



Undergraduate Catalog

Vanderbilt University

2024/2025

Containing general information and courses of study for the 2024/2025 session

Table Of Contents

Table Of Contents	2
Calendar 2024/2025	18
FALL SEMESTER 2024	18
SPRING SEMESTER 2025	18
MAYMESTER 2025	18
SUMMER SESSION 2025	18
Special Programs for Undergraduates	18
Immersion Vanderbilt	19
Hoogland Undergraduate Business Program	19
The Undergraduate Business Minor	20
BUS Pathways (all courses are 3.0 hours unless otherwise noted)	20
Entrepreneurship	20
Finance and Accounting	20
Marketing	21
Operations	21
Organizational Effectiveness	21
Strategy	22
Business-in-Society Electives	22
Course Descriptions	23
Undergraduate Minor in Legal Studies	23
Air Force Reserve Officer Training Corps (AFROTC)	24
AFROTC Program/Scholarships	25
General Benefits	25
Sponsored Activities	25
Aerospace Studies Courses at TSU	25
FRESHMAN YEAR	25
SOPHOMORE YEAR	25
JUNIOR YEAR	26
SENIOR YEAR	26
Army Reserve Officers' Training Corps (ROTC)	26
Military Science Department	27
Military Science Courses	27
FIRST YEAR	28
SOPHOMORE YEAR	28
JUNIOR YEAR	29
SUMMER BETWEEN JUNIOR AND SENIOR YEAR	29
SENIOR YEAR	30
Naval Reserve Officers' Training Corps (NROTC)	30
Naval Science	31
Naval Science Courses	31
FIRST YEAR	32
SOPHOMORE YEAR	32
JUNIOR YEAR	32
SENIOR YEAR	32
Admission	32
Admission	32
Academic Preparation	33
Application Procedure — First-year Applicants	33
Application Procedure — Transfer Applicants	34
International Applicants	34
Advanced Credit	34
Advanced Credit	35
College Entrance Exams	35
Advanced Placement Credit Policy	35
International Baccalaureate Credit Policy	35
Advanced Placement Examination Grades Accepted by Various Departments at Vanderbilt for Advanced Placement with Credit	35
African American Studies	35
Art	35
Computer Science	36
Economics	36
English	36
Government and Politics	36
History	36
Human Geography (No credit)	36
Languages	36

Mathematics	37
Music	37
Psychology	37
Sciences	37
Statistics	38
International Baccalaureate Test Scores Accepted by Various Departments at Vanderbilt for Advanced Credit	38
Pre-College Summer School Program	41
Credit for Previous College Work	41
International Students	42
Transfer Credit	43
Prior Degrees	43
Intra-University Transfer	44
Division of Unclassified Studies	45
Summer Session	45
Maymester	46
Financial Information	46
Financial Information	46
Payment of Tuition and Fees	46
Transcripts	46
Fraternity and Sorority Membership	46
Need-Based Financial Aid	47
University General Medals, Prizes, and Awards	47
Undergraduate Academic Regulations	56
Institutional Policies and Student Obligations	56
Honor System (A&S, Blair, VUSE, PBDY)	56
Responsibility to be Informed (VUSE)	56
Class Attendance (A&S, Blair, VUSE, PBDY)	56
Classroom Recording Policy (A&S, Blair)	57
Academic Advising (Blair, VUSE, PBDY)	58
Course Enrollment & Management	58
Registration (A&S, Blair, VUSE)	58
Normal Course Load (A&S, Blair, VUSE, PBDY)	59
Change of Course (Blair, VUSE)	60
Pass/Fail (A&S, Blair, VUSE, PBDY)	60
Withdrawal (A&S, Blair, VUSE, PBDY)	63
Taking Courses for No Credit (A&S, Blair)	64
Auditing (A&S, Blair, VUSE, PBDY)	64
Independent Study (A&S, Blair, PBDY)	65
Minimum Graded Credit Hours (A&S)	65
Duplication of Course Content (A&S, PBDY)	66
Repeated Courses (A&S, Blair, VUSE, PBDY)	66
Undergraduate Enrollment in Graduate School Courses (A&S, Blair, VUSE, PBDY)	67
Reserving Credit for Graduate School (A&S, PBDY)	68
Grading and Credits	69
Residence Requirement (A&S, Blair, VUSE, PBDY)	69
Advanced Placement (Blair)	69
Credit Hour Definition (Blair, VUSE, PBDY)	70
Grading System (A&S, Blair, VUSE, PBDY)	70
Grade Reports (A&S, Blair, VUSE)	71
Grade Point Average (A&S, Blair, VUSE, PBDY)	72
Defined Grades with Corresponding Grade Points per Credit Hour (A&S, Blair, VUSE, PBDY)	72
F: Failure (A&S, VUSE)	73
Grade Appeals (PBDY)	74
Mid-Semester Progress Reports (A&S)	74
Deficiency Notices (Blair)	74
Temporary Grades (A&S, Blair, VUSE, PBDY)	75
Transfer Credit (A&S, Blair, VUSE, PBDY)	75
Summer or Winter Work at Another Institution (A&S)	77
Credit by Examination (A&S, Blair, VUSE, PBDY)	77
Degree Progression & Class Standing	79
Requirements for the degree (VUSE)	80
Grade Point Average Requirements (VUSE)	80
Graduation Requirements (Blair, VUSE, PBDY)	80
Scholarship Student Requirements (Blair, VUSE)	80
Liberal Education Core Guidelines (PBDY)	81

Progress Evaluation (PBDY)	82
Writing Portfolio (Blair)	82
Degree Audit Reports (Blair)	82
Declaring of Major and of Second Major (PBDY)	82
Overlap in Course Work between Multiple Majors and Minors (PBDY)	82
Class Standing (A&S, Blair, VUSE, PBDY)	82
Senior in Absentia (A&S)	84
Examinations	84
Examinations (A&S, Blair, VUSE)	84
Dead Week (A&S, Blair, PBDY)	85
Final Examinations (A&S)	85
Comprehensive Examinations (A&S)	86
Senior Re-Examination (A&S, Blair, VUSE, PBDY)	86
Academic Standards & Discipline	87
Academic Standing (VUSE)	87
Sudden Academic Insufficiency (Blair, PBDY)	88
Academic Discipline (A&S)	88
Semester Requirements (A&S)	88
Academic Probation and Dismissal (Blair, PBDY)	89
Petitions and Appeals (A&S, PBDY)	90
Enrollment Status & Changes	91
Transfer Students (Blair)	91
Alternate Track (PBDY)	92
Leave of Absence (A&S, Blair, VUSE, PBDY)	92
Returning to the College (A&S)	93
Withdrawal from the University (A&S, VUSE, PBDY)	93
Change of Address (A&S, Blair, VUSE)	94
Special Programs	94
Immersion Vanderbilt (Blair, VUSE)	94
Study Abroad (Blair)	95
Blair-Specific Provisions	95
Internships (Blair)	95
Performance Instruction: B. Mus. and B. Mus. Arts Degrees (Blair)	96
Upper Divisional Hearing (Blair)	96
Pre-Recital Hearing (Blair)	96
Recital and Recital Committee (Blair)	97
Recital Attendance (Blair)	97
Extracurricular Performance (Blair)	97
College of Arts and Science	97
College of Arts and Science Administration and Faculty	97
Faculty	99
A Community for Liberal Learning	99
Faculty and Students	99
Academic Support	100
The Writing Studio / Tutoring Services	100
Computers	100
The Advising System	101
Public Lectures	101
Degree Programs in the College	102
The Bachelor of Arts	103
Limitation on Credit Hours outside the College	103
AXLE: Achieving eXcellence in Liberal Education	104
What Is Liberal Education?	104
Fear No Learning!	104
How to Get Started	104
Where to Get Information	105
Where to Get Advice	105
What Is AXLE?	105
Overview of AXLE	106
The First-Year Writing Seminar	106
The Writing Requirement	106
The Liberal Arts Requirement	107

The Major	109
AXLE Curriculum Course Distribution	109
AXLE, the Major, and the Optional Minor	109
Advanced Placement under AXLE	109
Transfer Credit under AXLE	109
Area of Concentration	109
Major Field	109
Defined Interdisciplinary Programs	110
Declaration of the Area of Concentration	111
Individually Designed Interdisciplinary Majors	111
Double and Triple Majors	112
Approved Second Majors Outside the College	112
Additional Programs in the College of Arts and Science	112
The Optional Minor	113
Approved Minors Outside the College	114
Undergraduate Research	114
Study Abroad Programs	114
Pre-Professional Studies	115
Medicine	115
Dentistry	115
Nursing	116
Architecture	116
Engineering	116
Law	116
Teacher Education	116
Internships	116
Finding an Internship	117
Interdisciplinary Internships	117
Departmental Internships	117
Cost of an Internship	118
Combined B.A./M.A. (4+1) Program	118
Programs of Study	118
Admissions Overview	119
Advising	119
Curriculum	119
Scholarships and Financial Aid	119
Honors in the College of Arts and Science	120
Founder's Medal	120
Latin Honors Designation	120
College Scholars Program	120
Departmental Honors	121
Dean's List	121
Phi Beta Kappa	121
Honor Societies for First-Year Students	122
Other Awards and Prizes	122
College of Arts and Science Programs of Study	124
College of Arts and Science Courses	125
Blair School of Music	128
Music at Vanderbilt	128
Facilities	129
The Blair Concert Series	129
Blair Academy at Vanderbilt	129
Classes for Students in Other Vanderbilt Schools and Colleges	130
Ensembles	130
Performance	131
Group Performance Instruction: Non-Major	131
Individual Performance Instruction	131
Music Minors	132
Music Minor. 24 or 25 hours.	132

Musicology/Ethnomusicology Minor. 18 or 19 hours.	132
Music Composition Minor. 26 hours.	133
Music Performance Minor. 25 or 26 hours.	133
Music as a Second Major	134
Music Major (Second Major). 31 hours.	134
Blair School of Music Administration and Faculty	135
Music Library	135
Area Coordinators	135
Faculty Coordinators and Program Directors	136
Committees	136
Faculty	136
The Degree Programs	136
Bachelor of Music	136
Bachelor of Music Degree Requirements	137
Requirements by Major Area	137
BRASS PERFORMANCE	137
COMPOSITION	138
HARP PERFORMANCE	139
INTEGRATED STUDIES	140
INTEGRATED STUDIES/TEACHER EDUCATION, INSTRUMENTAL/GENERAL	142
INTEGRATED STUDIES/TEACHER EDUCATION, VOCAL/GENERAL	143
JAZZ STUDIES	145
PERCUSSION PERFORMANCE	146
PIANO PERFORMANCE	147
STRING PERFORMANCE	148
VOICE PERFORMANCE	149
WOODWIND PERFORMANCE	150
Bachelor of Musical Arts	151
Bachelor of Musical Arts Degree Requirements	151
Liberal Arts Core	153
English/writing (6 hours)	153
Humanities (9 hours)	154
HUMANITIES REQUIREMENTS	154
HUMANITIES ELECTIVES	154
History, Social Science (3 hours)	155
HISTORY	155
SOCIAL SCIENCE	155
Mathematics, Natural Science (3 hours)	155
MATHEMATICS	156
NATURAL SCIENCE	156
Academic Electives (9 hours)	156
Free electives (sufficient to complete 126 hours)	156
Additional Programs in the Blair School of Music	156
Minor Area and Concentration Requirements	157
CONCENTRATION IN COLLABORATIVE ARTS. 24 hours	157
CONCENTRATION IN COMPOSITION. 20 hours minimum	157
CONCENTRATION IN CONDUCTING. 32 hours minimum (20 hours in music)	157
CONCENTRATION IN ETHNOMUSICOLOGY. 20 hours minimum	158
CONCENTRATION IN JAZZ. 20 hours minimum	158
CONCENTRATION IN MULTIPLE WOODWINDS. 23 hours	158
CONCENTRATION IN MUSIC AND THE MIND. 23 hours	159
CONCENTRATION IN MUSICOLOGY. 20 hours minimum	159
CONCENTRATION IN PEDAGOGY. 19 or 20 hours	159
CONCENTRATION IN MUSIC THEORY. 18-20 hours	159
HONORS IN MUSICOLOGY AND ETHNOMUSICOLOGY. 9 hours	160
MINOR INSTRUMENT. 10 hours	160
Teacher Education	160
Junior Mid-Program Review [Screening I]	160
Admission to Student Teaching [Screening II]	162
3+2 B.Mus.Arts/MBA Blair-to-Owen Program	163

Tuition and Financial Aid	164
Honors in the Blair School of Music	164
Founder's Medal	164
Academic Honors Designation	164
Honors Program in Musicology and Ethnomusicology	165
Dean's List	165
Pi Kappa Lambda	165
Awards and Prizes	165
Blair School of Music Courses	167
School of Engineering	168
School of Engineering Administration and Faculty	169
Named and Distinguished Professorships	169
Department Chairs and Division Director	170
Faculty	170
Engineering Education in a University Setting	170
Facilities	171
Professional Registration and Accreditation	172
Employment of Graduates	173
Supporting Organizations	173
Vanderbilt Engineering Council	173
Professional Societies	173
Degree Programs in Engineering	173
Degree Programs in Engineering	174
Undergraduate Degrees	175
The First Year	175
Mathematics and Physics	175
Liberal Arts Core	176
Immersion	176
Open Electives	176
Officer Education	176
Master of Engineering	177
Digital Learning Programs	177
Special Programs in the School of Engineering	177
Honors Programs	178
Study Abroad	178
Teacher Education	178
Second Major	178
Minors	179
Focus Areas	179
Dual Degree Program with Fisk University	179
Integrated Bachelor and Master of Engineering	180
Accelerated Graduate Program in Engineering	180
Honors in the School of Engineering	180
Founder's Medal	180
Latin Honors Designation	181
Dean's List	181
Honor Societies	181
Other Awards and Prizes	182
Engineering Courses of Study	183
Abbreviations	183
The First Year	184
Specimen Curriculum	184
Biomedical Engineering	184
Curriculum Requirements	186
Specimen Curriculum for Biomedical Engineering	187
Double Majors	188
Chemical Engineering	189
Curriculum Requirements	191
Double Majors	191
Specimen Curriculum for Chemical Engineering	192
Civil Engineering	193
Curriculum Requirements	195

Specimen Curriculum for Civil Engineering	196
Pre-Architecture Advising	198
Computer Engineering	198
Curriculum Requirements	199
Computer Engineering Areas of Concentration	200
Specimen Curriculum for Computer Engineering	200
Minor in Computer Engineering	201
Computer Science	202
Curriculum Requirements	203
Specimen Curriculum for Computer Science	204
Second Major in Computer Science for Non-Engineering Students	205
Electrical and Computer Engineering	206
Curriculum Requirements	207
Electrical and Computer Engineering Areas of Concentration	208
Specimen Curriculum for Electrical and Computer Engineering	210
Engineering Science and Management	212
Engineering Science Major (Bachelor of Science)	212
Curriculum Requirements	213
Environmental Engineering	214
Curriculum requirements	215
Specimen Curriculum for Environmental Engineering	215
Mechanical Engineering	216
Curriculum Requirements	218
Specimen Curriculum for Mechanical Engineering	219
School of Engineering Minors	220
Computer Science Minor	220
Data Science Minor	221
Digital Fabrication Minor	224
Electrical and Computer Engineering Minor	226
Engineering Management Minor	227
Energy and Environmental Systems Minor	228
Environmental Engineering Minor	229
Materials Science and Engineering Minor	230
Nanoscience and Nanotechnology Minor	232
Quantum Information Science and Engineering Minor	235
Scientific Computing Minor	235
School of Engineering Focus Areas	237
Engineering Communications	238
Human Computer Interaction (HCI)	238
Microelectronics	238
Nanotechnology	239
Product Development	239
Strategic and Technical Consulting	239
Technology Entrepreneurship	239
Engineering Courses	240
Peabody College	240
Peabody College Administration and Faculty	240
Endowed Chairs and Named Professorships	241
Faculty Council	241
Council on Teacher Education	241
Faculty	241
Education and Human Development at Vanderbilt	242
Centers and Outreach Efforts	242
Next Steps at Vanderbilt University	242
The Undergraduate Program	243
Liberal Education Core Program	243
Licensure for Teaching	243
Security Clearance	244
Degree Audits	244
SCREENING	245
Screening I (Formal Admission to an Undergraduate Teacher Education Program)	245
Screening II (Admission to Student Teaching)	246
Student Teaching	246
Application for Teacher Licensure and University Recommendation for Licensure	246
Accreditation	247
Special Program in Peabody College	248

Peabody Scholars Program	248
Interdisciplinary Majors	248
Language and Literacy Studies (36 hours)	248
Mathematics and Science Studies (35–37 hours)	249
Natural Science Studies (35–36 hours)	250
Multilingual/Multicultural Studies (36 hours)	251
Social Studies (36 hours)	252
Anthropology	252
Economics	252
United States History	252
European History	252
American Politics	253
World Politics	253
Sociology	253
Psychology and Human Development	253
Majors in Child Development, Child Studies, and Cognitive Studies	254
Major in Child Development	254
Honors Program	255
Curriculum	255
Liberal Education Core Requirements. Minimum 40 hours.	255
Writing Requirement	255
Major Requirements. 30 hours.	255
Major Core. 21 hours.	255
Major Elective Area. A minimum of 9 hours.	256
Second Major or Electives. 50 hours (or less if additional hours are earned in the Liberal Education Core, Major Core, or Major Elective Area).	257
Major in Child Studies	257
Honors Program	257
Curriculum	257
Liberal Education Core Requirements. Minimum 40 hours.	257
Writing Requirement	257
Child Studies Major Courses	257
Major in Cognitive Studies	259
Honors Program	260
Curriculum	260
Liberal Education Core Requirements. Minimum 40 hours.	260
Writing Requirement	260
Major Requirements. 33 hours.	260
Second Major and Electives. 51-52 hours.	262
Minors	262
The Minor in Child Development	262
The Minor in Child Psychology and Mental Health	263
Structure of the Minor	263
The Minor in Cognitive Studies	264
The Minor in Language Sciences	264
The Minor in Quantitative Methods	265
Structure of the Minor	265
Teaching and Learning	266
Majors in Early Childhood and Elementary Education, and Secondary Education and Minor in Multilingual Learner Education	266
Elementary Education	266
B.S. Degree Requirements	267
Elementary Education (K-5 Licensure)	267
Secondary Education	267
B.S. Degree Requirements	268
Secondary Education (6-12 Licensure)	268
B.S. Degree Requirements	271
Educational Studies	271
Minor in Multilingual Learner Education	273
Human and Organizational Development	274
Major in Human and Organizational Development	274
Curriculum	276
Honors Program	280

The Minor in Human and Organizational Development	280
Potential Peabody Second Majors	281
Human and Organizational Studies	282
Special Education	282
Major in Special Education	282
Honors Program	283
B.S. Degree Requirements	283
Liberal Education Core Requirements. Minimum 60 hours.	283
Writing Requirement	283
Specializations	283
Minors	284
Minor in Special Education	285
Minor in Instruction in Special Education	285
Disability Studies	286
Honors in Peabody College	286
Founder's Medal	286
Latin Honors Designation	286
Dean's List	286
Kappa Delta Pi	286
Honor Societies for Freshmen	287
Awards	287
Human Organization and Development	287
Psychology and Human Development	287
Special Education	287
Teaching and Learning	288
Peabody College Courses	289
Undergraduate Programs of Study	289
African American and Diaspora Studies	289
Program of Concentration in African American and Diaspora Studies	290
Honors Program	290
Minor in African American and Diaspora Studies	290
Areas of Study	291
Area of Study I, Gender and Sexuality	291
Area of Study II, Literature, Theory, and Visual Culture	291
Area of Study III, Social Sciences	291
Other Electives	291
Anthropology	292
Program of Concentration in Anthropology	293
Honors Program	294
Minor in Anthropology	295
Arabic	295
Art	295
Program of Concentration in Art	296
Requirements for the Program of Concentration in Art	297
Honors Program in Art	297
Minor in Art	297
Asian Studies	298
Program of Concentration in Asian Studies	299
Program of Concentration in Asian American and Asian Diaspora Studies	299
Honors Program in Asian Studies	300
Minor in Asian Studies	300
Minor in Chinese Language and Culture	300
Minor in Japanese Language and Culture	300
Minor in Korean Language and Culture	301
Minor in South Asian Language and Culture	301
Minor in Asian American and Asian Diaspora Studies	301
Asian Studies Course List	301
Biochemistry and Chemical Biology	308
Program of Concentration	309
Required Math and Science Courses for Both Tracks	309
Fundamental Core Courses for all Tracks (12 credit hours)	309
Tracks (14 credit hours)	309
Biochemistry Track	309
Chemical Biology Track	309
General Electives (6 credit hours)	310
Honors Program	310

Biological Sciences	310
General Requirements	311
Minor in Biological Sciences	312
Specific Requirements for Individual Majors	312
Biomedical Engineering	314
Curriculum Requirements	316
Specimen Curriculum for Biomedical Engineering	316
Double Majors	317
Business Studies	318
Chemical Engineering	318
Curriculum Requirements	320
Double Majors	320
Specimen Curriculum for Chemical Engineering	321
Chemistry	322
Program of Concentration in Chemistry	323
Options for Concentration in Chemistry	324
Minor in Chemistry	325
Honors in Chemistry	325
Licensure for Teaching	325
Introductory Courses	325
Civil Engineering	325
Curriculum Requirements	327
Specimen Curriculum for Civil Engineering	328
Pre-Architecture Advising	330
Cinema and Media Arts	330
Program of Concentration in Cinema and Media Arts	330
Honors Program	331
Minor in Cinema and Media Arts	331
Classical and Mediterranean Studies	332
Program of Concentration in Classical and Mediterranean Studies	333
Track 1: Classical and Near Eastern Languages and Cultures	333
Track 2: Mediterranean Archaeology	334
Track 3: Mediterranean Studies	334
Honors Program	334
Minor in Mediterranean Archaeology	335
Minor in Mediterranean Studies	335
Approved List of Courses	335
Climate and Environmental Studies	337
Computer Engineering	340
Curriculum Requirements	341
Computer Engineering Areas of Concentration	342
Specimen Curriculum for Computer Engineering	342
Minor in Computer Engineering	343
Computer Science	344
Curriculum Requirements	345
Specimen Curriculum for Computer Science	346
Second Major in Computer Science for Non-Engineering Students	347
Communication of Science and Technology	348
Program of Concentration in Communication of Science and Technology	348
Approved Courses:	351
Honors Program	352
Requirements for Admission to Honors in CSET	352
Requirements for Completion of Honors in CSET	352
Course of Study for Honors in CSET	352
Minor in Communication of Science and Technology	352
Communication Studies	353
Program of Concentration in Communication Studies	353
Minor in Communication Studies	354
Culture, Advocacy, & Leadership	354
Program of Concentration in Culture, Advocacy, & Leadership (30 credit hours)	354
Minor in Culture, Advocacy, & Leadership (15 credit hours)	355
Minor in Sports and Society (15 credit hours)	355
Honors Program	355
Approved List of Courses	356
INTERDISCIPLINARY PROGRAMS	356
ELECTIVES	356
Earth and Environmental Sciences	358
Program of Concentration in Earth and Environmental Sciences	359

Track 1	359
Track 2	360
Designing Area of Focus	362
Honors in Earth and Environmental Sciences	362
Minor in Earth and Environmental Sciences	362
Licensure for Teaching	362
Economics	362
Program of Concentration in Economics	363
Mathematics Prerequisite	364
Minor in Economics	364
Honors Program	364
Program of Concentration in Economics and History	364
Licensure for Teaching	364
Economics and History	364
Honors Program (9 more credit hours)	365
Electrical and Computer Engineering	365
Curriculum Requirements	367
Electrical and Computer Engineering Areas of Concentration	368
Specimen Curriculum for Electrical and Computer Engineering	370
Engineering Science and Management	372
Engineering Science Major (Bachelor of Science)	372
Curriculum Requirements	373
English	374
Program of Concentration in English and American Literature	375
Program I: Literary Studies (30 credit hours)	375
Program II: Creative Writing (30 credit hours)	375
Program III: Specialized Critical Studies (30 credit hours)	375
Minor in English: Literature	376
Minor in English: Creative Writing	376
General Requirements and Advice for Majors and Minors in All Programs	376
Honors Program	376
Licensure for Teaching	377
Environmental Engineering	377
Curriculum requirements	378
Specimen Curriculum for Environmental Engineering	379
European Studies	380
Program of Concentration in European Studies (27-30 credit hours)	381
Honors Program	382
The Minor in European Studies	382
Joint Major Option	383
French and Italian	383
Program of Concentration in French	384
Honors Program in French	384
Program of Concentration in French and European Studies	384
Minor in French	385
Minor in Italian Studies	385
Program of Concentration in Italian and European Studies	386
Licensure for Teaching	386
French	386
Italian	386
Gender and Sexuality Studies	387
Program of Concentration in Gender and Sexuality Studies	387
Honors Program	388
Minor in Gender and Sexuality Studies	388
German, Russian and East European Studies	390
Program of Concentration in German Studies	392
German Language Proficiency	392
Honors Program in German Studies	392
Minor in German Studies	392
Study Abroad	393
Program of Concentration in German and European Studies	393
Program of Concentration in Russian Studies	393
Study Abroad	394
Honors Program	394
Minor in Russian Studies	394
Program of Concentration in European Studies: Russia and Eastern Europe	394
Licensure for Teaching	395
German	395
Russian	395
Hebrew	395

History	395
Program of Concentration in History	397
Program of Concentration in Law, History, and Society	399
Honors Program	400
Program of Concentration in Economics and History	400
Licensure for Teaching	400
Minor in History	400
History of Art and Architecture	401
Program of Concentration in History of Art	402
Program of Concentration in Architecture and the Built Environment	402
Honors Program	406
Minor in History of Art	406
Minor in Architecture and the Built Environment	407
Honors	407
Interdisciplinary Studies	408
Jewish Studies	408
Program of Concentration in Jewish Studies	408
Honors Program	409
Minor in Jewish Studies	409
LANGUAGE:	409
ELECTIVES:	409
Latin American Studies	411
Program of Concentration in Latin American Studies	412
Honors Program	414
Minor in Latin American Studies	414
Minor in Brazilian Studies	415
Areas of Study	415
Latino and Latina Studies	416
Program of Concentration in Latino and Latina Studies	416
Minor in Latino and Latina Studies	417
Approved List of Courses	417
Mathematics	419
Program of Concentration in Mathematics	420
Program I (Standard Track)	420
Program II (Applied Track)	420
Program III (Honors Track)	420
Honors Program	421
Minor in Mathematics	421
Licensure for Teaching	422
Calculus	422
Mechanical Engineering	422
Curriculum Requirements	423
Specimen Curriculum for Mechanical Engineering	424
Medicine, Health, and Society	425
Program of Concentration in Medicine, Health, and Society	426
Honors Program	428
Minor in Medicine, Health, and Society	428
Approved Courses	429
Nanoscience and Nanotechnology	435
Nanoscience and Nanotechnology Minor	436
Neuroscience	437
Program of Concentration	437
Required Math and Science Courses	437
Neuroscience Courses	438
Related Course Electives	438
Honors Program	438
Minor in Neuroscience	439
Philosophy	439
Program of Concentration in Philosophy	440
Honors Program	440
Minor in Philosophy	440
Physics and Astronomy	440
Program of Concentration in Physics	442
Licensure for Teaching	443
Honors Program	443
Departmental Minors	443
Minor in Physics	443

Minor in Astronomy	444
Introductory Courses - Physics	444
Intermediate Courses - Physics	445
Advanced Courses - Physics	445
Medical and Health Physics Courses	445
Physics Education Courses	445
Introductory Courses - Astronomy	445
Intermediate Courses - Astronomy	445
Advanced Courses - Astronomy	445
Political Economy	446
Minor in Political Economy	446
Prerequisites	446
Student Advising	446
Political Science	446
Program of Concentration in Political Science	447
Honors Program	448
Minors in Political Science	449
Licensure for Teaching	450
Psychology	450
Programs of Concentration in Psychology	451
General Program	451
Honors Program	452
Honors Program	452
*Distribution Courses	452
** Electives	453
Comprehensive Exam	453
Minor in Psychology	453
Public Policy Studies	453
Program of Concentration in Public Policy Studies	454
Prerequisites	454
Core Curriculum (5 courses, 15 credit hours)	454
Electives and Areas of Concentration (5 courses, 15 credit hours)	454
Honors Track (2 additional courses, 6 additional hours)	455
Quantum Information Science and Engineering	456
Quantum Information Science and Engineering Minor	456
Religious Studies	457
Program of Concentration in Religious Studies	458
Honors in Religious Studies	459
Minor in Religious Studies	460
Minor in Islamic Studies	460
Minor in Arabic Language	461
Arabic	462
Scientific Computing	462
Sociology	463
Program of Concentration in Sociology	464
Program I (Standard Track)	464
Program II (Honors Research Track)	465
Comprehensive Exam	466
Program of Concentration in Environmental Sociology	466
Program I (Standard Track)	466
Program II (Honors Research Track in Environmental Sociology)	467
Comprehensive Exam	468
Minor in Sociology	468
Licensure for Teaching	468
Spanish and Portuguese	468
Program of Concentration in Spanish	470
Honors Program in Spanish	470
Minor in Spanish	470
Minor in Portuguese	472
Program of Concentration in Spanish and Portuguese	472
Program of Concentration in Spanish and European Studies	472
Teacher Licensure	473
Catalan	473
Portuguese	473
Spanish	474
Teacher Education	475
Early Childhood and Elementary Education	475
Secondary Education	475

Special Education	475
Theatre	475
Program of Concentration in Theatre	477
Honors Program	477
Minor in Theatre	477
Campus Resources	478
Life at Vanderbilt	478
Accommodations for Students with Disabilities	478
Nondiscrimination, Anti-Harassment, Anti-Retaliation, and Sexual Misconduct	478
Official University Communications	478
Student Records (Family Educational Rights and Privacy Act)	478
The Vanderbilt Honor Code and the Honor System	480
VA Compliance Statement	481
Vanderbilt University	481
Accreditation	481
Commencement	481
Modification Policy and Nondiscrimination Statement	481
Obtaining Information about the University	482
The University	483
Vanderbilt University Administration	483
Vanderbilt University Board of Trust	484
Courses by Subject Areas	487
A&S College Core	487
African American Diaspora Studies	487
American Sign Language	495
American Studies	495
Anthropology	498
Arabic	516
Aramaic and Syriac	518
Art Studio	518
Asian Studies	525
Asian-American Studies	533
Astronomy	535
Baroque Performance	538
Biochemistry & Chemical Biology	538
Biological Sciences	540
Biomedical Engineering	550
Business	556
Business-Arts&Science	559
Career Development	562
Catalan	562
Chemical and Biomolecular Engineering	562
Chemistry	567
Cherokee	574
Chinese	574
Cinema and Media Arts	577
Civil Engineering	582
Classical Hebrew	588
Classics	589
Communication Studies	598
Communication of Science and Technology	604
Computer Science	609
Conducting	618
Culture, Advocacy, & Leadership	620
Data Science	622
Digital Fabrication	624
Digital Humanities	624
Earth and Environmental Sciences	625
Economics	633
Education	642
Electrical & Computer Engineering	648

Engineering Management	655
Engineering Science	658
English	661
English Education	682
Ensembles	684
Environmental Engineering	687
Environmental and Sustainability Studies	690
European Studies	691
Foreign Language Education	694
French	694
Gender and Sexuality Studies	700
German	710
Greek	717
H&OD: Community Leadership and Development	718
H&OD: Education Policy	721
H&OD: Health & Human Services	722
H&OD: International Leadership and Policy	724
H&OD: Leadership & Organizational Effectiveness	726
Haitian Creole Language	729
Hebrew	729
Hindi Urdu Language Instruction	731
History	732
History Of Art	765
Honors	783
Human & Organizational Development	784
Humanities	788
Humanities Education-PC	788
Immersion Vanderbilt	789
Interdisciplinary Studies	789
Italian	790
Japanese	794
Jewish Studies	796
K'iche' - Mayan Language	805
Keyboard Harmony	806
Korean	807
Latin	808
Latin American Studies	811
Latino and Latina Studies	813
Malagasy	814
Materials Science & Engineering	815
Math Education	816
Mathematics	817
Mechanical Engineering	827
Medicine, Health, and Society	832
Military Science-PC	842
Minor in Legal Studies	844
Music Business/Entrepreneurship	845
Music Composition	846
Music Pedagogy	848
Music Repertoire/Literature	850
Music Teacher Education	851
Music Theory	854
Musicians' Wellness	859
Musicianship	860
Musicology/Ethnomusicology	861
Nanoscience and Nanotechnology	870
Naval Science	870
Naval Science - Peabody	871
Neuroscience	871
Next Steps	875

Other Music Courses	876
Peabody College	880
Peabody Honors Scholars	881
Performance Instruction: Banjo	882
Performance Instruction: Bass	882
Performance Instruction: Bassoon	883
Performance Instruction: Cello	884
Performance Instruction: Clarinet	885
Performance Instruction: Drumset	885
Performance Instruction: Euphonium	886
Performance Instruction: Fiddle	886
Performance Instruction: Flute	887
Performance Instruction: Guitar Classical	887
Performance Instruction: Harp	888
Performance Instruction: Harpsichord	889
Performance Instruction: Horn	889
Performance Instruction: Jazz	890
Performance Instruction: Mandolin	891
Performance Instruction: Oboe	891
Performance Instruction: Organ	892
Performance Instruction: Percussion	892
Performance Instruction: Piano	893
Performance Instruction: Saxophone	895
Performance Instruction: Steel Pan	895
Performance Instruction: Trombone	896
Performance Instruction: Trumpet	896
Performance Instruction: Tuba	897
Performance Instruction: Viola	898
Performance Instruction: Violin	899
Performance Instruction: Voice	900
Persian	901
Philosophy	902
Physics	912
Political Science	918
Portuguese	937
Psychology (AS)	939
Psychology-PC	948
Public Policy Studies	957
Religious Studies	958
Robert Penn Warren Center	970
Russian	970
Sanskrit	977
Science Education	977
Scientific Computing	979
Social Studies Education	979
Sociology	981
Spanish	991
Special Education	1003
Special Education: High Incidence	1005
Special Education: Severe	1007
Special Education: Vision	1009
Swahili	1011
Theatre	1011
Tibetan Language	1015
Turkish	1016
University Courses	1016

Calendar 2024/2025

Dates are subject to change.

FALL SEMESTER 2024

Classes begin. Wednesday 21 August

Registration ends. Friday 30 August.

Deadline to pay fall charges. Saturday 31 August.

Thanksgiving holidays. Saturday 23 November - Sunday 1 December

Classes end. Thursday 5 December

Reading days and examinations. Friday 6 December - Saturday 14 December

Fall semester ends. Saturday 14 December

SPRING SEMESTER 2025

Deadline to pay spring charges. Tuesday 31 December 2024

Classes begin. Monday 6 January

Registration ends. Tuesday 14 January

Spring holidays. Saturday 8 March - Sunday 16 March

Classes end. Monday 21 April

Reading days and examinations. Tuesday 22 April - Thursday 1 May

Commencement. Friday 9 May

MAYMESTER 2025

Classes begin. Monday 5 May

Classes end; examinations. Friday 30 May

SUMMER SESSION 2025

Classes begin. Tuesday 3 June

Examinations for first-half courses. Friday 4 July

Second-half courses begin. Tuesday 8 July

Examinations for second-half and full-term summer courses. Friday 8 August

Special Programs for Undergraduates

Immersion Vanderbilt

Immersion Vanderbilt is an innovative program that enhances the undergraduate experience through hands-on experiential and applied learning. Each student shall complete at least one immersive experience, followed by a culminating project. At its core, Immersion Vanderbilt gives every Vanderbilt student the opportunity to pursue intellectual curiosities through immersive experiences and culminating projects that are as creative and unique as the students. Throughout the Immersion Vanderbilt program, students are supported by faculty and the Immersion Vanderbilt office.

Immersion Vanderbilt is a requirement for all undergraduates. Some majors, minors, programs of study, and classes are approved to satisfy the immersive experience, culminating project, or both. To complete the Immersion Vanderbilt requirement, students engage in one or more experiential learning activities, for which the student has a faculty or staff mentor. The student will complete their immersive experience in one of the six immersion pathways of their choosing: 1) Research; 2) Study Abroad; 3) Innovation, Arts, & Design; 4) Civic & Community Engagement; 5) Leadership & Professional Development; or 6) Internships. When a student engages in research for Immersion, a Vanderbilt faculty member must be the mentor. Throughout the program, students are prompted to reflect upon their immersive experiences, which can inform the development of the culminating project. This reflective process ensures that students gain a deeper understanding of their immersive experience(s) and its significance to their goals.

Upon completing their immersive experience(s), students plan and complete their culminating project. Although students are encouraged to base their culminating project on their immersive experience(s), this is not required; the culminating project can relate to an immersive experience already completed or a new topic. As with the immersive experience, the student completes their culminating project in one of the six immersion pathways: 1) Research; 2) Study Abroad; 3) Innovation, Arts, & Design; 4) Civic & Community Engagement; 5) Leadership & Professional Development; or 6) Internship. The format of the culminating project can take many forms, including oral presentations, poster presentations, artistic displays at a showcase, performances, design projects, videos, websites, prototypes, white papers, or senior theses, among others. The Immersion Vanderbilt faculty adviser guides the creation of the culminating project, assesses its quality, and marks it as complete.

When the Immersion Vanderbilt faculty adviser approves the culminating project submission, the Immersion Vanderbilt requirement is complete and cannot be changed. Completion of the Immersion Vanderbilt graduation requirement is noted on the student's degree audit and the student transcript is updated with the culminating project title and project pathway. More information about Immersion Vanderbilt can be found at:

<https://www.vanderbilt.edu/immersion/>.

Hoogland Undergraduate Business Program

Vanderbilt University offers a transinstitutional, interdisciplinary undergraduate minor in business that is administered by the Owen Graduate School of Management. The undergraduate business minor requires 16.5 credit hours and is directed by Gary Kimball. Professor Kimball also serves as the director of undergraduate studies for the program.

The Hoogland Undergraduate Business Program (BUS) provides students with a rigorous exposure to the fundamental business disciplines of financial reporting, finance, organizational behavior, marketing, and operations. The program also intentionally grounds the study of business within the liberal arts tradition, allowing students to understand the context within which business operates in society.

Students declaring the undergraduate business minor (BUS) may not also declare either of the minors in human and organizational development (HOD) or engineering management (ENGM). Students electing the undergraduate business minor must follow academic regulations regarding minors in their home school, including but not limited to regulations regarding unique hours.

Three of the five mandatory courses in the undergraduate business minor require one of the following prerequisites, which may be completed in any order or simultaneously; Advanced Placement (AP) or International Baccalaureate (IB) credit may be used to satisfy the Microeconomics and Statistics prerequisites.

1. Introductory Microeconomics: ECON 1020
2. Introductory Statistics: One of BME 2400, ECON 1500, ECON 1510, MATH 1010, MATH 1011, MATH 2810, MATH 2820, MATH 2821, PSY 2100, PSY-PC 2110, or SOC 2100

The Undergraduate Business Minor

The undergraduate business minor (BUS) requires 16.5 credit hours of course work, distributed as follows:

1. 7.5 credit hours of required course work composed of 5 half-semester courses listed below. While not required, it is recommended that students complete the five required courses prior to fulfilling the elective requirement. Students may concurrently enroll in two of the five required courses.

BUS 1100	Essentials of Financial Reporting	(1.5 hours)
BUS 1300	Principles of Finance	(1.5 hours)
BUS 1400	Organizational Behavior	(1.5 hours)
BUS 1600	Principles of Marketing	(1.5 hours)
BUS 1700	Managing Operations	(1.5 hours)

2. At least 6 credit hours of courses selected from one or more of the six "BUS pathways" (entrepreneurship, finance and accounting, marketing, operations, organizational effectiveness, and strategy).
3. At least 3 credit hours of courses selected either from the "BUS pathways" or from the "business-in-society" electives. "Business-in-society" electives represent business-related disciplines in the liberal arts tradition, and are listed following the "BUS pathway" electives below.

BUS Pathways (all courses are 3.0 hours unless otherwise noted)

Entrepreneurship

- BUS 2310, Introduction to Entrepreneurship (1.5 hours)
BUS 2320, Innovation Strategy (1.5 hours)
BUSA 2300, Entrepreneurship: The Business Planning Process
BUSA 3300, Entrepreneurial Challenge
ENGM 3600, Technology-based Entrepreneurship
SOC 3206, Creativity and Innovation in Society

Finance and Accounting

- BUS 2710, Business Finance (1.5 hours)
BUS 2720, Introduction to Real Estate (1.5 hours)
BUS 2730, Financial Modeling (1.5 hours)

BUS 2740, Real Estate Finance and Development (1.5 hours)

BUS 3720, Case Problems in Finance (1.5 hours)

BUSA 2600, Managerial Accounting

BUSA 2705, Corporate Finance

BUSA 3605, Financial Reporting and Analysis

BUSA 3700, Investment Analysis

BUSA 3705, Financial Management

BUSA 3710, Corporate Valuation

ECON 2300, Money and Banking

ECON 3200, Public Finance

ECON 3300, Financial Instruments and Marketing

ECON 3610, International Finance

Marketing

BUS 2210, Consumer Behavior (1.5 hours)

BUS 2220, Digital Marketing Strategy (1.5 hours)

BUSA 2205, Business Development

BUSA 3200, Applied Marketing

ENGM 3200, Technology Marketing

Operations

BUSA 2200, Data Analysis and Presentation

ENGM 3000, Enterprise Systems Design

ENGM 3650, Operation and Supply Chain Management

ENGM 3700, Program and Project Management

Organizational Effectiveness

BUSA 3105, Negotiation

CMST 2120, Business Communication

HODC 3232, Ethics for Human Development Professionals

HODI 3240, Effectiveness in International For-Profit Organizations

HODL 3204, Leadership Theory and Practice

HODL 3224, Analyzing Organizational Effectiveness

HODL 3234, Advanced Organizational Theory

HODL 3244, Introduction to Human Resource Management

HODL 3254, Human Resource Management

HODL 3264, Evidence-based Practice in Organizations

HODL 3274, Managing Organizational Change

HODL 3314, Strategic Planning and Project Management

PHIL 1100, Introduction to Business Ethics

PHIL 3609, Ethics and Business

PSY 3605, Industrial and Organizational Psychology

SOC 3615, Human Behavior in Organizations

Strategy

BUSA 2150, Leading Business Through Crisis

BUSA 2160, Corporate Social Responsibility

BUSA 2200, Data Analysis and Presentation

BUSA 3110, Business Management

BUSA 3255, Corporate Strategy

ECON 2160, Strategic Analysis

ECON 3250, Industrial Organization

ECON 4260, Game Theory with Economic Applications

Business-in-Society Electives

ANTH 3135, Development, Social Enterprise, Social Injustice

ANTH 4153, Economic Anthropology

CHIN 4401, Business Chinese I

CHIN 4402, Business Chinese II

ECON 2100, Labor Economics

ECON 2150, Economic History of the United States

ECON 2220, Latin American Development

ECON 3100, Wages, Employment, and Labor Markets

ECON 3160, Economic History of Europe

ENGL 3898, Special Topics in English and American Literature: Business Leader's Bookshelf

FREN 3111, French for Business

GER 4558, Business German

HIST 1600, European Economic History, 1000-1700

HIST 1640, History of American Capitalism

HIST 1660, American Enterprise

HIST 1665, Capital, Labor, and Democracy

HIST 2138, Blood Diamonds, Blood Oil, Commodities, and Conflicts in Africa

HIST 3190, Religion, Culture, and Commerce: the World Economy in Historical Perspective

HIST 3200, Poverty, Economy, and Society in Sub-Saharan Africa

HODL 3890, Special Topics: Introduction to Data Science: Using Data for Understanding

MENT 1120, The Business of Music

MENT 1130, Building Communities through Music and the Arts [1 credit hour]

MENT 1135, Arts Administration: Best Practices and Careers in the Arts Organization [2 credit hours]

MENT 1140, Creating Funding and Nonprofit Vehicles for 21st-Century Community Service [2 credit hours]

PSY-PC 2120, Statistical Analysis (second course in sequence)

PSY-PC 3735, Correlation and Regression

PSY-PC 3749, Applied Nonparametric Statistics

SOC 1020, Contemporary Social Issues: Corporations and Society (only this emphasis)

SOC 3316, Business, Civil Society, and the Environment

SOC 3318, Sociology of Green Jobs

SPAN 3345, Spanish for Business and Economics

[Course Descriptions](#)

Undergraduate Minor in Legal Studies

The Undergraduate Minor in Legal Studies, designed and taught by Vanderbilt Law School Faculty, offers a comprehensive introduction to law for Vanderbilt undergraduate students. Through five courses totaling 15 credits and supplemental programming, the Minor will enable students to make informed judgments about whether to pursue law school and legal careers, as well as gain knowledge and skills that will give them a leg up in law school and their future careers. Students will also graduate with a better understanding of how the law shapes our society. The Director of the Undergraduate Minor in Legal Studies is Sean B. Seymore, Centennial Professor of Law. Students pursuing the Undergraduate Minor in Legal Studies will have access to specialized programming throughout the school year on a variety of Law School topics, including the admissions process, legal career paths, and the graduate student experience.

Students are required to take Introduction to Law and the Legal System, which is offered each semester. They must also take four additional minor-specific Law School courses, of which at least one will be offered every semester. One of these four additional courses may be taken from an approved list of non-Law School Vanderbilt University courses.

Subject	Course #	Course Title
ULAW	1000	Introduction to American Law
ULAW	2100	Access to Justice
ULAW	2120	AI, Law, and Society
ULAW2	200	Behavioral Law and Economics
		Constitutional Law: Structure of Government and Equal Protection of the Law
ULAW	2300	Constitutional Law: Structure of Government and Equal Protection of the Law
ULAW	2330	Contract Law
ULAW	2350	Corporate Law: The Structure of Business Entities
ULAW	2370	Courts and Social Policy
ULAW	2380	Criminal Law and Procedure
ULAW	2440	Education Law
ULAW	2500	Foreign Relations and International Law
ULAW	2540	International Protection of Human Rights
ULAW	2545	Justice and the Constitution
ULAW	2560	Juvenile Justice
ULAW	2580	Law and Psychology
ULAW	2590	Legal Research and Writing
ULAW	2800	Patent Law
ULAW	2890	Separation of Powers: Theory, Doctrine, and Practice
CLAS	3150	Roman Law
PSCI	2208	Law, Politics, and Justice
PSCI	3262	Election Law

Air Force Reserve Officer Training Corps (AFROTC)

[AFROTC Program/Scholarships](#)

[General Benefits](#)

[Sponsored Activities](#)

[Aerospace Courses at TSU](#)

The Air Force Reserve Officer Training Corps (AFROTC) provides pre-commission training for college men and women who desire to serve as commissioned officers in the United States Air Force and Space Force. When combined with the academic disciplines offered at the college level, the program provides the student a broad-based knowledge of management, leadership, and technical skills required for a commission and subsequent active-duty service in the Air Force or Space Force.

Graduates are commissioned as Second Lieutenants and will enter active duty. The main objectives of producing officers through the AFROTC program are (1) to procure officers with a broad educational base, (2) to provide a basic military education for college students, (3) to teach fundamentals and techniques of leadership, management, and decision making, and (4) to develop, in conjunction with other academic disciplines, individual character and attributes required of a commissioned officer in the United States Air Force.

AFROTC Program/Scholarships

Enrolling in AFROTC. Please go to www.tnstate.edu/afrotc for application deadlines. Vanderbilt University students may participate in the Air Force ROTC program in cooperation with Tennessee State University. Call Detachment 790, (615) 963-5980, and ask for a Cross-Town Application. Mail this application and your official transcripts with your immunization records back to Detachment 790. The program provides training and education that will develop skills and attitudes vital to the professional Air Force officer.

Students who participate in the Air Force ROTC program must be enrolled at Vanderbilt University. The student is also jointly enrolled as a TSU student and participates in Aerospace Studies (Air Force ROTC) at TSU. For more information, contact the unit admissions officer at (615) 963-5931/5979 or check our website at www.tnstate.edu/afrotc.

Currently there is no charge for tuition to take Air Force ROTC. The grade and credit can transfer back for graduation as indicated below.

Curriculum. The General Military Course (GMC) is composed of the first four semesters of aerospace studies (AERO) and is for freshmen and sophomores. The Professional Officer Course (POC) constitutes the final four semesters of AFROTC study and enrolls juniors and seniors. The Leadership Lab is required.

General Benefits

All students enrolled in the AFROTC program are provided textbooks and uniforms at no expense. Professional Officer Course (POC) students (juniors and seniors) and all scholarship students receive a monthly subsistence allowance which will increase each year the student remains in the program. All AFROTC students that remain in the program until their junior year, will contract with Air Force ROTC and receive a scholarship. Additionally, Vanderbilt University offers a generous stipend to all AFROTC cadets.

Sponsored Activities

Professional Development Training is provided during the summers to cadets interested in enhancing their knowledge of Air Force leadership and management opportunities, increasing their cultural awareness, and learning about specific career specialties.

AFROTC Flight Orientation Program is designed to allow all cadets, regardless of intended career field, the chance to fly as front seat or back seat passengers in Civil Air Patrol aircraft. Everyone can experience the joy of flight.

Aerospace Studies Courses at TSU

FRESHMAN YEAR

Heritage and Values of the United States Air Force and Space Force (no credit at Vanderbilt)

A survey course designed to introduce students to the United States Air Force and Space Force. This class provides an overview of the role of military in U.S. society, military history, officership, professionalism, core values, career opportunities, and customs/courtesies. Freshman Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing followership experiences.

SOPHOMORE YEAR

Team and Leadership Fundamentals (transfers as GNEL 2000)

A course that focuses on laying the foundation for teams and leadership. The topics include; development/deployment of air power, leadership and quality principles, ethics and values, leadership development based on student participation in group problem solving, as well as oral/written communication development. The purpose of this course is to instill a leadership mindset and to motivate sophomore students to transition from an AFROTC cadet to AFROTC officer candidate. Sophomore Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing followership experiences.

JUNIOR YEAR

Leading People and Effective Communication (transfers as HOD 2051)

A course that teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Cadets have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors. A mandatory junior year Leadership Laboratory provides advanced leadership experiences and the opportunity to apply the leadership and management principles of this course.

SENIOR YEAR

National Security Affairs/Preparation for Active Duty (no credit at Vanderbilt)

This course is designed for college seniors and provides them with the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the cadets for Active Duty. A mandatory senior year Leadership Laboratory provides advanced leadership experiences and the opportunity to apply the leadership and management principles of this course.

Army Reserve Officers' Training Corps (ROTC)

[Military Science Department](#)

[Military Science Courses](#)

The Army Reserve Officers' Training Corps (ROTC) is a sequential and progressive academic program that provides pre-commission training for college-educated men and women who desire to serve as commissioned officers in the active Army, Army Reserve, and Army National Guard. As the Army's largest commissioning source, it fulfills a vital role in providing mature young men and women for leadership and management positions in an increasingly technological Army. Admission is open to both men and women who meet mental, moral, and physical qualifications.

Training goes beyond the typical college classroom and is designed to build individual confidence and self-discipline, instill values and ethics, and develop leadership skills. The course load consists of one course per semester. Each succeeding year will address course topics in greater depth as students receive feedback on their leadership style and assume positions of greater responsibility within the program. Graduates are commissioned as Second Lieutenants and will enter active duty with follow-on employment in the Army Reserves, National Guard, or active duty. Educational delays may be granted for graduates who desire to pursue advanced degrees prior to entry on active duty.

All university students in the Nashville area may participate in the Army ROTC program at Vanderbilt University. While Vanderbilt serves as the host university, students at partnership schools are not charged additional tuition to take military science courses. Grades are transferred back to each university and added to the students' transcripts.

Scholarships. Students can earn merit scholarships in several ways. High school seniors and graduates compete for four-year scholarships that are determined by local competition among Vanderbilt applicants. Although determined locally, the application process is centrally managed. Scholarship students receive financial benefits that cover the cost of full tuition scholarships each year, an annual \$1,200 book allowance, all uniforms, and a monthly tax-free stipend of \$420. Vanderbilt University also provides Vanderbilt ROTC scholarship students an additional \$6,000 tuition grant each year for room and board.

Students who are not on scholarship receive the monthly stipend during their junior and senior years. All students

enrolled in the Army ROTC program are provided textbooks and uniforms at no expense. Contracted non-scholarship students also receive the monthly stipend \$420. For more information, see the website at goarmy.com/rotc.html.

Summer training. Students have the opportunity to attend several training events over the summer.

Advanced Camp — This five-week leadership exercise at Fort Knox, Kentucky, is a commissioning requirement. This is normally done between the junior and senior years. Travel, room, and board are provided free, and cadets are paid approximately \$700.

Cultural Understanding and Language Program (CULP) Internships — Students are encouraged to spend a semester, special or summer session in academic studies abroad if feasible. Special incentives are available to further attract qualified students to these valuable programs.

Cadet Troop and Leadership Training Internships (CTLT) — CCTLT Internships are leadership development opportunities for students who are placed with military organizations throughout the world to gain perspective and understanding on the role of the military officer.

Cadet Professional Field Training (CPFT) — Airborne, Air Assault, Mountain Warfare, Robin Sage (U.S. Special Forces), Helicopter Flight Training, and Sapper.

Other training opportunities exist for qualified applicants who are interested.

Commissioning and career opportunities. A commission in the U.S. Army is a distinctive honor earned through hard work, demonstrated commitment, and a desire to serve the nation. Post-graduate military education, usually starting within six months of graduation and commissioning and continuing through the officer's service career, begins with the basic officer leadership course followed by officer basic course that qualify new lieutenants in their specific branch of service. Education delays are available for critical specialties requiring postgraduate civilian education such as law and medical degrees.

Course credit. During the four-year program, Army ROTC students complete eight courses of military science plus associated labs. Academic credit varies by university.

Vanderbilt University College Credit: All AROTC courses count toward elective credit. See course descriptions below.

Information. Inquiries regarding enrollment in the Army ROTC program should be made to the Army ROTC Admissions Officer at (615) 322-8550 or (800) 288-7682 (1-800-VUROTC). Also see vanderbilt.edu/army.

Military Science Department

COMMANDING OFFICER Christine N. Kendzior

MILITARY INSTRUCTORS Christine N. Kendzior, Jermaine Denny, Ethan Orr

Military Science Courses

During the four-year program, Army ROTC students complete eight courses of military science plus associated labs, and must complete an American Military History course and Advanced Camp.

FIRST YEAR

MS-PC 1210. Leadership and Personal Development. Leadership is one of the most compelling topics of our time, and might be one of the most important attributes for effectiveness in all levels of human endeavor. The success of one of the most admired and respected institutions in our country, the military, is founded upon the understanding and effective application of leadership, and the development of leaders. This course introduces students to the personal challenges and competencies that are critical to effective leadership. The focus is on developing basic knowledge and comprehension of leadership attributes and core leader competencies in a universal setting and exploring potential applications of these principles and practices at Vanderbilt, in the military and in the corporate world. [1]

MS-PC 1210L. Leadership and Personal Development Lab. Leader development is a continuous process of training, assessment and feedback with the goal of instilling and enhancing desirable behavior in individuals and organizations. Within the military science curriculum, this process is called the Leadership Development Program (LDP), modeled after the principles spelled out in Field Manual 22-100, *Army Leadership*, and is standardized both on campus and in Advanced Camp environments. The flexible methodology of LDP accommodates personalized, individual development at all levels of proficiency throughout the officer educational experience, from program entry to commissioning. The LDP includes basic leadership training, periodic assessment and counseling at both team and individual levels by experienced observers. Trends and deficiencies are identified and addressed with retraining and reassessment in a continuous cycle. Effective leader development is progressive, building on lessons learned and maximizing individual potential. This course introduces students to the leadership development process by providing structured leadership opportunities in a variety of training settings. Student performance in leadership roles is assessed and notable strengths and weaknesses are identified. A plan for improvement is discussed in detail during one-on-one counseling sessions. [1]

MS-PC 1230. Leadership and Personal Development II. What motivates others to follow a person is intriguing, inspiring and alluring. Through routine observation, we learn from leaders regardless of the setting (military, business, education, etc.). Leadership and Personal Development II provides an overview of leadership fundamentals such as setting direction, problem solving, listening and providing feedback. You will explore dimensions of leadership, values, attributes, skills, and actions in a military context through practical, hands-on, and interactive exercises. [1]

MS-PC 1230L. Leadership and Personal Development II Lab. Leader development is a continuous process of training, assessment and feedback with the goal of instilling and enhancing desirable behavior in individuals and organizations; this process is called the Leadership Development Program. Effective leader development is progressive, building on lessons learned and maximizing individual potential. This course introduces students to the leadership development process by providing structured leadership opportunities in a variety of training settings. A plan for improvement is discussed in detail during one-on-one counseling sessions. [1]

SOPHOMORE YEAR

One American Military History course, chosen from the following:

HIST 1730. The U.S. and the Cold War.

HIST 1740. The U.S. and the Vietnam War.

HIST 2720. World War II.

MS-PC 1510. American Military History: Principles of War.

PSCI 3272W. The War in Iraq, 2003-2011.

MS-PC 2150. Foundations of Leadership. MS-PC 2150 introduces the process of understanding and defining leaders in order to develop leadership skills appropriate for future commissioned Army officers. This class is broken

down into five key skills development areas: 1) values and ethics, 2) personal development, 3) officership, 4) leadership, and 5) tactics and techniques. The class emphasizes individual leadership values and characteristics with a focus on Leadership Theory and Interpersonal Communications, Army Values, Troop Leading Procedures, Problem Solving, and Team Building in a military environment. [2]

MS-PC 2150L. Foundations of Leadership Lab. This lab builds upon the classroom topics in MS-PC 2150 and introduces the process of understanding and defining leaders in order to develop leadership skills appropriate for future commissioned Army officers. The lab is broken down into five key skill development areas: 1) leadership, 2) values and ethics, 3) personal development, 4) professional officership, and 5) various tactics, techniques, and procedures. The lab emphasizes individual leadership values and characteristics with a focus on leadership theory and interpersonal communications, Army values, troop leading procedures, problem solving, and team building in a military environment. [1]

MS-PC 2160. Foundations of Tactical Leadership. MS-PC 2160 builds upon MS-PC 2150. The class is broken down into five key skill development areas: 1) leadership, 2) values and ethics, 3) personal development, 4) professional officership, and 5) various tactics, techniques, and procedures. During this class we will focus on individual leadership development where the student begins to plan, organize, and lead small teams and groups in situational training exercises. Students begin to apply leadership skills at the smallest unit level. [2]

MS-PC 2160L. Foundations of Tactical Leadership Lab. MS-PC 2160L builds upon MS-PC 2150 and MS-PC 2150L. The lab is broken down into five key skill development areas: 1) leadership, 2) values and ethics, 3) personal development, 4) professional officership, and 5) various tactics, techniques, and procedures. During the lab we will focus on individual leadership development where the student begins to plan, organize, and lead small teams and groups in situational training exercises. Students begin to apply leadership skills at the smallest unit level. [1]

JUNIOR YEAR

MS-PC 3110. Leadership and Problem Solving. This course builds upon your skills developed in MS-PC 2160 and continues to develop leadership, officership skills, self-awareness, and critical thinking skills through challenging scenarios related to small-unit tactical operations. Cadets receive systematic and specific feedback on their leadership values, attributes, skills, and actions. Prerequisite: MS-PC 1210, 1230, 2150, and 2160. [3]

MS-PC 3110L. Leadership and Problem Solving Lab. MS-PC 3110L builds upon MS-PC 3110 and MS-PC 2150L. The lab is broken down into five key skill development areas: 1) leadership, 2) values and ethics, 3) personal development, 4) professional officership, and 5) various tactics, techniques, and procedures. During the lab we will focus on individual leadership development where the student begins to plan, organize, and lead small teams and groups in situational training exercises. Students begin to apply leadership skills at the smallest unit level. [1]

MS-PC 3120. Applied Team Leadership. Challenging scenarios related to small-unit tactical operations are used to develop self-awareness and critical thinking skills. Students receive systematic and specific feedback on their leadership values, attributes, skills, and actions. Prerequisite: MS-PC 3110. [3]

MS-PC 3120L. Applied Team Leadership Lab. MS-PC 3120L builds upon MS-PC 3120 and MS-PC 3110L. The lab is broken down into five key skill development areas: 1) leadership, 2) values and ethics, 3) personal development, 4) professional officership, and 5) various tactics, techniques, and procedures. During the lab we will focus on individual leadership development where the student begins to plan, organize, and lead small teams and groups in situational training exercises. Students begin to apply leadership skills at the smallest unit level. [1]

SUMMER BETWEEN JUNIOR AND SENIOR YEAR

Cadet Leader Course (1 Cr) — All students pursuing a commission as an Army Officer must complete Advanced Camp during the summer between their junior and senior year. Students may apply for 1 credit hour of academic credit with the designation of interdisciplinary internship (INDS 3881). This course may be taken once and repeated once for a maximum of 2 credits on a Pass/Fail basis only.

SENIOR YEAR

MS-PC 4150. Leadership and Ethics. Students develop proficiency in planning, executing, and assessing complex operations, functioning as a member of a staff, and providing leadership-performance feedback to subordinates. Students are given situational opportunities to assess risk, make sound ethical decisions, and provide coaching and mentoring to fellow ROTC Cadets. Prerequisite: MS-PC 3120. [3]

MS-PC 4150L. Leadership and Ethics Lab. MS-PC 4150L builds upon MS-PC 4150 and MS-PC 3120L. The lab is broken down into five key skill development areas: 1) leadership, 2) values and ethics, 3) personal development, 4) professional officership, and 5) various tactics, techniques, and procedures. During the lab we will focus on individual leadership development where the student begins to plan, organize, and lead small teams and groups in situational training exercises. Students begin to apply leadership skills at the smallest unit level. [1]

MS-PC 4160. Leadership in a Complex World. Students develop proficiency in leadership and management skills required of junior officers serving in military companies. The course further explores the dynamics of leading in complex situations of the contemporary operating environment and applies a cultural lens to problem solving. Students continue to gain leadership experience through situational opportunities, organizational projects, and coaching and mentoring fellow ROTC Cadets.

MS-PC 4160L. Leadership in a Complex World Lab. MS-PC 4160L builds upon MS-PC 4160 and MS-PC 4150L. The lab is broken down into five key skill development areas: 1) leadership, 2) values and ethics, 3) personal development, 4) professional officership, and 5) various tactics, techniques, and procedures. During the lab we will focus on individual leadership development where the student begins to plan, organize, and lead small teams and groups in situational training exercises. Students begin to apply leadership skills at the smallest unit level. [1]

Naval Reserve Officers' Training Corps (NROTC)

[Naval Science](#)

[Naval Science Courses](#)

The Naval Reserve Officer Training Corps (NROTC) unit at Vanderbilt conducts the Naval Officer Education program.

Challenging academic courses and experience-building events prepare a select group of highly accomplished students for the opportunity to serve their country as a Navy or Marine Corps officer and receive an education. The primary focus of the NROTC program is to develop the most capable leaders possible by building upon the academic strength of Vanderbilt and providing essential military and leadership education.

Students participate in the NROTC unit in the scholarship program, the college program, or the naval science program. College Program students take the prescribed naval science course each semester, participate weekly in naval science lab, and engage in summer training programs after each academic year. The NROTC College Program is identical to the scholarship program except for tuition financial benefit and that students only participate in summer training upon completion of their junior academic year. Also, any Vanderbilt student may take any or all of the naval science courses without participating in naval science lab or summer training.

Scholarship students receive tuition, fees, uniforms, \$375 per semester for textbooks, and a monthly stipend beginning at \$250 for freshmen and increasing to \$400 for seniors. Vanderbilt may provide scholarship students with up to a \$6,000-per-year stipend toward room and board. College Program students are provided uniforms, textbooks for naval science courses, and a monthly stipend of \$350 upon commencement of their junior year with approval by higher authority based on academic performance and military aptitude.

Scholarships. Students can earn scholarships in several ways. Four-year scholarships are determined by national competition among high school seniors and graduates. Based on the national ranking, students may be awarded a scholarship that covers full tuition. To be eligible, applicants must have less than 30 semester hours of college credit. College Program students can also be nominated for three- and two-year scholarships by the NROTC unit. These nominations are based on the students' academic and military performance at the college level. Sophomores not enrolled in the College Program are eligible to apply for the two-year NROTC scholarship program. This is a national competition and application is made through the NROTC unit.

Service obligation. For most students at the beginning of their sophomore year, should they choose to continue with the NROTC program, Navy option scholarship students incur a minimum service obligation of five years active duty, and Marine option scholarship students incur a minimum service obligation of four years of active duty, to be served upon graduation or withdrawal from the program. College Program students incur a three-year active duty commitment upon graduation or withdrawal from the program. Additional requirements may be required for specific job assignments.

Summer training. Summer training for three to four weeks is conducted aboard naval vessels and naval shore stations after each of the first three academic years. Scholarship students are normally required to participate each year. All scholarship and College Program midshipmen are required to participate in summer training prior to their final academic year.

Course credit. During the four-year program, NROTC Navy-option students are required to complete eight courses (24 hours) of naval science, and Marine-option students are required to complete six courses (18 hours) of naval science. Academic credit awarded varies by course and is outlined in the course descriptions below.

Required Courses for Navy/Marine Scholarship. The following courses are required for students on scholarship:

- Calculus (Navy option only) (6 credits minimum): Mathematics 1200-1201, or 1300-1301 completed by the end of the sophomore year.
- Physics (Navy option only) (6 credits): 1501-1502 or 1601-1602 completed by the end of the junior year.
- English (6 credits): Two semesters of any English course or courses containing a designated writing component.
- American History/National Security Policy (3 credits): Contact the Naval ROTC unit for a listing of courses fulfilling this requirement.
- World Culture/Regional Studies (Navy option only) (3 credits): Contact the Naval ROTC unit for a listing of courses fulfilling this requirement.

Information. Inquiries regarding enrollment in the Naval ROTC program should be made to the Naval ROTC unit recruiting officer at (615) 322-2671, or by contacting a local Navy or Marine Corps recruiting station.

Admission to the program is open to both men and women. Physical qualification to Naval Service standards is required.

Naval Science

COMMANDING OFFICER Aaron Buckles

EXECUTIVE OFFICER Brian Fremming

NAVAL INSTRUCTORS Arthur Busick, Renny Ignacio

MARINE INSTRUCTOR Kenneth St Cyr

Naval Science Courses

For Navy-option NROTC students, the following naval science courses are required for commissioning: NS 1100, HIST 1690, NS-PC 2410, ES 3231, ES 3230, ES 3232, ES 4233, and NS-PC 4242 and their appropriate labs. For Marine-option NROTC students, the following naval science courses are required for commissioning: NS 1100, HIST 1690, NS-PC 2410, HIST 1691, HIST 1693, and NS-PC 4242 and their appropriate labs.

FIRST YEAR

NS 1100

HIST 1690

SOPHOMORE YEAR

NS-PC 2410

ES 3231

JUNIOR YEAR

ES 3230

ES 3232

SENIOR YEAR

ES 3233

NS-PC 4242

The Marine option courses listed below are taught in the spring, rotating on a yearly basis. They are taken in the sophomore and junior year.

HIST 1691

HIST 1693

Admission

Admission

[Academic Preparation](#)

[Application Procedure - First-Year Applicants](#)

[Application Procedure - Transfer Applicants](#)

[International Applicants](#)

The admissions process for first-year applicants to Vanderbilt is holistic in nature and based on students' academic records and personal accomplishments. All available information is considered, including secondary school academic record, evidence of academic maturity and independence, extracurricular activities, contributions to and impact on the school and community, scores on standardized tests if submitted (see #3 in Application Procedure below), and letters of recommendation.

The admissions process supports the university's mission of scholarship and discovery and is designed to select a student body with exceptional academic talent, high standards of personal character, serious educational aims, and wide-ranging backgrounds, experiences, and perspectives. Policies that govern the selection process have been set

by the vice provost for university enrollment affairs. Please refer to the nondiscrimination statement which appears earlier in this catalog.

Admission to the four undergraduate schools is managed by the Office of Undergraduate Admissions.

Prospective students are encouraged to investigate the university by visiting the campus, exploring the Office of Undergraduate Admissions website, connecting via social media, and attending college fairs and other programs hosted by Vanderbilt admissions officers across the country, around the world, and online. Admissions staff are available to answer questions, assist with understanding campus visit opportunities, provide additional information about degree programs, and link visitors with appropriate campus offices and members of the university community.

Academic Preparation

Every candidate for admission must present an official transcript of work completed in high school. While our admissions process is holistic, most successful candidates will present a curriculum that includes the equivalent of five academic subjects each year for four years. Recommended course work includes 4 units of English, 4 units of mathematics, 4 units of natural science, 2 units of foreign language, 2 units of social science/humanities, and 4 units of additional course work in these areas, or other academic courses such as engineering science, computer science, social science or natural science research, or advanced work in the humanities. Close attention will be paid to the rigor of course work presented. It is highly recommended that candidates applying to the School of Engineering have taken calculus, calculus-based physics, and chemistry.

Most successful candidates will have meaningfully engaged with the academic, intellectual, social, and leadership opportunities available in the context of their high schools and communities. In exceptionally rare cases, students may be considered for admission before completing four years of high school. In these cases, the Admissions Committee considers especially evidence of maturity and readiness for an immersive, residential college experience.

Application Procedure — First-year Applicants

1. Applicants must apply to Vanderbilt through Coalition, powered by Scoir, the Common Application, or the QuestBridge Application. Applications for admission may be accessed online at admissions.vanderbilt.edu/apply.
2. Applicants must arrange for their high school to submit an official transcript and their School Report to the Office of Undergraduate Admissions via one of the application portals.
3. For students applying for fall 2025 entry, Vanderbilt is test optional. Scores from the ACT or SAT are not required to be considered for admission. Applicants who want their test scores to be considered may self-report them on the application or may have official scores sent to Vanderbilt by the testing agency. Score reports appearing on official high school transcripts are accepted as official. Official test scores will be required for students who applied with testing and who were admitted and enroll.
4. A \$50 nonrefundable application fee, or fee waiver for qualified students, is required.
5. On the application for admission, select the decision plan for which you wish to be considered: Early Decision I, Early Decision II, or Regular Decision.
 - o Early Decision plans are designed for students whose first-choice college is Vanderbilt. These plans are binding: if offered admission, students agree to attend Vanderbilt and to withdraw all other applications for admission. In addition to the other application requirements, the Early Decision Agreement must be submitted. Signatures are required from the applicant, the applicant's parent/guardian, and the high school counselor.
 - o The Regular Decision plan is designed for students who are considering many college options and who wish to compare offers of admission and financial aid before committing to one college. Applicants will be admitted, denied, or offered a spot on the waitlist. Waitlisted students may be offered admission later in the spring.
 - o Deadlines:
 - Early Decision I — submit application by November 1
 - Early Decision II — submit application by January 1*
 - Regular Decision — submit application by January 1*
6. Blair School of Music applicants are required to follow the audition protocol detailed on the Blair website (blair.vanderbilt.edu/admissions/apply.php). Selected applicants will be invited to audition in person on *Priority deadline for Blair applicants is December 1

campus.

Application Procedure — Transfer Applicants

Admission of transfer students to Vanderbilt is competitive and holistic. The priority deadline to submit the transfer application is March 15. It is Vanderbilt's practice to offer transfer admission only for the fall semester.

1. Apply online through Coalition, powered by Scoir, or through the Common Application Transfer Application.
2. For students applying for fall 2025 entry, Vanderbilt is test optional. Scores from the ACT or SAT are not required to be considered for admission. Applicants who want their test scores to be considered may self-report them on the application or may have official scores sent to Vanderbilt by the testing agency. Score reports appearing on official high school transcripts also are accepted as official. Official test scores will be required for students who applied with testing and who were admitted and enroll.
3. A \$50 nonrefundable application fee, or fee waiver for qualified students, is required.
4. Provide a fully complete Transfer College Report and be in good academic and social standing at the institution last attended.
5. Provide a list of courses in which the student is currently enrolled.
6. Provide an official secondary school transcript.
7. Provide official transcripts from each college attended.
8. Submit two academic letters of recommendation.
9. Agree to attend a Vanderbilt undergraduate program for at least four semesters (60-plus hours) of full-time work (63-plus hours for Blair School of Music students). Two of these semesters (30-plus hours) must be within the senior year.
10. Blair School of Music applicants are required to follow the audition protocol detailed on the Blair website (blair.vanderbilt.edu/admissions/apply.php). Selected applicants will be invited to audition in person on campus.

International Applicants

For the purpose of admission, the term "international applicants" refers to students who are not citizens of the United States or who are not eligible non-citizens. International applicants must complete all admission requirements of the university. (See "Application Procedure" above, for first-year and for transfer applicants.)

Applicants whose first language or language of instruction is not English are required to submit the results of the Test of English as a Foreign Language (TOEFL) iBT (including Home and Paper editions) TOEFL Essentials, the International English Language Testing Service (IELTS), the Pearson Test of English Academic (PTE Academic), the Duolingo English Test (DET), or the Cambridge English C1 Advanced or C2 Proficiency. This testing requirement may be waived if a student has scored above a 26 on the ACT English section or above 630 on the SAT Evidence-based Reading and Writing section. Minimum recommended scores for Vanderbilt are 100 TOEFL iBT, 10.5 on the TOEFL Essentials, 7.0 on the IELTS, 70 on the PTE Academic, 130 on the Duolingo English Test, and 185 on the Cambridge English C1 Advanced or C2 Proficiency.

Advanced Credit

[Advanced Credit](#)

[College Entrance Exams](#)

[Advanced Placement Credit Policy](#)

[International Baccalaureate Credit Policy](#)

[Advanced Placement Examination Grades Accepted by Various Departments at Vanderbilt for Advanced Placement with Credit](#)

[International Baccalaureate Scores Accepted by Various Departments at Vanderbilt for Advanced Credit](#)

[Pre-College Summer School Program](#)

[Credit for Previous College Work](#)

Advanced Credit

Honors courses and other accelerated study in high school are excellent preparation for Vanderbilt. The well-established advanced-placement policy endeavors to recognize exceptional high school preparation, to avoid requiring first-year students to take courses clearly mastered in high school, and to encourage students to begin their college learning experience at the level most appropriate to their preparation. Advanced placement may be granted on the basis of good performance on the College Board Advanced Placement Examinations, on International Baccalaureate tests, or, in some cases, on placement tests given by Vanderbilt. Credit may also be awarded for the British G.C.E. "A" level examinations, the Advanced International Certificate of Education (AICE), the Cambridge Pre-U diploma, and similar tests, such as the French *baccalauréat*, the German *abitur*, or the Swiss *maturité* examinations. To qualify for credit for the AICE examinations or individual A-level examinations, students must have achieved an *A**, *A*, or *B* thereon. More information on international exam credit is available at registrar.vanderbilt.edu/international-examinations.

College Entrance Exams

Students may not take college entrance exams after they begin their enrollment at Vanderbilt University for the purpose of course placement or academic credit. This applies to SAT, ACT, Advanced Placement, International Baccalaureate, and any similar international exams.

Advanced Placement Credit Policy

Advanced Placement Examination grades accepted for advanced placement with credit by the various departments at Vanderbilt are listed below. At the determination of individual departments, Advanced Placement Examination grades with a score of 4 or 5 may be accepted for credit. The amount of credit that may be awarded corresponds to the course work waived. Advanced Placement credit does not affect the Vanderbilt grade point average.

Students of the College of Arts and Science are limited to a total of 18 credit hours earned by any combination of advanced placement, international baccalaureate credit, advanced international credit, and credit by departmental examination, counting toward the minimum number of hours required toward the degree. For students in the College of Arts and Science, no form of advanced placement credit can be used to fulfill the Achieving Excellence in Liberal Education (AXLE) requirements.

International Baccalaureate Credit Policy

International Baccalaureate test scores accepted for advanced credit by the various departments at Vanderbilt are listed below. Students who have taken tests in other areas may submit their scores to the Office of Academic Services for evaluation by the appropriate departments. Credits are awarded for exams taken at the higher level only. The amount of credit that may be awarded is subject to the same limitations as credit for Advanced Placement.

Advanced Placement Examination Grades Accepted by Various Departments at Vanderbilt for Advanced Placement with Credit

AP Exam	AP Score	Vanderbilt Course or Credit Equivalent	Credit Hours
African American Studies			
African American Studies	4 or 5	AADS No Equivalent	3
Art			
Art History	4 or 5	HART 1100: History of Western Art I HART 1105: History of Western Art II	3
Studio Art: 2-D Design	4 or 5	ARTS No Equivalent: Art Studio	3

Studio Art: 3-D Design	4 or 5	ARTS No Equivalent: Art Studio	3
Studio Art: Drawing	4 or 5	ARTS No Equivalent: Art Studio	3
Computer Science			
Computer Science A	5	CS 1101: Programming & Problem Solving	3
Computer Science Principles	5	CS 1000: The Beauty and Joy of Computing	3
Economics			
Macroeconomics	4 or 5	ECON 1010: Principles of Macroeconomics	3
Microeconomics	4 or 5	ECON 1020: Principles of Microeconomics	3
English			
English Language & Composition	4 or 5	ENGL 1300W: Intermediate Composition	3
English Literature & Composition	4 or 5	ENGL 1220W: Drama Forms and Techniques	3
		ENGL 1230W: Literature and Analytical Thinking	3
Government and Politics			
Government & Politics: Comparative	4 or 5	PSCI 1101: Introduction to Comparative Politics	3
Government & Politics: United States	4 or 5	PSCI 1100: Introduction to American Government and Politics	3
History			
European History	4 or 5	HIST No Equivalent: European History	3
United States History	4 or 5	HIST No Equivalent: U.S. History	3
World History	4 or 5	HIST No Equivalent: World History	3
Human Geography (No credit)			
Languages			
Chinese Language and Culture	4	CHIN 2201: Intermediate Chinese I	5
Chinese Language and Culture	5	CHIN 2201: Intermediate Chinese II	5
French Language	4 or 5	FREN 2203: Contemporary Francophone Cultures	3
		FREN 2501W: French Composition and Grammar	3
German Language	4 or 5	GER 2201: Intermediate German I	3
		GER 2202: Intermediate German II	3
Italian Language and Culture	4 or 5	ITA 2203: Italian Journeys	3
		ITA 2501W: Grammar and Composition	3
Japanese Language and Culture	4	JAPN 2201: Intermediate Japanese I	3

Japanese Language and Culture	5	JAPN 2202: Intermediate Japanese II	3
Latin	4 or 5	LAT 2202: Intermediate Latin: Poetry	3
Spanish Language or Literature (beyond Fall 2021 admission)	4	SPAN 2010: Non-equivalent credit; convertible to SPAN 2204 with proctored departmental placement score of 410 or above.	3
Spanish Language (beyond Fall 2021 admission)	5	SPAN 2012: Non-equivalent credit; convertible to SPAN 3302 with proctored departmental placement score of 460 or above.	3
Spanish Literature (beyond Fall 2021 admission)	5	SPAN 2011: Non-equivalent credit; convertible to SPAN 3301W with proctored departmental placement score of 460 or above.	3
Mathematics			
Calculus AB	5	MATH 1300: Accelerated Single-Variable Calculus I	4
Calculus BC & AB Subscore	3 & 5	MATH 1300: Accelerated Single-Variable Calculus I	4
Calculus BC & AB Subscore	4 & 5	MATH 1300: Accelerated Single-Variable Calculus I	4
Calculus BC	5	MATH 1300: Accelerated Single-Variable Calculus I	4
		MATH 1301: Accelerated Single-Variable Calculus II	4
Precalculus	<i>No credit</i>		
Music			
Music Theory	5	MUTH 1200: Survey of Music Theory	3
	<i>No course credit awarded for music majors.</i>		
Psychology			
Psychology	5	PSY 1200: General Psychology	3
Sciences			
Biology	4 or 5	BSCI 1100: Biology Today BSCI 1100L: Biology Today Laboratory	3 1
Chemistry	5	CHEM 1601: General Chemistry CHEM 1601L: General Chemistry Laboratory CHEM 1602: General Chemistry CHEM 1602L: General Chemistry Laboratory	3 1 3 1
Environmental Science	4 or 5	EES No Equivalent	3
Physics 1	5	PHYS 1010: Introductory Physics PHYS 1010L: Introductory Physics Lab	3 1
<i>None of the credits awarded for Physics 1 shall count toward the major or the minor in physics. No credit awarded for engineering students.</i>			
Physics 2	5	PHYS No Equivalent	4
<i>None of the credits awarded for Physics 2 shall count toward the major or the minor in physics. No credit awarded for engineering students.</i>			
Physics C: Electricity & Magnetism	5	PHYS 1602: General Physics II PHYS 1602L: General Physics II Laboratory	3 1
Physics C: Mechanics	5	PHYS 1601: General Physics I PHYS 1601L: General Physics I Laboratory	3 1

Statistics	4 or 5	MATH 1010: Probability and Statistical Inference <i>No credit awarded for engineering students.</i>	3
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International Baccalaureate Test Scores Accepted by Various Departments at Vanderbilt for Advanced Credit

IB Certificate Subject	IB Score	Vanderbilt Course or Credit Equivalent	Credit Hours
Biology	6 or 7	BSCI 1100: Biology Today BSCI 1100L: Biology Today Laboratory	3 1
Chemistry (Higher)	6 or 7	CHEM 1601: General Chemistry CHEM 1601L: General Chemistry Laboratory CHEM 1602: General Chemistry CHEM 1602L: General Chemistry Laboratory	3 1 3 1
Chinese A: Language and Literature (Higher)	6 or 7	CHIN No Equivalent: Elective Credit	3
Chinese A: Literature (Higher)	6 or 7	CHIN No Equivalent: Elective Credit	3
Chinese B: Mandarin (Higher)	6 or 7	CHIN No Equivalent: Elective Credit	3
Economics (Higher)	6 or 7	ECON 1010: Macroeconomics ECON 1020: Microeconomics	3 3
English A: Language and Literature (Higher)	6 or 7	ENGL No Equivalent: Elective Credit	3
English A: Literature (Higher)	6 or 7	ENGL No Equivalent: Elective Credit	3
French A: Language and Literature (Higher)	6 or 7	FREN 2203: Intermediate French Language and Cultures FREN No Equivalent: Elective Credit	3 3
French A: Language	6 or 7	FREN 2203: Intermediate French Language and Cultures FREN No Equivalent: Elective Credit	3 3
French B (Higher)	6 or 7	FREN 2203: Intermediate French Language and Cultures FREN No Equivalent: Elective Credit	3 3
German A: Language and Literature (Higher)	6 or 7	GER No Equivalent: Elective above 2440	3
German A: Literature (Higher)	6 or 7	GER No Equivalent: Elective above 2440	3
German B (Higher)	6 or 7	GER No Equivalent: Elective above 2440	3
History (Higher)	6 or 7	HIST No Equivalent: History Elective	3
Japanese A: Language and Literature (Higher)	6 or 7	JAPN No Equivalent	3
Japanese A: Literature (Higher)	6 or 7	JAPN No Equivalent	3
Japanese B (Higher)	6 or 7	JAPN No Equivalent	3
Korean A: Language and Literature (Higher)	6 or 7	KOR No Equivalent	3
Korean A: Literature (Higher)	6 or 7	KOR No Equivalent	3

Korean B (Higher)	6 or 7	KOR No Equivalent	3
Latin (Higher)	6 or 7	LAT 2201: Intermediate Latin: Prose LAT 2202: Intermediate Latin: Poetry	3 3
Mathematics: Applications and Interpretation (Higher)	6 or 7	MATH 1010: Probability and Statistical Inference MATH 1100: Survey of Calculus	3 4
		No credit for MATH 1010 for engineering students.	
Mathematics: Analysis and Approaches (Higher)	6 or 7	MATH 1010: Probability and Statistical Inference MATH 1300: Accelerated Single-Variable Calculus I	3 4
		No credit for MATH 1010 for engineering students.	
Music (Higher)	6 or 7	MUSL No Equivalent (may count toward a music major)	3
Physics (Higher)	7	PHYS 1601: General Physics I PHYS 1601L: General Physics Laboratory I PHYS 1602: General Physics II PHYS 1602L: General Physics Laboratory II	3 1 3 1
Psychology (Higher)	6 or 7	PSY 1200: General Psychology	3
Russian A: Language and Literature (Higher)	6 or 7	RUSS No Equivalent	3
Russian A: Literature	6 or 7	RUSS No Equivalent	3
Russian B (Higher)	6 or 7	RUSS No Equivalent	3
Spanish A: Language and Literature (Higher)	6 or 7	SPAN 2203: Intermediate Spanish	5
Spanish A: Literature (Higher)	6 or 7	SPAN 3302: Spanish for Oral Communication	3
Spanish B (Higher)	6 or 7	SPAN No Equivalent	3
Visual Arts (Higher)	6 or 7	ARTS No Equivalent: Visual Arts ARTS No Equivalent: Visual Arts	3 3

IB Certificate Subject	IB Score	Vanderbilt Course or Credit Equivalent	Credit Hours
Biology (Higher)	6 or 7	BSCI 1100: Biology Today	3
		BSCI 1100L: Biology Today Laboratory	1
Chemistry (Higher)	6 or 7	CHEM 1601: General Chemistry	3
		CHEM 1601L: General Chemistry Laboratory	1
		CHEM 1602: General Chemistry	3
		CHEM 1602L: General Chemistry Laboratory	1
Chinese A: Language and Literature (Higher)	6 or 7	CHIN No Equivalent: Elective Credit	3
Chinese A: Literature (Higher)	6 or 7	CHIN No Equivalent: Elective Credit	3
Chinese B: Mandarin (Higher)	6 or 7	CHIN No Equivalent: Elective Credit	3
Economics (Higher)	6 or 7	ECON 1010: Principles of Macroeconomics	3
		ECON 1020: Principles of Microeconomics	3
English A: Language and Literature (Higher)	6 or 7	ENGL No Equivalent: Elective Credit	3

English A: Literature (Higher)	6 or 7	ENGL No Equivalent: Elective Credit	3
French A: Language and Literature (Higher)	6 or 7	FREN 2203: Intermediate French Language and Cultures	3
		FREN No Equivalent: Elective Credit	3
French A: Language	6 or 7	FREN 2203: Intermediate French Language and Cultures	3
		FREN No Equivalent: Elective Credit	3
French B (Higher)	6 or 7	FREN 2203: Intermediate French Language and Cultures	3
		FREN No Equivalent: Elective Credit	3
German A: Language and Literature (Higher)	6 or 7	GER No Equivalent: Elective above 2440	3
German A: Literature (Higher)	6 or 7	GER No Equivalent: Elective above 2440	3
German B (Higher)	6 or 7	GER No Equivalent: Elective above 2440	3
History (Higher)	6 or 7	HIST No Equivalent: History Elective	3
Japanese A: Language and Literature (Higher)	6 or 7	JAPN No Equivalent	3
Japanese A: Literature (Higher)	6 or 7	JAPN No Equivalent	3
Japanese B (Higher)	6 or 7	JAPN No Equivalent	3
Korean A: Language and Literature (Higher)	6 or 7	KOR No Equivalent	3
Korean A: Literature (Higher)	6 or 7	KOR No Equivalent	3
Korean B (Higher)	6 or 7	KOR No Equivalent	3
Latin (Higher)	6 or 7	LAT 2201: Intermediate Latin: Prose	3
		LAT 2202: Intermediate Latin: Poetry	3
Mathematics: Applications and Interpretation (Higher)	6 or 7	MATH 1010: Probability and Statistical Inference MATH 1100: Survey of Calculus	3 4

No credit awarded for engineering students.

Analysis and Approaches (Higher)	6 or 7	MATH 1010: Probability and Statistical Inference	3
		MATH 1300: Accelerated Single-Variable Calculus I	4

No credit for MATH 1010 for engineering students.

Music (Higher)	6 or 7	MUSL No Equivalent (may count toward a music major)	3
Physics (Higher)	7	PHYS 1601: General Physics I	3
		PHYS 1601L: General Physics Laboratory I	1
		PHYS 1602: General Physics II	3
		PHYS 1602L: General Physics Laboratory II	1
Psychology (Higher)	6 or 7	PSY 1200: General Psychology	3
Russian A: Language and Literature (Higher)	6 or 7	RUSS No Equivalent	3
Russian A: Literature	6 or 7	RUSS No Equivalent	3
Russian B (Higher)	6 or 7	RUSS No Equivalent	3
Spanish A: Language and Literature (Higher)	6 or 7	SPAN 2203: Intermediate Spanish	5

Spanish A: Literature (Higher)	6 or 7	SPAN 3302: Spanish for Oral Communication	3
Spanish B (Higher)	6 or 7	SPAN No Equivalent	
Visual Arts (Higher)	6 or 7	ARTS No Equivalent: Visual Arts	3
		ARTS No Equivalent: Visual Arts	3

Pre-College Summer School Program

Upon completion of the sophomore or junior year in high school, students may enroll, at the freshman level, for regular work in the Vanderbilt summer session.

The following conditions must be met: (a) students must be in the upper 25 percent of their high school class and be recommended by their principal or counselor; (b) courses taken in the Vanderbilt summer session must be chosen by the student in consultation with his or her high school counselor and the director of the Division of Unclassified Studies so as to supplement and not overlap the total high school program. A student may take two courses in any one summer, or three courses by special authorization of the director of the Division of Unclassified Studies.

Course work done at Vanderbilt by a pre-college student may count toward the high school diploma and as part of the entrance requirements for regular admission to Vanderbilt. All course work done at Vanderbilt by pre-college students will be credited toward the degree for those who may subsequently matriculate at Vanderbilt, unless the course work is required for high school graduation. Admission to the pre-college summer school program does not admit a student as a regular entering freshman, nor does it commit the university to a student's admission.

Credit for Previous College Work

Entering first-year students who have taken college work in high school through dual enrollment or concurrent enrollment programs, or during summers prior to their offer of admission to Vanderbilt, must indicate such work on the undergraduate admission application. An official transcript showing any prior college work must be provided. Once all required documentation has been received, the coursework will be reviewed to determine whether it is eligible for credit at Vanderbilt.

Students should submit all required documentation for review before the first day of classes of their freshman year.

Credit will be awarded only if:

1. A course is regularly offered by an accredited two-year or four-year college or university. For domestic schools, the school must be regionally accredited; for international schools, the school must have country-specific accreditation.
2. The teacher was a regular faculty member of that college or university.
3. A majority of the students in the course were degree-seeking college students.

Additional requirements and guidelines regarding pre-freshman credit are available at registrar.vanderbilt.edu/transfer-credit.php.

The College of Arts and Science and Peabody College usually do not award credit for work at other colleges in the summer immediately preceding the student's first semester at Vanderbilt. Summer work elsewhere will be accepted for credit only if an unusual educational opportunity can be demonstrated and if the courses sought are as rigorous as courses offered at Vanderbilt. Approval for work to be taken elsewhere must be obtained in advance from the appropriate dean.

College of Arts and Science. In no case may credits completed elsewhere after the student has been offered admission by the College of Arts and Science satisfy AXLE requirements.

International Students

Vanderbilt has a large international community representing more than 95 countries. The university welcomes the diversity international students bring to the campus and encourages academic and social interactions at all levels.

Admission. See International Applicants section.

English Language Instruction. Students wishing to focus on improving their English language use for the context of the U.S. academic setting may take classes and participate in programming at the Vanderbilt English Language Center to support their academic success. The ELC's courses include *writeELC*, Academic Speaking, and Pronunciation. Throughout the academic year, academic workshops and one-to-one consultations for speaking and writing are also available through the ELC. Entering students may be required to take language support courses concurrently with their academic courses at the ELC. The ELC is located at 1208 18th Avenue South. For information about the ELC's programming, see the "English Language Center" section or visit vanderbilt.edu/elc.

Financial Resources. To meet requirements for entry into the United States for study, applicants must demonstrate that they have sufficient financial resources to meet the expected costs of their educational program. Applicants must provide documentary evidence of their financial resources before visa documents can be issued.

United States laws and regulations restrict the opportunity for international students in a non-immigrant visa status to be employed. Undergraduate international students are allowed to work on campus for nineteen hours per week while school is in session. Students may be allowed to work off campus only under special circumstances and after approval from ISSS. Many spouses and dependents of international students are not allowed to be employed while in the United States.

Limited need-based financial aid is available to students who are neither citizens nor permanent residents of the United States, and are considered to be international students in Vanderbilt's admissions process. Our admissions process is need-aware for international students; international students who demonstrate that they can afford the cost of attending Vanderbilt will be given preferential treatment. To apply for need-based financial aid, international students are required to submit the College Scholarship Service (CSS) Financial Aid Profile. Based upon an evaluation of academic qualities, financial need, and availability of resources, an international student may be considered for need-based financial assistance. International students who apply for need-based financial aid will be admitted only if they are competitive in our holistic review and if Vanderbilt is able to provide adequate financial assistance.

International Student Health Insurance. International students are required to have health insurance throughout their academic program and are automatically enrolled in the Vanderbilt-approved health insurance plan for international students. For information concerning the limits, exclusions, and benefits of this insurance coverage, please contact the Student Health Center.

Transfer Credit

Work presented for transfer must be from an accredited college and is subject to evaluation in light of the degree requirements of this university. For domestic schools, the school must be regionally accredited; for international schools, the school must have country-specific accreditation.

Work transferred to Vanderbilt from another institution will not carry with it a grade point average. No course in which a grade below *C-* was received will be credited toward a degree offered by the university.

College of Arts and Science. Transfer students must complete at least 60 hours of work in the College of Arts and Science. Credit earned as a degree-seeking student at another university may be used to fulfill AXLE requirements.

Blair School of Music. In addition to an application for admission, transfer students applying to Blair must also submit a Blair School of Music Application, which includes a required prescreening video, by the March 15 deadline. Selected applicants will be invited to audition in person. See the Blair website for information and instructions about the Blair admissions process. Transfer students will be assigned a level of program study based on the entrance audition. Credit for music courses may be granted following an examination at Blair. Credit for non-music courses is subject to evaluation by the university. Transfer students must complete at least 63 hours at Blair.

School of Engineering. Transfer students must complete at least 60 hours of work at Vanderbilt.

Peabody College. Transfer students must complete at least 60 hours of work at Peabody. Two of the four semesters in residence must be the last two semesters of the student's degree program.

Prior Degrees

It is the policy of Vanderbilt University to verify prior educational credentials for all admitted students who intend to matriculate. All matriculated students must provide official copies of transcripts and any other required supporting documentation to Vanderbilt University as part of the prior degree verification process. The Office of the University Registrar will review transcripts and other supporting documentation for authenticity and to confirm degrees earned prior to matriculation at Vanderbilt. Offers of admission are contingent on a student's providing the required documentation. Undergraduate students who are not able to provide evidence of prior degrees will not be permitted to register for subsequent terms and may be subject to dismissal from the university.

Intra-University Transfer

Undergraduate students in the College of Arts and Science, Blair School of Music, School of Engineering, and Peabody College may request a transfer between the schools. Students are eligible for intra-university transfer after having been enrolled on a full-time basis at Vanderbilt for two semesters. Students who transferred to Vanderbilt from another institution are eligible for intra-university transfer after having completed at least one full semester at Vanderbilt and having achieved sophomore standing. To be eligible for transfer, students must meet the requirements of the school they wish to enter.

Applications are available on the Office of the University Registrar website, registrar.vanderbilt.edu/intra-university-transfers/, and should be submitted to the Office of the University Registrar by the required deadlines listed on this webpage.

Students seeking transfer between schools within the university must meet the following requirements: (a) a student who has been in residence for two regular semesters must have a minimum of 24 hours and a cumulative grade point average of 1.800; (b) a student who has been in residence for three regular semesters must have a minimum of 39 hours and a cumulative grade point average of 1.850; (c) a student who has been in residence for four regular semesters must have a minimum of 54 hours and a cumulative grade point average of 1.900; (d) a student who has been in residence for five regular semesters must have a minimum of 69 hours and a cumulative grade point average of 1.950.

Individual schools and/or majors may impose additional restrictions beyond the minimum requirements listed above. Students applying to the Blair School of Music must audition as part of the process. Transfer applicants to the School of Engineering should present at least two semesters of college calculus and two semesters of laboratory-based science as required in the intended major. Advanced Placement or International Baccalaureate credit, if accepted by Vanderbilt, can be used to meet these requirements.

Division of Unclassified Studies

The Division of Unclassified Studies provides an opportunity to take undergraduate courses at Vanderbilt as follows:

- a. adults not interested in working toward a degree,
- b. visiting students working toward a degree at another institution (students in this category may not remain enrolled in the division for more than two regular semesters and one summer session), and
- c. rising junior and senior students in high school who have received special permission to enroll in courses for college credit.

Such students register in the Division of Unclassified Studies. Records are kept of their work, and a transcript may be made available to them as it would be if they were regularly enrolled at Vanderbilt. Work taken in the division may be transferred to a degree-granting unit of the university provided it is work that will count as part of the program of that unit. Work so transferred may not amount to more than one-fourth of the requirements for the Vanderbilt degree. Requests for transfer to a Vanderbilt degree-granting school must be made to the Office of Undergraduate Admissions. Division of Unclassified Studies students are not eligible for intra-university transfer.

Students who want to enroll in the Division of Unclassified Studies must apply and be admitted to the division at least one week before the first day of classes for the term or session they wish to attend. Requests for exceptions to the admission criteria must be addressed in writing to the vice provost for university enrollment affairs and dean of admissions and financial aid, whose decision is final.

All university regulations, including the Honor System, apply to students registered in the Division of Unclassified Studies.

Degree candidates have priority in enrollment at Vanderbilt, and students registering in the Division of Unclassified Studies should be prepared for this contingency. DUS students must meet all course prerequisites. Permission of the Office of the Dean is required for enrollment in some courses. Tuition is charged at the standard rate.

Division of Unclassified Studies students are not charged health insurance fees, and do not have access to student health services.

Summer Session

The ten-week summer session begins in early June and ends early in August. In addition, some units of the university offer an accelerated four-week Maymester. Vanderbilt offers the summer program for regularly enrolled students at the university, for part-time students, and for students enrolled during the regular year in other colleges and universities (visiting students).

Summer courses are normally offered by the College of Arts and Science, Blair School of Music, the School of Engineering, the Graduate School, the School of Nursing, and Peabody College.

Some courses extend over the entire summer session and complete the work of a full semester. Others are offered in modular units of eight, six, five, or four weeks, for full semester credit. Still other summer courses complete a full semester's work in the first five-week or second five-week half of summer session, with classes meeting twice as many hours per week. In full-year courses offered in summer, the work of the first semester is covered in the first half-session, the work of the second semester in the second half.

Classrooms, residence halls, libraries, and dining halls are air conditioned. The David Williams II Student Recreation and Wellness Center and other athletic facilities are open in the summer. Information about the summer session is available on request from the Division of Unclassified Studies or from each school's Office of Academic Services. Students may also visit vanderbilt.edu/summer for additional information.

Maymester

In the interval of several weeks between final examinations in the spring semester and the beginning of summer session, Vanderbilt offers educational travel opportunities and a variety of courses that would be difficult to offer during a regular semester.

Students are permitted to take no more than one course during the Maymester. Housing and food services are available during the session. Visiting students are eligible for Maymester courses.

Information about May courses on campus or abroad can be found at vanderbilt.edu/summer.

Financial Information

Financial Information

Information about undergraduate tuition and fees for the 2024-25 is available at
https://www.vanderbilt.edu/stuaccts/fees/tuition_fees_2024-25_ugrd.php.

Payment of Tuition and Fees

The Office of Student Accounts can be contacted at (615) 322-6693, toll-free at (800) 288-1144, or via email at student.accounts@vanderbilt.edu. For additional information, please visit the Student Accounts website at vanderbilt.edu/stuaccts.

Transcripts

Official academic transcripts are supplied by the Office of the University Registrar on authorization from the student. Additional information is available at <https://registrar.vanderbilt.edu/transcripts/>.

Fraternity and Sorority Membership

There is a financial commitment associated with joining a fraternity or sorority. The costs go toward inter/national fees, chapter operating expenses, and social functions. Financial obligations differ for men and women and among individual chapters. New members can expect to pay higher dues their first semester. Many chapters participate in the Facility Management Program, and members pay \$322 each semester, charged to their student account, for the maintenance and upkeep of the chapter house. Dues range from \$750 to \$1,500 for Interfraternity Council (IFC) and Panhellenic women. Initiation fees for National Pan-Hellenic Council (NPHC) and Intercultural Greek Council (IGC) chapters range from \$500 to \$1,500 and continuing dues range from \$100 to \$500 each year. Additional costs throughout the semester may be for meal plans, conference attendance, philanthropic contributions, pictures, gifts, parties, T-shirts, etc. Chapter fees are paid directly to the fraternity or sorority. There are payment plans available to students, as well as scholarships within the individual chapters.

For more information, please visit the [Office of Greek Life](#).

Need-Based Financial Aid

Vanderbilt is committed to accessibility and affordability for all admitted and enrolled students. Grants, scholarships, and work opportunities are available to eligible students who apply for assistance and have demonstrated financial need. Beginning in the fall of 2009, financial aid packages offered to incoming and current undergraduate students no longer included need-based loans. While continuing to meet the full demonstrated need of all eligible students, this expanded aid initiative, Opportunity Vanderbilt, announced in October 2008 provides increased amounts of need-based grants and/or scholarships (gift assistance) to replace need-based loans that would have otherwise been offered to meet a student's demonstrated financial need.

Demonstrated financial need is the difference between the cost of attending Vanderbilt and the amount that students and their families are expected to contribute toward that cost. The amount of aid to fully meet each student's demonstrated financial need is determined annually on the basis of current financial information required/provided on relevant application forms.

Additional information is available at <https://www.vanderbilt.edu/financialaid/undergraduate/index.php>.

University General Medals, Prizes, and Awards

Also see the Honors chapters in the College of Arts and Science, Blair School of Music, School of Engineering, and Peabody College sections of this catalog for listings of additional awards and prizes.

THE JESSICA ACESTE AND ELIZABETH BEALE RIPPLE IN THE POND AWARD was established in 2001 by Mr. and Mrs. George G. Strong through the Strong Family Foundation to reward an undergraduate student in any area of the university for random acts of kindness. The award was created to express the extreme gratitude of Mr. and Mrs. Strong in recognition of the assistance and care that their daughter, Meredith, received from her friends and the Vanderbilt community as she was stricken with meningococcal meningitis. Physicians credit the quick action taken by Meredith's classmates and Vanderbilt personnel with saving her life.

THE CHARLES FORREST ALEXANDER PRIZE IN JOURNALISM was endowed in 1982 by friends of Mr. Charles Forrest Alexander, B.A. 1950, who died in 1976. As a student, he was editor of the *Commodore, V Book*, and a staff member of the *Hustler*. The fund provides support for an annual prize to be awarded to a student who has achieved distinction in journalistic projects at Vanderbilt University.

THE GREG A. ANDREWS CIVIL ENGINEERING MEMORIAL AWARD was established in 1969 by James M. Andrews, Sr. to support a senior in civil engineering who has made the greatest progress and who plans to pursue graduate study in environmental and water resources engineering at the School of Engineering. Donor established the fund to honor the memory of his son, Greg, a junior at Vanderbilt who was fatally injured in an auto accident.

THE THOMAS G. ARNOLD FUND was established in 1988 by multiple donors to provide an award for the best research/design project completed by a senior student in the Biomedical Engineering Department at the School of Engineering. The fund was established by family, colleagues, and other friends of Mr. Thomas Arnold Jr., G 1956, in recognition of his long and distinguished service to Vanderbilt from 1952 until his retirement in 1989. Mr. Arnold died in 1989.

THE DAN BARGE JR. AWARD IN CIVIL ENGINEERING was established in 2011 by multiple donors to recognize a junior civil engineering student who exhibits outstanding academic performance and dedication to professional or community service at the School of Engineering. This fund was established to honor the legacy of Daniel B. Barge Jr., B.E. 1943, who was named a Distinguished Alumnus by the School of Engineering in 1981. Dan served his school in numerous capacities, both formal and informal: as an advisor, an employer of graduates, a donor, volunteer solicitor, and most importantly, as a role model for students. For many years, thanks to Dan's efforts, the school has presented an annual American Society of Civil Engineers (ASCE) Award, given in recent years as the ASCE/Dan

Barge Award, to honor Dan's professional accomplishments and contributions to ASCE that culminated in his 1987 presidency.

THE MORRIS H. BERNSTEIN JR. PRIZE IN LATIN DECLAMATION was endowed in 1983 by Mr. William H. Bernstein, B.A. 1983, open to any undergraduate student who has completed at least two semesters of Latin at Vanderbilt University. Contestants shall deliver from memory selected Latin prose or poetry passages which reflect the classical ideal. The fund is named for Mr. Bernstein's father, Dr. Morris H. Bernstein, Jr., B.A. 1943, M.D. 1946.

THE BLAIR STUDENT SERVICE AWARD fund established in 2009 by an anonymous donor to provide an annual award for the Blair student who best exemplifies the spirit and tradition of volunteer service through music at the Blair School of Music.

THE GLENN AND ELIZABETH BOGITSH AWARD was established in 1989 by Burton J. Bogitsh, professor of biology, and Mr. and Mrs. James T. Norris, Jr., to provide an annual award to the student at Vanderbilt University who has best demonstrated a strong commitment to campus recreational programs and, by example and leadership, has inspired participation and sportsmanlike conduct in these activities. The award recognizes physical fitness, participation in recreational sports, and sportsmanship and was established to honor the memory of the Donors' son, Glenn, and daughter, Libby, both Vanderbilt graduates who died in a 1988 plane crash. The award recipient will be given a small prize and will have his or her name engraved on a plaque, which describes the award and lists annual winners, to be mounted on a wall of the Student Recreation Center.

THE CASEY CARTER BONAR LEADERSHIP AWARD was established in 2011 by multiple donors to provide awards to undergraduate students in their senior year based on leadership, broad collaboration, enthusiasm, passion for campus involvement, selfless service to Vanderbilt, and dedication to positive change at Vanderbilt University. This fund was established to honor the memory of Casey Carter Bonar, B.A. 1985, a dedicated and selfless leader who inspired excellence and propelled others to join in her commitment to serve. Casey's vitality, warmth, compassion, and boundless enthusiasm served to energize and enhance each of the many campus activities in which she was involved, including student government, student media, Greek life, and Impact. Her passion for facilitating friendship and camaraderie for higher purpose, for promoting service to all and helping expand the horizons of the "underdog," earned her the lifelong gratitude and admiration of her Vanderbilt community. An active member of the Alumni Association Board, she often interviewed prospective students and organized alumni activities. Casey was proud of her Vanderbilt education. She exemplified Cornelius Vanderbilt's vision of strengthening the ties that bind as she consistently reached out to make someone's life better.

THE MARGARET BRANSCOMB PRIZE was established in 1993 to support an undergraduate prize at the Blair School of Music. The wife of Vanderbilt's fourth Chancellor, Harvie Branscomb (1946–1963), Mrs. Branscomb served as president of the Vanderbilt Garden Club from 1952 to 1954. Historically, the prize is given annually to a Blair freshman judged by the faculty to have the musical and personal qualities that best exemplify the spirit and standards of the school.

THE SUE BREWER FUND SCHOLARSHIP was established in 1987 by the Songwriters Guild Foundation to provide support to either composition or guitar majors at the Blair School of Music. To qualify, an entering freshman must be ranked in the upper 25th percentile of his or her class, and an upperclassman must have maintained at least a 3.0 GPA in the performance area, a 2.5 GPA in music, and a 2.0 overall GPA. This fund was established in memory of Sue Brewer, who befriended many of Nashville's struggling songwriters in the late 1960s and early 1970s.

THE FRANKLIN BROOKS MEMORIAL AWARD was established in 1995 by multiple donors to defray travel costs for students studying in France through the Vanderbilt in France program at the College of Arts and Science. This fund was established in memory of H. Franklin Brooks, former associate professor of French and three-time director of the Vanderbilt in France program during his 25-year teaching career at Vanderbilt.

THE LARRY ROSS CATHEY MEMORIAL AWARD was established in 1974 by Arnold M. Heiser to support an award that will recognize the most outstanding student majoring in astronomy in the Astronomy Department at the College of Arts and Science. This award was established in 1974 in memory of Larry Ross Cathey, who graduated in 1966 with honors in physics and astronomy.

THE NORA C. CHAFFIN SCHOLARSHIP was established 1956 by the Women's Council of the Women's Student Government Association to provide scholarship support for deserving undergraduate students at Vanderbilt University. This fund was established in honor of Nora C. Chaffin, former Dean of Women known for her service and loyalty to Vanderbilt University and its women students. The scholarship is awarded to a junior student who has displayed service to the University in the area of student government, religious, literary and scholastic activities, and in the arts.

THE CLASSICS DEPARTMENT STUDENT TRAVEL FUND FOR ROME, ITALY was established in 2006 by Richard H. Davis, B.E. 1969, and Barbara C. Davis, B.S.N. 1969, to support undergraduate student travel expenses in Rome, Italy, through the Classics Department at the College of Arts and Science.

THE PAUL CONKIN FUND was established in 1999 by an anonymous donor to establish a prize for the best undergraduate term paper written on American History in the History Department at the College of Arts and Science. Paul Conkin, Distinguished Professor of History Emeritus at Vanderbilt University, is the author of the history of Vanderbilt University, *Gone with the Ivy*, and the *Peabody College History* which was published in 2002.

THE COOLEY MEDAL was established in 1920 to provide recognition for students who excel in fine arts at the College of Arts and Science. The medal is named after Comrade Theodore Cooley, known as one of the most public-spirited citizens of Nashville. Cooley was a successful Nashville businessman and supporter of the Tennessee Centennial and International Exposition held in Nashville in 1897 at the current location of Centennial Park on West End Avenue.

THE WALTER CRILEY PRIZE PAPER AWARD was established in 1978 by Robert Derrick, B.E. 1954, and the Simons-Eastern Company to be given for the best paper on an advanced senior project in electrical engineering at the School of Engineering at Vanderbilt University. This award was created in honor of Walter Criley, professor emeritus of electrical engineering, who taught from 1947 until his retirement in 1965. Professor Criley helped organize both the student chapter and the Nashville section of the Institute of Electrical Engineers, and also served as southeastern regional vice-president of the National Institute of Electrical Engineers. He passed away in 1977.

THE DONALD DAVIE MEMORIAL POETRY PRIZE was established in 2005 by multiple donors to support an annual prize to be awarded each spring to the best poem submitted by a current graduate student in the Department of English at the College of Arts and Science. This fund was created in memory of poet and Vanderbilt University professor Donald Davie.

THE EDWARD PRENTICE DAVIS MEMORIAL PRIZE was established in 1997 by classmates of Mr. Edward 'Ward' Prentice Davis, B.A. 1987, to provide support for an annual prize awarded to a deserving ROTC college program midshipman. Ward was commissioned as a Second Lieutenant in the United States Marine Corps and served honorably for three years as an artillery officer. To his Marine Corps peers, Ward was an inspiration because he pursued his commission as a college program midshipman, without any scholarship. Ward passed away in 1995. This fund was established to honor Ward's commitment and perseverance.

THE ALLAN P. DELOACH MEMORIAL PRIZE IN PHOTOGRAPHY was established in 1998 by Mr. Rusty Edmister and Mrs. Pat Adams to support a prize in photography in the Fine Arts Department at the College of Arts and Science. This fund was established in memory of Mr. Edmister's and Mrs. Adam's former co-worker at IBM and Vanderbilt University alumnus, Allan P. DeLoach, B.A. 1963. The award is open to any student who has taken a studio class of any discipline. Students will submit one to three photographs to be judged by a professional photographer, outside

of the Vanderbilt community, who will pick the winner and give a slide lecture to students on his/her work.

THE ROBERT V. DILTS AWARD was established in 1994 by multiple donors to provide an award to a deserving undergraduate chemistry student in the Department of Chemistry at the College of Arts and Science. This award was established to honor Professor Robert V. Dilts, who served on the chemistry faculty from 1960 to 1994.

THE ARTHUR J. DYER JR. MEMORIAL PRIZE was established in 1938 by Arthur J. Dyer, Sr. to award a medal to the Civil Engineering student in his/her senior year who shows the greatest proficiency in the study and/or design in the use of structural steel at the School of Engineering, and who is a student member of the American Society of Civil Engineers. This fund was established in memory of a former Vanderbilt student, Arthur James Dyer, Jr., who was injured while prosecuting engineering duties on a bridge at Panama City, Florida, and died September 2, 1928.

THE DAVID ELIA AWARD was established in 2002 by Mrs. Jean M. Elia to provide a \$300 annual award to a varsity women's soccer player in the Department of Athletics. Players will vote on who they consider to be the hardest working player. This fund was established in memory of Mr. David Elia, a parent of a Vanderbilt soccer player.

THE T. ALDRICH FINEGAN AWARD FOR EXCELLENCE IN UNDERGRADUATE ECONOMIC RESEARCH was established in 2005 by T. Aldrich Finegan, Professor Emeritus, to recognize excellence in undergraduate research conducted by a senior graduating from the economics honors program. The award should be given for an outstanding thesis written by a student in the Department of Economics Honors Program at the College of Arts and Science.

THE EDWIN S. GARDNER MEMORIAL PRIZE FOR EXCELLENCE IN FRENCH was established in 1980 by Grace D. Gardner, B.A. 1932, to be used, at the discretion of the Department of French at the College of Arts and Science, in one of two ways: 1) to fund an annual award to a graduating senior excelling in French studies, or 2) to purchase books for the French collection in Jean and Alexander Heard Library. Donor made this gift in honor of her late husband, Edwin S. Gardner, B.A. 1927, who served as treasurer of Vanderbilt from 1953 to 1971.

THE GENERAL MOTORS POLITICAL SCIENCE FUND was established to support undergraduate prizes for political science students at the College of Arts and Science.

THE GEYER AWARD was established in 1979 by Mr. Richard A. Geyer Jr. to support a competitive journalism award designed to give recognition to campus reporters "who consistently write articles resulting from thorough research" and whose articles are, at the same time, "lively, informative, and logical" in any area of Vanderbilt University.

THE GUY GOFFE MEANS AWARD was established in 1975 through the bequest of Marie Hochle Means to provide an award to a student with ability in creative writing in the Department of English at the College of Arts and Science.

THE NORMAN L. AND ROSELEA J. GOLDBERG PRIZE was established in 1988 by Roselea J. Goldberg to support an annual award for the best manuscript submitted each year to Vanderbilt University, preferably in the area of art and medicine. The manuscript will be judged by a committee from Vanderbilt University Press.

THE JOHN P. GREER AWARD was established in 2006 by Professor John and Mrs. Shirley Lachs to provide an award to graduating seniors majoring in philosophy and going to medical school. Donors established this award in honor of Dr. John P. Greer, Professor of Medicine in Vanderbilt's Department of Hematology, to commend his career path and in gratitude of the care given by Dr. Greer to Mrs. Lachs.

THE LARRY C. HALL STUDENT TRAVEL FUND was established in 1995 by multiple donors to support a student traveling to the Pittcon Conference, a chemistry related conference, through the College of Arts and Science. The fund was established in honor of Dr. Larry Hall at the time of his retirement.

THE MARGARET STONEWALL WOOLDRIDGE HAMBLET AWARD was established in 1985 by Clement H. Hamblet and Margaret Hamblet Sarner at the College of Arts and Science. The fellowship was established in memory of Margaret Hamblet's love of art and travels to Europe to study art. Margaret Hamblet was a graduate of Peabody College in the Class of 1926. Clement and Margaret Hamblet met in Paris where Margaret was an art student. The fellowship is awarded to a deserving senior with outstanding merit in art and completion of three or more studio art courses and provides one year of travel and furtherance of creative endeavor following graduation from the College of Arts and Science. The second priority for the fund is to provide a continued small subsidy for a second graduating senior.

THE ANDREW SANG HAN MEMORIAL AWARD was established in 2017 to support an award for a woodwind or brass student at the Blair School of Music who demonstrates remarkable musicianship and leadership in all areas of ensemble playing. The award honors Sang Han, a clarinet performance major at the Blair School of Music from 2012-2015. Sang's dedication to excellence in all areas of performance, as well as the care and consideration he showed his peers, served as an example to his friends and colleagues at Blair.

THE JEAN AND ALEXANDER HEARD AWARD was established in 2013 by the children of Jean and Alexander Heard to provide need-based financial assistance to deserving undergraduate students who have been accepted to one of the summer music festivals through a summer study program at the Blair School of Music. This fund was established in memory of Jean and Alexander Heard. Chancellor Alexander Heard served as Vanderbilt University's fifth Chancellor from 1963 to 1982 and oversaw many changes in the campus. Under his tenure, Peabody College, Blair School of Music, and the Owen Graduate School of Management became part of the University.

THE JEAN KELLER HEARD PRIZE was established in 1985 by the Vanderbilt Woman's Club to provide an award for excellence in music performance to a string student seeking a Bachelor of Music degree at the Blair School of Music. This fund was established to honor violinist Jean Keller Heard, the wife of Vanderbilt's former Chancellor Alexander Heard. Mrs. Heard passed away in 2011.

THE FRANK HOUSTON AWARD FOR ORATORY was established in 1974 by Mr. Frank K. Houston, B.A. 1904, and former member of the Vanderbilt Board of Trust, to support an annual prize given to a student who excels in a presentation in public speaking in any department at Vanderbilt University. Mr. Houston grew up in Murfreesboro, Tennessee, and took public speaking while he was a student at Vanderbilt. He established this competition to encourage competent public speaking, as he believed that his experience at Vanderbilt had made a very real difference in his own life.

THE MELVIN D. JOESTEN SCIENCE VOLUNTEER AWARD FUND was established in 1998 by multiple donors to provide an award for outstanding science student volunteers in the Chemistry Department at the College of Arts and Science. This endowed fund was established in the name of Melvin "Mel" D. Joesten in recognition of his many years of service to the department and to Vanderbilt University.

THE MARK M. JONES UNDERGRADUATE AWARD IN INORGANIC CHEMISTRY was established in 1998 by colleagues and other friends of Professor Jones to recognize undergraduates who have excelled in inorganic chemistry at the College of Arts and Science. Preference will be given to students showing excellence in undergraduate research. Dr. Jones taught chemistry from 1957 until his retirement in 1998 and chaired the chemistry department from 1970 until 1976.

THE MICHAEL B. KEEGAN TRAVELING FELLOWSHIP was established in 2004 by Michael B. Keegan and others to provide one or more graduating undergraduate student(s) with an opportunity to study and travel abroad in pursuit of an issue or topic of personal and intellectual passion. The Fellowship will provide a minimum of one annual award,

each in the amount of not less than \$10,000 to help pay for travel expenses for the recipient(s), allowing the recipient(s) to study and possibly work outside the United States of America for approximately one year. The fund was established as an international fellowship to foster in the student(s) a sense of his/her potential as a citizen of the world, and as a traveling fellowship to create a deep cross-cultural experience.

THE W. G. KIRKPATRICK ENGINEERING PRIZE was established in 1926 through a bequest from Walter Gill Kirkpatrick, B.E. 1887, B.S. and

M.S. 1889, to provide support for an annual prize for the most deserving third-year student in the Department of Civil Engineering at the School of Engineering.

THE MAGDA LACHS AWARD was established in 2008 by Brenda Higgins, a former employee in Development and Alumni Relations for the Blair School of Music, to support a voice or orchestra student at Blair who participates in the opera presentation in the school year in which it was given. The fund was established in honor of Magda Lachs' 100th birthday.

THE C. MAXWELL LANCASTER AWARD FOR EXCELLENCE IN ITALIAN was established in 1990 by Professor Luigi Monga to honor the memory of C. Maxwell Lancaster, professor of French and Italian at Vanderbilt University from 1939 until his retirement in 1976, and to promote the study of the Italian language and literature at Vanderbilt University. The annual prize will consist of a medal which will be awarded to a fourth- semester student for excellence in Italian, at the recommendation of the faculty of the Department of French and Italian.

THE R. J. LARSEN PRIZE FOR EXCELLENCE IN MATHEMATICS was established in 2005 by multiple donors to provide an award to a graduating senior for excellence in mathematics at the College of Arts and Science. This fund was established in honor of Professor Richard Larsen to celebrate his retirement. Professor Larsen worked in the Department of Mathematics at the College of Arts and Science for over thirty years.

THE JOEL CARL LICHTER MEMORIAL AWARD was established in 1996 by Professor and Mrs. Barry D. Lichter to provide an award that will be presented each year at the Magnolia Awards ceremony to a graduating senior who contributes by example to the promotion of outdoor education, combining academic excellence and expertise in wilderness skills along with friendship and service to others in any area of Vanderbilt University. Professor and Mrs. Lichter established the award to honor the life of their son Joel Lichter, an avid outdoorsman who graduated from Vanderbilt University magna cum laude in 1981 with honors in chemical engineering. Joel Lichter died in a 1992 accident in Alaska while commercial fishing.

THE LEE J. LOVENTHAL PRIZE was established in 1937 by Mr. Lee Jefferson Loventhal, class of 1896 and member of the Vanderbilt University Board of Trust from 1919 to 1940, to establish a prize in the Department of Communication Studies.

THE S. S. AND I. M. F. MARSDEN AWARD IN MUSICAL SCHOLARSHIP was established in 1998 by Dr. Sullivan F. Marsden for a written paper on a topic that might lie outside the normal core of scholarship at the Blair School of Music. The award will be an annual \$1,000 prize to encourage and recognize excellence in scholarship.

THE THOMAS W. MARTIN MEMORIAL AWARD was established in 1992 by multiple donors to support an award recognizing an outstanding undergraduate physical chemistry student at the College of Arts and Science. This fund was established in memory of Thomas W. Martin Jr., chair of the Department of Chemistry from 1967 to 1970.

THE CARL MASON AWARD was established in 1986 to provide assistance to incoming graduate students in the area of environmental engineering in the School of Engineering.

THE DELENE LAUBENHEIM MCCLURE MEMORIAL PRIZE IN OPERA was established in 1997 by multiple donors to provide support for voice majors who exhibit excellence in opera at the Blair School of Music. This scholarship was established to honor the memory of Delene Laubenheim McClure, BMUS, 1991. While at Vanderbilt, Mrs. McClure was a member of the Blair Opera Workshop. She debuted at the Kennedy Center in Washington, D.C., in 1994 as a finalist in the National Symphony Orchestra's Young Soloists competition and won the competition in 1995. Mrs. McClure passed away in 1997.

THE JOHN T. AND LIZZE ALLEN MCGILL AWARD was established in 1960 by Lizzie Allen McGill to provide an award to one or more residents of McGill Hall who have the best developed qualities of leadership and scholarship. This fund was established in memory of Mrs. McGill's husband who passed away in 1946, and who spent his life in service to Vanderbilt as a student in the class of 1879, professor emeritus of chemistry, Dean of the School of Pharmacy, and historian of the university. Preference in awarding is for a freshman with financial need.

THE SAMUEL T. MCSEVENEY AWARD was established in 2001 by Professor Samuel T. McSeveney to recognize an undergraduate student with the best paper written in a freshman seminar in the Department of History.

THE MERRILL MOORE AWARD was established in 1961 by Mrs. Merrill Moore, Vanderbilt alumna and widow of the late Merrill Moore, M.D. 1928, to provide a cash award to a student graduating from Vanderbilt University or a junior or senior student on the basis of the student's literary promise and the psychological or practical usefulness of award to him/her at the College of Arts and Science. Dr. Moore was an internationally known Boston psychiatrist and a poet.

THE HENRIETTA HICKMAN MORGAN PRIZE was established in 1946 by William B. Morgan II to provide awards to freshmen students with the best pieces of original writing at the College of Arts and Science. This fund was established in memory of the donor's wife, Henrietta Hickman Morgan. Mrs. Morgan received her B.A. in 1938 from Vanderbilt University and was a member of the Kappa Alpha Theta sorority, and Phi Beta Kappa Phi Sigma Iota, an honorary romance language group. She served as flag secretary and aide to Rear Admiral Martin K. Metcalf for more than two years before falling ill in 1945.

THE NED PARKER NABERS AWARD was established in 1984 by multiple donors to provide an annual prize for the best essay or research paper by an undergraduate student in the fields of classical archaeology or ancient art or architecture. The fund was established in memory of Ned Parker Nabers who served on faculty from 1966 until his death in 1984.

THE DANA W. NANCE PRIZE was established in 1985 by Professor Francis C. Nance, B.A. 1953, and family to provide an annual award to a student at the College of Arts and Science. The award will recognize an outstanding student from the pre-medical curriculum who has demonstrated perseverance in overcoming academic, financial, or social obstacles to succeed, who is well-trained in the technical skills acquired through the undergraduate pre-medical curriculum, and who possesses an abiding sense of ethical and moral concern for the patient. The fund was established to honor Dana W. Nance, B.A. 1925, M.D. 1929, who served for many years as the area chairman of the Vanderbilt Alumni Fund.

THE ELLIOTT AND AILSA NEWMAN CLARINET AWARD was established in 1999 through the bequest of Ailsa MacKay Newman along with additional memorial gifts to provide an award to a deserving clarinet student at the Blair School of Music. Preference when awarding is given to a clarinet major who shows strong musical promise. If a clarinet major is not available, the award should be given to a woodwind student. This fund is named for Mrs. Newman and her husband, who predeceased her.

THE L. HOWARD NICAR MEMORIAL FUND was established in 1997 by multiple donors to award a prize or scholarship

to a collegiate student at the Blair School of Music. This fund was established in memory of L. Howard Nicar, former Assistant Dean of Admissions at the Blair School of Music.

THE DONALD E. PEARSON AWARD was established in 1980 by the Chemistry Department and endowed in 2008 by Dr. and Mrs. Frank Pinkerton to provide support for an annual award to an outstanding chemistry major who has done undergraduate research in chemistry. Professor Donald E. Pearson served as faculty in the Department of Chemistry at the College of Arts and Science until his retirement in 1986.

THE PHI BETA KAPPA CENTENNIAL AWARD was established in 1998 by the Phi Beta Kappa Council to provide support for an annual award at the College of Arts and Science. This fund, established in celebration of the Alpha of Tennessee chapter's centennial in 2001, will be presented to a Vanderbilt senior who has been elected to Phi Beta Kappa in their junior year and who has demonstrated excellence in several different fields of academic endeavor, and has applied his or her intellectual talents in extracurricular activities within the university or community that exemplify a dedication to improve the human condition.

THE EMILY ANN BENNETT PLANT AWARD IN ANTHROPOLOGY was established in 1995 by Emily Ann Bennett Plant, B.A. 1994, to provide financial support based on merit and need to recognize excellence in the study of anthropology at the College of Arts and Science. The award may be applied to the cost of tuition and living expenses or to fund supplemental educational activities that will enrich the study of anthropology, such as summer research or participation in a field school.

THE ROBERT PETER PRATT MEMORIAL AWARD was established in 1991 by multiple donors to honor Robert Peter Pratt (1954–1991), former associate director of Undergraduate Admissions and longtime leader in promoting diversity within the student population. The award is presented annually to the Chancellor's Scholar whose accomplishments best exemplify Peter Pratt's commitment to diversity and unity, leadership and cooperation, warmth and openness, and unselfish service to others. The award recognizes a Chancellor's Scholar of junior or senior standing whose campus leadership and service promote diversity and enhance understanding among the various groups that comprise the university community. Academic performance is also considered in selecting the award recipient.

THE DAVID RABIN PRIZE was established in 1985 by multiple donors to provide an annual prize to a student chosen on the basis of music ability and talent at the Blair School of Music. This prize was established in memory of Dr. David Rabin, former professor of medicine in obstetrics and gynecology at the School of Medicine. Dr. Rabin passed away in 1984.

THE JERRY REVES STUDENT ATHLETE GPA AWARD was established through funds from the terminated trust of Dr. Joseph Gerald Reves, Jr., B.A. 1965, to annually fund a plaque for the student-athlete with the highest GPA.

THE JIM ROBINS AWARD was established in 1969 by Michael G. Wagner, B.A. 1957, to honor the memory of James A. Robins, class of 1892, whose life and teaching exemplified selfless devotion to learning, to honor, to participation in sports and to service to youth and Vanderbilt. The prize is awarded to a member of the football team voted as the most outstanding representative of the group.

THE JOE L. ROBY NROTC ESPRIT DE CORPS AWARD was established in 2006 by Mr. Duff Anderson and Mr. W. Patrick McMullan III, B.A. 1974, to recognize and reward Vanderbilt NROTC Midshipmen who display outstanding enthusiasm and esprit de corps as members of the battalion through involvement in NROTC and university activities and provide inspiration to fellow midshipmen and students at Vanderbilt University. The award was created in honor of Joe L. Roby, B.A. 1961, Vanderbilt trustee emeritus, and a former Battalion Commanding Officer of the Vanderbilt NROTC Midshipmen Battalion in recognition of his inspiring leadership at Vanderbilt University and with the Vanderbilt Naval ROTC program and his subsequent service in the United States Navy.

THE KATHRYN SEDBERRY POETRY PRIZE was established in 2003 through the estate of Kathryn Sedberry, M.A. 1963, to provide support for an annual poetry prize in the Department of English at the College of Arts and Science.

THE JAMES G. STAHLMAN NROTC AWARD was established in 1972 by former Vanderbilt Trustee, James Geddes Stahlman, B.A. 1919, to provide an award to the top Navy ROTC member and the top Marine ROTC member from the senior class who have proven themselves to be the most outstanding in citizenship, scholarship, and leadership in the Naval ROTC unit. The award recipients will be chosen by their Commanding Officer.

THE DAVID STEINE ECONOMICS AND BUSINESS AWARD was established in 2006 by James B. Johnson Jr., B.A. 1954, to recognize undergraduates in the Hoogland Undergraduate Business Program who show exceptional promise for a career in business. The fund may be awarded to any graduating student from any of Vanderbilt's four undergraduate schools who will graduate with a business minor. The award was established to honor the memory and distinguished career of David Steine, a professor held in the highest esteem by the donor.

THE STEIN STONE MEMORIAL AWARD was established in 1948 by Mrs. James N. Stone to provide an award to students in the School of Engineering. This fund is to be awarded to a graduating senior who has lettered in a sport, preferably football, and who is judged to have made the most satisfactory scholastic and extramural progress as an undergraduate. This fund was established in memory of Mrs. Stone's late husband, James "Stein" Stone, student at the School of Engineering in 1908 and an "All Southern" center on the Vanderbilt University football team from 1904 to 1907.

THE HENRY LEE SWINT AWARD was established in 1976 by Frank A. Woods, B.A. 1963, LL.B. 1966, for an undergraduate history major with the best history essay or research paper in the Department of History at the College of Arts and Science. The fund was established in honor of Henry Lee Swint, a former Holland N. McTyeire Professor of History who served on the faculty from 1939 until his retirement in 1977.

THE ROBERT D. TANNER UNDERGRADUATE RESEARCH AWARD was established in 2005 by multiple donors to provide an award to an undergraduate student conducting research in the Department of Chemical Engineering at the School of Engineering. This award was established in honor of Dr. Robert D. Tanner, emeritus faculty, at the time of his retirement. Dr. Tanner was a professor of chemical engineering at Vanderbilt University.

THE JOEL TELLINGHUISEN PHI BETA KAPPA AWARD was established in 2006 by James B. Johnson, Jr., B.A. 1954, to recognize undergraduate students who have been initiated into Phi Beta Kappa and have shown exceptional ability at the College of Arts and Science. The award honors Joel Tellinghuisen, professor of chemistry, for his positive impact and influence in educating undergraduate students at Vanderbilt, including Mr. Johnson's daughter, Katherine Johnson, B.S. 1994, M.Ed. 1995. The annual awards will be made to graduating seniors who are members of Phi Beta Kappa, in recognition of outstanding performance in research as an undergraduate at Vanderbilt.

THE UNDERWOOD MEMORIAL AWARD was established in 1961 by Newton Underwood to support a senior in the Department of Physics or Department of Biology selected alternately by the head of the physics department and the head of the biology department to be awarded each year at commencement. The award honors his father, Judge Emory Marvin Underwood, B.A. 1900, LL.B. 1902, and a member of the Vanderbilt Board of Trust from 1922 until his death in 1960, who devoted his life to justice and to bringing out the best in people.

THE JACQUELINE AND MORRIS WACHS ESSAY PRIZE was established in 1999 by multiple donors to support a prize in the Department of French and Italian at the College of Arts and Science. This fund was established in memory of Jacqueline Wachs, former French professor from 1966 until her retirement in 1994, and Morris Wachs, emeritus professor of French at Vanderbilt. Mrs. Wachs died in 1999 and Mr. Wachs died in 2001.

THE WALTHER AWARD FOR VUCEPT EXCELLENCE (WAVE) was established in 2005 by Beverly R. Walther, B.S. 1990, MBA 1990, and Michael C. Walther II, B.S. 1989, MBA 1990, to reward undergraduate students serving as mentors in the VUcept orientation program at the discretion of the Provost and Vice Chancellor for Academic Affairs, or designee.

THE THOMAS M. WESER AWARD was established in 1989 by multiple donors to provide support for an annual award honoring an international student who has demonstrated an exceptional commitment to intellectual life, cross-cultural appreciation, and personal integrity at Vanderbilt University. Weser Award recipients are typically active in student organizations and community service projects outside of the classroom and maintain a solid record of academic performance at the undergraduate or graduate level. This fund was established in memory of Thomas M. Weser, an exchange student from Germany who was killed while attending Vanderbilt University in 1988.

THE MARTIN WILLIAMS AWARD was established in 1992 by multiple donors to provide an award to a music major writing the most outstanding paper for a music theory or literature/history course at the Blair School of Music. This fund was established in memory of Martin Williams, director of the Smithsonian Institution's jazz program and adjunct professor of jazz history at the Blair School of Music.

THE FRANK A. WOODS AWARD IN HISTORY was established in 2008 by Mr. James Lachs, B.S. 1993, to provide an award for a graduating senior majoring in history with the most distinguished academic record at the College of Arts and Science. The fund was created in honor of Mr. Frank A. Woods, B.A. 1963, LL.B. 1966.

THE KATHERINE B. WOODWARD PRIZE IN SPANISH was established in 1943 by Katherine B. Woodward, B.A. 1919, to provide an award to the student with the highest average majoring in Spanish at the College of Arts and Science. Preference in awarding will be given to senior year students. Miss Woodward served as a teacher then head of the Spanish Department at the Woodrow Wilson High School in Portsmouth, Virginia, from 1919 until her retirement in 1956. She had a deep love for Vanderbilt and an intense interest in promoting the teaching of Spanish.

Undergraduate Academic Regulations

Institutional Policies and Student Obligations

Honor System (A&S, Blair, VUSE, PBDY)

Arts & Science/Blair/Engineering/Peabody: All academic work at Vanderbilt is done under the Honor System. (See the chapter on [Life at Vanderbilt](#).)

Responsibility to be Informed (VUSE)

Engineering: It is the responsibility of the student to keep informed of course requirements and scheduling. Failure to do so may jeopardize graduation.

Class Attendance (A&S, Blair, VUSE, PBDY)

Arts & Science: Students are expected to attend all scheduled meetings of classes in which they are enrolled; they have an obligation to contribute to the academic performance of all students by full participation in the work of each class. At the beginning of the semester, instructors explain the policy regarding absences in each of their classes, and thereafter they report to the Dean's Office of Undergraduate Education in the College of Arts and Science the name of any student whose achievement in a course is being adversely affected by excessive absences. In such cases an associate dean, in consultation with the instructor, takes appropriate action, which may include dropping the student from the class; students dropped after the deadline for withdrawal (see Period for Withdrawal) receive the grade *F*. Class attendance may be specified as a factor in determining the final grade in a course, and it cannot fail to influence the grade even when it is not considered explicitly.

The last day before and the first day after official holidays are considered to be the same as any other day on which classes are scheduled. Assignments are made for classes scheduled on these days, and tests may be given in them. Students should take this fact into account in making travel plans.

The faculty of the College of Arts and Science recognizes that occasions arise during the academic year that merit the excused absence of a student from a scheduled class or laboratory during which an examination, quiz, or other graded exercise is given. Examples include participation in sponsored university activities (e.g., debate team, varsity sports), observance of officially designated religious holidays, serious personal problems (e.g., serious illness, death of a member of the student's family), and matters relating to the student's academic training (e.g., graduate or professional school interviews). While determination of the merit of a case is left primarily to the discretion of the individual instructor, conflicts arising from personal travel plans or social obligations do not qualify as excused absences. The Dean's Office of Undergraduate Education does not grant excused absences for students. For more information please visit as.vanderbilt.edu/academics/policies/absences.php.

The primary determination of whether a student's absence from class occurs for a reason that warrants rescheduling a graded exercise for that student is left to the judgment of the individual instructor. A standard of reasonableness should apply in making such judgments.

Except in cases of true emergency, student petitions for making up missed graded exercises must be made prior to the missed class, preferably at the beginning of the semester or at the earliest time thereafter when the need to be absent is known to the student. Faculty members retain discretion in the form and timing of makeup exercises or in devising other strategies for accommodating students.

The faculty of the College of Arts and Science authorizes the Office of the Dean to resolve through arbitration any cases that cannot be directly resolved between students and their instructors.

Blair: Students are expected to attend all sessions of each class in which they are enrolled. Attendance is usually a factor in determining the final grade in a course. A student who fails to abide by the attendance policy set by the course instructor is subject to removal from the course. The last day before and the first day after official holidays are considered to be the same as any other day on which classes are scheduled. Assignments are made for classes scheduled on these days, and tests may be given in them. Students should take this fact into account in making travel plans.

Engineering: Students are expected to attend all scheduled meetings of each class in which they are enrolled. At the beginning of each semester, instructors will explain the policy regarding absences in each of their classes. Students having excessive absences will be reported to the Office of the Dean. Class attendance may be a factor in determining the final grade in a course.

Peabody: Students are expected to attend all scheduled meetings of classes in which they are enrolled; they have an obligation to contribute to the academic performance of all students by full participation in the work of each class. At the beginning of the semester, instructors explain the policy regarding absences in each of their classes, and thereafter they report to the office of the dean of the college the name of any student whose achievement in a course is being adversely affected by excessive absences. In such cases, the dean, in consultation with the instructor, takes appropriate action, which may include dropping the student from the class; students dropped after the deadline for withdrawal receive the grade *F*. Class attendance may be specified as a factor in determining the final grade in a course, and it cannot fail to influence the grade even when it is not considered explicitly.

Classroom Recording Policy (A&S, Blair)

Arts & Science/Blair: The use of technologies for audio and video recording of lectures and other classroom activities is allowed only with the express permission of the instructor. In cases where recordings are allowed, such content is restricted to personal use only unless permission is expressly granted in writing by the instructor and by

other classroom participants, including other students. Personal use is defined as use by an individual student for the purpose of studying or completing course assignments. When students have permission for personal use of recordings, they must still obtain written permission from the instructor to share recordings with others.

For students registered with the Office of Student Access Services and who have been approved for audio and/or video recording of lectures and other classroom activities as a reasonable accommodation, applicable federal law requires instructors to permit those recordings. Such recordings are also limited to personal use, except with permission of the instructor and other students in the class.

Academic Advising (Blair, VUSE, PBDY)

Blair: All entering students are assigned academic advisers who assist in the planning of programs and course schedules. Students are required to meet with their advisers prior to registration for each semester.

Engineering: A faculty adviser is appointed for each student. This adviser is chosen from the faculty in the student's major, when the major is known. For students who have not chosen a major upon entry, an adviser who specializes in helping undeclared students explore different pathways and decide upon a major is assigned. If a student later chooses a different department for his or her major, a corresponding change of adviser is made. Engineering students are required to see their advisers at registration and any other time changes must be made in their programs of study. Any student who has academic difficulty is expected to see his or her faculty adviser for counsel. Faculty advisers can also provide useful career guidance.

Peabody: Each Peabody undergraduate is assigned an academic adviser who is familiar with his or her major. This adviser is generally a faculty member in the major department and is knowledgeable about the courses the student will need to complete his or her major. The adviser helps the student determine the courses that are most suitable for the chosen major and serves as a mentor to the student.

However, enrollment in appropriate courses to fulfill degree requirements and knowledge of university policies and regulations regarding courses are the responsibility of the individual student.

Course Enrollment & Management

[Registration \(A&S, Blair, VUSE\)](#)

[Normal Course Load \(A&S, Blair, VUSE, PBDY\)](#)

[Change of Course \(Blair, VUSE\)](#)

[Pass/Fail \(A&S, Blair, VUSE, PBDY\)](#)

[Withdrawal \(A&S, Blair, VUSE, PBDY\)](#)

[Taking Courses for No Credit \(A&S, Blair\)](#)

[Auditing \(A&S, Blair, VUSE, PBDY\)](#)

[Independent Study \(A&S, Blair, PBDY\)](#)

[Minimum Graded Credit Hours \(A&S\)](#)

[Duplication of Course Content \(A&S, PBDY\)](#)

[Repeated Courses \(A&S, Blair, VUSE, PBDY\)](#)

[Undergraduate Enrollment in Graduate School Courses \(A&S, VUSE, PBDY\)](#)

[Reserving Credit for Graduate School \(A&S, PBDY\)](#)

[Registration \(A&S, Blair, VUSE\)](#)

Arts & Science: A period is designated in each semester during which continuing students, after consultation with their advisers, register for work to be taken during the next term. The student's adviser must release the advising hold in YES before the student can register.

Students are asked to plan their immediate and long-range educational programs with their advisers before registering and to consult their advisers when they make changes in their registration.

Students not meeting specified tuition payment deadlines are not permitted to register. See the chapter on Financial Information for details.

Before registering, students should check their own records carefully with respect to the following items:

1. AXLE requirements;
2. Major requirements;
3. Requirements of any optional minor(s) sought;
4. Course prerequisites.

Blair: Registration is available to entering first-year students in June. Continuing students register on dates specified each semester in the University Calendar and as assigned in "YES" (Your Enrollment Services, yes.vanderbilt.edu). Conferences with faculty advisers are required before students may register. Detailed information on registration is available on the University Registrar website, registrar.vanderbilt.edu/registration/registration-info.php. Prior to registration, students should refer to the sample curriculum plans in the *Blair Student Handbook*.

Records and the degree audit should be checked regarding progress toward completing the following:

1. Music core
2. Liberal arts core
3. Additional major area requirements

A student whose registration choices are denied or altered (full or cancelled class, lack of prerequisite courses, etc.) may select alternate courses during the Open Enrollment registration period.

Engineering: A period is designated in each semester during which continuing students, after consultation with their advisers, register for work to be taken during the next term. Students can access their registration appointment times and the registration system via YES (Your Enrollment Services) at yes.vanderbilt.edu.

Normal Course Load (A&S, Blair, VUSE, PBDY)

Arts & Science: Each semester, regular tuition is charged on the basis of a normal course load of 12 to 18 semester hours. No more than 18 or fewer than 12 credit hours may be taken in any one semester without authorization of the Administrative Committee or an associate dean in 350 Buttrick Hall. (There is an extra charge for more than 18 credit hours at the current hourly rate.) First-year students may not take more than 18 credit hours in a semester.

Students permitted to take fewer than 12 credit hours are placed on probation, unless their light load is necessary because of outside employment or illness. During the summer session, there is no minimum course load. Summer loads exceeding 14 credit hours must be authorized by an associate dean in 350 Buttrick Hall.

Credit hours are semester hours; e.g., a three-hour course carries credit of 3 semester hours. One semester credit hour represents at least three hours of academic work per week, on average, for one semester. Academic work includes, but is not necessarily limited to, lectures, laboratory work, homework, research, class readings, independent study, internships, practica, studio work, recitals, practicing, rehearsing, and recitations. Some Vanderbilt courses may have requirements that exceed this definition.

A student must be enrolled in a minimum of 12 credit hours to be classified as a full-time student.

Blair: Tuition is charged on the basis of a normal course load of 12 to 18 semester hours. Course loads outside the norm, which must be recommended by the student's adviser and approved by the associate dean, are charged at an hourly tuition rate. Students who enroll in fewer than 12 hours are placed on probation, unless their underload is necessary because of outside employment or illness. The maximum course load for the summer session is 12 hours (6 hours for a summer half-session). A student must be enrolled in a minimum of 12 hours to be classified as a full-time student.

Engineering: Each semester, regular tuition is charged on the basis of a normal course load of 12 to 18 semester hours. No more than 18 or fewer than 12 hours may be taken in any one semester without authorization from the senior associate dean.

There is an extra charge for more than 18 hours at the current hourly rate. Students permitted to take fewer than 12 hours are placed on probation, unless their light load is necessary because of illness or outside employment and is approved by the senior associate dean. A student must be enrolled in a minimum of 12 hours to be classified as a full-time student.

Peabody: A student must be enrolled in a minimum of 12 hours to be classified as a full-time student. Students wishing to carry more than 18 hours must obtain the approval of the Associate Dean for Undergraduate Academic Affairs. All undergraduate students are assumed to be full-time students for the purpose of administering probation and retention policies. A student who for reasons of health, family, or outside employment wishes to enroll in Peabody as a part-time student must obtain permission from the Associate Dean for Undergraduate Academic Affairs. The academic standing of such students will be considered on an individual basis. Normally, however, a student earning less than 12 hours will be placed on academic probation.

Change of Course (Blair, VUSE)

Blair: Course changes may be made during the Open Enrollment period or the official Change Period (Drop/Add) as published in the University Calendar. All changes need the adviser's approval. A course dropped during the Change Period does not show on a transcript.

A course may be dropped or changed from P/F to graded status prior to the deadline for withdrawal published in the University Calendar. The approval of the adviser and associate dean is required (see Grading System regarding withdrawal grades). Regularly enrolled students must maintain a minimum course load of 12 hours.

Engineering: During the change period of registration as defined in the Academic Calendar, students may add or drop courses without academic penalty. No record of courses dropped during the change period appears on the academic record. After the change period, new courses may not be added, except under very unusual circumstances and with the approval of the adviser, the course instructor, and the senior associate dean.

Pass/Fail (A&S, Blair, VUSE, PBDY)

Arts & Science: Students may elect to take a limited number of courses on a Pass/Fail (P/F) basis. To enroll for a course on a Pass/Fail basis, students must have achieved at least sophomore standing, and must not be on academic probation. A minimum 12 graded credit hours is required.

A graduating senior who has permission to take fewer than 12 credit hours on a graded basis may take one course on a P/F basis in addition to the courses required for graduation. If the student does not graduate at the end of that semester, the *P* grade is automatically converted to the grade actually earned.

No more than 18 credit hours graded *P* may be counted toward the degree, and no more than one course per term may be taken P/F.

The P/F option does not apply to courses in the following categories:

1. Courses counted toward AXLE requirements;
2. Courses in the major field(s), other courses that may be counted toward the major(s), or courses required for the major(s);
3. For students with a defined interdisciplinary major, courses that are required for the major or that are eligible to count toward the major;
4. For students with an individually designed interdisciplinary major, courses listed in the student's plan of study;
5. For students planning an optional minor, courses in the minor field or those eligible to count toward an interdisciplinary minor;
6. Courses eligible to count toward the major or minor, regardless of whether the student has already satisfied major or minor requirements;
7. Courses that have been specifically excluded from the P/F option;
8. Courses taken previously.

Students may elect grading on a Pass/Fail basis or change from Pass/Fail to graded status until the deadline date for withdrawing from a course that is published in the Academic Calendar. Pass/Fail rules, requirements, and deadlines are not petitionable.

Those electing the Pass/Fail option must meet all course requirements (e.g. reports, papers, examinations, attendance, etc.) and are graded in the normal way. Instructors are not informed of the names of students enrolled on a Pass/Fail basis. At the end of the semester, a regular grade is submitted for the student enrolled under the P/F option. Any grade of *D-* or above is converted in the Student Records System to a *P*, while an *F* will be recorded if a student enrolled under this option fails the course. The *P* grade is not counted in the grade point average nor used in the determination of honors. The grade of *F* earned under the Pass/Fail option is included in the calculation of the grade point average.

The grade for a class will be converted from *P* to the recorded letter grade if a student later declares a major or minor toward which that class counts. The recorded letter grade will be included in both the overall and the major or minor grade point average.

Blair: Students may elect to take a limited number of courses on a Pass/Fail (P/F) basis. To enroll for a course on a Pass/Fail basis, students must have completed at least two semesters at Vanderbilt, must have achieved at least sophomore standing, and must not be on academic probation. The Blair Office of Academic Services can assist with P/F registration.

For B.Mus. and B.Mus.Arts students, the Pass/Fail option is limited to courses taken as free electives. Course work in the area of a minor or second major is governed by the school in which the department or program is housed. No more than one course may be elected on a Pass/Fail basis in any one semester. Only a total of 18 hours towards the 126-hour degree total may be taken on a Pass/Fail basis. Students electing course work on a Pass/Fail basis must be enrolled for 12 graded hours. A graduating senior who has permission to take fewer than 12 hours on a graded basis may take one course on a P/F basis in addition to the courses required for graduation. If the student does not graduate at the end of that semester, the grade *P* is automatically converted to the grade actually earned.

Students may register for grading on a Pass/Fail basis and may change from Pass/Fail to graded status until the deadline date for withdrawing from a course that is published in the Academic Calendar.

Those electing the Pass/Fail option must meet all course requirements (e.g., reports, papers, examinations, attendance, etc.) and are graded in the normal way. Instructors are not informed of the names of students enrolled

on a Pass/Fail basis. At the end of the semester, a regular grade is submitted for the student enrolled under the P/F option. Any grade of *D*- or above is converted in the Student Records System to a *P*, while an *F* will be recorded if a student enrolled under this option fails the course. The *P* grade is not counted in the grade point average nor used in the determination of honors. The grade of *F* earned under the Pass/Fail option is included in the calculation of the grade point average.

Engineering: Students may elect to take a limited number of courses on a Pass/Fail basis. To enroll for a course on a Pass/Fail basis, students must have completed at least two semesters at Vanderbilt, must have achieved at least sophomore standing, and must not be on academic probation.

In addition, the following regulations apply to students enrolled in the School of Engineering:

1. No more than 9 hours graded Pass will be accepted toward the B.S. or B.E. degree, as designated by each program's curriculum.
2. No more than two courses may be taken on a Pass/Fail basis in any one semester.
3. A minimum of 12 hours must be taken on a graded basis in any semester that a Pass/Fail course is taken. A graduating senior who needs fewer than 12 hours to graduate may take courses on a Pass/Fail basis as long as he or she takes the number of hours needed to graduate on a graded basis.
4. Students may elect grading on a Pass/Fail basis and may change from Pass/Fail to graded status until the deadline date for withdrawing from a course that is published in the Academic Calendar.

Pass/Fail Electives Options by Program

	Open Elective	Liberal Arts Core	Technical Elective
BME	X	X	
CE	X	X	
CHE	X		
CMPE	X		
CS	X	X	X
ECE	X		
ES	X	X	
ME	X	X	X (non-ME)

Those electing the Pass/Fail option must meet all course requirements (e.g., reports, papers, examinations, attendance, etc.) and are graded in the normal way. Instructors are not informed of the names of students enrolled on a Pass/Fail basis. At the end of the semester, a regular grade is submitted for the student enrolled under the P/F option. Any grade of *D*- or above is converted in the Student Records System to a *P*, while an *F* will be recorded if a student enrolled under this option fails the course. The *P* grade is not counted in the grade point average or used in the determination of honors. The grade of *F* earned under the Pass/Fail option is included in the calculation of the grade point average.

Peabody: Students may elect to take some courses in which they can receive the grade P (Pass). This grade is entered for the student enrolled under the P/F option who is awarded a grade of *D*- or higher. The grade P is neither counted in the grade point average nor used in the determination of honors. A failing grade will appear on the student record as F and will be counted in the student's grade point average.

To be eligible for the P/F option, the student must have completed two regular semesters at Vanderbilt and must not be on academic probation. No more than one course per semester may be taken on a P/F basis and no more than three total during the undergraduate career. No more than one course from any Liberal Education Core area (e.g., communications, humanities) may be taken under this option.

Note that neither courses taken for transfer credit (grade of "T") nor courses that are only offered on a pass/fail basis by the university (e.g., certain field experience courses) are counted against the number of courses that a student may voluntarily elect to take on a pass/fail basis, either within or across semesters.

The P/F option does not apply to courses in the following categories:

1. Liberal Education Core Courses that have been specifically identified by the student's primary major as needing to be taken on a graded basis.
2. For students with a single or double major, courses in the department(s) of the major(s) or other courses that may be counted for the major(s);
3. For students with an interdisciplinary major, courses listed in the student's plan of study;
4. For students planning an optional minor, courses in the department of the minor or those counting toward an interdisciplinary minor.

Students taking a course on a P/F basis must be enrolled for at least 12 additional hours on a regularly graded basis. If a student drops a course and falls below 12 graded hours, the P/F course is converted automatically to a regularly graded basis.

Seniors who meet the above criteria and have permission to take fewer than 12 hours on a graded basis may take one course on a P/F basis in one of their last two semesters (e.g., a semester in which an internship or student teaching is not being taken). If the student does not graduate at the end of the senior year, the grade of P is automatically converted to the grade actually earned. When a student wishes to complete a major or minor in a field in which a grade of P has been received, the registrar converts this grade to the regular grade originally earned.

All P/F students are expected to meet normal course requirements (e.g., reports, papers, examinations, laboratory attendance) and are graded in a normal way. At the end of the semester, students enrolled on a P/F basis are awarded a regular grade. Any grade of D- or better is converted in the Student Records System to a P, while an F grade remains as awarded. A student taking a course on a P/F basis must meet the course prerequisites as set forth in this catalog.

Students may submit a Pass/Fail request form on or before the Pass/Fail declaration deadline. Students may change from a P/F basis to a regularly graded basis until the last day to withdraw from classes in a given term. All Pass/Fail deadlines are published in the Academic Calendar. The Pass/Fail form is available online: peabody.vanderbilt.edu/admin-offices/oas/downloads.php.

Withdrawal (A&S, Blair, VUSE, PBDY)

Arts & Science: After the Change Period, and extending to the deadline published on the Undergraduate Academic Calendar, a student may withdraw from a course with approval from the student's adviser. Under certain conditions, withdrawal may also require approval from an associate dean in 350 Buttrick Hall. During the same period students may change their status from P/F to regularly graded or elect Pass/Fail status in a course.

These changes must be made with a Change of Course form, which is available online and which the student must submit to the Dean's Office of Undergraduate Education in Arts and Science. After the deadline, withdrawal is possible only in the most extraordinary circumstances, such as illness or unusual personal or family problems, and in all cases must be approved by the Administrative Committee. After the withdrawal deadline, change from P/F to regularly graded status is not permitted.

Students who withdraw from a course after the change period receive the grade *W* (withdrawal). This grade is not used in the computation of the grade point average or class rank. A student who defaults in a course without dropping or withdrawing from it receives the grade *F*.

Blair: A student may withdraw from a course after the official Change Period and prior to the deadline for

withdrawal published in the University Calendar, generally Friday of the week after mid-semester. A change of course request form must be signed by the instructor, adviser, and associate dean and filed with the Office of Academic Services. (Students from other schools of the university must file with their home school.) Withdrawals after the published deadline result in an *F*. The grade *W* may be assigned by the associate dean to a student who seeks to withdraw from a course or from school after the deadline for reasons such as extended illness or unusual personal or family problems. No *W* grades are calculated in a student's grade point average.

Engineering: After the Change Period and extending to the deadline published on the Undergraduate Academic Calendar, a student may withdraw from a course with approval of the student's adviser. Under certain conditions, withdrawal may also require approval from the senior associate dean. During the same period students may change their status from P/F to regularly graded or vice versa. The *W* is recorded for any course from which a student withdraws. A course in which a *W* is recorded is not used in figuring grade point averages.

Peabody: The symbol *W* (withdrawal) is assigned in lieu of a grade when a student formally withdraws from a class before the published mid-semester deadline. After that point, withdrawal will result in an *F*. A student who withdraws from school for reasons such as illness, unusual personal or family problems, and the like, may petition the Dean's Office for an authorized administrative withdrawal. If approved, the student will receive the grade *W* for courses in progress. A student who withdraws from school without an authorized administrative withdrawal receives the grade *W* or *F* depending upon the date of withdrawal. The grade *W* is not included in the calculation of the grade point average.

Taking Courses for No Credit (A&S, Blair)

Arts & Science: Students may want to take elsewhere in the university courses that are not creditable toward the bachelor's degree. They may do so on a no-credit basis, attending classes, doing all the work of the course, and receiving a grade that is recorded on the transcript with a notation that it does not count toward the degree.

No-credit courses count in computation of the student's academic load and in computation of tuition, but not in computation of the grade point average. They also do not count toward the attainment of class standing.

Blair: Students who wish to take courses on a no-credit basis must file with the Blair Office of Academic Services before the end of the Change Period. Students must attend class and complete all course work. A grade is recorded on the transcript with the notation "Grading Basis: No Credit Toward Current Degree," indicating that it does not count toward the degree.

No-credit courses count in the computation of a student's academic load and tuition, but not in the computation of the grade point average.

Auditing (A&S, Blair, VUSE, PBDY)

Arts & Science: Regularly enrolled Arts and Science students who want to audit courses in any of the undergraduate schools of the university must obtain the written consent of the instructor to attend the class but do not register for the course for credit. Forms are available from the Dean's Office of Undergraduate Education in each school. No permanent record is kept of the audit. Regular students may audit one class each semester.

Blair: Regularly enrolled Blair students who want to audit courses in any of the undergraduate schools of the university must complete the change of course request form and obtain the written consent of the instructor to attend the class but do not register for the course for credit. No permanent record is kept of the audit. Regular students may audit one class each semester.

Engineering: Regularly enrolled students in the School of Engineering who want to audit courses in any of the undergraduate schools of the university must get the written consent of the instructor to attend the class and

register to audit the course. Forms are available from the School of Engineering Office of Academic Services. No permanent record is kept of the audit. Regular students may audit one class each semester.

Peabody: Regularly enrolled Peabody College students who want to audit courses in any of the undergraduate schools of the university must obtain the written consent of the instructor to attend the class but do not register for the course for credit. Forms are available online: peabody.vanderbilt.edu/admin-offices/oas/downloads.php. No permanent record is kept of the audit. Regular students may audit one class each semester free of charge. In order to audit a course, the student must also be enrolled in at least one additional graded credit hour in the same semester.

Independent Study (A&S, Blair, PBDY)

Arts & Science: Independent study and directed study courses are intended primarily for students in their junior and senior years. Students may not take an independent study or directed study course that duplicates a regular course being offered in the same semester. Juniors or seniors who wish to take independent study or directed study courses must use the following procedure:

1. Students may initiate the independent study enrollment process in YES by clicking on the Individual Study link on the student landing page.
2. Students must be registered in the independent study before the end of the change period.

Blair: Students must obtain permission to enroll in Independent Study from the instructor of their choice prior to registration. Independent Study authorization forms are available at blair.vanderbilt.edu/academics. The instructor's signature on the authorization form indicates a willingness to supervise the Independent Study project. A contract or study plan, approved by the instructor in consultation with the appropriate department chair and the associate dean, must be submitted to the Blair Office of Academic Services by the tenth calendar day after classes begin. If no plan is submitted, the student will be dropped from Independent Study. An Independent Study project should result in a substantial written report, paper, or lecture/recital. The report, recording, or some physical manifestation of the project should be retained by the instructor. Independent Study projects proposed by students for cross-school registration should be approved through the mechanisms of both schools. Consult associate deans from both schools for guidance.

A student may register for a maximum of 3 hours in Independent Study in a semester. A student may count a total of 6 hours in Independent Study toward the degree. A faculty member may supervise no more than four students per semester in Independent Study projects.

Independent Study cannot substitute for courses which are part of the curriculum.

Peabody: Independent study courses, ranging from zero to three hours of credit, are listed in the *Schedule of Courses* and are intended for students in their junior and senior years. Students wanting to undertake an independent study must follow these guidelines:

1. Students must be in academic "good standing" (may not be on probation or Leave of Absence).
2. Students must arrange the independent study with a Vanderbilt full time faculty member who has agreed to supervise and grade this course.
3. Students may enroll for up to 3 hours of independent study in one semester.
4. Students must make a study plan detailing the nature of the project and the amount of credit. The Individual Learning/Directed Study contract must be approved by the instructor and the department chair (or the chair's designee) by the last day of the change period.
5. Registration for the course occurs when the completed Individual Learning/Directed Study contract is submitted to the Peabody Office of Academic Services. Registration for an independent study will not be allowed after the change period has ended.

Students may not repeat independent study courses for grade replacement.

Minimum Graded Credit Hours (A&S)

Arts & Science: A course may not be dropped without authorization of the Administrative Committee or an

associate dean if the student is left with a course load of fewer than 12 credit hours on a regularly graded basis.

Duplication of Course Content (A&S, PBDY)

Arts & Science: It is the responsibility of the individual student to avoid duplication in whole or in part of the content of any course counting toward the degree. Such duplication may result in the withdrawal of credit.

Peabody: It is the responsibility of the individual student to avoid duplication in whole or in part of the content of any courses offered toward the degree. Such duplication may result in the withdrawal of credit. This policy also applies to Advanced Placement credit.

Certain courses (e.g., ensemble, performance instruction, special topics, and directed study) are designated as repeatable as they contain evolving or iteratively new content. These courses may be taken multiple times for credit. If a course can be repeated, the number of credits allowable per semester should not exceed 3 credit hours without permission.

Repeated Courses (A&S, Blair, VUSE, PBDY)

Arts & Science: Most courses offered in the College of Arts and Science may be repeated. If a course was failed the last time it was taken, credit is awarded when the course is repeated with a passing grade. If a course was previously passed, no new credit is earned. If a course previously passed is repeated and failed, credit originally earned for it is lost. In any case all grades earned are shown on the transcript. Under conditions explained below, the most recent grade in a course replaces the previous grade in determining credit, in computing the grade point average, and in verifying the completion of degree requirements and progress toward the degree.

The policy of grade replacement applies when all of the conditions below are met.

1. Failed courses may be repeated until passed; passed courses may be repeated only once.
2. Exactly the same course (same department and course number) is completed. A repeated First-Year Writing Seminar must have the same department and section number but cannot be repeated after completion of the second semester in residence.
3. The course is repeated on a regularly graded basis. This limitation applies even if the course was originally taken on a P/F basis.
4. The course is not one in independent study or directed study.
5. A non-W course is taken as repeat credit for a Writing version of the same course that was previously passed. The student loses credit for the writing requirement.
6. A W course is taken as repeat credit for a non-Writing version of the same course that was previously passed. The student earns credit for the writing requirement.
7. Certain courses (e.g., ensemble, performance instruction, and independent study) are designated as repeatable as they contain evolving or iteratively new content. These courses may be taken multiple times for credit. If a course can be repeated, the number of credit hours allowable per semester will be included in the course description.

In some instances, enrollment in a course similar to one already completed but with a different course number will result in the award of no credit for the second course and will have no effect on the grade point average. These are designated in the departmental course listings.

Courses taken in the College of Arts and Science may not be repeated elsewhere for grade replacement.

Students are cautioned that while repeating for grade replacement a course previously passed may improve their cumulative grade point average, it may also lead to a problem in meeting minimum credit hours requirements for class standing because no new credit is earned.

Blair: Certain courses, notably performing ensembles and variable credit performance instruction, may be taken

more than once for credit. Otherwise, students may repeat any course to replace a grade, with no additional credit hours earned, subject to the following conditions:

- Courses taken at Vanderbilt may not be repeated elsewhere. A grade may not be replaced by a grade of "Pass."
- A grade of *W* or *I* cannot replace a letter grade.
- Only the most recent grade is calculated in the grade point average, but all grades show on the transcript.

Engineering: Courses in which a student has earned a grade lower than *B-* may be repeated under certain conditions. A course in which the student earned a grade between *D-* and *C+*, inclusive, may be repeated only once. A course may be repeated only on a graded basis, even if the course was originally taken Pass/Fail. Courses taken Pass/Fail in which the student earned a Pass may not be repeated. A course cannot be repeated through credit by examination.

Students should note that repeating a course may improve the grade point average, but it may also lead to problems in meeting minimum hour requirements for class standing and progress toward a degree. Repeating a course does not increase the number of hours used in calculation of the grade point average. All grades earned will be shown on the transcript, but only the latest grade will be used for computation of grade point averages.

Peabody: If a course is repeated, only the last grade and credit hours earned will be used to calculate the grade point average and be creditable toward graduation. However, the original grade will appear on the transcript. Certain courses (e.g., special topics courses, directed study courses; see duplicate content section, below) may be repeated for credit when there is no duplication of content. Such courses may be repeated to replace a grade only when the content of the original and repeated courses is the same. Courses must be repeated in a graded status. This policy also applies to Advanced Placement credit. Courses taken at Vanderbilt may not be repeated elsewhere for grade replacement, nor may courses taken elsewhere be repeated at Vanderbilt for grade replacement.

Undergraduate Enrollment in Graduate School Courses (A&S, Blair, VUSE, PBDY)

Arts & Science: In the 4-digit course numbering system some courses may enroll undergraduate and graduate students simultaneously. Typically, there is a 3000- or 4000-level course for undergraduates and a matching 5000-level course for graduate students. Undergraduate students may enroll in the 3000- or 4000-level course of these pairs without special approval.

A qualified Vanderbilt University senior undergraduate may enroll in courses approved for graduate credit (those numbered 5000 and higher) and receive credit that, upon the student's admission to the Vanderbilt Graduate School, may be applicable toward a graduate degree. Vanderbilt cannot guarantee that another graduate school will grant credit for such courses. The principles governing this option are as follows:

1. Work taken under this option is limited to those courses approved for graduate credit (those numbered 5000 and higher) and listed as such in the Graduate School catalog, excluding thesis and dissertation research courses and similar individual research and readings courses. Courses approved for professional credit (i.e., many courses in the Divinity School, Law School, School of Medicine, School of Nursing, and Owen Graduate School of Management) may not be taken as part of this option.
2. The student must, at the time of registration, have a 3.00 average in all prior work to be counted toward the bachelor's degree, or a 3.00 average in all prior work to be counted toward the undergraduate major, or a 3.00 average in the preceding two semesters.
3. The total course load, including both graduate and undergraduate courses, must not exceed 15 credit hours in any semester.
4. No undergraduate student may enroll in more than one graduate course in any semester.
5. A registration form for undergraduate Arts and Science students wishing to exercise this option is available in the Dean's Office of Undergraduate Education. The interested student must use this form to obtain the written approval of the following:
 1. the academic adviser,
 2. the instructor of the course,
 3. and the director of graduate studies of the department or program.

Engineering: A qualified Vanderbilt junior or senior may enroll in courses approved for graduate credit by the graduate faculty. Credit from such courses may be applied to undergraduate degree requirements or, upon the student's admission to the Vanderbilt University Graduate School, toward a graduate degree. Vanderbilt cannot

guarantee that another graduate school will grant credit for such courses. The principles governing this option are as follows:

1. Work taken under this option is limited to courses numbered 5000 and above and listed in the catalog of the Graduate School, excluding thesis and dissertation research courses and similar individual research and reading courses.
2. The student must, at the time of registration, have a 3.500 grade point average in the preceding two semesters.
3. The total course load, graduate and undergraduate courses, must not exceed 18 hours in that semester.
4. The student must obtain the written approval of their academic adviser and the instructor of the course on a form available in the Office of Academic Services.
5. Permission for Vanderbilt undergraduates to enroll in graduate courses does not constitute a commitment on the part of any program to accept the student as a graduate student in the future.
6. An undergraduate student exercising this option will be treated as a graduate student with regard to class requirements and grading standards.

Peabody: All students wishing to take 5000-8000-level courses for either undergraduate or graduate credit must obtain the written approval of their academic advisers, the instructor of the course, and the Office of Academic Services. Some courses are designed to enroll both undergraduate and graduate/professional students in the same class section. Such courses will typically have two course numbers, one in the graduate range (5000-8000) and one in the undergraduate range (usually either 3000- or 4000-level). Unless they wish to take the course for post-baccalaureate credit, undergraduates must register for the course using the undergraduate course number and may do so without any special permission.

Undergraduates wishing to receive approval for graduate credit in 5000-8000-level courses also see Reserving Credit for Graduate School (A&S, PBDY).

Reserving Credit for Graduate School (A&S, PBDY)

Arts & Science:

1. Arts and Science students who are interested in reserving the credit earned in a graduate course (those numbered 5000 and higher) should consult with the Graduate School before attempting to register for graduate courses under this option.
2. The work must be in excess of that required for the bachelor's degree.
3. All of the above criteria apply under this option.
4. Students must declare their intention to reserve this credit on the registration form.
5. Permission for Vanderbilt undergraduates to enroll in graduate courses does not constitute a commitment on the part of any department to accept the student as a graduate student in the future.
6. An undergraduate student exercising this option is treated as a graduate student with regard to class requirements and grading standards.

Peabody: A qualified Vanderbilt University senior undergraduate may enroll in courses approved for post-baccalaureate credit and receive credit which, upon the student's admission into a Peabody College professional program, may be applicable toward the professional degree. The principles governing this option are as follows:

1. Work taken under this option is limited to those 5000-8000-level courses approved for post-baccalaureate credit, excluding thesis and dissertation research courses and similar individual research and readings courses.
2. Such work must be in excess of that required for the bachelor's degree.
3. At the time of registration, the student must have a *B* average in all prior work to be counted toward the bachelor's degree, or a *B* average in all prior work to be counted toward the undergraduate major, or a *B* average in the preceding two semesters.
4. Undergraduate students wishing to count for post-baccalaureate credit courses taken under this option must consult the instructor of each course and must, at the time of registration, declare their intention on a form available at the Office of Academic Services.
5. The student's total course load (graduate plus undergraduate courses) must not exceed 15 hours during any semester in which graduate credit is pursued.
6. Permission for Vanderbilt undergraduates to enroll in post-baccalaureate courses does not constitute a commitment on the part of any department to accept the student in the future. Courses taken under this option are subject to departmental approval before they may be included on post-baccalaureate programs of study.
7. An undergraduate student exercising this option will be treated as a post-baccalaureate student with regard to class requirements and grading standards.

Interested students should consult the Peabody Office of Academic Services to verify their eligibility as defined above before attempting to register for post-baccalaureate course work under this option.

Grading and Credits

[Residence Requirement \(A&S, Blair, VUSE, PBDY\)](#)

[Advanced Placement \(Blair\)](#)

[Credit Hour Definition \(Blair, VUSE, PBDY\)](#)

[Grading System \(A&S, Blair, VUSE, PBDY\)](#)

[Grade Reports \(A&S, Blair, VUSE\)](#)

[Grade Point Average \(A&S, Blair, VUSE, PBDY\)](#)

[Defined Grades with Corresponding Grade Points per Credit Hour \(A&S, Blair, VUSE, PBDY\)](#)

[F: Failure \(A&S, VUSE\)](#)

[Grade Appeals \(PBDY\)](#)

[Mid-Semester Progress Reports \(A&S\)](#)

[Deficiency Notices \(Blair\)](#)

[Temporary Grades \(A&S, Blair, VUSE, PBDY\)](#)

[Transfer Credit \(A&S, Blair, VUSE, PBDY\)](#)

[Summer or Winter Work at Another Institution \(A&S\)](#)

[Credit by Examination \(A&S, Blair, VUSE, PBDY\)](#)

Residence Requirement (A&S, Blair, VUSE, PBDY)

Arts & Science: A minimum of four normal semesters (at least 60 credit hours), including the last two semesters (at least 30 credit hours), must be spent in residence in the College of Arts and Science unless an exception is made by the Administrative Committee. Students transferring from other schools of the university must spend the last year (at least 30 credit hours) in residence in the College of Arts and Science.

Blair: A minimum of four semesters and at least 63 credit hours, as well as the last two semesters and the last 30 credit hours, must be spent in residence in the Blair School. Students transferring from other schools of the university must spend the last two semesters and at least the last 30 credit hours in residence in the Blair School. Students who wish to study abroad or study away in their penultimate semester may petition the Blair Curriculum Committee for a waiver of the residence requirement.

Engineering: A minimum of four semesters including the last two semesters must be spent in residence in the School of Engineering. A student in the School of Engineering is considered "in residence" if the student is (a) physically present at Vanderbilt and enrolled in Vanderbilt University classes offered on campus, or (b) enrolled in at least 12 credit hours in an approved Vanderbilt study abroad program. During these four or more semesters, the student must have completed at least 60 semester hours of an approved curriculum in one of the degree programs.

Peabody: Students must complete a minimum of 60 hours in residence at Vanderbilt including the final two semesters.

Advanced Placement (Blair)

Blair: *Advanced Placement with Credit.* Advanced placement with credit is granted in a number of areas (see the chapter on [Admission](#)).

Advanced Placement without Credit. Students may be admitted to advanced music courses on the basis of placement tests at Blair, but no credit is awarded for music courses exempted.

Credit Hour Definition (Blair, VUSE, PBDY)

Blair/Engineering/Peabody: Credit hours are semester hours; e.g., a three-hour course carries credit of three semester hours. One semester credit hour represents at least three hours of academic work per week, on average, for one semester. Academic work includes, but is not necessarily limited to, lectures, laboratory work, homework, research, class readings, independent study, internships, practica, studio work, recitals, practicing, rehearsing, and recitations. Some Vanderbilt courses may have requirements which exceed this definition. Certain courses (e.g., dissertation research, ensemble, performance instruction, and independent study) are designated as repeatable as they contain evolving or iteratively new content. These courses may be taken multiple times for credit. If a course can be repeated, the number of credits allowable per semester will be included in the course description.

Grading System (A&S, Blair, VUSE, PBDY)

Arts & Science:

A: excellent

B: good

C: satisfactory

D: minimum pass work

F: failure

Under certain circumstances the following grades may be awarded:

W: withdrawal

P: (see P/F Course Provision)

M: absent from final examination

I: incomplete in some requirement other than final examination

IP: first semester grade for two-semester Honors sequence

Plus and minus modifiers may be associated with letter grades *A* through *D* as shown in the table below. Grade point averages are calculated using indicated grade point values.

Blair:

A: excellent

B: good

C: satisfactory

D: minimum pass work

F: failure

Under certain circumstances the following grades may be awarded (see explanations below):

Pass: D- or above

W: withdrawal

M: missed final examination (prior approval needed; see below)

I: incomplete in some requirement other than final examination (see below)

Plus and minus modifiers may be associated with letter grades *A* through *D* as shown in the table below. Grade point averages are calculated using indicated grade point values.

Engineering:

Work is graded by letter. *A*, *B*, *C*, and *D* are considered passing grades. The grade *F* signifies failure. A student who withdraws from a course before the date given in the Academic Calendar is given the grade *W*. A student may not withdraw from a course after that date.

Peabody:

Peabody College undergraduate students are on a four-point grading system. All work is graded by letters, interpreted as follows:

A: excellent

B: good

C: satisfactory

D: minimum pass work

F: failure

Under certain circumstances the following grades may be awarded:

W: withdrawal

P: pass (see Pass/D/Fail course provision)

M: missed final examination

I: incomplete in some requirement other than final examination

Plus and minus modifiers may be associated with the letters *A* through *D* as shown in the table below. Grade point averages are calculated using indicated grade point values.

Grade Reports (A&S, Blair, VUSE)

Arts & Science: Students have access to their grade reports on the Academic Record in YES. Notifications are sent

to students in their last two semesters, showing total credit hours, grade point average, and degree requirements still to be met. Students should examine their Degree Audit carefully and discuss it with their advisers. Any errors should be reported immediately to the Dean's Office of Undergraduate Education. A grade reported and recorded in the Office of the University Registrar may be changed only upon request of the instructor with the approval of the Administrative Committee. The committee will approve such a change only on certification that the original report was in error.

Blair: Grade reports and faculty critiques of performance examinations will be provided to students as soon as possible at the end of each semester. Grades are available online in the Academic Record, which is housed within YES (Your Enrollment Services) at yes.vanderbilt.edu. Occasionally, student academic information may be shared with appropriate faculty committees for purposes of promotion and tenure review.

A grade reported and recorded in the Office of the University Registrar may be changed only upon written request of the instructor, on certification that the original report was in error, with approval of the associate dean.

Engineering: A grade report will be available to the student on Academic Record in YES as soon as possible after the conclusion of each semester. This report will give the total hours and grade points earned during the semester, as well as the cumulative hours and grade points earned through that semester. Students should examine these reports carefully and discuss them with their faculty advisers. Any errors should be reported immediately to the Office of Academic Services of the School of Engineering.

A grade reported and recorded in the Office of the University Registrar may be changed only upon written request of the instructor and with approval of the Administrative Committee. The committee will approve such a change only on certification that the original report was in error.

Grade Point Average (A&S, Blair, VUSE, PBDY)

Arts & Science: A student's grade point average is obtained by dividing the quality points earned by the credit hours for which the student has registered, excluding courses taken for no credit, those from which the student has officially withdrawn (see Withdrawal Period under Registration above), and those completed with the grade *P*.

In no case is the grade point average affected by transfer credit. No course at another institution in which a grade below *C-* was received, or which was taken on a Pass/Fail basis, is credited toward the degrees awarded by the College of Arts and Science.

Blair: A student's grade point average is obtained by dividing the total grade points earned by the number of hours for which the student registered, excluding courses audited or taken for no credit, those from which the student has withdrawn or for which an incomplete grade (*I* or *M*) has been authorized, and those with the grade *Pass*.

Engineering: A student's grade point average is obtained by dividing the total grade points earned by the number of hours for which the student registered, excluding courses taken for no credit, those from which the student has withdrawn, those with the temporary grade of *I* or *M*, those taken in a study abroad program, and those that are completed with the grade *Pass*.

Peabody: A student's grade point average is obtained by dividing the grade points earned by the hours for which the student has registered, excluding courses taken for no credit, those from which the student has withdrawn, and those that are completed with the grade *P*.

Defined Grades with Corresponding Grade Points per Credit Hour (A&S, Blair, VUSE, PBDY)

Arts & Science:

A	4.0	C	2.0
A-	3.7	C-	1.7
B+	3.3	D+	1.3
B	3.0	D	1.0
B-	2.7	D-	0.7
C+	2.3	F	0.0

Blair:

A	4.0	C	2.0
A-	3.7	C-	1.7
B+	3.3	D+	1.3
B	3.0	D	1.0
B-	2.7	D-	0.7
C+	2.3	F	0.0

Engineering:

A+	4.0	C+	2.3
A	4.0	C	2.0
A-	3.7	C-	1.7
B+	3.3	D+	1.3
B	3.0	D	1.0
B-	2.7	D-	0.7
C+	2.3	F	0.0

Peabody:

A	4.0	C	2.0
A-	3.7	C-	1.7
B+	3.3	D+	1.3
B	3.0	D	1.0
B-	2.7	D-	0.7
C+	2.3	F	0.0

F: Failure (A&S, VUSE)

Arts & Science: The grade *F* indicates failure. All *F*'s are counted in the computation of grade point averages, except when a course is repeated and is subsequently passed. In this case the latest grade is used for computation of the grade point average (but the grade originally earned is not removed from the transcript). A course in which the grade *F* is received must be repeated as a regular course if credit is to be given. It may not be repeated as a course in independent or directed study, under the procedures for credit by examination, or on a P/F basis.

Engineering: A subject in which the grade *F* is received must be taken again in class before credit is given. A student who deserts a course without following the correct procedure for withdrawing from it will receive an *F* in the course.

Grade Appeals (PBDY)

Peabody: A student who believes they have received an inappropriate final grade in a class can appeal that grade if they believe the grade is inappropriate for at least one of the following reasons:

1. The student is held to different standards than other students in the course.
2. The instructor in determining the final grade applied standards that departed from those outlined in the course syllabus.
3. The student believes that there is a clerical error in the calculation or reporting of the grade.
4. The instructor did not adequately consider the student's needs for officially sanctioned and communicated accommodations.

Ultimately, the grade can be appealed following the academic appeals process outlined for more general academic matters, directly above. However, several steps to attempt to resolve the grade should be taken, in turn, before an appeal is submitted to the Undergraduate Administrative Committee (UAC).

First, students and instructors are encouraged to resolve grade disputes informally. If an informal process fails, the student may formally appeal a final course grade by contacting the instructor in writing within ten (10) business days after the start of the following semester. The student's written appeal must include the grounds for the appeal (see conditions 1 through 4 listed above), the change in grade that is being requested, and evidence to support the student's case for a grade change. The instructor must inform the student of his/her decision in writing.

Second, if the student does not feel the matter has been resolved satisfactorily with the instructor, the student may petition the director of undergraduate studies in the department where the course is housed. The petition for reviewing the appeal must include the original written appeal, the instructor's written response, and the reason why the student is dissatisfied with the instructor's decision. The DUS will review the materials and assess the merits of the case. If the DUS finds no basis for the grievance, the petition will be dismissed and the student will be notified in writing. If the DUS determines that the grievance has merit, the DUS will work with the parties to seek a resolution. If the DUS is the course instructor, the student may directly petition the department chair in which the course is housed.

Third, if the case is dismissed by the DUS, and the student does not agree with the grounds for the decision, the student may petition the chair of the department where the course is housed. The student is responsible for providing the department chair with relevant case documentation, including the original written appeal, the written responses of both the instructor and the DUS, and an explanation as to why the student is dissatisfied with the DUS's decision to dismiss the case. The department chair will decide the merits of the case and provide written documentation to all parties as to the decision. If the case is determined to have merit, the department chair will seek a resolution among the parties involved, including the student, the instructor, and the DUS. If the department chair is the course instructor, the student may appeal the DUS's decision directly to the Undergraduate Administrative Committee using the more general academic appeals process outlined in the previous Appeals section.

Fourth, if the case is dismissed by the department chair and the student does not agree with the grounds for the decision, the student may appeal the department chair's decision to the Undergraduate Administrative Committee using the more general academic appeals process outlined in the previous Appeals section.

Mid-Semester Progress Reports (A&S)

Arts & Science: At the end of the seventh week of each semester, instructors assess the progress of all students in their classes and report those whose work at that point is deficient or whose work is being harmed by excessive absences. Grades to be reported are *C-*, *D+*, *D*, *D-*, *F*, and *I* (for incomplete, meaning that some work due by that point has not been submitted). Instructors may combine with one of these grades or assign separately a notation of excessive absences from a class. Reports of these deficiencies are posted in the Academic Record application in YES. Grades given at mid-semester do not become part of the permanent record but are intended to warn students about performance judged unsatisfactory.

Deficiency Notices (Blair)

Blair: During the week after mid-semester, the Office of the University Registrar posts deficiency notices for students whose mid-semester grade in any course is a *C*- or below or whose work is incomplete (*I*). (Deficiency notices are found in the Academic Detail in YES at yes.vanderbilt.edu.) Deficiencies are issued as a matter of information and warning. Deficiencies do not show on transcripts, but information is sent to the faculty advisers and may be sent to parents of those students who have submitted a FERPA Release form indicating permission to release academic information to specific individuals.

A student who receives a deficiency notice is required to meet with the faculty adviser before the deadline for withdrawal at the end of the week. A student with deficiencies in two or more courses or any senior who receives a deficiency notice is also required to meet with the associate dean before the deadline for withdrawal (usually Friday of the week after mid-semester).

Temporary Grades (A&S, Blair, VUSE, PBDY)

Arts & Science, Blair, Engineering, Peabody: Temporary grades are placeholders that are assigned under defined circumstances and are not replacements for failing grades. Missing work must be completed by the deadline specified by the instructor (usually before the end of the second week of classes in the next regular term but no later than the end of the following semester) after which the permanent grade is recorded (either the newly assigned or default grade). The default grade is calculated by assigning zero points for work not submitted. Temporary grades are not calculated in the GPA, but a student who receives a temporary grade is ineligible for the Dean's List. An undergraduate student cannot graduate with any temporary grades on their record.

The following temporary grades are available

I: Incomplete

To be assigned only if the following conditions apply:

1. An extenuating circumstance has emerged after the course withdrawal deadline
2. The student is up to date on all work prior to the extenuating circumstance
3. The student successfully completed at least 60% of the assigned work throughout the semester
4. The student requests the incomplete before the end of classes
5. The student has been attending a significant majority of the classes

M: Missed Final Examination or Final Evaluation

To be assigned only if the following conditions apply:

1. The student misses only the final examination or final evaluation and promptly informs the instructor as to the extenuating circumstances for missing the final exam/evaluation. In the absence of prompt notification of extenuating circumstances, a grade of zero for the final exam/evaluation is recorded.
2. The student could pass the course if the final examination is successfully completed. (The grade of *F* is given if the student could not pass the course even with the final examination.)

Transfer Credit (A&S, Blair, VUSE, PBDY)

Arts & Science: It is the student's responsibility to provide all of the information required by the Office of the University Registrar to assess the program for which transfer of credit is requested. Work presented for transfer must be from a regionally accredited college and is subject to evaluation in light of the degree requirements of the College of Arts and Science. Credit will not be awarded for independent study, physical education, or dance performance courses.

Work transferred to Vanderbilt from another institution will not carry with it a grade point average. No course in which a grade below *C*- was received, or which was taken on a Pass/Fail basis, will be credited toward a degree offered by the College of Arts and Science. The question of credit in the College of Arts and Science for previous

work done at another institution must be settled in advance of the student's first registration.

Transfer students must spend at least four full semesters, including the last two semesters, enrolled in the College of Arts and Science. They must earn at least 60 credit hours and complete at least one writing course in fulfillment of the writing requirement while so enrolled.

Blair: *Transfer courses* are often taken as free electives, but they may also earn liberal arts core credit. They may not fulfill the music core requirements, count as part of the last 30 hours of residence, serve as repeat credit, or be taken on a Pass/Fail basis. Work transferred from another institution will not carry with it a grade point average. No course in which a grade below C- was received will be credited toward the B.Mus. or B.Mus.Arts. It is the student's responsibility to provide all of the information required by the Office of the University Registrar to assess the program for which transfer of credit is requested. Work presented for transfer must be from a regionally accredited college or university. Information on the evaluation process and policies is available at registrar.vanderbilt.edu/transfer-credit.

Summer studies. Students enrolled at Blair may receive transfer credit for summer courses taken at another regionally accredited two-year or four-year college or university. This may include work at festivals or camps, if offered through a regionally accredited institution. To qualify for summer credit, a student must be in good standing, consult the Office of Academic Services, and submit courses for evaluation through the Transfer Credit portal in YES. A detailed course syllabus is required in order for a course to be evaluated. Deadline for pre-approval is April 1.

Semester work at another institution. Students wanting to receive transfer credit for a semester of work at another regionally accredited institution must receive approval in advance from the associate dean. To qualify for such credit, the student must be in good standing and must present a plan that makes clear the educational rationale for such work, the ways in which it supplements the Vanderbilt curriculum, and the equivalence of standards to those at Vanderbilt. Approval of the overall plan must be followed by approval of specific courses by the associate dean and submission of courses through the transfer credit evaluation process in YES. A detailed course syllabus is required in order for a course to be evaluated. Students enrolled full time (i.e., carrying at least 12 credit hours) during a regular (fall or spring) semester are assumed to be engaged in full-time study at Vanderbilt. Such students are not permitted to take additional course work elsewhere, for transfer credit, during the semester. This includes online courses as well as courses offered by nearby institutions.

Engineering: Work that a student contemplates taking at a college or university other than Vanderbilt after matriculating to VU is treated as transfer work and must be approved in advance in writing through the YES Transfer Credit application. The institution must have appropriate regional accreditation. It is the student's responsibility to provide all information needed for an assessment of the program and course(s) for which transfer credit is requested. Students must upload a detailed syllabus, which then must be approved by the Office of the University Registrar, the relevant Vanderbilt University department, and the School of Engineering Dean's Office. Work transferred to Vanderbilt from another institution will not be included in the Vanderbilt grade point average. No transfer credit course in which a grade below C- was earned or that was taken after the start of the penultimate Vanderbilt semester will be credited toward a degree offered by the School of Engineering. A course a student has taken at Vanderbilt may not be repeated in another institution to obtain a higher grade or to obtain credit. Students who have been dismissed from Vanderbilt and subsequently return to Vanderbilt are not eligible to receive transfer credit for any classes taken during the period of dismissal. Students cannot take courses for transfer credit at or through another institution while simultaneously enrolled in a semester at Vanderbilt unless authorized in advance by the School's Administrative Committee.

Peabody: Students who transfer from another institution must have a final transcript sent directly to the Undergraduate Admissions Office, Vanderbilt University. Upon acceptance, students will be asked to submit course descriptions and syllabi for all proposed transfer credit. Upon acceptance, courses will be evaluated by Vanderbilt to determine which courses will transfer and which requirements (e.g., Liberal Education Core, professional core) are met by the transfer courses. No course for which a student received the grade D+ or lower will transfer. Course work transferred to Vanderbilt from another institution will not carry with it a grade point average.

Transfer students must complete at least 60 hours of work at Vanderbilt. Two of the four semesters in residence must be the last two semesters of the student's degree program.

Peabody students who wish to take course work during the summer, or during an academic-year semester, at a regionally accredited two-year or four-year college or university and transfer up to 12 hours to Vanderbilt must be in good standing with at least a C average. Prior approval must be granted for all courses to be taken elsewhere. If the courses are to be taken during the academic year, the student must take a personal leave explicitly approved for this purpose by the Peabody Dean's Office. Students on leave for other reasons (e.g., medical or other personal reasons) cannot take course work elsewhere for transfer credit without prior permission. Course work transferred to Vanderbilt from another institution will not carry with it a grade point average.

Requests to participate in non-Vanderbilt-approved overseas programs for transfer credit will be approved only under exceptional circumstances in which the proposed program represents a truly unique and unusual educational opportunity. To apply for approval, the student should complete the transfer of credit application and apply for a leave of absence for the relevant semester. The student must be in good standing with at least a 2.700 grade point average as of the date of application, and approval must be granted in advance of the study overseas. Petitions for leaves of this type must be filed at least one month before the close of the preceding semester, and final approval of such petitions always rests with the dean's office. It should be noted, however, that if a program has been approved by Vanderbilt, students must enroll in the program via the Global Education Office. In no case, after matriculating at Vanderbilt, may a student apply to participate in an approved program for transfer credit through a different university, or through an external agency, and then seek to transfer that credit into Vanderbilt.

Students enrolled full time (i.e., carrying at least 12 credit hours) during a regular (fall or spring) semester are assumed to be engaged in full-time study at Vanderbilt. Such students are not permitted to take additional course work elsewhere, for transfer credit, during the semester. This includes online courses, as well as courses offered by nearby institutions.

Summer or Winter Work at Another Institution (A&S)

Arts & Science: Students enrolled in the College of Arts and Science may receive transfer credit for a maximum of two courses taken during summer or winter at a regionally-accredited institution. To qualify for such credit, the student must be in good academic standing and must obtain prior authorization from the appropriate department by submitting courses through the Transfer Credit Submission application in YES. A detailed course syllabus is required in order for a course to be evaluated. Such courses cannot fulfill AXLE requirements, count as part of the last 30 credit hours in residence, duplicate a course taken previously, or be taken on a Pass/Fail or similar basis. Students cannot transfer credit for summer or winter work from outside of the country of their permanent home address.

Credit by Examination (A&S, Blair, VUSE, PBDY)

Arts & Science: In certain circumstances, students may be awarded course credit by departmental examination. (This procedure is distinct from the award of credit through the College Board Advanced Placement Tests taken prior to the student's first enrollment.)

Students who wish to earn credit by departmental examination should consult the Dean's Office of Undergraduate Education in Arts and Science concerning procedures. To be eligible, students must be carrying a minimum of 12 credit hours and be in good standing.

Students must obtain the approval of the chair of the department that is to give the examination and the instructor designated by the chair. Students may earn up to 18 hours of credit by any combination of credit through advanced placement examinations and credit by departmental examination. Students may earn up to 8 hours of credit by examination in any one department. Students may attempt to obtain credit by examination no more than twice in one semester, no more than once in one course in one semester, and no more than twice in one course. Students may not repeat a course for grade replacement under the credit by examination procedures. Credits earned by

credit by examination may not be counted toward AXLE.

Credit hours and grade are awarded on the basis of the grade earned on the examination, subject to the policy of the department awarding credit. Students have the option of refusing to accept the credit hours and grade after learning the results of the examination.

Students enrolled for at least 12 credit hours are not charged extra tuition for hours earned through credit by examination, so long as the amount of credit falls within the allowable limits of an 18-hour tuition load, including no-credit courses and courses dropped after the Change Period. Students in this category must pay a \$50 fee for the cost of constructing, administering, and grading the examination. Since this cost has already been incurred, students who refuse the credit hours and grade are charged the \$50 fee nevertheless.

Full-time students with a tuition load exceeding 18 credit hours and students taking fewer than 12 credit hours pay tuition at the regular rate with no additional fee.

Blair: In certain circumstances, students may be awarded course credit (a maximum of 8 hours) by departmental examination. This procedure is distinct from the awarding of credit through the College Board Advanced Placement Tests or the International Baccalaureate. Students apply for credit by examination through the Blair Office of Academic Services.

To earn credit by departmental examination, students must be enrolled for at least 12 hours, be in good standing, be recommended by their advisers, and have the approval of the appropriate department. In addition, students must seek prior approval of their study plan through the associate dean's office. Students may attempt to earn credit by examination in no more than two courses in one semester, only once in any course in one semester, and no more than twice in the same course.

Credit hours and grade are awarded on the basis of the grade earned on the examination, subject to the policy of the department awarding credit. Students have the option of refusing to accept the credit hours and grade after learning the results of the examination.

Students enrolled for at least 12 hours are not charged extra tuition for hours earned through credit by examination, so long as the amount of credit falls within the allowable limits of an 18-hour tuition load, including no-credit courses and courses dropped after the change period. Students in this category must pay a \$50 fee for the cost of constructing, administering, and grading the examination. Since this cost has already been incurred, students who refuse the credit hours and grade are charged the \$50 fee nevertheless. Full-time students with a tuition load exceeding 18 hours and students taking fewer than 12 hours pay tuition at the regular rate, per credit hour, with no additional fee.

Engineering: In certain circumstances students may be awarded course credit by departmental examination. (This procedure is distinct from the award of credit through the College Board Advanced Placement or International Baccalaureate Examinations, taken prior to a student's first enrollment at Vanderbilt or another college.)

Students who want to earn credit by departmental examination should consult the associate dean concerning procedures. To be eligible, students must be in good standing.

Students must obtain the approval of the chair of the department that is to give the examination and of the instructor designated by the chair. Students may earn up to 8 hours of credit by examination in any one department, although this limitation might be raised on approval of the Administrative Committee. Students may

attempt to obtain credit by examination no more than twice in one semester, no more than once in one course in one semester, and no more than twice in one course.

Credit hours and grade are awarded on the basis of the grade earned on the examination, subject to the policy of the department awarding credit. Students have the option of refusing to accept the credit hours and grade after learning the results of the examination.

Students enrolled for at least 12 hours are not charged tuition for hours for which credit by examination is awarded, so long as the amount of credit falls within the allowable limits of an 18-hour tuition load, including no- credit courses dropped after the change period of registration. Students in this category must pay a fee of \$50 for the cost of administering the examination.

Peabody: In certain circumstances students may be awarded course credit by departmental examination. (This procedure is distinct from the award of credit through the College Board Advanced Placement Tests taken prior to a student's first enrollment.). Students wanting to earn credit by departmental examination should consult the Peabody Office of Academic Services concerning procedures. To be eligible, students must be carrying a minimum of 12 hours and be in good standing.

Students must obtain the approval of the chair of the department that is to give the examination and the instructor designated by the chair. Students may earn up to 8 hours of credit by examination in any one department. Students may attempt to obtain credit by examination no more than twice in one semester and no more than twice in one course. Students may not repeat a course for grade replacement under the credit by examination procedures.

Credit hours and grade are awarded on the basis of the grade earned on the examination, subject to the policy of the department awarding credit. Students have the option of refusing to accept the credit hours and grade after learning the results of the examination.

Students enrolled for at least 12 hours are not charged extra tuition for hours earned through credit by examination, so long as the amount of credit falls within the allowable limits of an 18-hour tuition load, including no- credit courses and courses dropped after the change period. Students in this category must pay a \$50 fee for the cost of constructing, administering, and grading the examination. Since this cost has already been incurred, students who refuse the credit hours and grade are charged the \$50 fee nevertheless.

Full-time students with a tuition load exceeding 18 hours and students taking fewer than 12 hours pay tuition at the hourly tuition rate.

Degree Progression & Class Standing

[Requirements for the Degree \(VUSE\)](#)

[Grade Point Average Requirements \(VUSE\)](#)

[Graduation Requirements \(Blair, VUSE, PBDY\)](#)

[Scholarship Student Requirements \(Blair, VUSE\)](#)

[Liberal Education Core Guidelines \(PBDY\)](#)

[Progress Evaluation \(PBDY\)](#)

[Writing Portfolio \(Blair\)](#)

[Degree Audit Reports \(Blair\)](#)

[Declaring of Major and of Second Major \(PBDY\)](#)

[Overlap in Course Work between Multiple Majors and Minors \(PBDY\)](#)

[Class Standing \(A&S, Blair, VUSE, PBDY\)](#)

[Senior in Absentia \(A&S\)](#)

Requirements for the degree (VUSE)

Engineering: Engineering: Candidates for a degree must have completed satisfactorily all curriculum requirements, have passed all prescribed examinations, and be free of indebtedness to the university. If graduation requirements change during the time students are in school, they may elect to be bound by the requirements published in the catalog in any year during their undergraduate academic career at Vanderbilt.

Grade Point Average Requirements (VUSE)

Engineering: To be eligible for graduation, a student must have successfully completed all degree requirements and shall have earned a minimum grade point average of 2.000 in (a) all courses taken, (b) courses taken within the School of Engineering, and (c) department courses of each major.

Graduation Requirements (Blair, VUSE, PBDY)

Blair: Candidates for degrees must have completed 126 hours and all curriculum requirements, have passed all prescribed examinations, and be free of indebtedness to the university.

Exceptions to stated degree requirements and procedures must be approved by the Curriculum Committee as the representative body of the faculty in matters pertaining to the curriculum.

The minimum grade point averages required for graduation are 2.0 overall and 2.0 in music. A student taking a second major must earn a 2.0 in that major in order for it to be certified on the transcript.

If requirements for graduation change, students may elect to be bound by requirements published in the *Undergraduate Catalog* in either their entering or their graduating year.

Engineering: The specific course requirements and total hours required for the bachelor's degree vary with the student's major program. Detailed requirements for each program are shown in the specimen curricula in the Courses of Study section.

Peabody: The specific course requirements and total hours required for the bachelor's degree vary with the student's major program. Detailed requirements for each program are shown in the specimen curricula in the Courses of Study section.

Scholarship Student Requirements (Blair, VUSE)

Blair: Students receiving honor scholarships through Blair School of Music must be enrolled full time, taking all assigned music courses, must qualify for class standing, and must maintain each semester minimum grade point averages of 2.0 overall and 2.7 in music. Students receiving the Cornelius Vanderbilt Honor Scholarship must maintain a minimum 3.0 grade point average overall and 3.0 in music each year. Additional requirements may be stipulated in scholarship award letters.

Honor scholarship awards are considered for renewal annually. Student work will be reviewed at the end of spring semester for possible renewal for the following academic year. Temporary grades may adversely affect renewal. A student who falls short of the requirements will normally have the scholarship for one semester of grace, after which, if requirements are still not met, the scholarship will be lost.

Students receiving scholarships or grants as part of their financial aid packages (not honor scholarships) must qualify for class standing in order to be considered for renewal each year. Students receiving federal aid are expected to make satisfactory academic progress as outlined in the chapter on Financial Information.

Engineering: Those students having honor scholarships are expected to maintain a 3.000 grade point average while taking a minimum of 12 hours. Failure to maintain a 3.000 grade point average each year will result in the cancellation of the scholarship.

Liberal Education Core Guidelines (PBDY)

Peabody: Applicants to Peabody College will be required to take the SAT I or ACT writing test and the SAT II mathematics test. Students with majors in human and organizational development, cognitive studies, child studies, or child development do not need the SAT II mathematics test. For applicants applying for Fall 2022 entry, Vanderbilt is test optional. Scores from the ACT or SAT are not required to be considered for admission. Applicants who want their test scores to be considered may self-report them on the application or may have official scores sent to Vanderbilt by the testing agency. Official test scores are required for students who applied with testing and who were admitted and enroll.

The following application of these scores will be made to the Peabody Liberal Education Core:

Writing Requirement

Before graduation, all Peabody students must successfully complete two writing courses and credit for the ENGL 1100s. Writing-intensive courses either have a "W" after the course number (A&S courses) or end with the digit "7" (Peabody courses).

To earn credit for ENGL 1100, students must complete one of the following:

- English 1100
- SAT: Combined score of at least 1220 on the Writing and Critical Reasoning sections, with a minimum score of 500 on each (test taken prior to March 2016).
- SAT: Score of at least 660 on the Evidence-Based Reading and Writing section, with a minimum score of 27 on the Reading section and a minimum score of 28 on the Writing and Language section (test taken March 2016 or later).
- ACT: Score of at least 27 on the English portion combined with a minimum score of 7 on the Writing portion (test taken prior to September 2015).
- ACT: Score of at least 27 on the English portion combined with a minimum score of 19 on the Writing portion (test taken between September 2015 and September 2016).
- ACT: Score of at least 30 on the English portion.
- AP: Minimum score of 4 on the English Language or English Literature exam.
- IB: Minimum score of 6 on the Higher level English A Literature or the Higher Level English A Language & Literature exam.
- Minimum score of 62 on the Tailwind Writing Skill and Reading Comprehension Proficiency Exam.

First-year seminars (courses labeled 1111) offered through the College of Arts and Science and Blair School of Music may count as writing-intensive courses. Peabody freshmen may register for first-year seminars when open registration begins if there are available seats in the course not reserved for Arts and Science students or Blair students. Peabody students are not *required* to take a First-year Writing Seminar.

Mathematics

Students with first majors in elementary, secondary, or special education with an SAT II Mathematics test score at or above 620 (Level I) or at or above 570 (Level II) are exempt from three hours of the math component of the Liberal Education Core mathematics category. Students with an exemption must take an additional three credit hours in their Liberal Education Core elective category to have the minimum required sixty-hour core. Students must take a statistics course if required for their major.

Students with first majors in child development, child studies, cognitive studies, or human and organizational development must take six hours as stated in the Liberal Education Core mathematics category.

Progress Evaluation (PBDY)

Peabody: Students enrolled in Peabody College are expected to satisfy most Liberal Education Core requirements during the freshman and sophomore years. Although legitimate circumstances sometimes force the postponement of Liberal Education Core requirements, upper-level students are not expected to have a significant number of Liberal Education Core requirements outstanding. A student who, in the opinion of the faculty adviser, the department chair, or the associate dean for undergraduate academic affairs, is not making satisfactory progress toward meeting Liberal Education Core or other degree requirements may be reported to the Undergraduate Administrative Committee and is subject to being placed on academic probation by that committee. Students placed on academic probation for failure to make satisfactory progress toward a degree must remove the deficiency in the manner specified by the Administrative Committee.

Writing Portfolio (Blair)

Blair: Students in their senior year are required to submit a writing portfolio drawn from academic course work from one or more classes to be evaluated by a faculty committee. Emphasis should be placed on demonstrating an ability to write clearly and effectively and on the student's ability to form connections across two or more disciplines. Students are required to prepare a one-paragraph narrative explaining how the submitted work demonstrates the required competencies.

Degree Audit Reports (Blair)

Blair: An online degree audit is available on YES to all Blair students, showing total hours earned, degree requirements completed, and those still to be met. Students should examine the audit carefully with their faculty advisers. Problems or suspected errors should be discussed immediately with the Blair Office of Academic Services.

Declaring of Major and of Second Major (PBDY)

Peabody: Peabody students declare a major as part of the application process prior to admission. In their first semester, Peabody freshmen are expected to take course work recommended for the major into which they were admitted. Students wishing to change into a different major within Peabody cannot declare this change until March of their first year. Second majors must be declared no later than the second semester of the sophomore year. Also, during the sophomore year, students majoring in secondary education and special education will be required to declare their area of specialization or track.

Overlap in Course Work between Multiple Majors and Minors (PBDY)

Peabody: Students pursuing multiple majors and/or optional minors are limited in the amount of course work that can be shared across their major and minor programs of study. If the major or minor is offered through a school other than Peabody, the amount of course work that can be shared between that major or minor and other majors or minors is determined by that school's policies. For a major offered through Peabody College, at least 21 credit hours need to be unique to that major. That is, 21 hours within the major cannot be used to count toward any other major or minor. For a minor offered through Peabody College, at least 15 hours need to be unique to that minor. Students in the School of Engineering may use courses taken in Peabody College for relevant second majors even if those courses also fulfill a School of Engineering degree requirement.

Class Standing (A&S, Blair, VUSE, PBDY)

Arts & Science: The Administrative Committee determines how many semesters will be allowed for each part-time student to attain sophomore, junior, or senior standing.

The internal record of a student dropped from the university under these regulations shows the notation "Failed to qualify for class standing."

Sophomore Standing

A student qualifies for sophomore standing upon completion of 24 credit hours of work with a grade point average of at least 1.800, completion of two regular semesters (fall or spring), and completion of the first-year writing requirement: successful completion of English 1100 if required and successful completion of a First-Year Writing Seminar (numbered 1111 in various disciplines). First-year students who fail to qualify for sophomore standing in two semesters are placed on probation and must have the permission of the Administrative Committee to register for a third semester. The third semester must be the summer semester at Vanderbilt. Normally, students who do not qualify for sophomore standing during this third semester are dropped from the university.

Junior Standing

A student qualifies for junior standing upon completion of 54 credit hours of work with a grade point average of 1.900, completion of four regular semesters (fall or spring), and completion of a W course at any level (other than ENGL 1100 or a First-Year Writing Seminar). Sophomores who fail to qualify for junior standing within two semesters after qualifying for sophomore standing are placed on probation and must have the permission of the Administrative Committee to register for another semester. This additional semester must be the summer semester at Vanderbilt. Normally, students who do not qualify for junior standing in this additional semester are dropped from the university.

Senior Standing

A student qualifies for senior standing upon completion of 84 credit hours of work with a grade point average of 2.000 and completion of six regular semesters (fall or spring). Juniors who fail to qualify for senior standing within two semesters after qualifying for junior standing are placed on probation and must have the permission of the Administrative Committee to register for another semester. This additional semester must be the summer semester at Vanderbilt. Normally, students who do not qualify for senior standing in this additional semester are dropped from the university.

Seniors who fail to maintain a minimum grade point average of 2.000 are placed on probation and must have the permission of the Administrative Committee to register for another semester.

Blair: To qualify for sophomore standing, a student must complete a minimum of 24 hours with a grade point average of 1.8 and have completed two regular semesters.

To qualify for junior standing, a student must complete a minimum of 54 hours with a grade point average of 1.9, must complete MUTH 2200 and MUTH 2220, and must have completed four regular semesters.

To qualify for senior standing, a student must complete a minimum of 86 hours with a grade point average of 2.0 and have completed six regular semesters.

Engineering: School of Engineering students are promoted on the basis of cumulative GPA, hours earned, and regular semesters in residence. For the purposes of promotion, a regular semester is defined as any fall or spring

term in which a student is enrolled at Vanderbilt University. Test credit and transfer credit can be used to satisfy the credit hour requirement.

VUSE Promotion Standards

Class Standing	GPA Requirement	Credit Hour Requirement	Minimum Residence Requirement
Sophomore	1.80	24 hours earned	2 regular semesters
Junior	1.90	54 hours earned	4 regular semesters
Senior	2.00	86 hours earned	6 regular semesters

Peabody: To qualify for sophomore standing, a freshman must earn at least 24 hours with a grade point average of at least 1.800 and have completed two regular semesters. A freshman who fails to achieve sophomore standing at the end of two regular semesters is placed on probation and has one additional semester in which to qualify for sophomore standing. This additional semester must be the summer session at Vanderbilt. Normally, students who fail to qualify for sophomore standing in the third semester are dropped from the university.

A student qualifies for junior standing by earning 54 hours with a grade point average of at least 1.900 and having completed four regular semesters. Students who fail to qualify for junior standing at the end of two semesters after qualifying for sophomore standing are placed on probation and must qualify in an additional semester. This third semester must be the summer session at Vanderbilt. Normally, students who do not qualify for junior standing in this additional semester will be dropped from the university.

A student qualifies for senior standing by earning 84 hours with a grade point average of at least 2.000 and having completed six regular semesters. A student who fails to qualify for senior standing within two semesters of qualifying for junior standing will be placed on probation and must qualify in one additional semester. This additional semester must be the summer session at Vanderbilt. Normally, students who do not qualify for senior standing in this additional semester will be dropped from the university.

Senior in Absentia (A&S)

Arts & Science: A student who wishes to earn a baccalaureate degree in the College of Arts and Science in absentia must have (a) completed the AXLE requirements and all major requirements; (b) earned at least 105 credit hours and a grade point average of 2.000 with at least 60 credit hours earned in a minimum of four semesters of residence in the College of Arts and Science; (c) been accepted at a professional or graduate school where, during the first year, the remaining credit hours needed for graduation can be earned; and (d) obtained the approval of the major department and an associate dean of the College of Arts and Science. Students who have completed fewer than 105 credit hours may petition the Administrative Committee for special consideration.

The limitation on credit hours outside the College of Arts and Science applies to all bachelor of arts candidates.

Students in the senior-in-absentia program pay a minimum semester tuition charge to the College of Arts and Science (see [Financial Information](#)).

Examinations

Examinations (A&S, Blair, VUSE)

Arts & Science: Each department establishes procedures for evaluating student performance, and normally the method of evaluation is the responsibility of the course instructor. At the beginning of the semester instructors should clearly state the evaluation procedures, including types of examinations, to be used in their courses. Students should have adequate opportunity during the semester to demonstrate their knowledge of the subject matter and should be given an indication of their progress in the course prior to the deadline for dropping courses.

Instructors are cautioned against placing excessive weight on the final examination when determining a student's grade in a course.

Blair: All examinations are conducted under the honor system. Primary and alternate exam schedules, which allow two hours for a final exam in each course, are listed on the University Registrar's website. The instructor may use the alternate schedule in addition to, but not instead of, the primary schedule.

Alternatives to standard in-class final examinations, such as term papers or take-home, self-scheduled, or oral examinations may be given at the instructor's discretion. A take-home exam is distributed at the last regular class meeting and must be completed by the latest time scheduled for the final examination.

Performance examinations are scheduled by area coordinators. Students giving full recitals during the semester may be exempted from performance examinations at the discretion of the instructor. If performance examinations are scheduled on a reading day (the day after classes end, when no course examinations are scheduled), students are also given the choice of a different day for their performance examinations.

A student who misses a final examination may be eligible to receive the grade *M* (see Temporary Grades).

Engineering: Examinations are usually given at the end of each semester. Exams will be no longer than three hours in length and are given according to the schedule published in the *Final Examination Schedule*. The School of Engineering does not offer an alternate examination schedule. All examinations are conducted under the honor system. Students must be present for all their scheduled final exams or otherwise will default on their exams.

Dead Week (A&S, Blair, PBDY)

Arts & Science: No examinations of any type—including quizzes, hour examinations, and portions of final examinations—are allowed during the last week of classes; papers and in-class presentations are permitted during dead week. The Administrative Committee may grant special permission to the instructor in charge of a course to give laboratory examinations during the last regular laboratory period of the last week of classes. The last week of classes is defined as the last seven calendar days preceding the end of classes. If, for example, classes end on Tuesday, then the “dead week” begins the preceding Wednesday and lasts through Tuesday. Students should notify the Dean’s Office of Undergraduate Education of any violation.

Blair: The last week of classes, i.e., the last seven calendar days before the final examination period each semester, is designated as dead week. No examinations of any type, including quizzes, portions of final examinations, recitals, or ensemble performances, may be given during this time without the express written permission of the dean and notification of students at least two weeks before dead week. Violations should be reported to the dean.

Peabody: Because Peabody classes integrate theory and practice, many courses include significant semester-long group and individual projects that culminate in papers, presentations, simulations, or other activities at the end of the semester. Therefore, while instructors are discouraged from scheduling quizzes, tests, or short-term assignments for the last week of the semester, Peabody’s “dead week” policy does not prohibit assignments during the week before finals.

Final Examinations (A&S)

Arts & Science: The primary and alternate final examination schedules issued each semester allow two hours for a final examination in each course. Each in-class final examination must be given at the time indicated on the primary schedule. The alternate schedule is used only if the instructor decides to give an in-class examination at two times. The final examination period lasts for about a week and a half.

Alternatives to the standard in-class final examination are permitted at the instructor's discretion. Some examples are take-home examinations, oral examinations, and term papers; there need not be a final examination if adequate evaluation procedures have been used during the term. A take-home or oral examination should make approximately the same demand on a student's time as an in-class examination and should be conducted during the final examination period. A take-home examination must be distributed at the last regular class meeting and must be completed by either the primary or the alternate examination date, whichever is later.

All examinations are conducted under the Honor System.

The instructor's record of grades given during a course and any final examination papers not returned to students must be kept on file by the instructor for the first month of the semester following the conclusion of the course. For spring semester and summer session courses, this rule means the first month of the fall semester.

Monitoring these regulations is the responsibility of the departments, under the supervision of the Dean's Office of Undergraduate Education. Variations from the regulations—such as changing the time of an in-class final examination for an entire class—are allowed only on approval of the Administrative Committee.

Comprehensive Examinations (A&S)

Arts & Science: Any department or interdisciplinary program may require a comprehensive examination of its major students as a condition of graduation.

Senior Re-Examination (A&S, Blair, VUSE, PBDY)

Arts & Science: A candidate for graduation who fails not more than one course in the final semester may be allowed one re-examination, provided the course failed prevents the student's graduation, and provided the student could pass the course by passing a re-examination. Certain courses may be excluded from re-examination. The re-examination must be requested through the Dean's Office of Undergraduate Education, and if approved, it is given immediately after the close of the last semester of the student's senior year. A student who passes the re-examination will receive a *D-* in the course. The terms and administration of senior re-examination are the responsibility of the school that offers the course.

Blair: A candidate for graduation who fails not more than one course in the final semester may be allowed one re-examination, provided the course failed would prevent the student's graduation, and provided the student could pass the course by passing a re-examination. Certain courses may be excluded from re-examination. The re-examination must be requested through the student's associate dean's office, and, if approved, it is given immediately after the close of the last semester of the student's senior year. A student who passes the re-examination will receive a *D-* in the course. The terms and administration of senior re-examination are the responsibility of the school that offers the course. Note: For engineering students taking engineering courses, the senior re-examination policy applies if a student fails not more than one course in the senior year.

Engineering: A candidate for graduation who fails not more than one course in the final semester may be allowed one re-examination, provided the course failed prevents the student's graduation, and provided the student could pass the course by passing a re-examination. Certain courses may be excluded from re-examination. The re-examination must be requested through the student's Dean's Office, and, if approved, it is given immediately after the close of the last semester of the student's senior year. A student who passes the re-examination will receive a *D-* in the course. The terms and administration of senior re-examination are the responsibility of the school that offers the course. For engineering students, this senior re-examination policy applies if a student fails a course in the final semester or fails a course in the penultimate semester that is not offered in the final semester, provided that failure in that one course is the only thing preventing the student's graduation.

Peabody: A candidate for graduation who fails not more than one course in the final semester may be allowed one re-examination, provided the course failed prevents the student's graduation, and provided the student could pass the course by passing a re-examination. Certain courses may be excluded from re-examination.

The re-examination must be requested through the Office of the Associate Deans, and if approved, it is given immediately after the close of the last semester of the student's senior year. A student who passes the re-examination will receive a D- in the course. The terms and administration of senior re-examination are the responsibility of the school that offers the course.

Academic Standards & Discipline

Academic Standing (VUSE)

Engineering:

Good Standing

To remain in good academic standing, a student must pursue a program leading toward a degree in the School of Engineering and meet all GPA and hours earned requirements at the conclusion of each fall and spring semester. A first-year student must successfully complete at least 12 hours and earn at least a 1.8 semester GPA each semester to remain in good standing. A sophomore, junior, or senior must complete at least 12 hours and earn at least a 2.0 semester GPA each semester to remain in good standing. In addition, a student must also promote to the next academic class every two regular semesters according to the VUSE promotion standards (above) to remain in good standing.

Probation

Students who fail to meet the GPA, hours earned, or class standing promotion standards required to remain in good standing will be placed on academic probation. Students who are not progressing toward a degree in the School of Engineering may be placed on academic probation. Students who fail to return to good standing after a semester on probation will be continued on probation or dismissed. Students who are on probation for three semesters risk dismissal.

A student authorized by the Administrative Committee to carry fewer than 12 hours because of illness or for some other approved reason may be placed on probation if the student's work is deemed unsatisfactory.

Required Leave of Absence

Under certain circumstances, a student may be required to take a semester-long leave of absence from the university. Such a leave may be required for students for whom one or more of the following conditions apply:

- Failing to pass 6 or more credit hours in a semester;
- Earning a semester grade point average of 1.4 or less; or
- Failing to improve academic achievement while on probation.

Dismissal

Any student who is deemed by the Administrative Committee not to be making satisfactory progress toward a degree in engineering will be dismissed from the School of Engineering and from Vanderbilt University. Satisfactory progress includes completing required courses in a timely manner and maintaining a 2.000 GPA in all courses, in the school, and in the student's major. Causes of dismissal include:

- Failure of all courses in any semester

- Three or more semesters on probation
- Failure to promote to the next class standing after three semesters
- Failure to progress toward a degree in the School of Engineering

Dismissed students are eligible to apply for reinstatement to the School of Engineering and to Vanderbilt University after one calendar year. The reinstatement process is outlined at registrar.vanderbilt.edu/reinstatement. Students who are dismissed and later apply for reinstatement are ineligible to receive transfer credit for courses taken while dismissed.

Sudden Academic Insufficiency (Blair, PBDY)

Blair: Any student who fails by a wide margin to reach prescribed levels of academic achievement, either at the end of a semester or at mid-semester, is reviewed by the associate dean's office in conjunction with the academic and studio adviser(s). If the student is not making satisfactory progress towards the degree, the student may be placed on probation or may be advised or required to take a leave of absence or advised to withdraw from the university.

Appeals of such findings should be addressed to the Blair Curriculum Committee.

Peabody: Any student who fails by a wide margin to reach prescribed levels of academic achievement, either at the end of a semester or at mid-semester, or who has been placed on probation more than once is reviewed by the Peabody Undergraduate Administrative Committee. The Committee considers each case within the general guidelines for maintenance of satisfactory academic standing and may take any of several actions, among which are the following:

- The student may be placed on probation;
- The student may be advised to take a leave of absence or to withdraw from the university;
- The student may be required to take an academic probationary leave of absence;
- The student may be dismissed from the university.

Under certain circumstances, a student who has been formally dismissed may be readmitted to Peabody. The Peabody Undergraduate Administrative Committee must review and approve any request for readmission.

Academic Discipline (A&S)

Arts & Sciences: The College of Arts and Science requires each student to maintain an academic record that will permit graduation according to a specified schedule. Students are considered to fall short of the expected rate of progress when

1. They pass fewer than 12 credit hours in a semester or have a semester grade point average lower than 1.500; or
2. In a summer they take 12 or more credit hours but pass fewer than 12 credit hours or earn a grade point average lower than 1.500; or
3. They fail to achieve sophomore, junior, or senior standing within the time allowed; or
4. They accumulate more than two probations after the freshman year, in which case they will normally be dropped from the university; or
5. As first-semester freshmen they pass fewer than two courses or earn a semester grade point average lower than 1.000, in which case they may be required to take a probationary leave of absence; or
6. As first-semester freshmen they earn fewer than 9 credit hours or a semester grade point average lower than 1.500, in which case they may be offered a choice (see Semester Requirements below).

Any student who falls somewhat short of the prescribed levels of academic achievement is normally placed on probation. Any student who fails by a wide margin to reach these levels or who has been placed on probation more than once is reviewed by the Administrative Committee, and may be dropped from the university without having previously been placed on academic probation. The committee considers each case within the framework of the guidelines outlined below and may take any of several actions, among which are the following:

1. The student may be placed on probation;
2. The student may be advised to take a leave of absence or to withdraw from the university;
3. The student may be required to take a leave of absence;
4. The student may be dropped from the university.

Semester Requirements (A&S)

Arts & Science: Full-time students are expected to earn each semester at least 12 credit hours and a minimum grade point average of 1.500. Students who fall short of these levels are normally placed on probation. Students are removed from probation after earning at least 12 credit hours and a semester grade point average of 1.500 or better, assuming they have fulfilled the requirements for class standing stated below.

First-year students who pass fewer than two regular courses in their first regular semester or who earn a semester grade point average lower than 1.000 have so seriously compromised their academic standing that they may be required to take a probationary leave of absence until the beginning of the following fall semester.

First-year students who earn fewer than 9 credit hours or a grade point average lower than 1.500 in the fall may, at the discretion of the Administrative Committee, choose a probationary leave for the spring and return the next fall with two semesters in which to qualify for sophomore standing.

A student on probationary leave may not earn credit at another institution for transfer to Vanderbilt. In appropriate cases the Administrative Committee may prescribe conditions that must be satisfied before the student returns from a probationary leave. Students who do not choose to return at the end of a probationary leave but want to return later are required to apply for reinstatement.

After their first year, full-time students may not be placed on probation more than twice (continuance on probation for a second semester counts as another probation). If a student's performance is deficient a third time, the student is dropped from the university.

Students who have been authorized to carry fewer than 12 credit hours because of illness or outside employment may be placed on academic probation if their work is deemed unsatisfactory by the Administrative Committee; they are removed from probation when the committee deems their work satisfactory. If they are not removed from probation after a reasonable period of time, such students are dropped.

The internal record of a student dropped from the university under these regulations shows the notation "Dropped for scholastic deficiency."

Academic Probation and Dismissal (Blair, PBDY)

Blair: Students are placed on probation if they fail to meet class standing benchmarks, as noted above. Students on probation must qualify for class standing in one additional semester or risk being dropped from the university.

Students are placed on academic probation: if they fail to meet class standing benchmarks; if they complete fewer than 12 hours in a fall or spring semester except in cases involving documented mitigating circumstances (illness, injury, or family emergency); or if their semester grade point averages fall below 1.8 overall or 2.0 in music. In addition, first-year students are placed on academic probation if they do not complete one writing course.

Incomplete grades may adversely affect class standing or grade point averages.

Students on academic probation may not transfer summer study credit, elect to take courses on a Pass/Fail basis, earn credit by departmental examination, or participate in any extracurricular performance activity. They are required to participate in a special academic advising program. Students will be placed on probation no more than twice. Students who are candidates for probation a third time will be dropped from the university.

Peabody: After achieving sophomore standing, the student may not be on academic probation for more than two

semesters. A student whose academic record warrants a third semester of probation normally will be dropped from the university. Students will be placed on academic probation if any of the following conditions apply:

Freshmen

1. The student's cumulative grade point average falls below 1.800. Probation is removed (assuming there is no other reason for the probation) when the student's grade point average is raised to 1.800 or above.
2. The student fails to earn at least 12 hours in a regular semester as a freshman. Probation is removed when the student earns at least 12 hours in a subsequent semester and/or is judged to be making satisfactory academic progress.
3. The student fails to achieve sophomore standing in the required two semesters. Probation is removed when the student achieves sophomore standing.
4. Freshmen who pass fewer than two regular courses in their first regular semester or who earn a grade point average lower than 1.000 have so seriously compromised their academic standing that they may be required to take an academic probationary leave of absence during the spring semester.

Sophomores

1. The student's cumulative grade point average falls below 1.800. Probation is removed (assuming there is no other reason for the probation) when the student's grade point average is raised to 1.800 or above, except that at the end of the second regular semester the student must qualify for junior standing.
2. The student fails to earn at least 12 hours in a regular semester as a sophomore. Probation is removed when the student earns at least 12 hours in a subsequent semester and/or is judged to be making satisfactory academic progress.
3. The student is placed on probation by the Undergraduate Administrative Committee for failure to make satisfactory progress toward the degree. Probation is removed when the specified conditions are met.
4. The student fails to achieve junior standing in the required two semesters after achieving sophomore standing. Probation is removed when junior standing is achieved.

Juniors

1. The student's cumulative grade point average falls below 1.900. Probation is removed (assuming there is no other reason for the probation) when the grade point average is raised to 1.900 or above, except that at the end of the second regular semester the student must qualify for senior standing.
2. The student fails to earn at least 12 hours in a regular semester as a junior. Probation is removed when the student earns at least 12 hours in a subsequent semester and/or is judged to be making satisfactory academic progress.
3. The student is placed on probation by the Undergraduate Administrative Committee for failure to make satisfactory progress toward the degree. Probation is removed when the specified conditions are met.
4. The student fails to achieve senior standing in the required two semesters after achieving junior standing. Probation is removed when senior standing is achieved.

Seniors

1. The student's cumulative grade point average falls below 2.000. Probation is removed when the grade point average is raised to 2.000 or above.
2. The student fails to earn at least 12 hours in a regular semester as a senior, unless the semester is one in which the student needs fewer than 12 hours in order to complete the requirements for graduation (see section on Course Load, above). Probation is removed when the student earns at least 12 hours in a subsequent semester and/or is judged to be making satisfactory academic progress and/or completes the requirements for graduation.

Petitions and Appeals (A&S, PBDY)

Arts & Science: The Administrative Committee of the College of Arts and Science entertains petitions from currently enrolled students for exceptions to academic regulations. Any student subject to action by the Administrative Committee may appeal that action to the committee in writing. Further appeals from decisions of the committee follow standard university policies as described in the *Student Handbook*.

Peabody: The procedures of the appeal process pertaining to academic matters within Peabody College are listed below. Please see the chapter "Student Accountability" in the Vanderbilt University *Student Handbook* for a description of the appeal process for non-academic matters.

Petitions for exceptions to academic policies, appeals of academic policy implementations by Peabody Dean's Office staff, and appeals of academic actions by the Undergraduate Administrative Committee (UAC) Chair (e.g., letters of dismissal) may be directed to the full UAC.

Petitions and appeals should be sent to the Peabody Office of Academic Services
- peabodyacademicservices@vanderbilt.edu, Peabody Administration Building.

A student may ask the UAC to reconsider a decision if the student has new information to offer. The chair of the UAC will decide whether the full UAC will reconsider. Requests for reconsideration of UAC decisions should be sent to the above address.

A final, negative decision of the UAC may be appealed to the dean of Peabody College (at the above address), who may assign an associate dean to handle the matter on the dean's behalf. The dean or associate dean will consult with the UAC and other relevant faculty or staff as part of the review of the decision.

Further appeals beyond Peabody College should be directed to the Provost's Office.

Enrollment Status & Changes

[Transfer Students \(Blair\)](#)

[Alternate Track \(PBDY\)](#)

[Leave of Absence \(A&S, Blair, VUSE, PBDY\)](#)

[Returning to the College \(A&S\)](#)

[Withdrawal from the University \(A&S, VUSE, PBDY\)](#)

[Change of Address \(A&S, Blair, VUSE\)](#)

Transfer Students (Blair)

Blair: Transfer applicants must comply with university standards (see the chapter on Admissions). The required audition is of major importance in the evaluation of any application. Composition applicants must submit a composition portfolio and interview with a member of the composition faculty.

Transfer students must submit catalog copy and course syllabi from the previous institution(s). A level of performance study is assigned based on the entrance audition. Credit for courses is subject to evaluation. Music courses may require an examination to verify placement and/or credit at Vanderbilt, and credit for non-music courses must be approved through the YES Transfer Credit portal. Transfer students must complete at least half the credit required for the degree, or 63 hours, at the Blair School. See also, *Transfer courses*.

Intra-university transfer. Students intending to transfer within the university should meet with the head of academic advising and file appropriate paperwork. For students transferring out of the B.Mus. or B.Mus.Arts program, music fees are covered through the end of the final term as a B.Mus. or B.Mus.Arts student. All students are expected to maintain a minimum of 3 credit hours within their home school until transfer is approved. First-year students are ineligible for transfer status until the end of their second semester. Students who transferred to Vanderbilt University from another institution are eligible for intra-university transfer after having completed one semester in residence and having achieved sophomore standing. See also, the chapter on Admissions.

Alternate Track (PBDY)

Peabody: Occasionally students find that it will be necessary to reduce their normal load due to medical reasons, varsity athletics, or other circumstances. The result is that they will accomplish the bachelor of science degree in nine or ten semesters instead of eight. In such cases, the student may request Alternate Track status. After discussing this option with their parents and faculty adviser, students petition the Associate Dean for Undergraduate Academic Affairs for permission. This normally takes place during the sophomore year. Additional information is available by contacting the Associate Dean for Undergraduate Academic Affairs.

Leave of Absence (A&S, Blair, VUSE, PBDY)

Arts & Science: A student desiring a leave of absence should obtain instructions from the Dean's Office of Undergraduate Education in the College of Arts and Science. All students who have completed one regular (fall/spring) semester at Vanderbilt are eligible, provided they have not been dropped by the university and are not dropped at the end of the semester during which application is made. Students may take a leave no more than twice during their career in the College of Arts and Science.

Leaves are granted for one semester or for a year. Applications should be completed before the end of the fall semester for a leave of absence during the spring semester, and before August 15 for a leave of absence during the fall semester (or for the academic year). If the leave is approved, the student must keep the Office of the University Registrar informed of any change of address while on leave.

A student who takes a medical leave after mid-semester is expected to be on leave for the following regular semester as well. A student who plans to return from medical leave must submit appropriate documentation to the Dean's Office of Undergraduate Education and the Office of Student Care Coordination.

A student in good standing who seeks to transfer to Vanderbilt credit earned elsewhere while on leave of absence must obtain permission in advance from the Office of Undergraduate Education. Requests for leave of absence for purpose of semester study away may be allowed if the semester study-away institution is domestic to the student. Requests for leave of absence plus semester study away are not allowed if the semester study-away institution is international to the student.

Registration information is emailed to students on leave of absence. A student failing to register at the conclusion of the stated leave will be withdrawn from the university and must apply for reinstatement.

Blair: A student in good standing may, with the approval of the associate dean, take leave of absence for one or two semesters. Application forms, available from the Blair Office of Academic Services, must be submitted by 1 December for spring semester leave or by 1 May for fall semester.

Students planning to study elsewhere while on leave (elective courses) must have prior approval if credits are to be transferable. Upon the student's return, a performance examination during the first two weeks of the semester may be needed to determine the student's standing in the major performance area.

Registration notifications are emailed to students on leave. A student failing to register at the conclusion of the stated leave will be withdrawn from the university and must apply for readmission.

Students who have been on leave of absence and not enrolled for three or more semesters or who leave the university while on academic probation must re-audit and achieve the approval of the associate dean prior to readmission.

Engineering: A student at Vanderbilt or one who has been admitted to Vanderbilt may, with the approval of his or her academic dean, take an official leave of absence for as much as two semesters and a summer session. Leave of absence forms are available in the Office of Academic Services. A student who fails to register in the university at the end of the leave will be withdrawn from the university.

Peabody: A student desiring a leave of absence should obtain the appropriate forms from the Peabody Office of Academic Services website: peabody.vanderbilt.edu/admin-offices/oas/downloads.php. All students are eligible, provided they have not been dropped by the university and are not dropped at the end of the semester during which application is made.

Leaves are granted for one or two semesters. Applications should be completed before the end of the fall semester for a leave of absence during the spring semester and before 15 August for a leave of absence during the fall semester (or for the academic year). If the leave is approved, the student must keep the Dean's Office informed of any change of address while on leave.

Should a student seek to transfer to Vanderbilt credit earned elsewhere while on a leave of absence, it is mandatory that permission be obtained **in advance** from the Dean's Office. Petitions for leaves of this type must be filed at least one month before the close of the preceding semester.

While the student is on leave, registration information will be emailed to his or her Vanderbilt email address. A student failing to register at the conclusion of the stated leave will be withdrawn from the university and must apply for readmission.

Students who wish to participate in a non-Vanderbilt program in the United States, abroad, or at sea should apply for a leave of absence for the relevant semester. To qualify for such a leave, a student must be in good standing at Vanderbilt with at least a 2.700 grade point average as of the date of application. Students must obtain prior approval for the leave of absence and for the credits to be taken in other programs if the credits are to be transferred to Vanderbilt. Final approval of leaves of absence always rests with the Dean's Office. See the section on Transfer Credit in this chapter.

Returning to the College (A&S)

Arts & Science: Students on leave of absence return to the university at the end of the leave. If they do not return at that time and want to return later, they must apply to the Office of the University Registrar for reinstatement. Students who are advised to withdraw from the university determine whether or not to return in consultation with the Dean's Office of Undergraduate Education. Students who have been dropped may apply to the Office of the University Registrar for reinstatement; in most cases reinstatement is not granted unless there has been an intervening period of at least a year. The Office of the University Registrar forwards all documents to the Administrative Committee, which considers each case on an individual basis. Reinstatement is competitive, and there is no assurance that it will be granted.

Students reinstated after having been advised to withdraw or after having been dropped are automatically on final probation. If they fail to regain good standing and to maintain it until graduation, they are dropped again with little prospect for reinstatement. Application deadlines for reinstatement are as follows: July 15 for the fall semester, November 15 for the spring semester, and April 1 for the summer session.

Withdrawal from the University (A&S, VUSE, PBDY)

Arts & Sciences: Students proposing to withdraw from the university during a regular term must report to the Dean's Office of Undergraduate Education in the College of Arts and Science to initiate proper clearance procedures. If withdrawal from the university is officially authorized, the student will receive withdrawal grades on the same basis as a student withdrawing from a particular course or courses. (See the section on Period for Withdrawal under Registration above).

Engineering: A student proposing to withdraw from the university must notify the Office of Academic Services of the School of Engineering so that proper clearance may be granted and incomplete work is not charged as a failure against the student's record.

Peabody: Students proposing to withdraw from the university during any semester must report to the Associate Dean for Undergraduate Academic Affairs to initiate proper clearance procedures. Students are graded on the same basis as if withdrawing from a course. Students who withdraw before the end of the eighth week of classes receive a partial refund of tuition (see the section on Financial Information).

Change of Address (A&S, Blair, VUSE)

Arts & Science: Students are responsible for keeping the university informed of their correct mailing addresses, both school and home. They should notify the university, through the Office of the University Registrar, online or in writing, of any address changes as soon as possible. They are provided an opportunity to review address information at registration. The university will consider notices and other information delivered if mailed to the address on file in the Office of the University Registrar.

Blair: Any change of address should be submitted to the Office of the University Registrar at yes.vanderbilt.edu. The university will consider notices or other information delivered if mailed to the address currently on file.

Engineering: Any change of address should be reported to the Office of the University Registrar using the YES online form. The university will consider notices or other information delivered if mailed to the address on file in YES.

Special Programs

Immersion Vanderbilt (Blair, VUSE)

Blair: To fulfill the university requirement of Immersion Vanderbilt, a student must participate in an intensive learning experience that takes place in and beyond the classroom and culminates in the creation of a tangible final project. This requirement applies to all students who entered Vanderbilt as first-year students in or after summer 2018, as second-year students in or after summer 2019, or as third-year students in or after summer 2020.

Immersion Vanderbilt is divided into four broad pathways: civic and professional, creative expression, international, and research. The pathway selected by the student may focus on one or more than one of these areas and should provide a structure upon which students can brainstorm, plan, and execute their immersive projects across multiple years.

Most Blair students will take advantage of the senior recital experience or honors thesis in ethnomusicology/musicology to satisfy the requirements of Immersion Vanderbilt. However, students may choose to pursue an Immersion plan outside their home program. Students should consult the Office of Experiential Learning and Immersion Vanderbilt. Completion of the Immersion Vanderbilt graduation requirement will be shown on the student's degree audit, and the title of the Immersion project will be added to the student's transcript. vanderbilt.edu/immersion

Engineering: Immersion Vanderbilt (vanderbilt.edu/immersion) allows students to pursue a multi-year path to be curious, to develop their passions and to learn by experience. To fulfill the university requirement of Immersion Vanderbilt, a student must participate in immersive experiences and then complete a culminating project that is based on one specific immersive experience.

The experiential learning may focus on one or more areas of student interest. Most engineering students will take

advantage of a four-year engineering design experience to satisfy the requirements of Immersion Vanderbilt. Each engineering major offers such a multi-year experience within its curriculum. Students whose plans include professional development may also pursue industrial internships. A research path can engage the student in discovery through research in engineering or other fields. While most engineering students will select an immersion experience associated with their major, students can pursue an Immersion plan outside their home program. For example, students interested in creative expression might develop a performance piece, exhibit, or artistic work, while those interested in international study may explore firsthand the culture, language, and history of other countries. Students interested in such immersion plans should consult the Office of Experiential Learning and Immersion Vanderbilt.

The Immersion Vanderbilt process is composed of several phases. The initial step involves the creation of a plan that identifies the intended Immersive experience. Before students start their immersive experience, they will submit the Immersive Experience Declaration Form. Students may submit multiple immersive experience forms throughout their time at Vanderbilt University. After each experience, a self-reflection component is required.

Immersion Vanderbilt culminates in the creation of a final project arising from one of the experiences. Approval and assessment of the project is done by the supervising school or college. Senior design projects in the School of Engineering satisfy the final project requirement for Immersion Vanderbilt, with students presenting the results of their design project at the school's Design Day. For students completing other immersion projects, Immersion coordinates a series of showcases open to the entire campus where students display their projects. Upon completion of the project, Immersion Vanderbilt conveys that the requirements have been met by showing completion of the Immersion Vanderbilt graduation requirement on the student's degree audit and adding the Immersion project to the student's transcript.

Study Abroad (Blair)

Blair: Five Vanderbilt study abroad programs are coordinated with the degree programs in music: the IES programs in Milan, Italy; Vienna, Austria; and in Amsterdam, The Netherlands; the DIS program at the Royal Danish Academy of Music in Copenhagen, Denmark, and the IFSA/Butler program at the University of Sydney and Sydney Conservatorium of Music in Sydney, Australia. These programs include provisions for lesson and ensemble credits, contingent upon audition and admission to the program. These will count towards the Blair music core and are covered at least in part by regular tuition and fees, although students are responsible for any instrument rental fees they accrue. All programs also allow for a range of liberal arts and elective credits. Further information can be obtained from the Vanderbilt Global Education Office, Suite 103, Student Life Center, or vanderbilt.edu/geo, and from Blair's associate dean.

Blair students may also elect any of the Vanderbilt-approved study abroad programs; see descriptions under "Study Abroad" in the front chapters of the catalog. Blair students in these programs have typically enrolled in music electives, courses in the liberal arts core, and course work toward minors and second majors. Students in these programs typically arrange alternative performance or composition instruction, and those fees are usually not covered by tuition. It should be noted that if a program has been approved by Vanderbilt students must enroll in the program via the Global Education Office. In no case, after matriculating at Vanderbilt, may a student apply to participate in a program for transfer credit through a different university, or through an external agency, and then seek to transfer that credit into Vanderbilt. Any student studying abroad must register with Vanderbilt's global travel office.

Blair-Specific Provisions

Internships (Blair)

Blair: The Career Center assists students interested in internship opportunities in the music industry and elsewhere; there are opportunities in many states of the U.S. and also abroad, both during the academic year and in the summer. A student serving as an intern may register for MENT 3880, 3881, or 3882 as a corollary if credit is desired. Students with summer internships that require an academic component must register for credit (vanderbilt.edu/career/career-exploration/internships/summer-internship-subsidy/). A maximum of 6 hours of internship credit may be counted toward the degree. Students are responsible for finding a faculty sponsor; a written study plan must be approved by the faculty sponsor and the Blair associate dean no later than the tenth day of classes. Internship paperwork is available on the Blair School website at blair.vanderbilt.edu/academics.

Performance Instruction: B. Mus. and B. Mus. Arts Degrees (Blair)

Blair: Fees. Performance instruction fees are waived for B.Mus. and B.Mus.Arts students. A one-time music technology fee is charged to each first-year student.

Elective credit. B.Mus. and B.Mus.Arts students taking a second instrument normally enroll in 1100-level performance instruction for 1 or 2 hours elective credit. Consent of the instructor is required. B.Mus. and B.Mus.Arts students who have declared a minor instrument also register for performance instruction at the 1100 level; consent of the instructor and notification of the Blair Office of Academic Services are required.

Composition Majors. Students register for performance instruction at the 1100 level. A minimum of 6 semesters of study totaling 6 credit hours is required.

Integrated Studies Majors, Integrated Studies/Teacher Education Majors, Jazz Studies Majors, and B.Mus.Arts students. First-year students and sophomores register for 2100-level performance instruction in their primary area. Juniors and seniors register for 4100-level performance instruction in their primary area. A minimum of 8 semesters totaling 16 credit hours required; performance instruction required every semester in residence.

Performance Majors. First-year students and sophomores register for 2200-level performance instruction in their primary area. Juniors and seniors register for 4200-level instruction in their primary area. A minimum of 8 semesters totaling 32 hours (instrumental performance majors) or 28 hours (vocal performance majors) required; performance instruction required every semester in residence.

Upper Divisional Hearing (Blair)

Blair: Requirements for performance majors include an upper divisional hearing in the sophomore year to determine continuance in the performance degree program and permit subsequent enrollment in upper division study at the 4200 level. Students are required to perform a program of twenty to thirty minutes for a faculty committee convened by the studio instructor or by the department chair. The committee will normally consist of the student's studio teacher and at least two additional members of the department. Memorization is required as appropriate, and where called for, collaboration with piano is expected.

The student must consult with the studio instructor regarding appropriate repertoire. Instrumental selections must be chosen from the solo repertoire and should represent diverse historical periods. Percussionists must perform on keyboard percussion, timpani, and snare drum and/or multiple percussion. String repertoire must include solo Bach. Pianists must perform a 30-minute memorized program of solo piano literature representing at least three style periods. Vocal repertoire must include a minimum of five songs of contrasting periods and styles, using three languages (Italian, English, and either French or German).

Failure to pass this hearing demonstrates a lack of the requisite skills to graduate in performance at the Blair School, necessitating transfer to another degree program. A student may petition the faculty once for a second hearing, with entirely different repertoire, to take place before the end of the first semester of the junior year

Pre-Recital Hearing (Blair)

Blair: All students (excepting composition) giving required recitals and any student who wishes to give a recital in the Blair building must pass a hearing, held at least three weeks before the recital. After establishing a recital date, the student, with guidance from the studio instructor, will assemble a recital hearing committee, consisting of two additional faculty members, one of whom must be from outside the student's performing area. For integrated studies/teacher education students, the committee will normally consist of the studio instructor, a teacher education faculty member, and at least one additional faculty member. For non-required, non-credit recitals, the hearing committee may be from within the department. For any recital involving a student's second performing medium, the student must seek approval from the studio instructor and area coordinator of the secondary and primary performing areas; in addition, a full-time faculty member from the secondary performing area must be part of the

hearing committee. The student must notify the recital hearing committee, in writing, of the hearing date, recital date, time, and place. Senior composition recitals are screened in advance at the department level.

For a required junior or senior recital, the repertoire will normally encompass three major style periods, as appropriate to the medium; at least one work in a contemporary idiom will be included in either the junior or senior recital. For teacher education students, a conducting component must be included on the required senior recital. For jazz studies students, an original composition or arrangement must be included on the required senior recital. A required senior recital must also include written or spoken program notes, visual media, or other audience engagement component, with the approval of the studio instructor. The hearing committee should hear all of the recital repertoire. Grading of the hearing is on a Pass/Fail basis, with written faculty comments. If a student fails the hearing, another must be scheduled. Only two recital hearings in one semester are permitted.

For students also choosing the senior recital to fulfill Immersion Vanderbilt, the recital program and audience engagement component should be a deeper, more intensive project that integrates classroom knowledge with experience. The student will work with the project's primary Immersion adviser (usually the studio teacher) to develop a plan relevant to the student's recital. While there are no specific requirements, examples may be found in the Blair Student Handbook. The student's Immersion adviser will ultimately decide if the plan fulfills the Immersion Vanderbilt project.

Recital and Recital Committee (Blair)

Blair: For recitals given for credit, the recital committee is the same as the hearing committee whenever possible. The final grade is a composite of those of at least two committee members, including the studio instructor, with the studio instructor's grade valued at two thirds of the total. Copies of committee member's grades are kept by the instructor. Recitals not given for credit are not graded; they involve a hearing committee but not a recital committee.

Recital Attendance (Blair)

Blair: Each semester in residence, students (except graduating seniors in their penultimate or final semester) are required to register for MUSO 1000 and attend weekly student recitals/convocations and a minimum of six Blair faculty or professional concerts or their community equivalents as described on the syllabus. Students must fulfill both aspects of the requirement to pass each semester. The course receives zero credit hours but is graded on a Pass/Fail basis and listed on students' transcripts. A temporary final grade will not be granted except in the case of documented medical emergency.

Students must register their attendance at each recital. Two absences from Friday afternoon recitals are permitted each semester. Under extraordinary circumstances, make-up assignments can be obtained from the recital attendance coordinator with the permission of the associate dean. Students must plan and keep up with their concert attendance. Except for weekly student recitals, performances in which students are participants do not fulfill the attendance requirement for the performer. Deadline for completion of all work is listed on the course syllabus for MUSO 1000. The first failure would result in the loss of the senior penultimate or final semester exemption. Additional failure(s) would require students to enroll for additional semester(s) until the seven required semesters are passed.

Extracurricular Performance (Blair)

Blair: Students must be in good standing and have the consent of their private instructors in order to participate in any extracurricular performance activities, including in-school collaboration, that are not required by a student's degree program or honor scholarship.

College of Arts and Science

College of Arts and Science Administration and Faculty

Timothy P. McNamara

Ginny and Conner Searcy Dean of the College of Arts and Science

Bonnie J. Dow

Vice Dean and Senior Associate Dean of Faculty Affairs

John McLean

Senior Associate Dean for Research and Graduate Education

Allison Schachter

Senior Associate Dean of Academic Affairs

Elizabeth Meadows, Assistant Dean and Director of Undergraduate Education

Pavneet Aulakh, Assistant Dean

Alissa Hare, Assistant Dean

Mario Rewers, Assistant Dean

Angela Sutton, Assistant Dean of Graduate Education and Academic Initiatives

Paul Stob, Director of A&S College Core

Elizabeth Catania, Associate Director of A&S College Core

Josh Brewer, Chief Business Officer

Hollis Calhoun, Chief Communications Officer

Angela Land-Dedrick, Chief Operations Officer

Rosters for the following Arts and Science committees are available at as.vanderbilt.edu/faculty/committees.php.

ADMINISTRATIVE COMMITTEE

ADMISSIONS COMMITTEE

COMMITTEE ON ACADEMIC STANDARDS AND PROCEDURES

COMMITTEE ON EDUCATIONAL PROGRAMS

COMMITTEE ON GRADUATE EDUCATION

COMMITTEE ON HEALTH RELATED PROFESSIONS

COMMITTEE ON INDIVIDUAL PROGRAMS

COMMITTEE ON UNDERGRADUATE INTERDISCIPLINARY STUDIES

CURRICULUM COMMITTEE

SECOND LANGUAGE STUDY COMMITTEE

STUDENT-FACULTY RELATIONS COMMITTEE

Faculty

For a list of current faculty, please visit vanderbilt.edu/faculty-affairs/faculty-registry/.

A Community for Liberal Learning

[Faculty and Students](#)

[The Writing Studio/Tutoring Services](#)

[Computers](#)

[The Advising System](#)

[Public Lectures](#)

“The work of the College of Arts and Science is fundamental. It is the basis of all professional study. No professional school can be self-sufficient. The College in its undergraduate and graduate work must remain the heart of the whole situation, and send its quickening life blood into every fiber and tissue.”

—Chancellor James H. Kirkland at the semicentennial celebration of the university October 1925

Chancellor Kirkland’s words were prophetic of our times as well as true of his own. Since its founding Vanderbilt has pursued its mission of excellence in the liberal arts with a commitment to liberal learning that is the special concern of the College of Arts and Science. Liberal learning endures because it brings men and women to subjects, concepts, and modes of thought that enable them to think critically about where humanity has been and where it ought to be going. The liberal arts spark curiosity and broaden vision, help to instill understanding of matters otherwise unknown, and encourage individuals to live their lives with a sense of purpose, context, and relatedness. A liberal education has perennial relevance and usefulness: it should prepare its recipients to think precisely, to reason clearly, and to judge wisely—all practical considerations in the pursuit of constructive and satisfying lives and in the practice of today’s professions and vocations.

Today the College of Arts and Science maintains its historic position as the heart of the university. Excellence in undergraduate and graduate education is its unwavering aim.

The College of Arts and Science provides intellectual stimulation, training, and incentive designed to foster the lifelong liberal learning of its graduates. It offers challenging, forward-looking programs of study in the humanities, natural sciences, and social sciences resourcefully taught by distinguished faculty recognized for excellence in research, scholarship, and creative expression. It promotes self-realization and expression in the context of social responsibility.

Faculty and Students

The College of Arts and Science derives its strength from the range of its academic offerings, from the quality of the faculty who teach, and from the quality of the students who come to learn. Traditionally fortunate in its ability to attract and retain a superior faculty, the College of Arts and Science has more than 500 full-time professors who supplement their achievements in the classroom with significant research, creativity, and writing. Many faculty members hold awards for distinguished scholarship and have been elected to high offices in their professional associations, including the Classical Association of the Middle West and South, the American Economics Association, the American Political Science Association, the American Philosophical Association, the American Physical Society,

the American Historical Association, and the Biophysical Society.

The quality of the College's faculty is matched by that of its diverse student body. Undergraduates come from the fifty states and fifteen to twenty foreign countries and are almost evenly divided between men and women.

Academic Support

The Writing Studio / Tutoring Services

The Writing Studio provides undergraduate students the opportunity to meet with trained writing consultants to discuss individual writing concerns, from invention to drafting to revision. The Writing Studio provides a space for students to discuss work-in-progress with expert writers, to create their own writing, and to utilize available resources for improving both writing and critical thinking skills.

The mission of the Vanderbilt Writing Studio is to enhance student writing and writing instruction, and to encourage regular conversation about the writing process. The Writing Studio's extensive programming includes individual consultations, creative writing groups, workshops focused on specific issues in academic writing, open-mike readings, and student-run writers' support groups.

The Writing Studio is located at 1801 Edgehill Avenue, Suite 112, and there is a satellite location in 217 Commons Center convenient to the first-year residence halls. The Writing Studio website can be accessed at

One-on-one tutoring in many subjects is available through Tutoring Services, also located at 1801 Edgehill Avenue. Consultations in the Writing Studio and in Tutoring Services are free to all undergraduates.

Computers

The following locations are available for walk-in use of computers and software:

Center for Second Language Studies (Furman Hall 001)

Stevenson computer lab and lounge (Stevenson Center 2200)

Wilson computer lab (Wilson Hall 120)

All of the college's computer labs and classrooms offer a wide variety of "courseware" and commercial "productivity software," including word processing packages. Color printing and scanners are available in most of the labs. In addition to accessing software on the local servers, students may also connect to both campus services and the internet, including VUGmail and e-resources in the libraries, as well as course materials in Brightspace. While use of the above facilities is free, printing is charged per page.

The computer classrooms in the Center for Second Language Studies and Wilson Hall are available for walk-in use during the late afternoon and evening hours. Stevenson Center lab and lounge are card-accessible weeknights until 1:00

a.m. All lab hours are posted by semester at In addition to the college facilities, a few "kiosk" systems are available in the Sarratt Student Center. As a result, access to computers in the College of Arts and Science is extensive.

At last count, more than 98 percent of Vanderbilt students own a personal computer. Since all students also have a high-speed network connection, it is convenient for students to have their own system (please consult the ResNet guidelines for supported systems). However, most students will find that the college computing facilities provide all of the computing resources that are needed for success at Vanderbilt.

The Advising System

Entering first-year students are assigned advisers from CASPAR (College of Arts and Science Pre-major Academic Advising Resources Center). These “pre-major advisers” counsel students during their first three and one-half semesters, or until the students choose majors, when they are assigned faculty advisers in their major department or program. Pre-major advisers are specially trained to help students move efficiently through the requirements of AXLE (Achieving eXcellence in Liberal Education) and chart a course of study.

During the last two years of study, when a student is acquiring depth of knowledge in a major field, studies are guided by a specialist in that field. Students are encouraged to see their faculty advisers at any time, since the advisers are available for guidance and counseling and are faculty members with whom advisees may be studying.

All students are required to see their advisers prior to registration for each semester.

Advisers are generally happy to talk over any problems students may have, although their chief function is academic counseling. In addition, several members of the Dean’s Office of Undergraduate Education, themselves teaching faculty members, have as their principal duty counseling students and referring them to sources of expertise on non-academic problems.

Public Lectures

THE BERRY LECTURES. Established in 1988 through the generosity of Kendall and Allen Berry, John and Shirley Lachs, Steve Turner, and Jim Burke. Three annual lectures—the Berry lecture, the Steve Turner lecture, and the Jim Burke lecture—are given by distinguished philosophers.

THE LOUIS JACOB BIRCHER LECTURE IN CHEMISTRY. Established in 1976 in recognition of Professor Bircher’s forty-one years of service to Vanderbilt beginning in 1921. He served as the sole professor of physical chemistry until 1954, was chair of the Department of Chemistry from 1955 to 1961, and retired as professor emeritus in 1962. Family, colleagues, students, and friends of Professor Bircher have provided generous support for the series. The lecture is presented by a leading physical chemist.

THE BYRN HISTORY LECTURE. Established in 1986 and endowed by the late J. W. Byrn of Dickson, Tennessee, a student and admirer of the thought of the British historian Arnold Toynbee. Annual lectures deal with his fields of interest: world history, philosophy of history, and historiography.

THE FREDERICK LEROY CONOVER MEMORIAL LECTURE. First given in 1977 in honor of Vanderbilt’s first analytical chemist. Professor Conover came to Vanderbilt in 1923 and remained for thirty-seven years. Lectures given by a distinguished analytical chemist are supported by family, colleagues, students, and friends of Professor Conover.

THE WALTER CLYDE CURRY SHAKESPEARE LECTURE. Inaugurated in 1982 and funded by one of his former students, this lectureship honors the late Walter Clyde Curry, distinguished medieval and Renaissance scholar, author of books on Chaucer, Shakespeare, and Milton, and for forty years beloved professor of English at Vanderbilt. Bringing to campus in alternate years eminent Shakespearean scholars and experienced Shakespearean performers, the

lectureship gratefully recognizes Professor Curry's devoted service and lasting contributions to the university.

THE WAITE PHILIP FISHEL LECTURE. Established in 1974 as a tribute to Professor Fishel, who was known as an outstanding, popular teacher and was renowned for his research in metallurgy. Through the generosity of family, colleagues, students, and friends, the lecture is presented by a leading inorganic chemist.

THE HARRY C. HOWARD JR. LECTURESHIP. Established in 1994 at the Robert Penn Warren Center for the Humanities in honor of Harry C. Howard Jr. (B.A. 1951). The lectureship was endowed by Mr. and Mrs. Thomas Nash Jr. and Mr. and Mrs. George Renfro, all of Asheville, North Carolina, in honor of their longtime friend and attorney. The lectureship allows the Warren Center to bring an outstanding scholar to Vanderbilt annually to deliver a lecture on a significant topic in the humanities.

THE ARTHUR WILLIAM INGERSOLL MEMORIAL LECTURE. Established in 1973 to honor Arthur Ingersoll, professor of organic chemistry at Vanderbilt until his death in 1969. Each year contributions for this lecture are received from family, colleagues, students, and friends. A leading organic chemist is invited to present the lecture.

THE CARL K. SEYFERT LECTURE IN ASTRONOMY. Established in 1983 as part of the astronomy program's commemoration of the thirtieth anniversary of the Arthur J. Dyer Observatory. The lectureship recognizes the untiring efforts and contributions to astronomy made by Carl K. Seyfert, professor of astronomy and first director of the Dyer Observatory. A distinguished astronomer is invited to present this lecture every third year.

THE SHANKS LECTURES. Established in 1984 and named for E. Baylis Shanks and Olivia H. Shanks in honor of their accomplishments in the fields of mathematics and education and in recognition of their loyalty and service to Vanderbilt University, these lectures are presented on two successive days in the fall of each year. A special committee from the Department of Mathematics, influenced by the professional interests of Professor and Mrs. Shanks, chooses the lecturers from mathematicians of the highest reputation. The topics of the lectureship vary from year to year according to the area of specialization of the speaker chosen. The lectures have been endowed by members of the family of Olivia and Baylis Shanks.

THE FRANCIS G. SLACK LECTURES IN PHYSICS. Established in 1977 by the Department of Physics and Astronomy in honor of Francis G. Slack, former Landon C. Garland professor of physics and chair of the department, these lectures recognize his many contributions to physics. The series was first partially endowed by his colleagues and students and then with the generous help of Professor Slack. Each speaker gives one lecture of general interest to the university and one more specialized lecture for the department.

THE DAVID STEINE LECTURE. Established in 1978 as a memorial to David Steine, professor of business administration in the Department of Economics and Business Administration, by members of his family, friends, and associates. The lecture is devoted to an economic problem of interest to the general public.

THE GERTRUDE VANDERBILT AND HAROLD S. VANDERBILT VISITING WRITERS PROGRAM. Established in the Department of

English in 1958 under the generous sponsorship of the late Mrs. Vanderbilt, this program has annually presented readings and public lectures by a poet, a novelist, and a critic—each of whom also visits classes and meets informally with members of the university and Nashville communities. Recent participants have included Dannie Abse, Madison Smartt Bell, Ellen Gilchrist, Alison Lurie, Czeslaw Milosz, Wyatt Prunty, Ann Thwaite, Anthony Thwaite, and Helen Vendler.

Degree Programs in the College

[The Bachelor of Arts](#)

[Limitation on Credit Hours Outside the College](#)

[AXLE: Achieving eXcellence in Liberal Education](#)

[What Is Liberal Education?](#)

[Fear No Learning!](#)

[How to Get Started](#)

[Where to Get Information](#)

[Where to Get Advice](#)

[What is AXLE?](#)

[Overview of AXLE](#)

[The First-Year Writing Seminar](#)

[The Writing Requirement](#)

[The Liberal Arts Requirement](#)

[The Major](#)

[AXLE Curriculum Course Distribution](#)

[AXLE, the Major, and the Optional Minor](#)

[Advanced Placement under AXLE](#)

[Transfer Credit under AXLE](#)

[Area of Concentration](#)

[Major Field](#)

[Defined Interdisciplinary Programs](#)

[Declaration of the Area of Concentration](#)

[Individually Designed Interdisciplinary Majors](#)

[Double and Triple Majors](#)

[Approved Second Majors Outside the College](#)

The Bachelor of Arts

The bachelor of arts degree is granted upon successful completion of the following five requirements:

1. At least 120 semester hours of creditable college work,
2. A final grade point average of at least 2.000,
3. Completion of the AXLE requirements,
4. Completion of one of the options listed under Area of Concentration,
5. Completion of at least 102 credit hours of course work within the College of Arts and Science, or a minimum of 90 credit hours for those students with a second major outside the College of Arts and Science.

Limitation on Credit Hours outside the College

Candidates for the bachelor of arts degree must successfully complete a minimum of 102 credit hours within the College of Arts and Science. Students who are completing an approved second major from one of the other schools within Vanderbilt are required to complete 90 credit hours within the College of Arts and Science for the bachelor of arts degree.

AXLE: Achieving eXcellence in Liberal Education

The Arts and Science core program of study—known as AXLE—is anchored in intensive practice in writing and a diverse thirteen-course component of classes that has been designed to allow maximum choice in course selection (based on student interests and achievement levels). At the same time, the distribution requirements of AXLE ensure that students will explore intellectually and academically the breadth of possibilities represented by the liberal arts.

What Is Liberal Education?

The study of the liberal arts—what is historically called a liberal education—is the oldest and most venerable form of higher education. It has proved itself perennially flexible and adaptive over the past centuries, and it remains the single best educational preparation for further, specialized study in the professions (medicine, law, education, business, et al.), as well as for doctoral work in the humanities and social sciences and advanced research in the sciences. The holistic focus of a liberal education encompasses all areas of human knowledge: the natural and social sciences, mathematics, foreign languages and cultures, the arts, and the humanities. The empirical disciplines guide us in our efforts to live most productively and efficiently. But the rest of the curriculum—the humanities and the arts—makes it possible to reflect upon the right use of the remarkable scientific knowledge we have acquired. In a liberal arts education, content is always considered in its larger context. Thus, the reflective and discursive aspects of study in the liberal arts call upon students to move beyond the mere acquisition of information to inquire into the deeper issues within their studies, and to connect their learning across disciplines and cultures as they live and work in the communal environment of Vanderbilt. The end product of a successful liberal arts education is a thoughtful citizen who is prepared to take up his or her rights and responsibilities in a democratic society, to analyze and critique received information, to articulate the issues at hand or the personal values at stake, and whose intellectual life is marked by ongoing internal dialogue about the quality and meaning of life for him or her, as well as for the community at large.

Fear No Learning!

The interdisciplinary inclination of many courses in the College of Arts and Science is an ideal training ground for learning new methodologies for problem solving in the complex, global world of the 21st century. Here, students may work with biologists and psychologists in the Neuroscience program; study with creative writers, sociologists, historians, or cinema and media arts scholars in the African American and Diaspora Studies program; or take a class, team taught, by professors from the School of Music and the Department of English in the College of Arts and Science. Over the course of a Vanderbilt education, students challenge themselves with the academic demands of the classes they select, and are challenged by new ideas and unfamiliar ways of looking at issues. Exploring beyond the boundaries of one's intellectual comfort zone in order to admit new ideas is one of the most important aspects of higher education. The time and effort devoted to selecting thoughtfully the courses that will satisfy AXLE requirements prepare students for the more specialized study that they undertake in their major (or majors).

How to Get Started

The program of studies is divided approximately into thirds:

- 1/3 — courses to meet the requirements of the Writing and Liberal Arts requirements;
- 1/3 — courses required to complete the chosen major;
- 1/3 — electives, which will complete the 120 credit hours required for graduation.

These divisions are approximate and may differ for individual students.

For a student's first semester, most selections should be from the first group, courses that will fulfill the Writing and

Liberal Arts requirements. Academic background, career goals, and general talents and interests will affect choice of courses.

Upon graduation, students in the College of Arts and Science will receive a bachelor of arts degree upon completion of the other four requirements in addition to AXLE: fulfillment of requirements for one major, a 2.000 average in the major, 120 cumulative earned credit hours, and a 2.000 average overall.

Where to Get Information

In addition to this catalog's sections on the rules, regulations, and policies of the College of Arts and Science as well as descriptions of the academic programs of all the undergraduate schools, students may refer to the booklet, *Understanding Your Core Curriculum & Pre-major Advising*, a College of Arts and Science manual for entering students.

Where to Get Advice

Entering students are assigned pre-major advisers from CASPAR (College of Arts and Science Pre-major Academic Advising Resources Center). Pre-major advisers are carefully selected and receive intensive training on how to help students proceed effectively through the requirements of AXLE and chart a course of study. These advisers will counsel students through their first three and one-half semesters or until they declare a major. At that time, students are assigned faculty advisers in their major departments. Students are encouraged to see their advisers at any time; they must, however, consult their pre-major adviser three times during the first year: during summer before the fall semester, prior to the opening of enrollment windows for the spring semester, and prior to the opening of enrollment windows for the fall semester of their second year. Prior to their first semester, entering first-year students must consult in June with their pre-major adviser who will assist with course selections for registration for the fall and begin to understand each student's interests and goals. (This initial contact is typically via phone and/or email.)

What Is AXLE?

AXLE is the acronym for Achieving eXcellence in Liberal Education. It is the core curriculum that all students in the College of Arts and Science must fulfill. The AXLE curriculum is flexible and very user-friendly. It consists of two parts: the Writing Requirement and the Liberal Arts Requirement.

The Writing Requirement has four segments: completion of English 1100 or demonstration of basic skills in English composition; completion of a First-Year Writing Seminar; completion of a writing course (indicated by a "W") no later than the fourth semester in residence; and completion of a second writing course (indicated by a "W") or an approved course in oral communication (CMST 2100, 2110, or 2120).

The Liberal Arts Requirement is composed of a total of thirteen courses taken at Vanderbilt, and distributed across six categories. The First-Year Writing Seminar and all writing courses, and approved Oral Communication courses are also counted in the thirteen-course Liberal Arts Requirement.

1. The Writing Requirement (three to four courses)
 - a. English Composition ENGL 1100 (appropriate test score or one course)
 - b. First-Year Writing Seminar (one course)
 - c. a W course before the end of the fourth semester (one course)
 - d. a second W course or approved Oral Communication course (one course)
2. The Liberal Arts Requirement (13 courses)
 - a. HCA — Humanities and the Creative Arts (three courses)
 - b. INT — International Cultures (three courses)
 - c. US — History and Culture of the United States (one course)
 - d. MNS — Mathematics and Natural Sciences (three courses)
 - e. SBS — Social and Behavioral Sciences (two courses)
 - f. P — Perspectives (one course)

All students must also complete requirements for at least one major (between 27 and 48 credit hours of course

work) and earn a minimum number of 120 earned credit hours in order to graduate.

Overview of AXLE

AXLE consists of two parts: the Writing Requirement (including a First-Year Writing Seminar) and the Liberal Arts Requirement.

The First-Year Writing Seminar

The First-Year Writing Seminar is an integral part of the first-year experience in the College of Arts and Science. Through these seminars, first-year students engage in independent learning and inquiry in an environment in which they can express knowledge and defend opinions through intensive class discussion, oral presentations, and written expression. The small-group nature of these seminars allows for direct student-faculty interaction that stresses training in techniques of scholarly inquiry. The students' written work and oral presentations are subject to thoughtful critical review by the faculty member, providing feedback that can be used to reconsider the manner in which they articulate their ideas and to refine their skills in these areas. Thus, first-year students learn not only about the subject matter of the seminar, but are also exposed to new methods of acquiring knowledge, different ways of expressing and sharing ideas, and unique opportunities to participate in critical inquiry.

All first-year students must enroll in a First-Year Writing Seminar. (First-Year Writing Seminars in the College of Arts and Science are numbered 1111.) This course may be taken during the fall or the spring semester. Students are permitted to enroll in only one First-Year Writing Seminar per semester. All First-Year Writing Seminars also count in their appropriate distribution areas within the Liberal Arts Requirement, but a second seminar will not count toward the writing requirement. Students who transfer into the College of Arts and Science (whether from another school at Vanderbilt or from another college or university) do not complete a First-Year Writing Seminar. Students beyond their second semester in residence may not register for First-Year Writing Seminars, nor may First-Year Writing Seminars be repeated after completion of the second semester in residence.

The Writing Requirement

Excellent communication skills, including the ability to articulate ideas and defend positions in writing, will be paramount for the 21st-century graduates of Vanderbilt University; therefore, all students in the College of Arts and Science must successfully complete the Writing Requirement.

- a. All students must demonstrate competence in English composition. Appropriate skills in composition are essential to successful progress at the Competence is demonstrated by completion of ENGL 1100 or any of the following test-based or transfer-credit satisfiers:
 - i. SAT: Combined score of at least 1220 on the Writing and Critical Reasoning sections, with a minimum score of 500 on each (test taken prior to March 2016).
 - ii. SAT: Score of at least 660 on the Evidence-Based Reading and Writing section.
 - iii. ACT: Score of at least 30 on the English portion (beginning October 2016).
 - iv. AP: Minimum score of 4 on the English Language or English Literature exam.
 - v. IB: Minimum score of 6 on the Higher level English
 - vi. Transfer credit for English 1100
 - vii. Transfer credit for English 1210W, 1220W, 1230W, 1250W, 1260W, 1270W, or 1300W. (If used to satisfy the English composition requirement, the transfer credit does NOT also count as the W course required to achieve junior standing.
- b. First-Year Writing Seminar (see above).
- c. All students must successfully complete at least one Arts and Science writing course (indicated by a "W") at Vanderbilt University, regardless of AP or IB credits, SAT scores, or ACT scores earned prior to matriculation. The 1000-level writing-intensive courses emphasize general writing skills within the context of discipline-specific subject matter. The 2000 and higher-level writing-intensive courses foster advanced, discipline-specific writing skills. Departments or programs that offer these courses determine their specific writing In 2000 or higher-level W courses, continued attention to the process of writing is included in the classroom. Students receive regular feedback on their writing that will contribute toward enhancing writing skills appropriate to specific disciplines. The process of revising written work allows students to reflect on the writing process; writing tutorials may also be included. All students are required to complete a W course

- (other than ENGL 1100 or a First-Year Writing Seminar) **no later than the fourth semester**. All Arts and Science W courses also count in their appropriate distribution areas within the Liberal Arts Requirement.
- d. All students must successfully complete either a second Arts and Science W course (other than ENGL 1100 or a First-Year Writing Seminar), or an approved course in oral communication (CMST 2100, 2110, 2120) at Vanderbilt University, regardless of AP or IB credits, SAT scores, or ACT scores earned prior to Oral communication courses focus on developing improved public speaking skills. These courses introduce students to the principles and practices of public discourse and reasoned argument. Attention to the process of effective oral communication is integral to these classes. Students receive regular speaking assignments throughout the semester and regular feedback to enhance effective speaking skills. **All students must complete Part d of the Writing Requirement before graduation.**

The Liberal Arts Requirement

The Liberal Arts Requirement consists of successful completion of thirteen courses from the College of Arts and Science. Most courses in the College of Arts and Science fulfill one of these Liberal Arts requirements. Courses must carry three or more credits to count toward the AXLE Liberal Arts Requirement. Although some courses may be appropriate to more than one requirement, each course will fulfill only one requirement. These thirteen courses must be distributed as outlined below. They must be taken from at least seven departments or subject areas.

a. Humanities and the Creative Arts — HCA (3 courses)

Courses in the humanities and the creative arts challenge students to examine their personal understanding of life and how their individual experiences overlap with those of the rest of humankind. These courses testify to the varying ways in which people think, form values, confront ambiguity, express spiritual and aesthetic yearnings, and grapple with moral and ethical problems. By analyzing and interpreting literary, philosophical, religious, or artistic works, students examine the foundations of human experience. By producing original artistic works in imaginative writing, studio art, theatre, film, music, and dance, students have the opportunity to connect the universal sources of human inspiration with their own creative processes.

b. International Cultures — INT (3 courses)

The study of international cultures provides students with a basis for understanding the diversity of experiences and values in our contemporary, global society. Options in this category include not only international history and cultural studies courses, but also courses in literature, cinema and media arts, the social sciences, art, music, and languages. Students may satisfy this requirement by choosing courses that focus on the history and culture of a single society or time period in human history and/or that represent a broad spectrum of different human societies and time periods.

Language courses introduce students to the language of a different culture and provide insight into that culture in ways that are not possible to achieve through detached study. At intermediate and advanced levels, students are able to explore the culture in depth, using the language itself to read, discuss, and write about its various aspects. Even at the most basic level, exposure to the language of a different culture prepares students to think and act in terms of living in a global community.

Intermediate and advanced language courses prepare students for study abroad programs, which the College of Arts and Science strongly recommends. A maximum of one course in this requirement may be satisfied through study abroad in a Vanderbilt-approved program. A summer study abroad program must earn 6 or more credit hours to satisfy this requirement.

The Global Education Office maintains a list of pre-approved programs.

Note: All students who study abroad must register their travel in advance with Vanderbilt's international security provider. Registration is completed on your behalf if you enroll in a program offered through the Global Education Office. Otherwise, information is available on the GlobalVU website: vanderbilt.edu/global.

All students must complete three courses in this category, irrespective of previous language study or proficiency in a language other than English. At least one of the three courses presented in fulfillment of this category must be a second-semester (or higher) language acquisition class taught at Vanderbilt University (or through the Duke-UVa-Vanderbilt Partnership for Less Commonly Taught Languages), unless the student successfully demonstrates proficiency in a language other than English at or above the level achieved by second-semester language acquisition classes taught at Vanderbilt University. Students may demonstrate proficiency in a number of ways: SAT Subject Test scores (French, 540; German, 470; Hebrew, 530; Italian, 540; Japanese with Listening, 440; Latin, 530; Spanish, 520); by appropriate score on proficiency tests (written and oral) administered by the Tennessee Language Center; or with AP or IB credit in a foreign language. The first semester of an introductory language acquisition class in any language a student has studied for at least two years in high school, or in which a student transfers credit from another institution, cannot be used in partial fulfillment of this requirement. Intensive elementary language courses that cover the content of two semesters in one shall count as one course toward this category.

Students who, because of special ability and achievement, are admitted to the College of Arts and Science without the normally required two years of one foreign language in high school must enroll in a foreign language course during their first semester and must remain continuously enrolled until they successfully complete a full year of one foreign language. They must complete this requirement by the end of their fourth semester in the College of Arts and Science.

c. History and Culture of the United States — US (1 course)

The study of the history and culture of the United States provides students with a basis for understanding the American experience and the shaping of American values and viewpoints within the context of an increasingly global society. Interpreting history and culture in the broadest sense, options in this category include traditional history and cultural studies courses, but also courses in literature, cinema and media arts, the social sciences, art, and music, which illuminate historical periods or cultural themes in United States history. Students may satisfy this requirement by choosing a course that focuses on the history and culture of a single social group or time period in American history and/or that represents a broad spectrum of different social groups and time periods.

d. Mathematics and Natural Sciences — MNS (3 courses, one of which must be a laboratory science)

Courses in mathematics emphasize quantitative reasoning and prepare students to describe, manipulate, and evaluate complex or abstract ideas or arguments with precision. Skills in mathematical and quantitative reasoning provide essential foundations for the study of natural and social sciences. Students are generally introduced to mathematical reasoning through the study of introductory courses in calculus or probability and statistics.

Courses in the natural sciences engage students in hypothesis-driven quantitative reasoning that helps to explain natural phenomena, the roles of testing and replication of experimental results, and the processes through which scientific hypotheses and theories are developed, modified, or abandoned in the face of more complete evidence, or integrated into more general conceptual structures. Laboratory science courses engage students in methods of experimental testing of hypotheses and analysis of data that are the hallmarks of the natural sciences. Natural science courses prepare students to understand the complex interactions between science, technology, and society; teach students to apply scientific principles to everyday experience; and develop the capacity to distinguish between science and what masquerades as science.

e. Social and Behavioral Sciences — SBS (2 courses)

Social scientists endeavor to study human behavior at the levels of individuals, their interactions with others, their societal structures, and their social institutions. The remarkable scope represented by these disciplines extends from studying the underpinnings of brain function to the dynamics of human social groups to the structures of political and economic institutions. The methods employed by social scientists are correspondingly broad, involving approaches as varied as mapping brain activity, discovering and charting ancient cultures, identifying the societal forces that shape individual and group behavior, and using mathematics to understand economic phenomena. By studying how humans and societies function, students will learn about individual and societal diversity, growth, and change.

f. Perspectives — P (1 course)

Courses in Perspectives give significant attention to individual and cultural diversity, multicultural interactions, sexual orientation, gender, racial, ethical, and religious issues within a culture across time or between cultures, thereby extending the principles and methods associated with the liberal arts to the broader circumstances in which students live. These courses emphasize the relationship of divergent ethics and moral values to contemporary social issues and global conflicts.

The Major

All students must successfully complete a course of study leading to one of the approved major programs in the College of Arts and Science, or successfully complete an individually designed interdisciplinary major designed in consultation with College of Arts and Science faculty and approved by the Committee on Individual Programs in the College of Arts and Science.

AXLE Curriculum Course Distribution

The distribution of Arts and Science courses into AXLE categories is available in YES. Using the advanced-class-search dialog box, use the pull-down menu under “Class Attributes” to select an AXLE category.

AXLE, the Major, and the Optional Minor

Courses used to satisfy requirements of AXLE may also be used to satisfy requirements of the major or the optional minor.

Advanced Placement under AXLE

With the exception of basic English composition and the foreign language proficiency requirements, no AXLE requirement may be fulfilled with any form of advanced placement credit (AP, IB, A-level, etc.).

Transfer Credit under AXLE

Generally, only courses taken in the College of Arts and Science may be used toward AXLE; however, any college course credit earned **prior** to graduation from high school, and transfer credit earned **before** admission to Vanderbilt, may be used toward fulfilling AXLE requirements.

Area of Concentration

During the junior and senior years, much of the student's work is concentrated in one large unit of intellectually related courses. The program of concentration may be arranged through a single major, an interdisciplinary major, or a double major. Each of the three options is described below. A triple major may be declared with the approval of the Administrative Committee.

Major Field

Under this plan, the student majors in one of the recognized fields. There shall not be fewer than 27 credit hours in the major field, but a given department may require up to 48 credit hours. Students may take more than the required number of credit hours in any major; any given department, however, may limit the total permissible credit

hours in a discipline.

For graduation, a student must have achieved a grade point average of at least 2.000 in all classes taken in the major. This set of courses includes all courses a student takes in the department or program of the major and all courses a student takes outside the department or program that may count toward the major. All courses that are listed as fulfilling credit hours required for the major, as listed in the *Undergraduate Catalog*, are included in calculating the grade point average in the major.

Within the framework of these general requirements, each department has its own policies governing major work, which are published elsewhere in this catalog or otherwise available to students.

Academic programs of the College of Arts and Science are varied and broad in scope, with departmental majors offered in the following fields:

African American and Diaspora Studies	History
Anthropology	History of Art and Architecture
Architecture and the Built Environment	Jewish Studies
Art	Law, History, and Society
Asian Studies	Mathematics
Biological Sciences	Medicine, Health, and Society
Chemistry	Molecular and Cellular Biology
Cinema and Media Arts	Philosophy
Communication Studies	Physics
Earth and Environmental Sciences	Political Science
Ecology, Evolution, and Organismal Biology	Psychology
Economics	Religious Studies
English	Russian Studies
Environmental Sociology	Sociology
French	Spanish
Gender and Sexuality Studies	Spanish and Portuguese
German Studies	Theatre

Defined Interdisciplinary Programs

Students may also major in defined interdisciplinary programs (listed below). There shall not be fewer than 27 credit hours in the major field, but a given program may require up to 48 credit hours. The student must achieve at least a 2.000 grade point average in all work taken in the major.

American Studies	German and European Studies
Biochemistry and Chemical Biology	Italian and European Studies
Classical and Mediterranean Studies	Latin American Studies
Communication of Science and Technology	Latino and Latina Studies
Economics and History	Neuroscience
European Studies	Public Policy Studies
European Studies: Russia and Eastern Europe	Spanish and European Studies
French and European Studies	

Students may combine an interdisciplinary major with a major in one of the recognized fields listed at the beginning of this section.

Declaration of the Area of Concentration

Students may formally declare a major at any time during the third semester of residence and must do so no later than the Friday before Spring Break of the fourth semester. The student selects a department or interdisciplinary program and contacts that department or program for assignment to an adviser. Students who wish to develop an individually designed interdisciplinary program apply to the associate dean who chairs the Committee on Individual Programs.

Each fall a program is arranged that provides for consultation of sophomores with department chairs, for the purpose of helping students select a major. Sophomore students who have not declared a major should participate in this program if they intend to attain junior standing before the next spring.

Students should declare their intention to pursue specific majors by completing forms available in the Dean's Office of Undergraduate Education as well as the various departmental and program offices. Departments and programs assign advisers to students who declare majors in their respective areas. Students have the responsibility to know and satisfy all requirements for majors that they intend to complete. When the student's major has been registered, access to the student's academic record is transferred from the pre-major adviser to the new major adviser, with whom they should work closely.

Students may not add a major(s) past the fifth class-day of the first semester of the senior year.

Individually Designed Interdisciplinary Majors

This plan permits students to contract for an individually designed program of concentration consisting of at least 48 credit hours of approved work. The program is constructed around a coherent academic purpose and may draw together the academic resources of a number of departments and schools. The program's purpose may include topical, period, or area studies, and must be consistent with the philosophy underlying a liberal arts education (see the "What is Liberal Education?" section of this catalog). The program should not be designed with a focus on pre-professional training (e.g., pre-business, pre-law, or pre-medicine). The student may be required to achieve a standard of proficiency in appropriately related areas such as foreign languages or mathematics in addition to the 48 credit hours constituting the program of concentration.

Each student must identify a major adviser who will offer advice and guidance. The major adviser must be a professor or full-time senior lecturer in the College of Arts and Science.

The student's plan for an individually designed interdisciplinary major is a statement of required courses. Furthermore, because of the nature of interdisciplinary majors, all courses that have previously been included in the student's plan are considered to be part of the major discipline. The student must achieve at least a 2.000 grade point average in all courses that are (or have been) part of the plan.

Normally, no more than three introductory-level courses will be counted toward the interdisciplinary major.

Students may not add a major(s) past the fifth class day of the first semester of the senior year.

Double and Triple Majors

This program permits a student to concentrate in two or three fields, which may or may not be intellectually related. With approval of the departments concerned, the student completes all of the requirements stipulated for the majors. Triple majors require approval of the Administrative Committee.

Each A&S major must include at least 24 credit hours that are being counted solely toward the major. This rule also applies to students who combine (in a double or triple major) a non-interdisciplinary major with an interdisciplinary major.

Students in the School of Engineering may use courses taken in the College of Arts & Science for relevant second majors even if those courses also fulfill a School of Engineering degree requirement.

Approved Second Majors Outside the College

All undergraduate courses, majors, and minors offered by Blair School of Music, School of Engineering, and Peabody College are approved for students in the College of Arts and Science. See the appropriate sections of the *Undergraduate Catalog* under each school for details. Arts and Science students with a second major from another Vanderbilt undergraduate school must earn a minimum of 90 credit hours in Arts and Science. Consultation with the student's Arts and Science major adviser is especially important.

Additional Programs in the College of Arts and Science

[The Optional Minor](#)

[Undergraduate Research](#)

[Study Abroad Programs](#)

[Pre-Professional Studies](#)

[Medicine](#)

[Dentistry](#)

[Nursing](#)

[Architecture](#)

[Engineering](#)

[Law](#)

[Teacher Education](#)

[Internships](#)

[Finding an Internship](#)

[Interdisciplinary Internships](#)

[Departmental Internships](#)

[Cost of an Internship](#)

[Combined B.A./M.A. \(4+1\) Program](#)

[Programs of Study](#)

[Admissions Overview](#)

[Advising](#)

[Curriculum](#)

[Scholarships and Financial Aid](#)

For information on the College Scholars program and departmental honors, please see the section titled Honors.

The Optional Minor

A minor is a program within a recognized area of knowledge offering students more than a casual introduction to the area but less than a major in it. Although the completion of a minor is not a degree requirement, students may elect to complete the courses specified for one or more minors. A student who completes all designated courses in a minor with a grade point average of at least 2.000 will have the minor entered on the transcript at the time of graduation.

Minors may be combined with any departmental major or interdisciplinary major, but minors may not be earned in the department or program of the major. Each minor must, however, include at least 15 credit hours that are being counted solely toward the minor. Courses may not be taken on a P/F basis if they are offered in the department of the minor or if they are being counted toward an interdisciplinary minor (see Academic Regulations).

Minors consist of a minimum of five courses of 3 or more credit hours each. Many minors require a greater number of credit hours and specific courses. When a minor is offered in a discipline that offers a major, only those courses that count toward the major may be counted toward the minor.

Students should refer to the appropriate sections of this catalog for specific requirements. Minors available at present are listed below.

Students should declare their intention to pursue specific minors by completing forms available in the Dean's Office of Undergraduate Education as well as the various departmental and program offices. Departments and programs assign advisers to students who declare minors in their respective areas. Students have the responsibility to know and satisfy all requirements for minors that they intend to complete.

Students may not add or change a minor after the final day of classes in the second semester of their senior year.

Optional minors are offered in the following fields and interdisciplinary programs:

African American and Diaspora Studies	English	Mediterranean Studies
American Studies	Environmental and Sustainability Studies	Nanoscience and Nanotechnology**
Anthropology	European Studies	Neuroscience
Arabic Language	French	Philosophy
Architecture and the Built Environment	Gender and Sexuality Studies	Physics
Art	German Studies	Political Science
Asian Studies	History	Portuguese
Astronomy	History of Architecture	Psychology
Biological Sciences	Islamic Studies	Quantum Information Science and Engineering
Brazilian Studies	Italian Studies	Religious Studies
Chemistry	Japanese Language and Culture	Russian Studies
Chinese Language and Culture	Jewish Studies	Scientific Computing**
Cinema and Media Arts	Korean Language and Culture	Sociology
Communication of Science and Technology	Latin American Studies	South Asian Language and Culture
Communication Studies	Latino and Latina Studies	Spanish
Data Science*	Mathematics	Sports and Society
Earth and Environmental Sciences	Medicine, Health, and Society	Theatre
Economics	Mediterranean Archaeology	Undergraduate Business Minor ^

* Administered by the four undergraduate schools

**Administered by the School of Engineering in collaboration with the College of Arts and Science

^Administered by the four undergraduate schools and the Owen Graduate School of Management

Approved Minors Outside the College

Arts and Science students are permitted to pursue a second major and/or a minor that has been approved by the faculties of the other Vanderbilt undergraduate schools: the Blair School of Music, the School of Engineering, and Peabody College of Education and Human Development. See the appropriate sections of the Undergraduate Catalog under each school for details. Minors may not be earned in the department or program of the major.

Undergraduate Research

All students have ample opportunity to participate in faculty research projects or to pursue research projects independently, both on campus and at remote sites. Such research has led to the publication of coauthored or student-authored papers and other presentations to the scholarly community. Summer and academic year research by undergraduates in all fields may be subsidized by the university or the College of Arts and Science. Students should contact the director of undergraduate studies in the field of interest for more information.

Study Abroad Programs

Vanderbilt offers study programs for all undergraduate students from Arts and Science, Blair School of Music, School of Engineering, and Peabody College to provide undergraduates immediate contact with cultures different from their own and to aid in the mastery of foreign languages. Students interested in applying for study abroad should consult their advisers to determine whether all degree requirements can be completed on schedule.

Brochures on all approved programs are available in the Global Education Office in Room 115, Student Life Center. GEO also maintains a website, vanderbilt.edu/geo. The study abroad programs are described in more detail in the Special Programs for Undergraduates section of this catalog.

When choosing programs in a city for study abroad, College of Arts and Science students may only apply to the Vanderbilt-approved overseas program(s). The College only accepts credit from international schools and programs that have been approved by Vanderbilt faculty, and for which the University has a contract or agreement.

Pre-Professional Studies

Medicine

Students interested in the study of medicine should plan their undergraduate programs in consultation with Dr. Michelle Grundy, health professions adviser. There is no formal premedical program of courses in the College of Arts and Science or elsewhere at Vanderbilt. Each student should plan a program to meet individual needs. The program should include whatever courses may be necessary to meet medical school admission requirements, all courses required for the major, all AXLE requirements, and elective options. Students may choose majors from any of the four undergraduate colleges, and may elect to pursue a double major or an interdisciplinary program of concentration.

A student who plans to apply for admission to the Vanderbilt University School of Medicine, as well as other medical schools, may choose either of the following options:

1. A student may qualify for admission with a B.A. degree, whether completed in three years or in four. Minimum requirements for admission generally would be met by completing at least two semesters of English, four semesters of chemistry including organic, two semesters of biology, two semesters of physics, and at least one semester of calculus/math. Since prerequisites may vary across medical schools, students are urged to consult the online resource, *Medical School Admission Requirements* (MSAR) published by the American Association of Medical Schools (at aamc.org) for school-specific information.

In light of the Medical College Admissions Test (MCAT) changes that took effect in 2015, it is recommended that students take one semester of biochemistry and one semester of introductory statistics. Additionally, through course work or self-directed study, students will need to be knowledgeable in basic concepts of psychology, sociology, and bioethics.

For more information, students are advised to visit the website of the Health Professions Advisory Office (vanderbilt.edu/hpao) and refer to the links for 1) "Premedical Preparation" and 2) "Threading a path through premedical expectations."

2. A student may qualify as a three-year student in the senior-in-absentia program (see Senior-in-Absentia in this catalog).

Dentistry

Students interested in predental studies should plan their undergraduate program in consultation with Dr. Michelle Grundy, health professions adviser. There is no formal predental program of courses at Vanderbilt. Predental studies should include courses necessary to meet dental school admission requirements, all courses required for the major, all AXLE requirements, and elective options. Students may choose majors from any of the four undergraduate colleges. They may also elect a double major or an interdisciplinary program of concentration. A student may apply

to dental school under the senior-in-absentia program (see Senior-in-Absentia in this catalog) or apply for admission after three years of college work without a degree.

Any student contemplating application to dental school should take at least two semesters of English, four semesters of chemistry including organic, two semesters of biology, two semesters of physics, and at least one semester of calculus/math. Since prerequisites may vary across dental schools, students are urged to consult the *ADEA Official Guide to Dental Schools* published by the American Association of Dental Schools.

Nursing

Students interested in developing a program that could lead to a master of science in nursing are advised to consult the Office of Admissions in the School of Nursing.

Architecture

Undergraduate students in the College of Arts and Science expecting to pursue architecture at the graduate level should complete at least one year of analytic geometry and calculus and one year of physics. Students may select any major but would want to include courses that emphasize a broad sense of art and architectural history, including courses in studio art. Before applying to specific schools of architecture, they would develop a portfolio of creative work. Further information is available from the pre-architecture advisers: Professor Vesna Pavlović, Department of Art, and Professor Kevin Murphy, Department of the History of Art and Architecture.

Engineering

Undergraduate students in the College of Arts and Science expecting to pursue engineering at the graduate level should normally major in a natural science or mathematics and, at a minimum, should complete two years of calculus or its equivalent, one year each of chemistry and physics, and at least an additional year of a natural science or mathematics. A minimum of one year of computer science is highly desirable. Students should seek specific information concerning admission from the engineering school of their choice as early as possible, preferably by the end of the sophomore year, to assure optimum preparation for entry into that school. Standards for admission vary, but usually a 3.00 average or better is required.

Law

There is no formal program of prelaw studies at Vanderbilt. Most law schools have no specific requirements for a prelaw curriculum but place great emphasis on the development of the student's ability to read and comprehend accurately, thoroughly, and rapidly; to speak and write clearly and correctly; to think precisely; and to analyze complex situations and weigh and appraise their several elements. The development of analytical skills and of mature study habits is vital. A broad cultural background is important—since law touches life at every point, every subject in the college curriculum may bear on the lawyer's work. Students interested in the study of law should plan their undergraduate programs in consultation with Dean Carrie Russell, prelaw adviser, in the Dean's Office of Undergraduate Education.

Teacher Education

Details will be found in Licensure for Teaching in the Peabody College section of this catalog.

Internships

Students may earn academic credit for the work of internships in the College of Arts and Science on a Pass/Fail basis

through interdisciplinary or departmental internships. Credit hours earned will not count toward major or minor requirements or toward AXLE, but will count as part of the total credit hours required for graduation. Students obtain their own placement and faculty adviser who works with them to develop a list of readings or research agenda for the internship, which must be approved by the director of internships in the College of Arts and Science (Associate Dean Daniel Morgan). The necessary forms for earning academic credit for an internship may be obtained from the Dean's Office of Undergraduate Education in 350 Buttrick Hall, although students register for internships through their respective school. The deadline for submitting registration forms to the office of Dean Jones for internship courses taken during summer term and fall semester is May 1. Students expecting to intern during the spring semester should submit registration forms by January 1.

Finding an Internship

Students searching for an internship opportunity locally or elsewhere should contact the Career Center.

Interdisciplinary Internships

INDS 3880 (fall, spring), 3884 (summer). 1 credit hour (repeatable)

Any student who is at least a sophomore and in good academic standing may earn one credit hour per semester or summer for an internship under this designation. This course may be repeated twice for a maximum of 3 credit hours exclusively on a Pass/Fail basis.

Departmental Internships

Maximum of 15 credit hours (may be taken only once)

Under this option students from any discipline may earn academic credit for internships in the departments listed below if they meet the minimum GPA requirements and have 6 credit hours of prior work in the department in which they wish to intern. Students are responsible for securing a faculty adviser for the internship and developing an academic plan of work for the internship opportunity, both of which must be approved by the director of undergraduate studies in the department in which the internship is housed. (In some instances, the DUS will serve as the faculty adviser for all internships taken in that discipline.) All internships under this designation are taken concurrently with a research and/or readings course. The latter is taken on a graded basis and may count toward requirements for a major or minor. Students should consult the director of undergraduate studies in the department of interest to obtain additional information about internships in that discipline. The following departments offer up to 15 credit hours of academic credit per semester or summer for the following courses (internship courses are offered during FALL, SPRING, and SUMMER sessions):

AADS 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [3-6].

AMER 3880-3881. 3880: Internship Training [1-6], 3881: Internship Readings and Research [3-6].

ANTH 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [1-6].

BCB 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [1-6].

CLAS 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [1-6].

CMA 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [1-6].

EES 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [3-6].

FREN 3880-3881. 3880: Internship Training in France [1], 3881: Internship Readings and Research in France [3].

GSS (formerly WGS) 3880, 3882-3883. 3880: Internship Training [1-9], 3882: Internship Readings [1-3], 3883:

Internship Research [1-3].

HART 3880, 3883. 3880: Internship Training [1-9], 3883: Internship Research [1-3].

HIST 3880, 3882-3883. 3880: Internship Training [3-9], 3882: Internship Readings [3], 3883: Internship Research [3].

JS 3880, 3883. 3880: Internship Training [1-3], 3883: Internship Research [3].

LAS 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [3-6].

MHS 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [1-6].

PSCI 3880, 3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [1-6].

PSY 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [3-6].

RUSS 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [3-6].

SOC 3880-3881. 3880: Internship Training [1-9], 3881: Internship Readings and Research [3-6].

SPAN 3880-3881. 3880: Internship Training in Spain [1], 3881: Internship Readings and Research in Spain [3].

More complete information regarding departmental internship courses may be found in the course descriptions in this catalog.

Cost of an Internship

Internships taken during the fall or spring semester will fall under the normal tuition charge unless the student falls below 12 or exceeds 18 credit hours during the semester. In both instances, the hourly tuition charge will apply with permission for an underload/overload from the appropriate academic dean. Students will be charged for internships taken during summer on the basis of the hourly tuition rate for summer school unless approved in advance to receive the internship subsidy (see the Career Center website).

Combined B.A./M.A. (4+1) Program

The College of Arts and Science offers students in many departments and programs the opportunity to earn both the bachelor's degree and the master's degree in a shorter period of time and at less cost than is normally the case.

Exceptional students in the College of Arts and Science can obtain both degrees in an expedited period, typically within, but not less than, five years.

The usual period of study for both the bachelor's and the master's degree is six years. Through the 4+1 option, the student and her or his adviser plan a five-year program of study. It is important to note that there is no provision for obtaining both degrees in a period shorter than five years. The program is intended for selected students for whom the master's degree is sufficient preparation for their career goals, is desirable as a goal in itself, or is viewed as additional preparation before pursuing a doctorate or a professional degree.

The areas of study available for the Combined B.A./M.A. (4+1) option within Arts and Science are determined by individual departments and programs, which also determine the policies and guidelines to be followed. Students will be admitted to the Combined B.A./M.A. program only by the invitation and the approval of the department or program.

Programs of Study

The 4+1 option is currently available in the following departments and programs: English; French; German; History; History of Art and Architecture; Latin American Studies; Mathematics; Medicine, Health, and Society; Philosophy; Political Science; and Psychology. Students are welcome to discuss the Combined B.A./M.A. (4+1) option with any of these departments and programs.

Admissions Overview

The Combined B.A./M.A. program allows Vanderbilt University students to study for both degrees typically, but not necessarily, in the same department. Undergraduates with strong academic records may apply for admission to the program after the first semester of their junior year. Qualifying students are normally accepted into the program in the second semester of the junior year.

To apply for admission, students will first consult with the Dean's Office of Undergraduate Education (350 Buttrick Hall), and then submit to the prospective graduate department or program a "Petition to Apply to the Combined B.A./M.A. (4+1) Degree Program" (available at as.vanderbilt.edu/academics/specialdegree/4plus1.php), a statement of purpose, a formal application to the Graduate School, a preliminary program proposal, two letters of recommendation from Vanderbilt faculty, and a current transcript. Application forms are available for download or can be completed online at vanderbilt.edu/gradschool. GRE scores or other admissions requirements may be specified by the prospective department. Admission to the 4+1 option is highly selective. An accomplished academic record, a demonstrated commitment to pursue graduate study, and a strong endorsement from Vanderbilt faculty are key elements to the successful applicant. Students will be provisionally accepted as graduate students, pending completion of all undergraduate requirements. Graduate student status will apply in the fifth year.

Advising

Prospective students should discuss with one of their advisers general information on the program and whether this program is appropriate to their long-term goals. All students are encouraged to discuss their plans and goals with their undergraduate pre-major and major adviser. Especially in cases where the intended graduate program differs from the undergraduate major, the student is further encouraged to seek advice from the advisers in the graduate program.

Curriculum

Students in a 4+1 program must satisfy all requirements for both degrees. Advanced Placement (AP) credits will often be used toward satisfying general curriculum requirements, for a maximum of 18 credit hours. The principal distinction between this program and the standard graduate program is two-fold: (1) students are allowed to take master's courses while completing the bachelor's degree, and (2) students are thereby enabled to complete both degrees within five years.

In order to complete the program in five years, students will be expected to complete most, if not all, of the requirements for their undergraduate degree by the end of the first semester of the senior year. Until all baccalaureate requirements are fulfilled, the student will follow College of Arts and Science undergraduate policies and procedures. It is also suggested that students begin taking graduate courses toward the master's degree in the second semester of the senior year. Most graduate programs participating in this option have a non-thesis plan of study requiring 30 graduate credit hours in addition to the requirements for the undergraduate degree. An average load per semester as a graduate student is 9-12 credit hours.

Scholarships and Financial Aid

Students who are receiving scholarships or other forms of financial aid as a Vanderbilt undergraduate are advised that such aid applies in most cases only toward the completion of the bachelor's degree or the first four years of their studies (which may include their taking some graduate courses during their senior year). Students wishing to

pursue the 4+1 option should seek support for their fifth year of study through student loans and other financial aid.

For additional information, contact A&S Deans' Office, 350 Buttrick Hall, or consult the website as.vanderbilt.edu/academics/specialdegree/4plus1.php.

Honors in the College of Arts and Science

[Founder's Medal](#)

[Latin Honors Designation](#)

[College Scholars Program](#)

[Departmental Honors](#)

[Dean's List](#)

[Phi Beta Kappa](#)

[Honor Societies for First-Year Students](#)

[Other Awards and Prizes](#)

Founder's Medal

The Founder's Medal, signifying first honors, was endowed by Commodore Cornelius Vanderbilt as one of his gifts to the university. The recipient is named by the Dean after consideration of faculty recommendations and overall academic achievements, as well as grade point averages of the year's highest ranking summa cum laude graduates.

Latin Honors Designation

Honors noted on diplomas and published in the Commencement program are earned as follows:

Summa Cum Laude. Students whose grade point average equals or exceeds that of the top 5 percent of the previous three years' Arts and Science graduating seniors.

Magna Cum Laude. Students whose grade point average equals or exceeds that of the next 8 percent of the previous three years' Arts and Science graduating seniors.

Cum Laude. Students whose grade point average equals or exceeds that of the next 12 percent of the previous three years' Arts and Science graduating seniors.

College Scholars Program

The College Scholars Program is the honors program for the College of Arts and Science. All first-year students in the College of Arts & Science are invited to apply at the end of their first semester. Students are selected to participate in the College Scholars program based on their academic record and achievements from their first semester on campus. These students have the opportunity to pursue advanced scholarly work in honors seminars and enriched courses or independent-studies projects. The College Scholars program is open only to Arts and Science students.

College Scholars may achieve the designation "Honors in the College of Arts and Science" on their diplomas by acquiring fifteen "honors points" in the program. The honors points system encourages breadth and depth. Students accomplish these goals by taking honors seminars in several AXLE categories and by doing independent projects (independent studies, enriching courses, departmental honors research, internships, service, and creative projects). A maximum of thirteen points may be earned in honors seminars, and a minimum of two research projects must be completed to earn fifteen points. Students must earn a grade of "B" or better in classes that earn honors points. To remain in good standing in the program, students must maintain a minimum grade point average of 3.000.

Further information on the College Scholars program and honors in the College of Arts and Science may be obtained from Associate Dean Dan Morgan.

Departmental Honors

To encourage individual development and independent study within their field, many departments and interdisciplinary programs of the College of Arts and Science offer honors programs for selected, superior candidates. Students often begin departmental honors work in the junior year, but some projects start in the senior year. To qualify for consideration, students must have (a) attained a minimum grade point average of 3.300 in all work previously taken for credit and in the major, and (b) exhibited to the department(s) and/or interdisciplinary program(s) other evidence of the student's capacity for independent study. Some departments and interdisciplinary programs require higher grade point averages in all work previously taken for credit and/or in the major. Formal admission is by the director of honors study in the Dean's Office of Undergraduate Education after nomination by the department(s) and/or interdisciplinary program(s) concerned.

Requirements to complete departmental honors vary from department to department (see descriptions in the appropriate department sections of this catalog). Candidates are required to demonstrate some degree of originality and maturity in the methods of independent investigation, analysis, and criticism, and skill in the written presentation of independent work. This standard usually requires a senior thesis but may be satisfied, in departments that have gained approval of this procedure, by a series of briefer critical papers.

Departmental honors work culminates in an examination given in the second semester of the senior year. The examination shall be both oral and written except in departments where honors students must take all courses required of standard majors in addition to those required of honors students. These departments have the option of making the examination either oral or both oral and written. The examination shall be conducted by a committee with a majority of examiners who have not participated in the candidate's honors work. Where feasible, examiners from other institutions may be included. The examination shall cover the thesis and specific fields of the independent work and may, at the discretion of the department, include all of the major work. Successful candidates are awarded honors or highest honors in their field, and this designation appears on their diplomas.

Dean's List

The Dean's List recognizes outstanding academic performance in a semester. Students are named to the Dean's List when they earn a grade point average of at least 3.500 while carrying 12 or more graded credit hours, with no temporary or missing grades in any course (credit or non-credit), and no grade of *F*. A student must be in a degree-granting school.

Phi Beta Kappa

The Alpha Chapter of Phi Beta Kappa in the state of Tennessee honors scholarly attainments in the liberal arts and sciences and annually elects seniors and juniors to membership during the spring semester.

Seniors who have completed at least 60 credit hours in the College of Arts and Science and earned a cumulative grade point average of 3.65 or higher are eligible for consideration, as are juniors who have completed at least 70 credit hours at Vanderbilt with a cumulative grade point average of at least 3.90. Juniors must have completed most AXLE requirements by the end of their junior year. For calculating credit hours and judging residence requirements, the chapter treats foreign study programs in the same manner as does the College of Arts and Science.

Attainment of the minimum required grade point average does not guarantee election. Membership in Phi Beta Kappa is based on a demonstration of scholarly achievements, broad cultural interests, and high moral character.

The scholarly work must emphasize liberal rather than applied or professional studies. As a guideline, for seniors at least 90 credit hours must qualify as liberal. Grades earned in applied (vocational) or professional course work are not counted in computing the grade point average. The breadth of a candidate's program, as shown by the number and variety of courses taken outside the major, is also considered.

Phi Beta Kappa has long emphasized the importance of mathematics and foreign language in a liberal education. In keeping with this tradition, the chapter considers only those students who have demonstrated proficiency in these areas beyond the AXLE graduation requirements. Proficiency in reading, writing, and speaking a foreign language is typically demonstrated by passing a course in a language at a level at least one semester beyond the AXLE requirements. Courses must be taken on a graded rather than a P/F basis. The foreign language requirement may be satisfied with College Board SAT Subject, Advanced Placement, International Baccalaureate, or Tennessee Language Center test scores.

Mathematics proficiency may be demonstrated by completing two semesters of calculus or one semester of calculus and one semester of statistics. Courses must be taken on a graded rather than a P/F basis. The mathematics requirement may be satisfied with Advanced Placement, International Baccalaureate, or A-Level exam credit, but not College Board SAT Subject test scores.

In no event may the total number of persons elected from any senior class exceed 10 percent of the class, and from any junior class exceed six persons. Eligible juniors who are not elected are reconsidered for membership in their senior year.

Refer to the chapter website my.vanderbilt.edu/phibetakappa for additional information and detailed eligibility criteria.

Honor Societies for First-Year Students

First-year students who earn a grade point average of 3.500 or better for their first semester are eligible for membership in the Vanderbilt chapters of Phi Eta Sigma and Alpha Lambda Delta.

Other Awards and Prizes

MORRIS H. BERNSTEIN JR. PRIZE IN LATIN DECLAMATION. Established in 1983 by William H. Bernstein (B.A. 1983) in memory of his father (B.A. 1943, M.D. 1946). Awarded after a competition, open to any undergraduate who has studied two semesters of Latin, in which participants deliver from memory Latin passages selected to reflect classical ideals.

FOUNDER'S MEDAL FOR ORATORY. Awarded to the senior who has demonstrated the highest standard in public speaking.

FRENCH GOVERNMENT PRIZES. Awarded for excellence in French studies.

EDWIN S. GARDNER MEMORIAL PRIZE FOR EXCELLENCE IN FRENCH. Awarded to a graduating senior who majored in French.

ALEXANDER HEARD AWARD. Presented annually to the outstanding senior political science major.

RICHARD J. LARSEN AWARD FOR ACHIEVEMENT IN UNDERGRADUATE MATHEMATICS. Established in 2005 to honor the commitment to undergraduate education of Richard J. Larsen, member of the faculty from 1970 to 2005. Presented each spring to the senior math major judged by the faculty to have excelled in all aspects of undergraduate mathematics.

AVERY LEISERSON AWARD. Presented for the best research paper or essay written by an undergraduate in a political science course.

MERRILL MOORE AWARD. Endowed in 1961 by Mrs. Merrill Moore, Squantum, Massachusetts, in memory of her husband. Presented to a graduating senior or a student entering the junior or senior class, selected by the Department of English on the basis of "literary promise and the psychological or practical usefulness of the award" to the student.

DANA W. NANCE PRIZE FOR EXCELLENCE IN A PREMEDICAL CURRICULUM. Endowed in 1985 by the family and friends of Dana W. Nance (B.A. 1925, M.D. 1929). Awarded annually to a student who has demonstrated the perseverance to succeed in a premedical curriculum and who embodies the attributes of a caring physician.

JUM C. NUNNALLY AWARD. Established in 1987 in memory of this professor of psychology from 1960 to 1982. Presented to a graduating senior in the honors program of the Department of Psychology for the best research project.

DONALD E. PEARSON AWARD. Presented annually to a graduating senior in chemistry adjudged the most distinguished in undergraduate research in chemistry.

PHI BETA KAPPA FRESHMAN SEMINAR AWARD. Awarded annually to students who have done outstanding creative work in freshman seminars.

AWARD FOR OUTSTANDING RESEARCH IN MOLECULAR BIOLOGY. Presented to a senior in molecular biology for outstanding research performed as part of the major program in molecular biology.

OUTSTANDING SENIOR IN CHEMISTRY AWARD. Presented annually to that graduating senior in chemistry who, in the opinion of the faculty of the Department of Chemistry, shows most promise of an outstanding career.

HENRY LEE SWINT PRIZE. Awarded since 1978 for the best essay in history.

STANLEY AND ANN T. TARBELL PRIZE IN ORGANIC CHEMISTRY. Awarded annually to a graduating senior who has excelled in organic chemistry by earning the highest grades in courses or performing outstanding research in organic chemistry.

UNDERWOOD MEMORIAL AWARD. Endowed in 1961 by the late Newton Underwood in memory of his father, Judge Emory Marvin Underwood, long-time member of the Board of Trust. The cash award is given to the most deserving and most promising graduating senior or graduate student in physics.

SUSAN FORD WILTSHERE PRIZE. Cosponsored by the Gender and Sexuality Studies program and the Women's Faculty Organization, this award is given annually for the best undergraduate essay that deals with gender issues.

KATHARINE B. WOODWARD PRIZE. Awarded since 1943 and endowed in 1962 by Miss Katharine B. Woodward, Class of 1919, for excellence in Spanish studies.

MARGARET STONEWALL WOOLDRIDGE HAMBLET AWARD. Endowed in 1983 by Clement H. Hamblet in memory of his late wife, who began her art studies at Peabody College. The award is given to a graduating student of outstanding merit in studio art to enable the pursuit of his or her creative development through one year of extensive travel and further studies in studio art.

College of Arts and Science Programs of Study

[African American and Diaspora Studies](#)

[Anthropology](#)

[Arabic](#)

[Art](#)

[Asian Studies](#)

[Biochemistry and Chemical Biology](#)

[Biological Sciences](#)

[Business Studies](#)

[Chemistry](#)

[Cinema and Media Arts](#)

[Classical and Mediterranean Studies](#)

[Climate and Environmental Studies](#)

[Communication of Science and Technology](#)

[Communication Studies](#)

[Culture, Advocacy, & Leadership](#)

[Earth and Environmental Sciences](#)

[Economics](#)

[Economics and History](#)

[English](#)

[European Studies](#)

[French and Italian](#)

[Gender and Sexuality Studies](#)

[German, Russian, and East European Studies](#)

[Hebrew](#)

[History](#)

[History of Art and Architecture](#)

[Honors](#)

[Interdisciplinary Studies](#)

[Jewish Studies](#)

[Latin American Studies](#)

[Latino and Latina Studies](#)

[Mathematics](#)

[Medicine, Health, and Society](#)

[Nanoscience and Nanotechnology](#)

[Neuroscience](#)

[Philosophy](#)

[Physics and Astronomy](#)

[Political Economy](#)

[Political Science](#)

[Psychology](#)

[Public Policy Studies](#)

[Quantum Information Science and Engineering](#)

[Religious Studies](#)

[Scientific Computing](#)

[Sociology](#)

[Spanish and Portuguese](#)

[Teacher Education](#)

[Theatre](#)

College of Arts and Science Courses

Explanation of Course Numbers and Symbols **1000-level courses** are introductory courses primarily taken by freshmen and sophomores.

2000- and higher-level courses are intermediate- or advanced-level courses which typically require some prerequisite. They are primarily intended for sophomores, juniors, and seniors.

Hours are semester hours—e.g., a three-hour course carries credit of three semester hours.

Bracketed figures indicate semester hours credit, e.g., [3].

First-Year Writing Seminars are numbered 1111.

W symbols used in course numbers designate courses in the College of Arts and Science that will meet the AXLE writing requirement.

The AXLE designation in parentheses in each course description indicates which AXLE requirement pertains. For example, (HCA) indicates credit for Humanities and the Creative Arts in AXLE. The designation (No AXLE credit) indicates the course does not satisfy an AXLE degree requirement.

The university reserves the right to change the arrangement or content of courses, to change the texts and other materials used, or to cancel any course on the basis of insufficient enrollment or for any other reason.

It is the responsibility of each student to avoid duplication, in whole or in part, of the content of any courses offered toward the degree. Such duplication may result in withdrawal of credit.

[African American Diaspora Studies](#)

[American Studies](#)

[Anthropology](#)

[Arabic](#)

[Aramaic and Syriac](#)

[Art Studio](#)

[Asian Studies](#)

[Astronomy](#)

[Biochemistry & Chemical Biology](#)

[Biological Sciences](#)

[Business Studies](#)

[Catalan](#)

[Chemistry](#)

[Chinese](#)

[Cinema and Media Arts](#)

[Classical Hebrew](#)

[Classics](#)

[Communication Studies](#)

[Communication of Science and Technology](#)

[Digital Humanities](#)

[Earth and Environmental Sciences](#)

[Economics](#)

[English](#)

[Environmental and Sustainability Studies](#)

[European Studies](#)

[French](#)

[Gender and Sexuality Studies](#) (formerly Women's and Gender Studies)

[German](#)

[Greek](#)

[Haitian Creole Language](#)

[Hebrew](#)

[Hindi Urdu Language Instruction](#)

[History](#)

[History of Art](#)

[Honors](#)

[Humanities](#)

[Interdisciplinary Studies](#)

[Italian](#)

[Japanese](#)

[Jewish Studies](#)

[K'iche' - Mayan Language](#)

[Korean](#)

[Latin](#)

[Latin American Studies](#)

[Latino and Latina Studies](#)

[Malagasy](#)

[Mathematics](#)

[Medicine, Health, and Society](#)

[Neuroscience](#)

[Philosophy](#)

[Physics](#)

[Political Science](#)

[Portuguese](#)

[Psychology \(AS\)](#)

[Public Policy Studies](#)

[Religious Studies](#)

[Robert Penn Warren Center](#)

[Russian](#)

[Sanskrit](#)

[Sociology](#)

[Spanish](#)

[Theatre](#)

[Tibetan Language](#)

Blair School of Music

Music at Vanderbilt

[Facilities](#)

[The Blair Concert Series](#)

[Blair Academy at Vanderbilt](#)

The Blair School of Music focuses on the personal and professional education of highly talented young musicians who demonstrate an exceptional capacity and motivation to shape our increasingly diverse and complex global century—through music, with music, and in music.

Our unique “Blair Experience” builds on the very foundation of methods, repertoires, and ensembles shared by the world's most competitive schools of music and conservatories but goes well beyond that, immersing students in the transformative spaces of a world-class research university committed to inclusive excellence with distinction in areas ranging from theology to science, arts to engineering, humanities to business, and education to law. Graduates of the Blair School are recognized as superior artists and scholars distinguished by their global mindsets, broad interdisciplinary competencies, and unyielding commitments to advocacy, entrepreneurship, and education.

The Blair School has been an integral part of Nashville’s musical environment since its founding in 1964 by the Justin and Valere Potter Foundation through a bequest of Valere Blair Potter. In 1981 the school was merged with Vanderbilt following the university’s decision to develop an excellent program in music. Studies leading to the professional bachelor of music in performance were initiated in 1986.

The Bachelor of Music degree program includes majors in performance, composition, jazz studies, and integrated studies. The performance major is available in any orchestral instrument, piano, saxophone, euphonium, and voice. The major in composition emphasizes analytical skills as well as the development of students’ creativity. The jazz studies major offers a focus on American and non-Western music traditions while also developing the core fundamentals of Western music common to all Blair majors. The integrated studies major combines the study of composition or a performance area with an additional concentration in music and forms the basis for a five-year program in teacher education offered cooperatively with Peabody College. In the Bachelor of Musical Arts degree program, composers and performers complete an in-depth music study in addition to a field outside of music.

A non-professional 31-hour liberal arts music major makes it possible for students outside the Blair School to choose music as a second major. Students in other schools and colleges of the university also may pursue a minor in music, music composition, musicology/ethnomusicology, or music performance. And Blair offers a remarkable variety of electives for students who wish to enrich their studies with credit in music courses, ensembles, or performance instruction, or to select music as an extracurricular activity.

Blair School of Music is home to internationally known faculty soloists and ensembles, and Blair's performers, composers, ethnomusicologists, and musicologists are among the most respected in their fields. Members of the faculty ensembles provide private performance instruction and coach chamber music ensembles and performance classes. The faculty's dedication to teaching and a low student/faculty ratio provide students the personal attention that fosters maximum musical growth and understanding. The school is committed to its goal of developing students who are among the most articulate, culturally aware, and artistically sensitive of any graduates in the country.

Facilities

The Blair building incorporates innovative developments in acoustical design and engineering. It contains teaching studios and faculty offices, classrooms, rehearsal halls, practice rooms, library, administrative offices, technology and keyboard labs, and concert venues. The 272-seat Steve and Judy Turner Recital Hall is the locus for student recitals and concerts and master classes by faculty members and visiting artists held on a regular basis. It also houses the Dobson Organ Opus 92 (2014), designed in the tradition of eighteenth-century eastern German organs not unlike those Bach knew, with additions and accommodations for twenty-first century use. Opened in spring 2002, the 609-seat Ingram Hall garnered immediate acclaim for its superb acoustics, its visual beauty, and its enhancement of the school's ability to host and produce orchestra, opera, and other major concert events.

The Anne Potter Wilson Music Library is a division of the Jean and Alexander Heard Libraries. The collection, begun in 1947, was moved from Peabody College to its new and permanent home at Blair in the summer of 1985. Named to honor Anne Potter Wilson by the Vanderbilt Board of Trust in 1987, the 12,000-square-foot library holds more than 116,000 books, scores, sound and video recordings, and subscriptions to journals and online music databases. It is equipped with a seminar room, listening and viewing stations, computer workstations, and study facilities. A variety of equipment is available for check out including laptops, microphones, phone chargers, midi keyboards, headphones, and umbrellas. Music librarians and staff are available to assist users with music research and finding resources for performance, study, or instruction.

The Blair Concert Series

The Blair Concert Series offers a broad array of music performances to the university community and the region. National and international artists and ensembles, the Blair faculty, including resident ensembles and soloists, and student ensembles and performers are all featured. All student recitals are open to the public. More than 350 concerts are presented at the school each year, and most are free of charge, as a gift to the community.

A milestone in the Blair School's history was "The Blair Commissions: Music for the 21st Century," a project funded by the James Stephen Turner Family Charitable Foundation, which has commissioned several important works by renowned composers from 2005 through 2019. These include works by Susan Botti and Peter Schickele and four major works by Michael Hersch. Each composition received its premiere in Nashville, and all the works were then either recorded or performed in New York. The project has served two intertwined missions: to promote the composition of outstanding works by the world's leading composers and to invite attention to the excellent ensembles and faculty performers of Vanderbilt University.

Composers-in-residence who have visited the Blair School include Robert Beaser, William Bolcom, Susan Botti, George Crumb, Michael Daugherty, Lukas Foss, Gabriela Lena Frank, John Harbison, Michael Hersch, Karel Husa, Steven Mackey, Donald Martino, Cindy McTee, Jessie Montgomery, Kevin Puts, Christopher Rouse, Adam Schoenberg, Joseph Schwantner, Frank Ticheli, Michael Torke, and Joan Tower.

Blair Academy at Vanderbilt

Individual, group, class, and ensemble instruction for precollege and adult students (defined as students above high school age not receiving university credit) is offered through the Blair Academy at Vanderbilt. Course offerings are available at blair.vanderbilt.edu/blair-academy/.

Classes for Students in Other Vanderbilt Schools and Colleges

[Ensembles](#)

[Performance](#)

[Group Performance Instruction: Non-Major](#)

[Individual Performance Instruction](#)

[Music Minors](#)

[Music Minor](#)

[Musicology/Ethnomusicology Minor](#)

[Music Composition Minor](#)

[Music Performance Minor](#)

[Music as a Second Major](#)

[Music Major \(Second Major\)](#)

The Blair School of Music welcomes all Vanderbilt students into its classes and studios. A large number of courses are designed specifically for non-majors. Many classes are held in Sarratt Cinema, Alumni Hall, and other central campus locations. Non-majors may also participate in any and all music major courses for which they are qualified.

A wide variety of music courses fulfill liberal arts core requirements for undergraduates in the College of Arts and Science, the School of Engineering, and Peabody College. Students in the School of Engineering can count up to 12 hours of MUSE, MUSO, COMP, MREP, MUTH, and performance courses, except MUSO 1001, towards liberal arts core requirements. How students in the College of Arts and Science and Peabody College may use music courses varies according to their specific degree and program requirements.

Ensembles

The Blair School of Music sponsors several major performing ensembles, including the Vanderbilt University Singers, Vanderbilt Chorale, Orchestra, Wind Symphony, Opera Theatre, and Blair Big Band. Other non-western and vernacular ensembles, such as the African Performing Ensemble and the Steel Drum/Pan Ensemble, are also available for credit. A large number of smaller ensembles and chamber music groups also exist, offering students a wide variety of experiences.

Auditions. Auditions for the major performing ensembles are held at the beginning of each semester. Audition information can be found on the Blair School of Music website. Assignment is at the discretion of the director. Students need the approval of the appropriate faculty chamber music coordinator before enrolling in chamber music; if participation has not been discussed with the coach, students may register tentatively for the "to be assigned" section of chamber music. Openings in ensemble are not guaranteed.

Credit. Students may register for course credit. Audit status or registration for zero hours may be possible with permission of the director and the associate dean of the student's school or college.

Performance

Performance instruction in individual or group settings is available for university credit for an additional fee. Private instruction is offered in all orchestral instruments and in piano, organ, guitar, saxophone, euphonium, steel drum/pan, and voice. Credit is flexible, but beginning students may register for only 1 credit hour. Students can earn either 1 or 2 credit hours each semester, depending on lesson length and number of required practice hours. Students in the School of Engineering can count up to 12 hours of performance courses towards liberal arts core requirements. For others, performance is elective credit. Group instruction is offered in piano, guitar, and percussion; groups have maximum of six students and earn 1 credit hour.

Group Performance Instruction: Non-Major

Group instruction is designed for beginning students with emphasis on basic technique, rhythm, tone, and musical interpretation. Groups are limited to six students.

Registration. New students must interview with the appropriate faculty member before finalizing registration. Instructions are given in the online registration system.

Fees. Music fees are in addition to tuition charges and are not refundable after the change period. The cost for group instruction is \$1,013 per semester for one 50-minute class weekly. (Fees, set annually by the Board of Trust, are subject to review and change without further notice.)

Individual Performance Instruction

Individual instruction is focused on the art and practice of an instrument or voice, with emphasis on tone quality, technique, rhythm, interpretation, and literature. Blair offers collegiate-level performance instruction for non-majors at the 1100 level. 2100-, 2200-, 4100- and 4200-level courses are open only to B.Mus. and B.Mus.Arts students.

Registration. New students must interview with the appropriate faculty member before finalizing registration.

Information is available in YES. Enrollments are limited.

Credit. University students enrolled in individual instruction may earn 1 or 2 credit hours depending on lesson length and practice commitment.

- 30-minute or 45-minute lessons with 5 hours minimum weekly practice earn 1 credit
- 60-minute lessons with 10 hours minimum weekly practice earn 2 credit
- Beginners may not register for more than 1 hour of credit

Fees. Music fees are charged in addition to regular tuition, and are not refundable after the change period.

Students receiving need-based financial aid may request that music fees be considered in their financial aid package. Students with a declared second major or minor in music will be charged approximately one-half the music performance instruction fee. For instrument courses numbered 1100, fees per semester are as follows:

	Elective Credit/Non-Blair Students	2nd majors and minors receive 50% discount
One 30-minute lesson weekly	\$1,311	
One 45-minute lesson weekly	\$1,838	
One 60-minute lesson weekly	\$2,304	

Fees, set annually by the Board of Trust, are subject to review and change without further notice.

Music Minors

Students may elect one of four minors: music, music composition, musicology/ethnomusicology, or music performance. Formal admission to the music minor or performance minor is contingent upon a performance audition that meets departmental standards for the intermediate or advanced level of study. Following interviews with the appropriate department, students plan their studies with Blair advisers. Contact information and declaration paperwork are available online: blair.vanderbilt.edu. Students must complete all requirements for the music minors with standard grading basis (that is, not Pass/Fail).

Music Minor. 24 or 25 hours.

Music Theory. 6 or 7 hours.

MUTH 1200 and 1210 (6 hours); or MUTH 2100/2110 and MUTH 2200/2220 (7 hours)

Musicology/Ethnomusicology. 12 hours.

MUSL 2200W or 1200

One course chosen from: MUTH 3890, MUSL 1111-02 (Shakespeare and Music), 1210, 1220, 1240, 3220-3240, and 3890

One course chosen from: MUSL 1100, 1105, 1111-01 (Music and Global Health), MUSL 1111-03 (Music and Modernism), MUSL 1111-04 (Music, Identity, and Diversity), 2110, 2150, 2610, 3220-3240, and 3890

One course chosen from: MUTH 3890 or any MUSL course

Performance. 4 hours.

Individual performance instruction in a single instrument for at least 4 semesters (any orchestral instrument, piano, organ, guitar, saxophone, euphonium, voice, or JAZZ 1100).

Students must meet minimum performance standards for admission to the program, earning a total of 4 hours. Declaration forms are available at blair.vanderbilt.edu/academics.

Ensemble. 2 hours (2 different semesters).

Participation for two semesters in an appropriate performing ensemble, after consultation with the minor adviser.

Musicology/Ethnomusicology Minor. 18 or 19 hours.

Music Theory. 6 or 7 hours.

MUTH 1200 and 1210; or MUTH 2100/2110 and MUTH 2200/2220

Musicology/Ethnomusicology. 12 hours.

MUSL 2100, MUSL 2200W*, MUSL 3100, and one course from MUSL 3220-3240 or 3890.

*Students who have completed MUSL 1200 must substitute another course for MUSL 2200W, selected from MUSL 1100, 1105, 1210, 1220, 1240, 1300, 1600, 1610, 1620, 1630, 1640, 1650, 1660, 1670, 2110, 2150, 2320, 2600, 2610, 3220-3240, 3160, or 3890.

Music Composition Minor. 26 hours.

Music Theory. 13 hours.

MUTH 2100, 2200, 2300, 2400; MUTH 2110, 2220

Musicology/Ethnomusicology. 6 hours.

MUSL 1200 or 2200W, 3100

Composition. 7 hours.

COMP 1100; COMP 1150 (4 semesters)

Formal admission into the music composition minor requires departmental approval; successful completion of COMP 1100 (Composition Workshop) is a pre-requisite to applying. Upon completion of COMP 1100, applicants may submit to the Composition Chair a portfolio of three completed works, with scores and recordings (MIDI is acceptable). The entire composition faculty will then evaluate the portfolio and make a final decision.

Music Performance Minor. 25 or 26 hours.

Music Theory. 6 or 7 hours.

MUTH 1200 and 1210; or MUTH 2100/2110 and MUTH 2200/2220

Musicology/Ethnomusicology. 6 hours.

MUSL 2200W or 1200

One course chosen from MUSL 3220-3240 or 3890 (Jazz students: MUSL 1620)

Performance. 8-11 hours.

Individual instruction in a single instrument for at least 6 semesters (any orchestral instrument, piano, organ, guitar, saxophone, euphonium, or voice.) Jazz students earn 8 hours in 4 semesters of JAZZ 1100.

Students must meet minimum performance standards for admission to the program, earning a total of 8-11 hours. Repertoire information and declaration forms are available at blair.vanderbilt.edu/academics.

Ensemble. 2 hours (two different semesters).

Participation for two semesters in an appropriate performing ensemble, as assigned following audition. String, woodwind, brass, percussion, and harp students must audition for MUSE 1010, Instrumental Ensemble.

Students who are not placed in MUSE 1010 may participate in another appropriate ensemble, contingent upon permission of the ensemble instructor and the studio instructor. Guitar and voice students must audition for MUSE 1020, Vanderbilt University Singers. Keyboard students must participate as a pianist for one semester in MUSE 2300, 2310, 2320, 2330, 2210, 2230, or 2270; or in 1010, 1020, 1030, or 2120, contingent upon permission of the ensemble instructor and the piano instructor. Jazz students may choose MUSE 1310, 1320, or 1330.

Elective for Jazz students. 2-3 hours. One or two courses chosen from JAZZ 1150, 1210, 1220, 1230; MUSO 1340, 1342; MUTH 3120; MUSL 1105, 1600, 1630, 2110, 2600, 2610, 2620, 3160.

Music as a Second Major

Blair offers a non-professional liberal arts major in music that requires a minimum of 31 hours. Designed jointly by Blair and the College of Arts and Science, it is also available to Peabody and Engineering students as a second major. Formal admission to the second major is contingent upon a performance audition that meets departmental standards for the intermediate or advanced level of study. Following interviews with the appropriate performance department, students plan their studies with Blair adviser Professor Russell Platt, coordinator of the program. Contact information and declaration paperwork are available online: blair.vanderbilt.edu. Students must complete all requirements for the music as a second major with standard grading basis (that is, not Pass/Fail).

Music Major (Second Major). 31 hours.

Music Theory. 12 hours.

MUTH 2100/2110, MUTH 2200/2220, MUTH 2300/2330, and MUTH 2400.

Musicology/Ethnomusicology. 9 hours.

MUSL 2100, 2200W*, 3100.

*Students who have completed MUSL 1200 must take an additional course instead of MUSL 2200W, selected from MUSL 3220-3240.

Individual Performance Instruction. 6 hours.

Six semesters of study in any orchestral instrument, piano, organ, guitar, saxophone, euphonium, or voice. Students must meet minimum performance standards for admission to the program, earning a total of 6 hours. Repertoire information and declaration forms are available in the Blair office and online at blair.vanderbilt.edu/academics.

Ensemble. 2 hours (two different semesters).

Participation for two semesters in an appropriate performing ensemble, as assigned following audition. String, woodwind, brass, percussion, and harp students must audition for MUSE 1010, Instrumental Ensemble.

Students who are not placed in MUSE 1010 may participate in another appropriate ensemble, contingent upon permission of the ensemble instructor and the studio instructor. Guitar and voice students must audition for MUSE 1020, Vanderbilt University Singers. Keyboard students must participate as a pianist for one semester in MUSE

2300, 2310, 2320, 2330, 2210, 2230, or 2270; or in 1010, 1020, 1030, or 2120, contingent upon permission of the ensemble instructor and the piano instructor.

Elective. 2-3 hours.

One course in music theory, musicology/ethnomusicology, or conducting, chosen from MUTH 2400, 3130, 3110, 3210, 3200, 3120, 3140, 3160, 3890; any MUSL; MCON 3000.

Blair School of Music Administration and Faculty

MELISSA K. ROSE, D.M.A., Dean, Blair School of Music

MICHAEL SLAYTON, D.M.A., Senior Associate Dean for Faculty Affairs

TUCKER BIDDLECOMBE, Ph.D., Associate Dean for Academic Affairs

BRIAN UTLEY, D.M.A., Assistant Dean for Academic Affairs

BRITTANY CHASE, Assistant Dean for Non-Degree Programs

ADDIE SULLIVAN, B.F.A., Associate Dean for Blair Development and Alumni Relations

MOLLY JEWELL, B.M., Director, Admissions

ASHLEE BARTLEE, Executive Assistant to the Dean

KATHRYN DUDLEY, B.F.A., Chief Business Officer

RACHEL HOBBS, B.A., Office of Academic Services

KATHLEEN EADS, M.A., Senior Director, Production Services

JARED WONDERLY, M.S.A., Facilities Manager

Music Library

HOLLING SMITH-BORNE, M.L.S., Director

KATE LINTON, M.L.S., Music Librarian for Instruction and Outreach

JACOB SCHaub, M.M., M.L.S., Music Librarian/Cataloging

MICHAEL JONES, B.A., Circulation Coordinator

ROBERT RICH, B.M., M.M., Reference Assistant

Area Coordinators

MICHAEL SLAYTON, Composition/Theory, Chair

JEREMY WILSON, Brass and Percussion

THOMAS VERRIER, Ensembles

RYAN MIDDAGH, Jazz and Global Music

HEATHER CONNER, Keyboard

CYNTHIA CYRUS, Musicology/Ethnomusicology

CONNIE HEARD, Strings, Guitar, and Harp

TYLER NELSON, Voice

JARED HAUSER, Woodwinds

Faculty Coordinators and Program Directors

MARY BIDDLECOMBE, Director, Blair Academy

DANIEL TAYLOR, Ph.D., Music Education Program

JOSHUA MCGUIRE, Aural Skills, Musicians' Wellness, Music Technology

RYAN MIDDAGH, Director, Jazz Studies

BRIAN UTLEY, Chamber Music, Immersion

RUSSELL PLATT and JAMA REAGAN, Music Minors

RUSSELL PLATT, Music as a Second Major

Committees

For a list of committees, please visit blair.vanderbilt.edu.

Faculty

For a list of current faculty, please visit vanderbilt.edu/faculty-affairs/faculty-registry/.

The Degree Programs

[Bachelor of Music](#)

[Bachelor of Musical Arts](#)

[Liberal Arts Core](#)

Bachelor of Music

The Bachelor of Music degree program includes five different majors: performance, composition, jazz studies, integrated studies, and integrated studies/teacher education. The performance major is available in any orchestral instrument, piano, saxophone, euphonium, and voice. The composition major emphasizes both the creation and analysis of music. The major in jazz studies combines performance, composition, improvisation, musicianship, analysis, music technology, entrepreneurship, and an emphasis on global music. Optional concentrations are available in collaborative arts, composition, conducting, ethnomusicology, jazz, multiple woodwinds, music and the mind, musicology, pedagogy, or music theory. The integrated studies major provides a solid foundation in the art of music and includes a required concentration in collaborative arts, composition, conducting, ethnomusicology, jazz, multiple woodwinds, musicology, pedagogy, music theory, or an individually designed area.

The integrated studies/teacher education program, a five-year curriculum jointly developed with Peabody College, is for students interested in earning the master of education degree and teacher licensure in addition to the bachelor of music degree. Students in this curriculum can earn the B.Mus. degree in four years and the M.Ed. and teacher licensure for instrumental/general or vocal/general music in the fifth year (June–May).

All bachelor of music degree candidates complete a program designed to ensure an intense, yet broadly-based, understanding of the discipline of music, focused on the skills and knowledge students will need to succeed as informed musicians of the twenty-first century. Each student must complete 126 credit hours, including 80 hours in music. The music core (44 credit hours minimum) includes music theory, aural skills, keyboard harmony, ethnomusicology/musicology, conducting, technology for musicians, pedagogy, and ensemble. Each major has additional specific requirements, including performance instruction and other music courses (to fulfill 80 hours).

Liberal arts core requirements (minimum of 30 hours) include English, the humanities, courses chosen from history or social science, mathematics or natural science, and academic electives. Students may take free electives to total 126 hours. Sample curriculum plans are in the *Blair Student Handbook* at blair.vanderbilt.edu/academics.

Bachelor of Music Degree Requirements

Requirements by Major Area

[Brass Performance](#)

[Composition](#)

[Harp Performance](#)

[Integrated Studies](#)

[Integrated Studies/Teacher Education Instrumental/General](#)

[Integrated Studies/Teacher Education Vocal/General](#)

[Jazz Studies](#)

[Percussion Performance](#)

[Piano Performance](#)

[String Performance](#)

[Voice Performance](#)

[Woodwind Performance](#)

BRASS PERFORMANCE

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 10 hours minimum

MUSE 1010 (every semester in residence); MUSE 2210 (four semesters, 1/2 credit minimum each semester, taken both semesters of the first year, with two additional courses taken during career). MUSE 2280 may substitute for one semester of MUSE 2210 after completing two semesters of MUSE 2210. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 32 hours, 8 semesters (every semester in residence)

TRPT, HORN, TROM, EUPH, or TUBA 2200; 4200

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. TRPT, HORN, TROM, or TUBA 1000 (every semester in residence); MUSO 3970, 4970

OTHER MUSIC. MPED 3142, MREP 2110

LIBERAL ARTS. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

COMPOSITION

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 8 hours minimum (every semester in residence)

Eight semesters selected with the adviser's approval. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 6 hours, 6 semesters

3 semesters in any orchestral instrument, piano, organ, harpsichord, guitar, saxophone, euphonium, or voice (1100 level); 2 semesters chosen from any orchestral instrument, piano, organ, harpsichord, guitar, saxophone, euphonium, or voice or MUED 1010-1040; 1 semester chosen from any orchestral instrument, piano, organ, harpsichord, guitar, saxophone, euphonium, voice (1100 level), or JAZZ 1100.

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

COMPOSITION. COMP 2301-2304, 4301-4304

Students rotate instructors as assigned for COMP 2301-2304 to gain experience with 4 different members of the department. Students may select one or more instructors of choice for COMP 4301-4304.

OTHER MUSIC. COMP 1000 (every semester in residence); MUTH 3110, MUTH 3210 or 3220, MUTH 3230, COMP 3978, 4970

MUSIC ELECTIVES. To complete minimum of 80 hours in music

LIBERAL ARTS. Must include one year of a foreign language, normally French, German, or Italian. Another language appropriate to the student's musical pursuits may be chosen with approval of composition/ theory department. Two (2) courses chosen from: 2000-level or higher art history, 2000- level or higher English, 2000-level or higher philosophy; a total of 33 hours, rather than 30, in liberal arts (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

HARP PERFORMANCE

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 10 hours minimum

MUSE 1010 (every semester in residence); MUSE 1130 or 2210 (four semesters, 1/2 credit minimum each semester, taken both semesters of the first year, with two additional courses taken during career). MUSE 2280 may substitute for one semester of MUSE 2210 after completing two semesters of MUSE 2210. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 32 hours, 8 semesters (every semester in residence)

HARP 2200; 4200

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. HARP 1000 (every semester in residence), MUSO 3970, 4970

OTHER MUSIC. MREP 2130, MPED 3128

MUSIC ELECTIVES. To complete minimum of 80 hours in music

LIBERAL ARTS. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

INTEGRATED STUDIES

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 8-10 hours (every semester in residence)

Auditions for major ensembles are required each semester until requirements are fulfilled. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

Strings, woodwinds, brass, harp, percussion—(10 hours minimum) Eight semesters MUSE 1010 (including four semesters of MUSE 1130, 1140, 2220, 2210, 2230, or 2240, $\frac{1}{2}$ credit minimum each semester, taken both semesters of the first year, with two additional courses taken during career. Double bass majors may choose MUSE 2270 instead of 2210, 2220, or 2240. MUSE 2280 may substitute for one required semester of MUSE 2210, 2220, 2230, or 2240 after completing two semesters of MUSE 2210, 2220, 2230, or 2240.

Piano—(8 hours) MUSE 2300 (one semester), 2310 (one semester), 2320 (one semester), conducted ensemble 1010, 1020, 1030, 2120, or other approved conducted choir (one semester), and choice of 1010, 1020, 1030, 1310, 2120, 2210, 2230, 2270, 2280, 2310, 2320, or 2330 (four semesters). Participation in 1010 or 1030 is contingent upon approval of ensemble conductor and piano instructor.

Voice—(8 hours) Eight semesters MUSE 1020 or 2120 as assigned (or 2330 if demonstrated schedule conflict exists); juniors or seniors cast in principal roles in MUSE 1030 (as defined by the voice faculty) may substitute MUSE 1030 for one semester only of MUSE 1020 or 2120.

Composition—(8 hours) Eight semesters, selected with adviser's approval

INDIVIDUAL PERFORMANCE or COMPOSITION (for composition students) INSTRUCTION. 2100 and 4100 level, 16 hours, 8 semesters (every semester in residence)**RECITAL ATTENDANCE.** No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

REQUIRED CONCENTRATION IN MUSIC. 18-20 hours.**PERFORMANCE.** Performance class (or composition studio class for composers) every semester in residence

(BASS 1000, BSSN 1000, CLAR 1000, CLLO 1000, COMP 1000, FLUT 1000, HARP 1000, HORN 1000, OBOE 1000, PERC 1000, PIAN 1000, SAX 1000, TROM 1000, TRPT 1000, TUBA 1000, VLA 1000, VLN 1000, VOIC 1000)

OTHER MUSIC. 4 hours. MUSO 1201, 1400, 1410, 1420 (required for voice only); 4 hours of 1100-level performance instruction or MUED 1010- 1040 and 3 hours MUTH 3110 (required for composition only); MUSO 1130 (required for percussion only)

PEDAGOGY. 2 hours. MPED in the area of individual performance or COMP 1000 for composition.

MUSIC ELECTIVES. To complete a minimum of 80 hours in music

LIBERAL ARTS. 30 hours (see full requirements below)

IMMERSION VANDERBILT.**FREE ELECTIVES.** To complete 126 hours

INTEGRATED STUDIES/TEACHER EDUCATION, INSTRUMENTAL/GENERAL

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 9 hours minimum (ensemble enrollment required every semester and every module in residence).

Six semesters conducted ensemble (chosen from MUSE 1010, 1020, or 2120) and two semesters small ensemble (recommended: MUSE 1030, 1200, 1230, 1232, 1320, 1330, 1340, 2210, 2270, 2280, 2300, 2320 and 2330) are required. Instrumental ensemble (MUSE 1010) and co-requisite chamber music (MUSE 2210) are required for instrumentalists both semesters of the first year. Instrumentalists must enroll in at least one semester of MUSE 1020 or 2120 and have experience in orchestra, wind ensemble, jazz ensemble (as appropriate), choir and chamber music. Pianists must be accepted in MUSE 1010, 1020, or 2120 by the beginning of the second semester. Assignment to ensembles is at the discretion of the directors. During study abroad, a student may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE or COMPOSITION INSTRUCTION. 2100 and 4100 level, 16 hours, 8 semesters (every semester in residence)**RECITAL ATTENDANCE.** No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

COMPOSITION/THEORY. MUTH 3110**PERFORMANCE.** Performance class (or composition studio class for composers) on primary instrument every

semester. Secondary instrument(s) two semesters; Intro to Guitar GTR 1010. Senior Recital MUSO 4970. Composition majors only: Performance instruction in an instrument or voice, 8 semesters [8 hours]; composition majors must meet the performance department standards for instruction at the 2100 level and participation in required ensembles.

OTHER MUSIC. Instrumental Conducting MCON 3010.

Note: Conducting study must include two different professors.

MUSO 1130 (Percussion majors only)

PEDAGOGY. 2 hours. MPED in the area of individual performance or COMP 1000 for composition

TEACHING. Class Instruments MUED 1010, 1020, 1030, 1040; Methods and Materials MUED 2010, 3010; Experiential Instruction in Music MUED 3880, 3881, 3882; One MUED seminar of choice MUED 2120-2150; Practica in Music Teaching MUED 3870, 3871, 3872.

LIBERAL ARTS. 30 hours

English/Writing: 6 hours, including MUSL 2200W and choice of AP/IB English credit, any ENGL, or any writing course (any W in the English language, any 1111, or ENGL 1100).

Humanities: 9 hours, including MUSL 2100 and 6 hours in humanities.

History and Social Science: 3 hours

Mathematics: 3 hours math, chosen from statistics (PSY-PC 2110) or calculus (MATH 1010, 1011, 1100, 1200, 1201, 1300, 1301).

Academic Electives: 9 hours, including EDUC 1220 and SPED 1210, which must be completed before fall of the junior year.

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

INTEGRATED STUDIES/TEACHER EDUCATION, VOCAL/GENERAL

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 8 hours minimum (ensemble enrollment required every semester and every module in residence).

6 semesters large ensemble (chosen from MUSE 1010, 1020, or 2120) and 2 semesters small ensemble (recommended: MUSE 1030, 1200, 1232, 1320, 1330, 1340, 2210, 2270, 2280, 2300, 2320 and 2330) are required. Juniors or seniors cast in principal roles in MUSE 1030 (as defined by the voice faculty) may substitute MUSE 1030 for one semester only of MUSE 1020 or 2120. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE or COMPOSITION INSTRUCTION. 2100 and 4100 level, 16 hours, 8 semesters (every semester in residence)

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. Performance class on primary instrument every semester. PIAN 1100 one semester (or VOIC 1100 for non-voice majors). African Performing Ensemble MUSE 1230 one semester. Intro to Guitar GTR 1010. Senior Recital MUSO 4970. Composition majors only: Performance instruction in an instrument or voice, 8 semesters [8 hours]; composition majors must meet the performance department standards for instruction at the 2100 level and participation in required ensembles.

OTHER MUSIC. MCON 3020 Choral Conducting. MUSO 1400 Diction for Singers: English and Italian; MUSO 1410 Diction for Singers: German; MUSO 1420 Diction for Singers: French; it is recommended that MUSO 1400, MUSO 1410 and MUSO 1420 be taken in sequence in the first three semesters). MUSO 1130 (percussion majors only). MUSO 1201 (voice majors only).

PEDAGOGY. 2 hours. MPED in the area of individual performance or COMP 1000 for composition.

TEACHING. Methods and Materials MUED 2010, 3020; Choral Literature and Arranging MUED 2110; Experiential Instruction in Music MUED 3880, 3881, 3882; Piano Skills MUED 1080 (or VOIC 1100 for non-voice majors); One MUED seminar of choice MUED 2120-2150; Practica in Music Teaching MUED 3870, 3871, 3872.

LIBERAL ARTS. 30 hours

English/Writing: 6 hours, including MUSL 2200W and choice of AP/IB English credit, any ENGL, or any writing course (any W in the English language, any 1111, or ENGL 1100).

Humanities: 9 hours, including MUSL 2100 and 6 hours in humanities.

History and Social Science: 3 hours

Mathematics: 3 hours math, chosen from statistics (PSY-PC 2110) or calculus (MATH 1010, 1011, 1100, 1200, 1201, 1300, 1301)

Academic Electives: 9 hours, specifically EDUC 1220 and SPED 1210, which must be completed before fall of the

junior year.

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

JAZZ STUDIES

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 10 hours minimum; every semester in residence

MUSE 1310, 1320, or 1330, six semesters, 1 hour each; MUSE 1200, 1210, 1220, 1230, 1310, 1330, 1320, 1340, four semesters, 1 hour each. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 16 hours, 8 semesters (every semester in residence)

JAZZ 2100; 4100 (Voice students must also enroll in VOIC 1100 (1 hour) in each of the first two semesters in residence

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

JAZZ STUDIES. 19 hours

MUSL 1630; 3238; MUTH 3120; JAZZ 1150, 1210, 1220, 1230; Six hours chosen from MUSL in Jazz and Global Music, MENT or MUSO 1342-1348

OTHER MUSIC. JAZZ 1000 (every semester in residence), MUSO 4970, MUED 2140 (pedagogy)

LIBERAL ARTS. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

PERCUSSION PERFORMANCE

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 10 hours minimum

MUSE 1010 (every semester in residence); MUSE 1140, 2220, or 2210 (four semesters, 1/2 credit minimum each semester, taken both semesters of the first year, with two additional courses taken during career). MUSE 2280 may substitute for one semester of MUSE 2110 after completing two semesters of MUSE 2210. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 32 hours, 8 semesters (every semester in residence)

PERC 2200; 4200

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. PERC 1000 (every semester in residence), MUSO 3970, 4970

OTHER MUSIC. MUSO 1130, MREP 2120 or 2121, MPED 3144

MUSIC ELECTIVES. To complete minimum of 80 hours in music

LIBERAL ARTS. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

PIANO PERFORMANCE

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 2133 and 2134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 8 hours minimum (every semester in residence)

MUSE 2300 (one semester), 2310 (one semester), 2320 (one semester), conducted ensemble 1010, 1020, 1030, 2120 (one semester), and choice of 1010, 1020, 1030, 1310, 2120, 2210, 2230, 2310, 2320, 2330, 2270, or 2280 (four semesters). Participation in 1010 or 1030 is contingent upon approval of ensemble conductor and piano instructor. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 32 hours, 8 semesters (every semester in residence)

PIAN 2200; 4200

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. PIAN 1000 (every semester in residence), MUSO 3970, 4970

OTHER MUSIC. MREP 3310, 3311, MPED 3110

LIBERAL ARTS CORE. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

STRING PERFORMANCE

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2300, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 10 hours minimum

MUSE 1010 (every semester in residence); MUSE 2210, 2230, or 2240 (four semesters, 1/2 credit minimum each semester, taken both semesters of the first year, with two additional courses taken during career). Double bass majors may choose MUSE 2270. MUSE 2280 may substitute for one required semester of MUSE 2210, 2230, or 2240 after completing two semesters of MUSE 2210, 2230, or 2240. Double bass majors may substitute MUSE 2280 for one required semester of MUSE 2210, 2230, or 2270 after completing two semesters of MUSE 2210, 2230, or 2270. All students except double bass majors must have experience in string quartet (MUSE 2240). Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 32 hours, 8 semesters (every semester in residence)

VLN, VLA, CLLO, or BASS 2200, 4200

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. VLN, VLA, CLLO, or BASS 1000 (every semester in residence); MUSO 3970, 4970

OTHER MUSIC. MREP 2130. MPED 3120, 3121, 3125, 3127, or 3129

MUSIC ELECTIVES. To complete minimum of 80 hours in music

LIBERAL ARTS. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

VOICE PERFORMANCE

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 8 hours minimum (every semester in residence)

Eight semesters MUSE 1020 or 2120 as assigned (or 2330 if demonstrated schedule conflict exists); juniors or seniors cast in principal roles in MUSE 1030 (as defined by the voice faculty) may substitute MUSE 1030 for one semester only of MUSE 1020 or 2120. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 28 hours, 8 semesters (every semester in residence)

VOIC 2200; 4200

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. PIAN 1100 (two semesters); VOIC 1000 (every semester in residence); MUSO 3970, 4970

OTHER MUSIC. MUSO 1201, 1400, 1410, 1420, MREP 3330, MPED 3130

LIBERAL ARTS. 30 hours, including 6 hours (two semesters) chosen from French, German (GER 1105 is strongly recommended), and Italian (see full requirements under Humanities below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

WOODWIND PERFORMANCE

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 10 hours minimum

MUSE 1010 (every semester in residence); MUSE 2210 (four semesters, 1/2 credit minimum each semester, taken both semesters of the first year, with two additional courses taken during career). MUSE 2280 may substitute for one semester of MUSE 2210 after completing two semesters of MUSE 2210. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

INDIVIDUAL PERFORMANCE INSTRUCTION. 32 hours, 8 semesters (every semester in residence)

FLUT, OBOE, CLAR, BSSN, SAX 2200; 4200

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. FLUT, OBOE, CLAR, BSSN, SAX 1000 (every semester in residence); MUSO 3970, 4970

OTHER MUSIC. MREP 2140 (flute, oboe, clarinet, and bassoon) *or* MREP 2141 (saxophone); MPED 3140 (section appropriate for major instrument)

LIBERAL ARTS CORE. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

Bachelor of Musical Arts

The bachelor of musical arts degree gives excellent performers and composers the flexibility to combine in-depth music study with a second focus in a field outside of music. The degree, which is available in any orchestral instrument, piano, saxophone, euphonium, voice, jazz studies, and composition, includes 63 credit hours in music; a specific field outside of music or an individually-designed area of interdisciplinary studies (minimum of 18 hours) is also required. In addition to performance or composition instruction (16 hours), the music core (44 credit hours minimum) includes music theory, aural skills, keyboard harmony, ethnomusicology/musicology, conducting, technology for musicians, pedagogy, and ensemble. Liberal arts core requirements (minimum of 30 hours) include English, the humanities, courses chosen from history or social science, mathematics or natural science, and academic electives. Students may take free electives to total 126 hours.

Through a dual B.Mus.Arts/MBA program, interested students in the musical arts degree have an opportunity to compress both the bachelor of musical arts at the Blair School of Music and the master of business administration at the Owen Graduate School of Management into ten semesters in residence. Application for this program is made early in the fall semester of the junior year. First-year students will be admitted to the B.Mus.Arts through the admissions process of the Blair School. Students must declare the concentration within music or the field outside of music of the B.Mus.Arts no later than the tenth day of the first semester of the junior year. Sample curriculum plans are in the *Blair Student Handbook* at blair.vanderbilt.edu/academics.

Bachelor of Musical Arts Degree Requirements

MUSIC THEORY, AURAL SKILLS, AND KEYBOARD HARMONY. 19 hours

MUTH 2100, 2200, 2300, 2400

MUTH 2110, 2220, 2330, 2440

MUKH 1131, 1132, 1133, and 1134

MUSICOLOGY/ETHNOMUSICOLOGY. 12 hours

MUSL 2100, 2200W, one course chosen from 3220-3240, 3100

CONDUCTING. 2 hours

MCON 3000

TECHNOLOGY. 1 hour

MUSO 1340

ENSEMBLE. 8-10 hours (every semester in residence)

Auditions for major ensembles are required each semester until requirements are fulfilled. Assignment to ensembles is at the discretion of the directors. During study abroad, students may waive participation in an ensemble of choice.

Strings, woodwinds, brass, harp, percussion—(10 hours minimum) Seven semesters MUSE 1010 while in residence; four semesters of MUSE 2210, 2220, or 2240, $\frac{1}{2}$ credit minimum each semester, taken both semesters of the first year, with two additional courses taken during career; and one semester ensemble of choice. Double bass majors may choose MUSE 2270 instead of 2210, 2220, or 2240. MUSE 2280 may substitute for one required semester of MUSE 2210, 2220, or 2240 after completing two semesters of MUSE 2210, 2220, 2240. Double bass majors may substitute MUSE 2280 for one required semester of MUSE 2210, 2230, or 2270.

Piano—(8 hours) One semester chosen from MUSE 1010, 1020, 1030, 2120, or other approved conducted choir; one semester of 2300; three semesters of 2210, 2230, 2310, 2320, or 2330; three semesters ensemble of choice with adviser's approval.

Voice—(8 hours) Eight semesters MUSE 1020 or 2120 as assigned (or 2330 if demonstrated schedule conflict exists); juniors or seniors cast in principal roles in MUSE 1030 (as defined by the voice faculty) may substitute MUSE 1030 for one semester only of MUSE 1020 or 2120.

Composition—(8 hours) Eight semesters, selected with adviser's approval.

Jazz Studies - (8 hours) Five semesters chosen from MUSE 1310, MUSE 1320, or MUSE 1330; three semesters ensemble of choice with adviser's approval.

INDIVIDUAL PERFORMANCE or COMPOSITION (for composition students) INSTRUCTION. 16 hours, 8 semesters (every semester in residence)

RECITAL ATTENDANCE. No credit

MUSO 1000 (every semester in residence except penultimate or final semester)

PERFORMANCE. Performance class (or composition studio class for composers) every semester in residence

(BASS 1000, BSSN 1000, CLAR 1000, CLLO 1000, COMP 1000, FLUT 1000, HARP 1000, HORN 1000, JAZZ 1000, OBOE 1000, PERC 1000, PIAN 1000, SAX 1000, TROM 1000, TRPT 1000, TUBA 1000, VLA 1000, VLN 1000, VOIC 1000)

PEDAGOGY. 2 hours. MPED in the area of individual performance; COMP 1000 for composition; MUED 2140 for jazz studies.

OTHER MUSIC. 4 hours. MUSO 1201, 1400, 1410, 1420 (required for voice only); 4 hours of 1100-level performance instruction or MUED 1010-1040 and 3 hours MUTH 3110 (required for composition only); MUSO 1130 (required for percussion only); 3 hours from JAZZ 1210, 1220, 1230, 1150, or MUTH 3120 (required for jazz studies only); 2 hours of VOIC 1100, one in each of the first two semesters in residence (required for jazz studies voice only)

MUSIC ELECTIVES. To complete a minimum of 63 hours in music.

DISCRETE AREA OF COMPETENCE. Minimum of 18 hours in a specific field outside of music, such as a minor or major in another school, a pre-professional course of study, or a self-designed interdisciplinary area. Self-designed interdisciplinary areas and new concentrations with a significant number of courses from another Vanderbilt school/college may be developed in consultation with the appropriate department. Must be declared no later than the 10th day of the first semester of the junior year.

LIBERAL ARTS. 30 hours (see full requirements below)

IMMERSION VANDERBILT.

FREE ELECTIVES. To complete 126 hours

Liberal Arts Core

The liberal arts core affords music students the opportunity to develop a broad-based understanding of intellectual endeavors and methods in a variety of disciplines, to explore the interconnectedness of music, arts, and other humanistic pursuits, and to articulate their thinking in clear and effective language. The curriculum, which provides maximum flexibility for each student, requires a minimum of 30 hours (33 hours for composition majors), satisfied through required categories as noted below. Students electing a second major outside of music complete only the Blair liberal arts core; they are not expected to fulfill the core requirements (such as AXLE) of another Vanderbilt school or college. Hours earned toward the Blair liberal arts core may also be counted toward a second major or minor, if appropriate. Students admitted with a deficiency relative to high school credits must plan their liberal arts work to overcome the deficiency. 1001 courses do not count for liberal arts core credit.

English/writing (6 hours)

Students must complete writing course MUSL 2200W during the first year. A second English/writing course* of at least three credit hours, chosen from:

- Advanced Placement or International Baccalaureate credits in English/ Writing (consult the chapter on Admission for current policy)
- First year writing seminars (1111) in any discipline
- Writing courses in the English language in any discipline, designated by W in the course
- English: all courses
- Communication Studies: 1500, 1850
- MUSL 2330

*Students with a score of 770 on the Evidence-Based Reading and Writing section of the SAT with a minimum score of 39 in Writing and Language, or with a score of 35 on the English portion of the ACT, may exempt the second English/writing course, substituting 3 hours of any academic elective. Students who do not present a score of 660 on the Evidence-Based Reading and Writing section of the SAT test (with a score of 27 in Reading and 28 in Writing and Language), or a score of 30 on the English portion of the ACT test, must enroll in English 1100 in the first semester.

Humanities (9 hours)

HUMANITIES REQUIREMENTS

MUSL 2100. Students should complete this required course during the first year.

Six additional hours of humanities electives (listed below)

For composition majors (B.Mus.), 15 hours minimum, including MUSL 2100: one year of French, German, or Italian; and 6 hours chosen from 2000-level or higher art history, 2000-level or higher English, and 2000-level or higher philosophy.

For voice performance majors (B.Mus.), 9 hours: MUSL 2100 and 6 hours (two semesters) chosen from French, German, and Italian.

HUMANITIES ELECTIVES

African American and Diaspora Studies: 1506 and all HCA-designated courses

Anthropology: All HCA-designated courses

Arabic: All courses

Aramaic and Classical Syriac: All courses

Asian Studies: 1201, 2100W, 2511, 2512, 2513W, 2607, 2608, 3151

Catalan: All courses

Chinese: All courses

Cinema and Media Arts: All courses except W courses

Classics: All, except SBS-designated courses

English: All courses

European Studies: All HCA-designated courses

French: All courses

Gender and Sexuality Studies: All HCA- and US-designated courses, 2239, 2248

German: All courses

Greek: All courses

Hebrew: All courses

Hindi-Urdu: All courses

History of Art: All courses (art studio courses excluded)

Humanities: All courses

Italian: All courses

Japanese: All courses

Jewish Studies: All HCA- and US-designated courses

Korean: All courses

Latin: All courses

Medicine, Health, and Society: All HCA-designated courses

Musicology/Ethnomusicology: 1111-02, 1111-03 (Music and Modernism; Shakespeare and Music), 1300, 1610, 3155

Philosophy: All courses except 1003 and 3003

Portuguese: All courses

Religious Studies or Divinity School: All courses

Russian: All courses

Spanish: All courses

Theatre: All courses offered for AXLE credit

Tibetan: All courses

Ugaritic: All courses

History, Social Science (3 hours)

HISTORY

Classics: Only SBS designated courses

History: All courses

Musicology/Ethnomusicology: 1111 (Music and Global Health), 2110, 2150, 2600

SOCIAL SCIENCE

African American and Diaspora Studies: All courses except 1506 and HCA-designated

American Studies: 2100, 3890

Anthropology: All courses except HCA designated

Asian Studies: All courses except HCA designated

Communication Studies: All AXLE courses except HCA designated

Economics: All courses offered for AXLE credit

European Studies: All courses except HCA designated

Gender and Sexuality Studies: All courses except HCA and US designated

Human and Organizational Development (Peabody): All 3-hour courses except 1115 and practica

Interdisciplinary Studies: 3001

Jewish Studies: All SBS-, INT-, and P-designated courses

Latin American Studies: All AXLE courses

Medicine, Health, and Society: All SBS-, INT-, and P-designated courses

Musicology/Ethnomusicology: MUSL 1111 (Music and Global Health), 2110, 2150, 2600

Political Science: All courses

Psychology (A&S): All courses except MNS-designated

Psychology and Human Development (Peabody): All 3-hour courses from 1205-3800 inclusive

Public Policy Studies: All courses

Sociology: All courses

Mathematics, Natural Science (3 hours)

Students who score below 550 on the SAT Math Section or below 22 on ACT Math should take MATH 1010 or 1005.

For integrated studies/teacher education majors, 3 hours statistics (PSY-PC 2110 [Peabody]) or calculus (MATH 1010, 1011, 1100, 1200, 1201, 1300, 1301).

MATHEMATICS

Computer Science: CS 2212

Mathematics: All courses

Philosophy: 1003 and 3003

Political Science: PSCI 2259

Psychology (Peabody): PSY-PC 2110

NATURAL SCIENCE

Astronomy: All MNS-designated courses, including accompanying labs

Biochemistry & Chemical Biology: All courses designated for AXLE credit, with accompanying labs

Biological Sciences: All AXLE courses, with corequisite labs

Chemistry: All AXLE courses, with corequisite labs

Earth and Environmental Sciences: All MNS-designated courses

Neuroscience: All MNS-designated courses

Physics: All MNS-designated courses, including accompanying labs

Psychology: All MNS-designated courses

Academic Electives (9 hours)

For composition majors (B.Mus.), 2-6 hours, to complete 33 hours in liberal arts.

For integrated studies/teacher education majors, a total of 9 hours, including specifically EDUC 1220 (3 hours) and SPED 1210 (3 hours). For voice performance majors (B.Mus.), 5-9 hours to total 30 hours in liberal arts.

Academic electives, drawn from courses earning 3 or more credits, may include:

- Any course listed in the Liberal Arts Core
- Non-music courses in American studies, business (BUSA), computer science, data science, engineering science, human and organizational development
- Any course in the Divinity School

Practicums and internships may not count as academic electives.

Free electives (sufficient to complete 126 hours)

Any course in any Vanderbilt school.

Note: MWEL courses and MUSO 1240 and 1241 count only as free electives for Blair majors.

Additional Programs in the Blair School of Music

[Minor Areas and Concentrations](#)

[Teacher Education](#)

[Blair-to-Owen](#)

Minor Area and Concentration Requirements

Concentrations and the minor in a second instrument are open to bachelor of music and bachelor of musical arts degree students. Honors in Musicology and Ethnomusicology is open to all undergraduates. Deadline to declare a concentration or minor is the fifth day of the first semester of the senior year. For the integrated studies major, the deadline to declare a required concentration is the midpoint (on the last day students may withdraw from classes) of the fifth semester in residence.

[Concentration in Collaborative Arts](#)

[Concentration in Composition](#)

[Concentration in Conducting](#)

[Concentration in Ethnomusicology](#)

[Concentration in Jazz](#)

[Concentration in Multiple Woodwinds](#)

[Concentration in Music and the Mind](#)

[Concentration in Musicology](#)

[Concentration in Pedagogy](#)

[Concentration in Music Theory](#)

[Honors in Musicology and Ethnomusicology](#)

[Minor Instrument](#)

CONCENTRATION IN COLLABORATIVE ARTS. 24 hours

Musicology/Ethnomusicology: MUSL 3220 or 3221

Performance: HRPS 1100 (1 hour), MUSO 4970 (1 hour)

Other Music: MUSO 1400, 1410, 1420; MREP 3310 or 3311, 3330; MUSO 3850 (2 hours in vocal coaching or chamber music literature)

Ensemble: One semester chosen from MUSE 1010, 1020, or 2120; one semester of MUSE 2300; one semester of MUSE 1030 (as apprentice pianist); one semester each of MUSE 2210, 2230, 2310, 2320, and 2330; and four additional semesters of MUSE 2210, 2230, 2310, 2320, 2330, or other with adviser's approval

Liberal Arts: Must include one semester each in two different languages chosen from Italian, German (GER 1105 is recommended), or French. Students with previous study in one of these must study the other two.

CONCENTRATION IN COMPOSITION. 20 hours minimum

Prerequisite: COMP 1100; submission of portfolio of three representative works, with recordings; department approval. Composition: 4-6 hours over a minimum of 4 semesters in COMP 1150

Choice of four from MUTH 3110, 3120, 3130, 3140, 3170, 3200, 3210, 3220, 3222

Choice of two (6-7 hours) from ARTS, CMA, ENGL 1250W, ENGL 1290, HART 1105 or higher, THTR

CONCENTRATION IN CONDUCTING. 32 hours minimum (20 hours in music)

Department approval required before MCON 3030, 3050 and 3051. Criteria to include evidence of prior experience in conducting. Integrated Studies students interested in conducting should declare the individually-designed concentration in the fifth semester, pending faculty approval to declare the conducting concentration before the seventh semester. Other B.Mus. or B.Mus.Arts students may declare the conducting concentration in the fifth semester, but will need departmental consent for MCON 3050 and entrance into the senior year of the concentration. Departmental approval is required before 3030, 3050 and 3051. Criteria to include evidence of prior experience in conducting.

Composition/Theory: MUTH 3450, 3460, 3470, 3480; MUTH 3110

Conducting: MCON 3000 (required in music core); MCON 3010 or 3020; MCON 3030; MCON 3040, 3041, 3042, 3043; MCON 3050, 3051

Other Music: MWEL 1140 or 2120

Liberal Arts: Four semesters of one language, selected from French, Italian, German, or Russian

CONCENTRATION IN ETHNOMUSICOLOGY. 20 hours minimum

Department approval required

Musicology/Ethnomusicology: Choice of MUSL 3000-level or above, except MUSL 3100, 9-12 hours

Composition/Theory: Choice of MUTH 3140, MUTH 3200, or 3210, 2-6 hours

Cognate Area or Foreign Language, 6-16 hours:

1. Cognate area in AADS, AMER, ANTH, CMA, EUS, GSS, HIST, LAS, PHIL, SOC, or other area with department approval, 6-9 hours, or
2. Foreign Language, 6-16 hours, 4 semesters:
 - o Introductory-level competence, or one-year May be satisfied through placement exam, AP/IB credit, or for-credit course work. Students who test out of introductory-level competence need only 2 semesters (minimum 6 hours) of 2000-level or above, 6-8 hours, 2 semesters.
 - o 2000-level or above language and/or culture courses, 6-8 hours, 2 semesters.

CONCENTRATION IN JAZZ. 20 hours minimum

Department approval required for admission into the concentration. B.Mus. and B.Mus.Arts students are eligible to audition for a faculty committee no earlier than the end of their first year.

Literature/History: MUSL 1620

Composition/Theory: MUTH 3120; JAZZ 1150

Other Course Work: JAZZ 1210, 1220, or 1230 (2 semesters, 2 hours); MUED 2140

Performance: JAZZ 1100 (minimum of 4 semesters/4 credit hours); MUSO 4972 (in addition to recital required for major) or MUSO 3850 Senior Project (1 hour)

Ensemble: MUSE 1310, 1320, or 1330 (minimum of 4 semesters/credit hours)

CONCENTRATION IN MULTIPLE WOODWINDS. 23 hours

Department audition, consisting of performances on both secondary instruments, required before the end of the second semester in residence. Not available to performance majors. Three-, four-, and five-instrument options are possible.

Composition/Theory: MUTH 3110

Performance: 1100-level study in at least two secondary instruments, 4 semesters and 8 credit hours for each instrument; MUSO 4970, with repertoire for both primary and secondary instruments; corequisite performance classes required when enrolled in applied study; each secondary instrument must be performed in a large ensemble

for at least one semester (instead of primary instrument)

Other Music: MPED 3140 in primary instrument, recommended in secondary instrument(s); MREP 2140 in primary instrument

CONCENTRATION IN MUSIC AND THE MIND. 23 hours

This concentration satisfies the area of discrete competence for the bachelor of musical arts. By using free and academic electives, this concentration could be completed in addition to a minor in neuroscience or psychology.

It is also available to B.Mus. students, but it will not satisfy the music hours requirement for integrated studies.

Liberal Arts: NSC 2201, PSY 1200, PSY 3750, PSY 3120, NSC 3269, PSY 3890, PSY-PC 3650 (PSY-PC 2110 recommended, NSC 3274 optional)

Aural Skills: MUTH 3450, MUTH 3460

CONCENTRATION IN MUSICOLOGY. 20 hours minimum

Department approval required

Musicology/Ethnomusicology: Choice of MUSL 3000-level or above, except MUSL 3100, 9-12 hours

Composition/Theory: Choice of MUTH 3140, MUTH 3200, or 3210, 3-6 hours

Cognate Area or Foreign Language, 6-16 hours:

- Cognate area in AADS, AMER, ANTH, CMA, EUS, GSS, HIST, LAS, PHIL, SOC, or other area with department approval, 6-9 hours, or
- Foreign Language, 6-16 hours, 4 semesters:
 - Introductory-level competence, or one-year May be satisfied through placement exam, AP/IB credit, or for-credit course work. Students who test out of introductory-level competence need only 2 semesters (minimum 6 hours) of 2000-level or above, 6-8 hours, 2 semesters.
 - 2000-level or above language and/or culture courses, 6-8 hours, 2 semesters

CONCENTRATION IN PEDAGOGY. 19 or 20 hours

Music Cognition course work: MUSO 3100 or MUSO 3850 (independent study in teaching Aural Skills, 2 hours)

Instrumental Literature: Choice of MREP 2110, 2120, 2121, 2130, 2140, 2141, 3310, 3311, 3330, or MUSO 3850 (in field, 2 hours)

Pedagogy course work: Choice of MPED 3110, 3120, 3121, 3125, 3127, 3128, 3129, 3130, 3140, 3142, 3144 or MUSO 3850 (in field, 2 hours), and Pedagogy Practicum MPED 3870 (2 hours)

Pedagogy Internship: MPED 3880 (2 semesters, 6 hours)

Senior Recital: MUSO 4970

Liberal Arts: Must include PSY-PC 1250 and 2600 (Peabody courses)

CONCENTRATION IN MUSIC THEORY. 18-20 hours

Departmental approval required for admission to this concentration.

Composition/Theory: MUTH 3200, MUTH 3210 or 3220, and minimum of 13-15 hours in COMP 1100 and/or any 3000-level MUTH courses

HONORS IN MUSICOLOGY AND ETHNOMUSICOLOGY. 9 hours

Departmental approval required for admission to this program; see regulations in the Honors section of the catalog.

Thesis: Departmental approval of a formal thesis prospectus, MUSL 4998-4999 (6 hours), and successful completion of an oral defense.

Course work: One course beyond the MUSL core chosen from MUSL 3220-3240, 3160, 2610, or 3890 (3 hours)

The MUSL credit hours of this program may double-count in the concentration in musicology or ethnomusicology.

MINOR INSTRUMENT. 10 hours

Ensemble: Participation on minor instrument (including voice) in two separate ensembles in addition to major instrument requirement, as assigned (2 hours)

Performance: Minimum of four semesters (8 hours) in a second performance area (any orchestral instrument, piano, organ, harpsichord, guitar, saxophone, euphonium, voice, or baroque instrument). Students must meet minimum performance standards, earning a total of 8 hours.

Consent of instructor and department chair required. NOTE: Composition majors may satisfy the primary major ensemble and performance instruction requirements with courses also used to fulfill the minor instrument requirements.

Teacher Education

The Blair School and Peabody College offer a program for students interested in teacher licensure. Students completing this program earn the bachelor of music (B.Mus.) majoring in the integrated studies/teacher education track for four years, and the master of education (M.Ed.) in the fifth year to complete professional education requirements. During the junior year, application is made to Peabody College. The M.Ed. work requires one calendar year, June–May. Students may elect to work toward licensure in either instrumental/general or vocal/general music, based on their interest and ability to perform at a level sufficient for placement in the appropriate performing ensemble. The curriculum includes a strong music performance emphasis; a solid foundation in musicology/ethnomusicology, theory, and the liberal arts; undergraduate and graduate courses in psychology and education; and practica (practical experience) four of the five years of study, with at least 15 weeks of student teaching in field placements. Practica constitute a wide variety of grade K-12 experiences, including public school, private school, and Blair Academy programs such as Suzuki strings, Blair Children's Chorus program, and the Nashville Youth Orchestra program. Students complete the same music core requirements as any other B.Mus. candidate. The liberal arts core is adapted to fulfill state licensure requirements.

Junior Mid-Program Review [Screening I]

All students admitted to this program at matriculation must be formally continued through a process called Junior Mid- Program Review. Criteria for this review are listed below. Students not approved can complete the general integrated studies major.

Faculty evaluation of a student's qualifications for continuation in a teacher education program includes academic, performance, and disposition factors such as the following:

1. Dependability (as evidenced by good attendance and academic performance in classes and practica)
2. Professional and ethical behavior (honesty, acceptance of responsibility, emotional maturity)
3. Attitude and interpersonal skills (including the ability to work with children and with peers)
4. Academic competence

1. A minimum cumulative grade point average of 2.500.
2. Successful completion (C- or better) of EDUC 1220 and SPED 1210
3. Successful completion (C- or better) of MUTH 2200, MUTH 2220, MUSL 2200W and MUED 3870
4. Successful completion (C- or better) of two additional Vanderbilt courses which count towards the Liberal Arts
5. Departmental interview

General Criteria

These criteria rest on the professional judgment of appropriate faculty members, who are polled following the student's application for Junior Mid-Program Review.

1. Endorsement by the appropriate faculty that the applicant has demonstrated the academic and musical qualifications expected of Vanderbilt teacher education
2. Endorsement by the appropriate faculty that the applicant has demonstrated the personal and character traits expected of Vanderbilt teacher education

Procedure for Junior Mid-Program Review [Screening I]

Students apply for continuation in the teacher education program [Screening I] through the Blair program director. Applications must be submitted in the fall semester of the junior year. Deadline for submitting applications for Junior Mid-Program Review [Screening I] is 1 October. A departmental interview is then held with each candidate to review the student's academic progress and disposition criteria of dependability, professional and ethical behavior, attitude, and interpersonal skills.

Fifth Year Curriculum

SUMMER		Semester hours
EDUC 6510	Principles of ELL Education	3
EDUC 6010	Psychological Foundations of Education (or an approved elective course)	3
EDUC 6310	Teaching in Secondary Schools	3
MUED 5000	Philosophical Foundations and Contemporary Issues in Music Education	3
FALL		
EDUC 6300	Social/Philosophical Aspects of Education	3
EDUC 6320	Practicum in Music Education	1
EDUC 7960	Independent Study in Music (may be taken in summer; requires approval of Blair associate dean)	2
or MUED 5100	Advanced Studies for the Wind Band Conductor	
MUED 5010/5020	Methods and Materials in Teaching Music, Instrumental or Vocal/Choral	3
MUED 5030	Methods and Materials in General Music, PreK through 12	3
SPRING		
EDUC 7974	Internship in Teaching: Music	6
EDUC 7975	Internship Seminar: Music (A capstone project is also required)	1
	Total hours:	31

Admission to Student Teaching [Screening II]

The semester prior to the one in which a student plans to student teach, he/she must apply for student teaching (Screening II) and request student teaching placements. The student should be enrolled in any remaining required prerequisite courses. Applications will be processed in the Office of Teacher Licensure, and if eligible, forwarded to the appropriate faculty for review and vote. It is the student's responsibility to complete the application at the appropriate time.

The criteria that must be met for a student to be admitted into student teaching are as follows:

1. Specific Academic Criteria
 1. Formal admission to a teacher education program for initial licensure granted
 2. Approved program of studies and licensure audit forms on file
 3. Successful completion of all courses and field work required and prerequisite for student teaching
 4. Minimum cumulative grade point average of 3.0 (4.0 scale)
 5. Successful completion of standard first aid and CPR training (submit certificate copies prior to or with the Screening II application)
2. Specific Faculty Evaluative Criteria
 1. Dependability (as evidenced by good attendance in classes and practica and the completion of required assignments and procedures on time)
 2. Professional and ethical behavior (honesty, acceptance of responsibility, emotional maturity, etc.)
 3. Attitude and interpersonal skills (including the ability to work with children and with peers)
 4. Academic competence (It is possible for a student to meet minimum grade point requirements and

pass all courses and still have specific academic weaknesses which might cause denial of screening applications.)

5. Teaching competence (as evidenced by successful completion of practica requirements). It is possible for a student to meet minimum grade point requirements and pass all courses and still have specific performance weaknesses which might cause denial of screening applications. Each Screening II application must be accompanied by additional documents, depending on the endorsement(s) being sought.

Department of Teaching and Learning Additional Documents

1. Professional resume
2. Parent Letter (only required for Secondary Education)
3. Copy of first aid and CPR cards to amanda.vandoorn@vanderbilt.edu

Special Education Additional Documents

1. Professional resume
2. Philosophy of Teaching Statement
3. Copy of first aid and CPR cards to amanda. vandoorn@vanderbilt.edu

Departmental faculty will consider all criteria for each individual students and will vote on a recommendation for each student. Students who are approved to student teach will receive notification of their student teaching placements no later than during the Student Teacher Orientation at the beginning of the student teaching semester.

All Vanderbilt teacher education programs are approved by the Council for the Accreditation of Educator Preparation (CAEP).

3+2 B.Mus.Arts/MBA Blair-to-Owen Program

The five-year dual-degree program between the Blair School of Music and the Owen Graduate School of Management allows a small cohort of particularly motivated students to overlap their undergraduate course work with work toward the MBA, facilitating the earning of both the undergraduate and graduate degrees in five years (ten semesters). By combining three and one-half years in Vanderbilt's Blair School of Music with one and one-half years of study in the Owen School, students may obtain both the bachelor of musical arts and the master of business administration in five years. The baccalaureate from the Blair School is awarded at the end of the fourth year, and the MBA from the Owen School after the fifth year. Students interested in pursuing this program must be enrolled in the musical arts degree.

Required course work includes the normal Blair course work for the musical arts degree, for a minimum of 63 credit hours in music. The liberal arts core will also follow the requirements for the major, but must include the following specific requirements:

- Calculus (1 semester)
- Statistics, e.g., ECON 1500: Economic Statistics
- ECON 1010: Principles of Macroeconomics
- ECON 1020: Principles of Microeconomics
- ECON 3012: Microeconomics

A curriculum plan, including recommended electives, is provided in the *Blair Student Handbook*.

Students must apply to the Owen School for admission to the five-year program during their junior year. Students should apply in Round 1 of the MBA application cycle (typically early October) of the junior year, and early application and a standardized test score (e.g., GMAT, GRE) are recommended. Acceptance into the five-year program is extremely competitive and requires advanced standing earned in undergraduate courses. Being deficient

in full-time work experience, the 3+2 student must enhance their portfolio with an internship and outstanding academic performance, and also show a strong commitment to a rigorous business education. The Summer Business Institute (Accelerator), as administered by the Owen Graduate School of Management, is strongly recommended for 3+2 applicants prior to matriculating at Owen. The successful applicant will bring an accomplished academic record (normally a GPA of 3.3 or better), satisfactory internship or work experience, an ability to articulate his or her own preparedness for the work environment, and a strong endorsement from Vanderbilt faculty.

Students who are accepted to the 3+2 program will remain registered as B.Mus.Arts students through fall of senior year, and will register as Owen students in spring of senior year. Academically, students will take a full load of business courses both in fall and spring of senior year while completing the final B.Mus.Arts degree requirements (normally, lessons and ensembles). Students must complete a minimum of 62 credit hours at Owen over four semesters. Fifteen hours (normally in fall of the senior year) of Owen School courses approved by Blair may be counted toward completion of the undergraduate degree. Students with questions may contact Liz Scowden (liz.scowden@vanderbilt.edu) in the Owen Academic and Student Affairs Office. The completion of the B.Mus.Arts degree requirements prior to fall of the student's fifth year is required for continuation in the MBA program.

Tuition and Financial Aid

The scholarship or other financial aid commitment of the Blair School will not be continued automatically beyond the seventh semester for students enrolled in the dual-degree program. Eighth-semester financial aid is the student's responsibility. Students should notify the Owen School with their application if they are interested in being a candidate for an Owen scholarship during their MBA studies. Early application is recommended. *Need-based aid will still apply.*

Students pay tuition to the undergraduate school for the fall semester of their fourth year, after which all tuition is paid to Owen (and reflects graduate school tuition rates). The Blair School of Music will waive fees for the required performance instruction during spring of the fourth year to facilitate completion of the B.Mus.Arts requirements.

Honors in the Blair School of Music

[Founder's Medal](#)

[Academic Honors Designation](#)

[Honors Program in Musicology and Ethnomusicology](#)

[Dean's List](#)

[Pi Kappa Lambda](#)

[Awards and Prizes](#)

Founder's Medal

The Founder's Medal, signifying first honors, was endowed by Commodore Cornelius Vanderbilt as one of his gifts to the university. The recipient is named by the Dean after consideration of faculty recommendations as well as grade point averages of the year's highest-ranking graduates.

Academic Honors Designation

Honors, which are noted on diplomas and published in the *Commencement Program*, are earned as follows:

Summa Cum Laude. Students whose grade point average equals or exceeds that of the top 5 percent of the previous three years' graduating seniors.

Magna Cum Laude. Students whose grade point average equals or exceeds that of the next 8 percent of the previous three years' graduating seniors.

Cum Laude. Students whose grade point average equals or exceeds that of the next 12 percent of the previous three years' graduating seniors.

Honors Program in Musicology and Ethnomusicology

The honors program in musicology and ethnomusicology is designed to afford superior students the opportunity to pursue more intensive work within the field of musicology or ethnomusicology, culminating in the preparation of a senior honors thesis. The course of study includes seminar work as well as independent study and writing under the supervision of a thesis adviser. Students who want to do honors work should contact the chair of the musicology and ethnomusicology department in the fall of their junior year. Departmental approval of a formal honors thesis prospectus must take place prior to registration for MUSL 4998 in spring of the junior year or fall of the senior year. Minimum requirements are a 3.0 GPA overall and 3.3 in musicology and ethnomusicology courses.

Students accepted into the program must take a total of 9 credit hours: MUSL 4998-4999, Senior Honors Thesis (6 hours), and one course (beyond the MUSL core) chosen from MUSL 2610, 3160, 3220-3240, or 3890 (3 hours). In addition, successful completion of the honors program requires an oral defense of the honors thesis before a faculty committee. This defense will occur at the end of the second semester of thesis enrollment. Those enrolled in the program who successfully complete its requirements with distinction may graduate with Honors or Highest Honors in musicology and ethnomusicology.

Dean's List

The Dean's List recognizes outstanding academic performance in a semester. Students are named to the Dean's List when they earn a grade point average of at least 3.500 while carrying 12 or more graded hours, with no temporary or missing grades in any course (credit or non-credit), and no grade of *F*.

Pi Kappa Lambda

Election to Pi Kappa Lambda National Music Honor Society signifies superior accomplishment in the field of music. Students elected to membership must be outstanding musically and scholastically and ranked in the highest 20 percent of the senior class or the highest 10 percent of the junior class. The Eta Iota chapter was installed at Vanderbilt on April 8, 1992. Professor Karen Ann Krieger serves as its president.

Awards and Prizes

Several awards are presented to students at the Blair School of Music. Announcement is made at the final student recital/convocation of the spring semester. Each carries a monetary stipend. Awards, which are published in the *Commencement Program*, are as follows:

ACHIEVEMENT IN TEACHING AWARD. The Achievement in Teaching Award is presented by the faculty to a senior who has demonstrated superior abilities in teaching. The recipient must intend to teach music professionally in an independent studio or a classroom, or at the collegiate level.

ANDREW SANG HAN MEMORIAL AWARD. Established in memory of Sang Han, a clarinet performance major at Blair from 2012 to 2015. Sang's dedication to excellence in all areas of performance, from small chamber ensembles to wind symphony and orchestra, as well as the care and consideration he showed his peers, served as an example to his friends and colleagues at the Blair School. Presented to a woodwind or brass student who demonstrates remarkable musicianship and leadership in all areas of ensemble playing.

THE BLAIR VOLUNTEER SERVICE THROUGH MUSIC AWARD. Established in 2009, the award recognizes a student who, using music in service to others, has performed with extraordinary effort and distinction, particularly at the W. O. Smith Community Music School.

CHRISTIAN TEAL AWARD. This award recognizes a current string student who embodies the collaborative spirit of Professor Chris Teal, who retired in 2015 as Joseph Joachim Professor of Violin after forty-two years at the Blair School.

DAVID RABIN PRIZE. Established in memory of David Rabin, M.D., a professor of medicine and professor of obstetrics and gynecology at Vanderbilt from 1975 to 1984, and awarded for excellence in musical performance to a student enrolled at the Blair School of Music.

ELLIOT AND AILSA NEWMAN PRIZE. Endowed by Mrs. Ailsa Mackay Newman, in memory of her husband, Elliott Voss Newman, M.D., and his love of the clarinet. Dr. Newman was the Werthan Professor of Experimental Medicine at Vanderbilt from 1952 until his death in 1973. This prize is awarded to a promising clarinet or woodwind student for excellence in performance.

EXCELLENCE IN PIANO PERFORMANCE AWARD. This award is given by Blair faculty member Amy Kane Jarman in memory of her mother, June Kane, a 1947 piano performance graduate of the University of Colorado Boulder, and lifelong musician.

JEAN KELLER HEARD PRIZE. Established in honor of violinist Jean Keller Heard and awarded for excellence in musical performance to a string student or students seeking the bachelor of music at the Blair School of Music.

JULIUS AND MAGDA LACHS AWARD. Funded by Vanderbilt's Centennial Professor of Philosophy, John Lachs, in memory of his mother, Magda, a passionate opera enthusiast, and his father, Julius Lachs. It is given to an outstanding voice or orchestra student who participated in the current year's Vanderbilt Opera Theatre production.

L. HOWARD "ZEKE" NICAR AWARD. Established in memory of L. Howard "Zeke" Nicar, the Blair School of Music's first assistant dean for admissions. This award is presented to an outstanding student, for excellence in performance, as selected by the woodwind or brass faculty.

MARGARET BRANSCOMB PRIZE. Established in memory of Margaret Branscomb, wife of Vanderbilt Chancellor Emeritus Harvie Branscomb, and presented to a first-year student judged by the faculty to have the personal and musical qualities which best exemplify the spirit and standards of Blair.

MARK WAIT AWARD. Awarded for academic excellence and exemplary citizenship to a Blair senior with a second major outside of music. The Wait Award was created by an anonymous donor in honor of Mark Wait's tenure as dean of the Blair School.

MARTIN WILLIAMS AWARD. Established in memory of Martin Williams, former director of the Smithsonian Institution's Jazz Program and an adjunct professor of jazz history at Blair. This award is presented to the student writing the most outstanding class paper during the academic year.

MICHELSON AWARD IN COLLABORATIVE ARTS. Established in honor of Laura Michelson, BMus'11, this award is

presented to a singer, pianist, or voice/piano duo for exceptional performance in collaborative arts.

PRESSER AWARD. Established in memory of Theodore Presser, music publisher and philanthropist, and awarded to a rising senior judged by the Blair School of Music faculty to exemplify excellence both musically and academically.

RICHARD C. COOPER AWARD. This award is presented by the Pi Delta Chapter of Phi Mu Alpha to remember the outstanding contributions made by Chris Cooper to the student experience of music at Vanderbilt University.

SPIRIT OF BILLY ADAIR AWARD. The Spirit of Billy Adair award is given to a sophomore or junior who exhibits the qualities of leadership, mentorship, excellence, musicianship, and service within the jazz program at Blair.

STUDENT CITIZEN AWARD. The Student Citizen Award is given to the sophomore or junior judged by the entire faculty to have the musical and personal qualities that best exemplify the spirit and standards of the school, especially by sharing their talent and training in music as a service to others. The award is established by Madeline Myers, B.Mus.'11, in memory of her father, James Agnew Myers.

SUE BREWER AWARD. Established in memory of Sue Brewer by the Songwriters Guild Foundation and awarded for excellence to a student majoring in composition.

UNDERGRADUATE COMPOSITION AWARD. The Undergraduate Composition Award is awarded by the composition faculty to a student of junior or senior status who has made an outstanding contribution to the Blair School's composition program through creative output, academic excellence, and personal dedication. Given in honor of Sean William Calhoun, BMus'14.

Blair School of Music Courses

COMP	Composition
JAZZ	Jazz Studies
MCON	Conducting
MENT	Arts Advocacy, Career Development, and Entrepreneurship
MPED	Pedagogy
MREP	Orchestral Repertoire and Instrument Literature
MUED	Music Education
MUKH	Keyboard Harmony
MUSC	Musicianship
MUSE	Ensembles
MUSL	Musicology/Ethnomusicology
MUSO	Other Music Courses
MUTH	Music Theory
MWEL	Musicians' Wellness

Group Performance, Performance Classes and Individual Performance Instruction

BRQ	Baroque
BNJO	Banjo
BASS	Bass
BSSN	Bassoon
CLLO	Cello
CLAR	Clarinet
DRUM	Drumset
EUPH	Euphonium
FDDL	Fiddle
FLUT	Flute
GTR	Guitar
HARP	Harp
HRPS	Harpsichord
HORN	Horn
MNDL	Mandolin
OBOE	Oboe
ORGN	Organ
PERC	Percussion
PIAN	Piano
SAX	Saxophone
STPN	Steel Pan
TROM	Trombone
TRPT	Trumpet
TUBA	Tuba
VLA	Viola
VLN	Violin
VOIC	Voice

School of Engineering Administration and Faculty

KRISHNENDU ROY, Ph.D., Bruce and Bridgett Evans Dean of Engineering

NILANJAN SARKAR, Ph.D., Vice Dean

CYNTHIA B. PASCHAL, Ph.D., Senior Associate Dean for Undergraduate Education

JULIANNE VERNON, Ph.D., Associate Dean for Academic Success

FLORENCE SANCHEZ, Ph.D., Associate Dean for Graduate Education

IAN WOOD, Chief Business Officer

ADAM MCKEEVER-BURGETT, M.Div., Assistant Dean for People and Operations

THOMAS J. WITHROW, Ph.D., Assistant Dean for Design

MADDIE HUMBERT, M.A, Director

ALLISON GOMES, M.A., Academic Counselor

EMILY ARIZAGA, M.Ed., Academic and Educational Support Coordinator

Named and Distinguished Professorships

MARK D. ABKOWITZ, Distinguished Professor of Civil and Environmental Engineering

DOUGLAS E. ADAMS, Distinguished Professor of Civil and Environmental Engineering; Daniel F. Flowers Professor

GAUTAM BISWAS, Cornelius Vanderbilt Professor of Engineering

JAMES A. CADZOW, Centennial Professor of Electrical Engineering, Emeritus

THOMAS A. CRUSE, H. Fort Flowers Professor of Mechanical Engineering, Emeritus

PETER T. CUMMINGS, John R. Hall Professor of Chemical Engineering, Emeritus

BENOIT M. DAWANT, Cornelius Vanderbilt Professor in Engineering

CRAIG L. DUVALL, Cornelius Vanderbilt Professor of Engineering

PHILIPPE M. FAUCHET, Distinguished Professor of Electrical and Computer Engineering; Bruce and Bridgett Evans Dean's Chair in Engineering, Emeritus

DANIEL M. FLEETWOOD, Olin H. Landreth Professor of Engineering

KENNETH F. GALLOWAY, Distinguished Professor of Engineering, Emeritus

MICHAEL GOLDFARB, H. Fort Flowers Professor of Mechanical Engineering

JOHN C. GORE, Chancellor's University Professor of Radiology and Radiological Sciences and Biomedical Engineering

THOMAS R. HARRIS, Orrin Henry Ingram Distinguished Professor of Engineering, Emeritus

GEORGE M. HORNBERGER, Distinguished University Professor, Emeritus; Craig E. Philip Professor of Engineering, Emeritus

ROBERT W. HOUSE, Orrin Henry Ingram Distinguished Professor of Engineering Management, Emeritus

DAVID S. KOSSON, Distinguished Professor of Civil and Environmental Engineering; Gass Family Chair in Energy and the Environment

XENOFON KOUTSOUKOS, Thomas R. Walters Professor of Computer Science

BENNETT LANDMAN, Stevenson Chair of Electrical and Computer Engineering

M. DOUGLAS LEVAN, J. Lawrence Wilson Professor of Engineering, Emeritus

SANKARAN MAHADEVAN, John R. Murray Sr. Professor in Engineering

ANITA MAHADEVAN-JANSEN, Orrin H. Ingram Professor in Biomedical Engineering

W. DAVID MERRYMAN, Walters Family Professor

MICHAEL I. MIGA, Harvie Branscomb Professor

CAGLAR OSKAY, Cornelius Vanderbilt Professor of Engineering

SOKRATES T. PANTELIDES, University Distinguished Professor of Physics and Engineering

PETER N. PINTAURO, H. Eugene McBrayer Professor of Chemical Engineering, Emeritus

KRISHNENDU ROY, Bruce and Bridgett Evans Dean of Engineering; Distinguished Professor of Biomedical Engineering

NILANJAN SARKAR, David K. Wilson Professor of Engineering

DOUGLAS C. SCHMIDT, Cornelius Vanderbilt Professor of Engineering

RONALD D. SCHRIMPFF, Orrin Henry Ingram Professor of Engineering

RICHARD E. SPEECE, Centennial Professor of Civil and Environmental Engineering, Emeritus

JANOS SZTIPANOVITS, E. Bronson Ingram Distinguished Professor of Engineering

TAYLOR G. WANG, Centennial Professor of Materials Science and Engineering, Emeritus; Centennial Professor of Mechanical Engineering, Emeritus

ROBERT J. WEBSTER III, Richard A. Schroeder Professor in Mechanical Engineering

SHARON M. WEISS, Cornelius Vanderbilt Professor of Engineering

JOHN P. WIKSWO, JR., Gordon A. Cain University Professor; A. B. Learned Professor of Living State Physics

JAMEY D. YOUNG, Cornelius Vanderbilt Professor of Engineering

Department Chairs and Division Director

MICHAEL MIGA, Biomedical Engineering (Interim)

PAUL E. LAIBINIS, Chemical and Biomolecular Engineering

CAGLAR OSKAY, Civil and Environmental Engineering

JONATHAN SPRINKLE, Computer Science

BENOIT DAWANT, Electrical and Computer Engineering (Interim)

YIORGOS KOSTOULAS, Engineering Science and Management

HAOXIANG LUO, Mechanical Engineering (Interim)

Faculty

For a list of current faculty, please visit vanderbilt.edu/faculty-affairs/faculty-registry/.

Engineering Education in a University Setting

[Facilities](#)

[Professional Registration and Accreditation](#)

[Employment of Graduates](#)

[Supporting Organizations](#)

Vanderbilt University School of Engineering is the largest and oldest private engineering school in the South. Classes offering engineering instruction began in 1879, and seven years later Engineering was made a separate unit with its

own dean. The school's program emphasizes the relationship of the engineering profession to society and prepares engineers to be socially aware as well as technically competent.

The mission of the School of Engineering is threefold: to produce intellectual leaders, entrepreneurs, and innovators by recruiting the best students and providing them a top-notch education; to deliver scholarship of the highest caliber, published in the most visible venues, addressing important societal problems; and to be a leader in entrepreneurship and innovation, in Tennessee, the U.S., and globally.

The school strives to meet the undergraduate education portion of its mission by offering degree programs in fields of engineering relevant to the needs of society. An objective of these programs is to provide a technical education integrated with strong humanities, fine arts, and social sciences subject matter to provide the requisite foundation for lifelong learning. The availability of second majors and minors in subject areas in other schools and colleges of the university increases opportunities for engineering students to enhance their education by pursuing studies in the non-technical disciplines. Engineering students take close to 50 percent of their courses outside of the School of Engineering and associate daily with peers from other schools and colleges within the university.

Another objective is to prepare students who intend to enter engineering practice upon graduation and those who will continue their studies at the graduate level in engineering or in other professional fields. To this end, our programs emphasize mathematics and engineering sciences with significant exposure to engineering design and hands-on laboratory experiences.

A large fraction of the student body is destined for management positions early in their working careers. To meet these students' needs, the Engineering Management program offers a well-integrated minor.

Students at all levels have the opportunity to work with faculty in the generation of new knowledge. Those planning for graduate studies and research are especially encouraged to participate in individual topics and research courses to fulfill that desire. Engineering students also participate in summer research programs of the university and of the school.

Facilities

The School of Engineering is housed in five main buildings with several satellite facilities. William W. Featheringill Hall houses a three-story atrium designed for student interaction and social events, more than fifty teaching and research laboratories with the latest equipment and computer resources, and project rooms. The Engineering and Science Building is an eight-story state-of-the-art building that houses the Wond'ry at the Innovation Pavilion, the Frist Center for Autism and Innovation, numerous research labs, interactive classrooms, clean rooms, and space for students to work, study, and socialize. Olin Hall, which is attached to the Engineering and Science building, houses Chemical and Biomolecular Engineering, Mechanical Engineering, and Materials Science, several classrooms, and research and teaching laboratories. School administrative offices and several classrooms are located on the ground floor of the Science and Engineering Building in Stevenson Center, which also houses the Biomedical Engineering department on the 8th and 9th floors. Jacobs Hall, which flanks Featheringill Hall, contains laboratories, offices, and classrooms serving the Civil and Environmental Engineering, and Electrical and Computer Engineering departments. Labs, offices, and meeting spaces for Computer Science are also housed at 17th & DeFord Bailey, a building that serves as a hub for Computer Science and Data Science. Several satellite facilities are also part of the Engineering School: the W. M. Keck Free-Electron Laser Center building, housing the labs and offices of the Biomedical Photonics Center; the Laboratory for Systems Integrity and Reliability (LASIR), an off-campus hangar-style facility dedicated to scaling up experiments to realistic and full size that houses a wind tunnel and military aircraft; the Vanderbilt Institute of Software Integrated Systems; and the Institute for Space and Defense Electronics.

In all its engineering programs, Vanderbilt recognizes the vital place of experimental and research laboratories in the learning experience. Laboratories are designed to provide the strongest personal contact between students and faculty members consistent with enrollment.

Well-equipped undergraduate laboratories are maintained by the Chemistry and Physics & Astronomy departments in the College of Arts and Science, which offers mathematics and basic science courses required of all engineering students. Graduate and undergraduate divisions of these departments maintain teaching and research facilities in the Stevenson Center for the Natural Sciences. Another supporting department, Biological Sciences, is housed in Medical Research Building III. Most classes in humanities and the social sciences are conducted in Buttrick, Calhoun, Furman, Garland, and Wilson halls.

Professional Registration and Accreditation

Legislation exists in the various states requiring registration of all engineers who contract with the public to perform professional work. Although many engineering positions do not require professional certification, Vanderbilt supports registration and encourages its graduates to take the Fundamentals of Engineering examination as soon as they become eligible.

Bachelor of engineering degrees in biomedical engineering, chemical engineering, civil engineering, electrical and computer engineering, and mechanical engineering are accredited as noted below. Students in these programs may take the Fundamentals of Engineering examination as seniors. In addition, proven professional experience is a requirement for registration. Some state boards may have additional requirements for licensure.

All programs leading to the Bachelor of Engineering degree and the program leading to the Bachelor of Science in computer science are accredited as follows:

The Bachelor of Engineering degree program in biomedical engineering is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org/>, under the General Criteria and the Program Criteria for Bioengineering and Similarly Named Engineering Programs.

The Bachelor of Engineering degree program in civil engineering is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org/>, under the General Criteria and the Program Criteria for Civil and Similarly Named Engineering Programs.

The Bachelor of Engineering degree program in chemical engineering is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org/>, under the General Criteria and the Program Criteria for Chemical, Biochemical, Biomolecular and Similarly Named Engineering Programs.

The Bachelor of Science program in computer science is accredited by the Computing Accreditation Commission of ABET, <https://www.abet.org/>, under the General Criteria and Program Criteria for Computer Science and Similarly Named Computing Programs. The accredited program in computer science is the primary major administered by the School of Engineering. Computer science added as a second major by students outside the School of Engineering is not an accredited program.

The Bachelor of Engineering degree program in electrical and computer engineering is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org/>, under the General Criteria and the Program Criteria for Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs.

The Bachelor of Engineering degree program in mechanical engineering is accredited by the the Engineering Accreditation Commission of ABET, <https://www.abet.org/>, under the General Criteria and the Program Criteria for

Mechanical and Similarly Named Engineering Programs.

Employment of Graduates

Of the recent Vanderbilt graduates with baccalaureate degrees in engineering, about 75 percent entered directly into professional practice. Twenty-five percent continued with graduate or professional education. Others pursued diverse careers or other interests. Additional information regarding the employment of engineering graduates is available on the School of Engineering's website and in the VU Career Center.

Supporting Organizations

Vanderbilt Engineering Council

The Engineering Council is a student organization whose main goal is facilitating community among undergraduate students in the School of Engineering by organizing activities, e.g., Engineering Week, de-stress events around final examinations, and many more. Additionally, the council acts as a student voice to school administration and faculty. Representatives of engineering student organizations apply to serve on the E-Council leadership team, and the current leadership board selects and trains the new members. While the council has no administrative power, it provides students with a voice in the decision-making process in the School of Engineering.

Professional Societies

The leading national engineering societies have chartered branches or student sections at Vanderbilt. These organizations are run locally by students with the help of a faculty adviser. Meetings are devoted to matters of a technical nature, including outside speakers, plant trips, and other subjects of interest to the membership.

Students are invited to attend meetings and join as they will find the work of the professional societies beneficial in orienting them in their careers.

The student professional societies are:

American Institute of Aeronautics and Astronautics (A.I.A.A.)	Institute for Electrical and Electronics Engineers (I.E.E.E.)
American Institute of Chemical Engineers (AICh.E)	National Society of Black Engineers (N.S.B.E.)
American Society of Civil Engineers (A.S.C.E.)	Society of Asian Scientists and Engineers (S.A.S.E.)
American Society of Mechanical Engineers (A.S.M.E)	Society of Hispanic Professional Engineers (S.H.P.E.)
Biomedical Engineering Society	Society of Automotive Engineers (S.A.E.)
Engineering World Health (E.W.H.)	Society of Women Engineers (S.W.E.)
Engineers Without Borders (E.W.B.)	Women in Computing

The student Honor Societies are:

Tau Beta Pi	Alpha Eta Mu Beta
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Graduating seniors may join the Order of the Engineer, a society that recognizes the commitment of its members to the profession of engineering.

In addition to student chapters of national professional societies, the School of Engineering also hosts a number of additional student organizations.

Degree Programs in Engineering

[Degree Programs in Engineering](#)

[Undergraduate Degrees](#)

[The First Year](#)

[Mathematics and Physics](#)

[Liberal Arts Core](#)

[Immersion](#)

[Open Electives](#)

[Officer Education](#)

[Master of Engineering](#)

[Digital Learning Programs](#)

Bachelor of engineering degree programs are offered in the areas of biomedical, chemical, civil, electrical and computer, environmental, and mechanical engineering. Many of these programs allow considerable flexibility—but students are required to include in their courses of study those bodies of knowledge fundamental to that discipline.

Bachelor of science degree programs are offered in computer science and engineering science. The latter interdisciplinary engineering discipline allows strong concentration in other areas of engineering or outside of the School of Engineering.

The school offers the master of engineering (M.Eng.), with emphasis on engineering design and practice, in most areas of study. The Graduate School, through departments of the School of Engineering, offers the research-oriented Ph.D. and M.S. degrees in eight major fields. Degree programs offered by the School of Engineering are shown below.

Degree Programs in Engineering

	B.E.	B.S.	M.Eng.	M.S.	Ph.D.
Biomedical Engineering	•		•	•	•
Chemical Engineering	•		•	•	•
Civil Engineering	•		•	•	•
Computer Science		•		•	•
Cyber-Physical Systems			•		
Electrical and Computer Engineering	•			•	•
Engineering in Surgery and Intervention			•		
Engineering Management			•		
Engineering Science		•			
Environmental Engineering	•		•	•	•
Interdisciplinary Materials Science				•	•
Mechanical Engineering	•		•	•	•
Risk, Reliability, and Resilience Engineering			•		

Undergraduate Degrees

The First Year

Most courses normally scheduled for the first year are common to both the B.E. and B.S. degree programs. While the curriculum for the first year is generally the same for all students, there are important variations. For example, some major programs require a full year of introductory chemistry; others do not. Students should become familiar with requirements of those programs in which they have an interest and confer with their adviser at the time of enrollment and throughout the first year to plan a program of study that will keep options open as long as possible.

Specimen curricula for the engineering programs are given in the Courses of Study section. Requirements for the B.E. and B.S. degrees for the various programs vary in the minimum amount of hours and in specific course requirements in the basic sciences and in mathematics.

Included in the first year for all majors is the course Engineering Science 1401-1403 Introduction to Engineering, which introduces the student to design tools used in all areas of engineering.

Mathematics and Physics

Entering engineering students will be placed in the appropriate level mathematics course. Students having one full year or more of high school credit in analytic geometry and calculus may qualify for advanced placement in a regular sequence by scoring well on the Advanced Placement Examination.

Students with high mathematical ability and achievement as demonstrated by testing credit or credit by examination through the Department of Mathematics may begin in the next mathematics course for which they qualify (e.g., MATH 1301 or 2300). For more information, see the testing credit information under Advanced Credit in the Admissions section of this catalog and course descriptions under Mathematics in the Arts and Science section of this catalog. For majors requiring Math 2420 (Methods of Ordinary Differential Equations), students may select Math 2400 (Differential Equations with Linear Algebra) or Math 2610 (Ordinary Differential Equations) as a substitute.

First-year students with a test score of 5 on the Calculus-BC Advanced Placement examination and who wish to pursue the honors track of a second major in mathematics may take MATH 2500-2501, which will cover the material from MATH 2300 and 2600 but in a deeper and integrated fashion. Note that while linear algebra is required for some VUSE majors, no VUSE major specifically requires 2600. Students considering this option must discuss this with the Director of Undergraduate Studies in Mathematics and the School of Engineering Office of Academic Services.

Students with inadequate backgrounds in mathematics may be required to take Math 1005 (Pre-calculus Mathematics). Taking this course constitutes an additional requirement for graduation.

Math 1010-1011 (Probability and Statistical Inference) and Math 1100 (Survey of Calculus) cannot be credited toward a degree in the School of Engineering.

Students with greater interest in physics may enroll in Phys 1911, 1912, 1912L, and 2255L (Principles of Physics I and II and labs) as substitutes for Phys 1601, 1602, 1601L, and 1602L (General Physics I and II and labs), respectively. Students should consult with their Academic Adviser before taking this more advanced Physics sequence.

Pre-calculus courses Phys 1010, 1010L, 1020, 1020L, 2051, 2052, 2053, and 2054 cannot be credited toward a degree in the School of Engineering.

Liberal Arts Core

In order to provide the elements of a general education considered necessary for responsible practice as an educated engineer, the School of Engineering requires each student to complete at least 18 hours in the Liberal Arts Core comprising:

1. At least 3 hours selected from courses classified in the AXLE Curriculum Course Distribution as Humanities and Creative Arts (HCA), with the exception of CMST 1500, 2100, 2110, and 2120, and
2. At least 3 hours selected from courses classified in the AXLE Curriculum Course Distribution as Social and Behavioral Sciences (SBS).

The remaining hours are to be selected from:

1. Courses classified in the AXLE Curriculum Course Distribution as Humanities and Creative Arts (HCA), International Cultures (INT), History and Culture of the United States (US), Social and Behavioral Sciences (SBS), and Perspectives (P)
2. CS 1151 and ENGM 2440
3. ARA, CHEB, CHIN, FREN, GER, GRK, HEBR, HNUR, ITA, JAPN, KICH, KOR, LAT, RUSS, SNSK, and SPAN courses numbered 1101; CHIN and JAPN courses numbered 1011 and 1012; and ENGL and SPAN courses numbered 1100
4. AP Credit for AADS 2000 (earned from the AP African American Studies exam).
5. Peabody College courses in Psychology (PSY-PC) numbered 1205, 1207, 1250, 2200, 2250, 2300, 2400, 2500, 2550, 2600, and 3150, and in Human and Organizational Development (HOD) numbered 1250, 1300, 2100, 2260, 2400, 2500, 2700, and HODC 3232
6. All MUSO, COMP, MREP, MUTH, and performance courses in the Blair School of Music, except MUSO 1001
7. MS 1510

Immersion

Immersion Vanderbilt (vanderbilt.edu/immersion) allows students to pursue a multi-year path to be curious, to develop their passions and to learn by experience. To fulfill the university requirement of Immersion Vanderbilt, a student must participate in immersive experiences and then complete a culminating project that is based on one specific immersive experience as described in the Special Programs for Undergraduates section near the start of this catalog.

The experiential learning may focus on one or more areas of student interest. Most engineering students will take advantage of a four-year engineering design experience to satisfy the requirements of Immersion Vanderbilt. Each engineering major offers such a multi-year experience within its curriculum. Students whose plans include professional development may also pursue industrial internships. A research path can engage the student in discovery through research in engineering or other fields. While most engineering students will select an immersion experience associated with their major, students can pursue an Immersion plan outside their home program. For example, students interested in creative expression might develop a performance piece, exhibit, or artistic work, while those interested in international study may explore firsthand the culture, language, and history of other countries. Students interested in such immersion plans should consult the Office of Experiential Learning and Immersion (EL&IV).

The Immersion Vanderbilt process is composed of several phases. Senior design projects in the School of Engineering satisfy the final project requirement for Immersion Vanderbilt, with students presenting the results of their design project at the school's Design Day or Computer Science Immersion Showcase. For students completing other immersion projects, the Office of Experiential Learning and Immersion Vanderbilt coordinates a series of showcases open to the entire campus where students display their projects. Upon completion of the project, Office of Experiential Learning and Immersion Vanderbilt conveys that the requirements have been met by showing completion of the Immersion Vanderbilt graduation requirement on the student's degree audit.

Open Electives

Courses taken beyond specified courses and restricted (such as program, technical, and liberal arts) electives for the major may be taken as open electives.

Officer Education

Course offerings in military science and naval science are described in the section on Special Programs for

Undergraduates near the beginning of the catalog. All officer education courses designated as eligible for credit may be taken as open electives. In addition, some officer education courses in history and political science may be taken as part of the Liberal Arts Core while some officer education courses in engineering science may be taken as technical electives. AFROTC students may count 6 hours of the military courses as open electives.

Master of Engineering

The master of engineering (M.Eng.) is an advanced professional degree awarded by the School of Engineering and especially designed for engineering practitioners who may prefer to work while doing professional study. It is also suitable for individuals who apply directly from undergraduate school—but the thrust of the program is toward professional practice in engineering rather than research or teaching. The degree is offered in biomedical engineering, chemical engineering, civil engineering, cyber-physical systems, engineering in surgery and intervention, engineering management, environmental engineering, mechanical engineering, and risk, reliability, and resilience engineering.

Students must complete 30 hours of approved course work. A maximum of 6 hours of graduate-level course work may be transferred from another institution, and a maximum period of seven years is allowed to complete the degree. An extensive, written design report shall be submitted on a project approved by the student's project adviser.

Regular admission to the Master of Engineering program normally requires graduation from an approved undergraduate program in engineering or a related scientific discipline, attainment of a B average in undergraduate courses applicable to the student's career goals, and recommendations containing favorable appraisals of professional promise and attitude. A period of successful work experience prior to application to the program will also be given consideration. For information about admissions, application procedures, and application deadlines for the Master of Engineering programs, please visit <https://engineering.vanderbilt.edu/academics/master-of-engineering-degree>.

Current undergraduates in the School of Engineering may be eligible to earn the Master of Engineering via the Integrated Bachelor and Master of Engineering program described in the next section of this catalog.

For international students who did not graduate from an institution in a country where English is the official language, proficiency in English must be shown by a minimum score of 89 on the TOEFL or 7 on the IELTS test.

Digital Learning Programs

The School of Engineering offers two degree programs online: an M.S. in Computer Science, and an M.Eng. in Engineering Management. Courses in these digital learning programs are only available to students enrolled in these online degree programs. For information about admissions, application procedures, and application deadlines for the School of Engineering Digital Learning programs, please visit the website engineeringonline.vanderbilt.edu.

Special Programs in the School of Engineering

[Honors Programs](#)

[Study Abroad](#)

[Teacher Education](#)

[Second Major](#)

[Minors](#)

[Focus Areas](#)

[Dual Degree Program with Fisk University](#)

[Integrated Bachelor and Master of Engineering](#)

[Accelerated Graduate Program in Engineering](#)

Honors Programs

Honors programs allow selected undergraduate students to develop individually through independent study and research. Honors programs of each major are described in the Courses of Study section.

Requirements vary somewhat but, in general, to qualify for consideration a student should have (a) completed the technical course requirements of the first two years, (b) attained a minimum grade average of 3.5 in all work taken for credit, and (c) shown evidence indicating a capacity for independent study and/or research. Formal admission is by election of the department concerned. Once admitted, candidates remain in the program only if they maintain a 3.5 or higher grade point average.

Accepted candidates normally begin honors study in the junior year, but exceptions may be made for outstanding seniors.

Successful candidates are awarded Honors in their major. This designation appears on their diplomas.

Study Abroad

Vanderbilt's Global Education Office offers approximately thirty programs that allow students to take engineering or computer science courses in English abroad, in locations ranging from Dublin to Sydney, Madrid to Hong Kong. There are no language prerequisites for these programs. These programs also allow students to take a range of liberal arts core, major core, and elective courses abroad. In no case, after matriculating at Vanderbilt, may a student participate in a Vanderbilt-approved study abroad program through a different university or through an external agency and then seek to transfer that credit into Vanderbilt. Financial aid can be used for study abroad during the academic year, and scholarships are available to support Vanderbilt-approved summer study abroad options. Students are encouraged to discuss with their academic advisers how best to incorporate study abroad into their four-year plans of study. All students who study abroad must register their travel in advance with Vanderbilt's international security provider.

Registration is completed on your behalf when enrolling in a program offered through the Global Education Office. Otherwise, information is available on the GlobalVU website: vanderbilt.edu/global.

Teacher Education

Students who are interested in preparing for licensure as secondary school teachers should plan their programs in consultation with the associate dean in the School of Engineering and the Director of Secondary Education in the Department of Teaching and Learning at Peabody College. More specific information on professional education course requirements can be found under the Licensure for Teaching chapter in the Peabody College section of this catalog. Inquiries can also be made to the Office of Teacher Licensure at Peabody.

Second Major

It is possible for a student to combine an engineering field with a second area outside the School of Engineering. The student must obtain prior approval of each department and satisfy the requirements of each major, including the requirement regarding minimum grade point average. Students in the School of Engineering may use courses outside the School of Engineering for relevant second majors even if those courses also fulfill a degree requirement.

Certain double majors involving two programs within the School of Engineering have been approved by the faculty. The approved double majors are biomedical engineering/electrical and computer engineering, and biomedical engineering/chemical engineering.

Both majors are indicated on the student's transcript. Only one degree is awarded, from the school in which the student is enrolled.

Minors

A minor consists of at least five courses of at least 3 credit hours each within a recognized area of knowledge. A minor offers students more than a casual introduction to an area, but less than a major. A minor is not a degree requirement, but students may elect to complete one or more. Courses may not be taken on a Pass/Fail basis. A minor for which all designated courses are completed with a grade point average of at least 2.000 will be entered on the transcript at the time of graduation.

When a minor is offered in a discipline that offers a major, only those courses that count toward the major may be counted toward the minor. Students should refer to the appropriate sections of this catalog for specific requirements. Minors are offered in engineering management, materials science and engineering, computer science, data science, digital fabrication, electrical and computer engineering, energy and environmental systems, environmental engineering, nanoscience and nanotechnology, quantum information science and engineering, scientific computing, and most disciplines of the College of Arts and Science, Blair School of Music, and Peabody College.

Students declare their intention to pursue a minor by completing the online Major/Minor Declaration/Change workflow process found here: <https://registrar.vanderbilt.edu/registration/forms.php>. Departments and programs usually assign advisers to students who declare minors in their areas. Students are responsible for knowing and satisfying all requirements for the minors they intend to complete.

Focus Areas

Focus areas provide guidance to students wishing to concentrate on a specialized topic within engineering. Focus areas are typically nine credit hours, and qualifying courses are listed in the catalog. Students can declare a maximum of three focus areas; however, a qualifying course cannot be applied to more than one focus area. Students interested in declaring a focus area must do so before the start of their final semester at Vanderbilt. Successful completion of a declared focus area will be designated on a student's transcript upon graduation.

The School of Engineering offers the following focus areas:

- Human Computer Interaction
- Microelectronics
- Nanotechnology
- Strategic and Technical Consulting
- Engineering Communications
- Technology Entrepreneurship
- Product Development

Dual Degree Program with Fisk University

A coordinated dual degree program between the Vanderbilt University School of Engineering and Fisk University is especially designed to permit students to obtain an A.B. degree in biology, chemistry, computer science, physics, or mathematics from Fisk and a B.E. degree in engineering from Vanderbilt, generally within five years.

For the first three years, the student is enrolled at Fisk in a science or mathematics curriculum and, by cross-registration in the second and third years, takes introductory engineering courses at Vanderbilt. During the fourth and fifth years, the student is enrolled at Vanderbilt, following principally an engineering curriculum at Vanderbilt and completing necessary courses at Fisk. At the end of five years, the student should be able to satisfy the requirements for both bachelor's degrees.

Financial aid is available for qualified, deserving students. Additional information is available from the director of

transfer admissions in the Office of Undergraduate Admissions.

Integrated Bachelor and Master of Engineering

On the basis of recommendations containing favorable appraisals of professional promise, undergraduate students in the School of Engineering who have completed at least 75 hours by the end of the second year with at least a 3.500 grade point average may be accepted into an integrated Bachelor of Engineering-Master of Engineering program. This program is currently available in chemical, civil, environmental, or mechanical engineering. This program can also be completed with the Master of Engineering degree in Engineering in Surgery and Intervention (ESI) in combination with the bachelor's degree in biomedical, mechanical, electrical and computer engineering, or engineering science. The last two years of a student's program are planned as a unit.

With the approval of the student's adviser, the director of graduate studies in the student's major department, and the senior associate dean for undergraduate education, students apply through the senior associate dean for graduate education for admission to this integrated dual degree program. Upon admission to this program, a second "career" will be set up for the student which will allow the student to start taking graduate courses (course numbers > 5000) during the junior and senior years. These courses will be credited toward the master of engineering.

Note that no double counting of courses is allowed (i.e., the student must meet the degree requirements for each degree independent of the other degree). No more than 18 total credit hours between the two careers can be taken in a single semester. The student typically receives the bachelor's degree at the end of the fourth year and completes the master of engineering during the fifth year. Further information can be obtained from the director of graduate studies of the student's major department.

Accelerated Graduate Program in Engineering

Students who enter Vanderbilt with a significant number of credits, earned either through Advanced Placement or International Baccalaureate tests or in college courses taken during high school, may be eligible for the Accelerated Graduate Program in Engineering. Through this program, a student is able to earn both a bachelor's degree and a master of science in about the same time required for the bachelor's degree or slightly longer. To be eligible for the program, a student must complete 86 hours (senior standing) by the end of the sophomore year with at least a 3.500 grade point average. With the approval of the student's adviser, the director of graduate studies in the student's major department, and the senior associate dean for undergraduate education, students apply through the senior associate dean for graduate education for admission to this accelerated dual degree program. Upon admission to this program, a second "career" will be set up for the student which will allow the student to start taking graduate courses (course numbers > 5000) during the junior and senior years. These courses will be credited toward the master of science.

Note that no double counting of courses is allowed (i.e., the student must meet the degree requirements for each degree independent of the other degree). No more than 18 total credit hours between the two careers can be taken in a single semester. The student receives the bachelor's degree at the end of the fourth year and typically spends the summer finishing a master's thesis to complete the master of science. Further information can be obtained from the director of graduate studies of the student's major department.

Honors in the School of Engineering

[Founder's Medal](#)

[Latin Honors Designation](#)

[Dean's List](#)

[Honor Societies](#)

[Other Awards and Prizes](#)

Founder's Medal

The Founder's Medal, signifying first honors, was endowed by Commodore Cornelius Vanderbilt as one of his gifts to the university. The recipient is named by the dean after consideration of faculty recommendations and the grade point averages of the year's summa cum laude graduates.

Latin Honors Designation

Honors noted on diplomas and published in the Commencement Program are earned as follows:

Summa Cum Laude. Students whose grade point average equals or exceeds that of the top 5 percent of the previous three years' School of Engineering graduating seniors.

Magna Cum Laude. Students whose grade point average equals or exceeds that of the next 8 percent of the previous three years' School of Engineering graduating seniors.

Cum Laude. Students whose grade point average equals or exceeds that of the next 12 percent of the previous three years' School of Engineering graduating seniors.

Dean's List

The Dean's List recognizes outstanding academic performance in a semester. Students are named to the Dean's List when they earn a grade point average of at least 3.500 while carrying 12 or more graded hours, with no temporary or missing grades in any course (credit or non-credit) and no grade of *F*. Dean's List designations are posted to the Academic Record in YES.

Honor Societies

ALPHA ETA MU BETA, the National Biomedical Engineering Honor Society, was installed at Vanderbilt University in 1998 and re-established in 2019. AEMB was established in 1979 to recognize and encourage excellence in the field of biomedical engineering and bioengineering.

TAU BETA PI. The Tennessee Beta chapter of the Tau Beta Pi Association was installed at Vanderbilt University 7 December 1946. Members of Tau Beta Pi are selected from undergraduate students in the School of Engineering who have completed at least four semesters of required work, are in the upper eighth of their class scholastically, and have shown marked qualities of character and leadership; seniors in the upper fifth of their class scholastically are also eligible for election.

CHI EPSILON. The Vanderbilt chapter of Chi Epsilon, installed 18 March 1967, is restricted to undergraduate civil engineering students in the top third of their class. Election is based on grade point average, faculty recommendation, and exceptional achievements in extracurricular campus activities.

ETA KAPPA NU. The Epsilon Lambda chapter of the Eta Kappa Nu Association was established 22 April 1966. Undergraduate members are selected from the upper third of the class in electrical and computer engineering. Eta Kappa Nu recognizes leadership and scholastic accomplishment twice annually, selecting members also from the professional body of practicing engineers.

PI TAU SIGMA. The Delta Alpha chapter of Pi Tau Sigma was installed on the Vanderbilt campus 22 April 1971, for the purpose of recognizing scholastic achievement and professional promise in junior and senior mechanical engineering students. Students are elected to membership twice each year on the basis of academic excellence and recommendations from the faculty and chapter members.

SIGMA XI. The Vanderbilt chapter of the Society of the Sigma Xi recognizes accomplishment, devotion, and originality in scientific research. Associate members are elected annually from graduate-level students of the university.

for their first semester are eligible for membership in the Vanderbilt chapter of Phi Eta Sigma and Alpha Lambda Delta.

Other Awards and Prizes

DEAN'S AWARD FOR OUTSTANDING SERVICE. Awarded to the senior candidate in the School of Engineering who has shown remarkable leadership qualities and who has also made the greatest contribution in personal services to the school.

DEAN'S AWARD FOR OUTSTANDING SCHOLARSHIP. Awarded to each member of the senior class who graduates summa cum laude.

PROGRAM AWARDS. The faculty associated with each of the departments of the school annually bestows a certificate and a prize to one member of the graduating class who is judged to have made the greatest progress in professional development during his or her undergraduate career.

AMERICAN INSTITUTE OF CHEMISTS AWARD. Awarded to an outstanding undergraduate student majoring in chemical engineering on the basis of a demonstrated record of leadership, ability, character, scholastic achievement, and potential for advancement of the chemical professions.

GREG A. ANDREWS MEMORIAL AWARD. Endowed in 1969 and awarded to the senior in civil engineering who has been judged by the faculty to have made the greatest progress in professional development and who plans to do graduate work in environmental and water resources engineering.

THOMAS G. ARNOLD PRIZE. Endowed in 1989 and awarded by the biomedical engineering faculty to the senior(s) who presents (present) the best design of a biomedical engineering system or performance of a research project in the application of engineering to a significant problem in biomedical science or clinical medicine.

WALTER CRILEY PAPER AWARD. Endowed in 1978 and awarded in electrical and computer engineering for the best paper on an advanced senior project in electrical engineering.

JAMES SPENSER DAVIS AWARD. Given annually by the student chapter of Eta Kappa Nu in memory of Mr. Davis, this award recognizes excellence in the undergraduate study of electronics.

ARTHUR J. DYER JR. MEMORIAL PRIZE. Endowed in 1938 and awarded in civil engineering to the member of the senior class doing the best work in structural engineering.

WALTER GILL KIRKPATRICK PRIZE IN CIVIL ENGINEERING. Endowed and awarded in the School of Engineering to the most deserving third-year undergraduate student in civil engineering.

WILLIAM A. MA AWARD. Awarded to an outstanding senior majoring in chemical engineering on the basis of a demonstrated record of leadership and scholastic achievement.

WILSON L. AND NELLIE PYLE MISER AWARD. Awarded to the senior engineering student who has been judged by the faculty of mathematics to have excelled in all aspects of mathematics during his or her undergraduate career.

STEIN STONE MEMORIAL AWARD. Endowed in 1948 and awarded in the School of Engineering to the member of the graduating senior class who has earned a letter in sports, preferably in football, and who is adjudged to have made the most satisfactory scholastic and extramural progress as an undergraduate.

ROBERT D. TANNER UNDERGRADUATE RESEARCH AWARD. Awarded to a senior who, in the judgment of the chemical engineering faculty, has conducted at Vanderbilt University the best undergraduate research project.

W. DENNIS THREADGILL AWARD. Awarded to a graduating chemical engineering senior for outstanding achievement in the undergraduate program in honor of a former faculty member and department chair.

Engineering Courses of Study

1000-1999: Lower-level introductory courses. Generally no prerequisite.

2000-2999: Intermediate undergraduate courses. May have prerequisite courses.

3000-4999: Upper-level undergraduate course. Usually have prerequisite courses.

5000+: Courses for graduate credit.

Bracketed numbers indicate semester hours credit, e.g., [3].

W symbols used in course numbers designate courses that meet departmental writing requirements.

Abbreviations

BME	Biomedical Engineering
CE	Civil Engineering
CHBE	Chemical and Biomolecular Engineering
CMPE	Computer Engineering
CS	Computer Science
DF	Digital Fabrication
DS	Data Science
ECE	Electrical Engineering and Computer Engineering
ENGM	Engineering Management
ES	Engineering Science
ENVE	Environmental Engineering
ME	Mechanical Engineering
MSE	Materials Science and Engineering
NANO	Nanoscience and Nanotechnology
SC	Scientific Computing

The First Year

The first-year curriculum for all engineering disciplines is:

Specimen Curriculum

FALL SEMESTER		Semester hours
CHEM 1601, 1601L	General Chemistry and Laboratory	4
MATH 1300	Accelerated Single-Variable Calculus I	4
ES 1401-1403	Introduction to Engineering	3
	Elective (Liberal Arts Core Elective preferred)	3
ES 1115	First-year Engineering Seminar (optional)	1
VV 0700	Vanderbilt Visions	0
	Total	14-15

SPRING SEMESTER		Semester hours
Basic Science‡	Basic Science Course with Laboratory (requirements depend upon major)	4
MATH 1301	Accelerated Single-Variable Calculus II	4
PHYS 1601, 1601L	General Physics I and Laboratory	4
CS 1100, 1101, 1103, or 1104*	Computer Science Course	3
ES 1001	Engineering iCommons Seminar (optional)	1
	Total	15-16

‡ Biomedical engineering, chemical engineering, and environmental engineering majors must take CHEM 1602 and 1602L; electrical and computer engineering, and mechanical engineering majors must take MSE 1500 and 1500L or CHEM 1602 and 1602L; civil engineering majors must take MSE 1500 and 1500L; and engineering science majors should consult their program's basic science and technical elective requirements for approved courses.

* Computer science majors must take CS 1101 or 1104. Electrical and computer engineering majors must take CS 1100 or 1101 or 1104. Environmental engineering majors must take CS 1100 or 1101 or 1103.

Biomedical Engineering

[Degree Programs](#)

[Facilities](#)

[Undergraduate Honors Program](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Biomedical Engineering](#)

[Double Majors](#)

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COURSES OFFERED: [BME](#)

The foundations of biomedical engineering are the same as those in other engineering disciplines: mathematics, physics, chemistry, and engineering principles. Biomedical engineering builds on these foundations to solve problems in biology and medicine over the widest range of scales—from the nanoscale and molecular levels to the whole body. Biomedical engineering provides a robust platform for employment in the medical device and instrumentation industries as well as careers in companies that specialize in the development and application of biologics, biomaterials, computation, implants and processes. Our graduates gain entry into nationally recognized graduate schools for continuing studies in biomedical engineering.

Biomedical engineering is also a rigorous path for admission to and success in medical school for those students

willing and able to excel in mathematics, physics, chemistry, biology, physiology, and engineering.

The Department of Biomedical Engineering at Vanderbilt is unique among biomedical engineering programs in its immediate proximity to the world class Vanderbilt Medical Center, located on our compact campus. Our School of Medicine is among the top ten in funding from the National Institutes of Health and includes a National Cancer Institute- recognized Comprehensive Cancer Center, a major children's hospital and a Level I trauma center. This proximity and the strong relationships among faculty across multiple schools stimulate high impact research and provide unique educational and research opportunities for students.

Degree Programs. The Department of Biomedical Engineering offers courses of study leading to the B.E., M.S., M.Eng., and Ph.D. Vanderbilt biomedical engineering is a well-established program with undergraduate degrees granted continuously since 1965. Our undergraduate curriculum undergoes regular review and revision to ensure relevancy and to maintain full ABET accreditation. Students have complete flexibility in the selection of biomedical engineering, technical, and open electives. This allows students to design their own focus areas such as regenerative medicine and tissue engineering, wearables and point-of-care diagnostics, global health, surgery and engineering, robotics and prosthetics, lasers and medicine, medical imaging, biotechnology and nanomedicine, medical technology and entrepreneurship.

Facilities. The Department of Biomedical Engineering is located in Stevenson Center. Undergraduate instructional laboratories are equipped for study of biomedical processes, measurement methods and instrumentation. These facilities are equipped with embedded systems for instrumentation, design, and testing that mirror professional practice. Specialized facilities for biomedical imaging, biophotonics, cell and tissue culture, microfabrication, surgery and intervention, and nanoengineering are used both for faculty-led research and instructional purposes.

Undergraduate Honors Program. With approval of the Honors Program director, junior and senior students in biomedical engineering who have achieved a minimum grade point average of 3.5 may be accepted into the undergraduate Honors Program. Students in the program take at least 6 credit hours of 5000-level or above (graduate) biomedical engineering courses, which can be counted toward the 127-hour undergraduate degree requirements as biomedical engineering electives or which can be taken for graduate school credit. Students in the Honors Program must also complete a two-semester-long research project and present a research report; this is generally accomplished through the BME 3860 and 3861 Undergraduate Research elective courses. Honors students must make a grade point average of 3.0 in these classes and maintain an overall 3.5 GPA to be designated as an honors graduate. The diploma designation is Honors in Biomedical Engineering.

Curriculum Requirements

The B.E. in biomedical engineering requires a minimum of 127 hours, distributed as follows:

1. Mathematics (15 hours): MATH 1300, 1301, 2300, 2400.
2. Basic Science (20 hours): CHEM 1601, 1601L, 1602, 1602L; PHYS 1601, 1601L, 1602, 1602L; BSCI 1510, 1510L.
3. Engineering Fundamentals (6 hours): ES 1401, 1402, 1403; CS 1100 or 1101 or 1103 or 1104. (CS 1103 is strongly recommended except for students minoring in Computer Science).
4. Electrical Engineering (3 hours): ECE 2112.
5. Biomedical Engineering (38 hours): BME 2100, 2301, 2302, 2400, 2900W, 3000, 3301, 3302, 3400, 3500, 3900W, 4901W, 4950, 4951, 4959.
6. Biomedical Engineering electives (12 hours) comprising:
 1. BME courses numbered 2210 and higher (except BME 2860 and designated sections of 3890-3893) to include up to 6 hours total of BME 3860, 3861.
 2. Any one of the following: CHBE 4500, 4800, 4805, 4810, 4820, 4870; EECE 3214, 4353, 4354; ENVE 4610; ME 2220.
7. Technical electives (9 hours) comprising:

1. BME, CHBE, CE, CS, DF, DS, ECE, ENGM, ENVE, ME, MSE, NANO, and SC courses numbered 2000 or higher except CHBE 3300, CE 2200, DS 2100, 3850, 3851, ENGM 2160, 2440, 3100, 3350, 4800, ME 2171, and any School of Engineering courses numbered 2860. Up to 3 hours of independent study courses in the School of Engineering may be taken as technical electives. Up to 6 hours of Undergraduate Research (3860, 3861), summed across all programs, may be counted as BME electives and/or technical electives.
2. ES 3230, 3231, and 3232
3. Courses numbered 2000 or higher in the College of Arts and Science listed in the mathematics and natural sciences (MNS) AXLE distribution category except MATH 2610, 2810, 2820, and 3000.
4. BSCI 1511, 1511L; MHS 1500, 1600.
8. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
9. Open electives (6 hours).

Undergraduates in biomedical engineering may apply the pass/fail option only to courses taken as liberal arts core or open electives, subject to school requirements for pass/fail.

Specimen Curriculum for Biomedical Engineering

Semester hours

SOPHOMORE YEAR		FALL	SPRING
BSCI 1510, 1510L	Molecules & Cells, Biological Sciences Laboratory	4	-
BME 2100	Biomechanics	-	3
BME 2301, 2302	Systems Physiology I, II	3	3
BME 2400	Quantitative Methods I: Statistical Analysis	-	3
BME 2900W	Biomedical Engineering Laboratory I	-	1
ECE 2112	Circuits I	-	3
MATH 2300	Multivariable Calculus	3	-
MATH 2400	Differential Equations with Linear Algebra	-	4
PHYS 1602, 1602L	General Physics with Laboratory II	4	-
	Liberal Arts Core	3	-
		17	17
JUNIOR YEAR			
BME 3000	Physiological Transport Phenomena	3	-
BME 3301, 3302	Biomedical Instrumentation I, II	4	4
BME 3400	Quantitative Methods II: Signals and Modeling	3	-
BME 3500	Biomedical Materials	-	3
BME 3900W	Biomedical Engineering Laboratory II	1	-
	Biomedical Engineering and/or Technical Elective	3	6
	Liberal Arts Core	3	3
		17	16
SENIOR YEAR			
BME 4901W	Biomedical Engineering Laboratory III	1	-
BME 4950, 4951	Design of Biomedical Engineering Systems I, II	2	3
BME 4959	Senior Engineering Design Seminar	1	-
	Biomedical Engineering and/or Technical Elective	6	6
	Liberal Arts Core	3	3
	Open Elective	3	3
		16	15

Double Majors

- I. The double major in biomedical engineering and electrical and computer engineering requires a minimum of 130 semester hours. A specimen curriculum for the double major with electrical and computer engineering can be found on the biomedical engineering department's website. The requirements include those numbered 1, 2, and 8 for the B.E. in biomedical engineering and the following:
- Engineering Fundamentals (6 hours): ES 1401, 1402, 1403; CS 1101 or 1104.
 - Biomedical Engineering Core (32 hours): BME 2100, 2301, 2302, 2400, 2900W, 3000, 3302, 3500, 3900W, 4901W, 4950, 4951, 4959.
 - Biomedical Engineering Electives (3 hours): BME courses numbered 2210 and higher (except BME 2860, 3301, 3400 and designated sections of 3890-3893).
 - Electrical Engineering Core (18 hours): EECE 2112, 2112L, 2123, 2123L, 2214, 3235, 3235L; CS 2201 or 2204.
 - Electrical and Computer Engineering Electives (18 hours) selected as described by item 6 of the Curriculum Requirements in the Electrical and Computer Engineering section of the catalog, but totaling at least 18 hours. The courses must include:
 - at least 9 hours in one and at least 6 hours in another of the Areas of Concentration listed under

Electrical and Computer Engineering in the Undergraduate Catalog. BME 3302 may be included toward satisfying the Area of Concentration requirement but cannot be counted as an Electrical and Computer Engineering elective.

- at least one Design Domain Expertise course as designated in the catalog.

II. The double major in biomedical and chemical engineering requires a minimum of 131 hours and is described in the chemical engineering section of the catalog under its curriculum requirements.

Chemical Engineering

[Mission](#)

[Degree Programs](#)

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Double Majors](#)

[Specimen Curriculum for Chemical Engineering](#)

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COURSES OFFERED: [CHBE](#)

Chemical engineers play key roles in the development and production of commodity chemicals, pharmaceuticals, and bioengineered materials, high strength composites and specialty polymers, semiconductors and microelectronic devices, and a wide range of ultrapure fine chemicals. Indeed, chemical engineering is essential for the operation of contemporary society. The solutions to many of the problems that we face today—e.g., energy, the environment,

development of high-performance materials—will involve chemical engineers.

The undergraduate program in chemical engineering prepares students to contribute to the solution of these and similar problems. Graduates find meaningful careers in industry, in government laboratories, and as consultants. Some continue their education through graduate studies in chemical engineering, business, law, or medicine.

Mission. The mission of the Department of Chemical and Biomolecular Engineering is to educate those who will advance the knowledge base in chemical engineering, become practicing chemical engineers, and be leaders in the chemical and process industries, academia, and government; to conduct both basic and applied research in chemical engineering and related interdisciplinary areas; and to provide service to the chemical engineering profession, the School of Engineering, Vanderbilt University, the country, and the world.

Degree Programs. The Department of Chemical and Biomolecular Engineering offers the B.E. in chemical engineering and graduate study leading to the M.Eng., M.S., and Ph.D.

Undergraduate chemical engineering students acquire a solid background in mathematics, chemistry, biology, physics, and computing. The chemical and biomolecular engineering program has as its basis courses in transport phenomena, thermodynamics, separations, and kinetics. Other courses deal with the principles and techniques of chemical engineering analysis and design, along with economic analysis, process control, chemical process safety, bioprocessing, process simulation, and engineering ethics. Laboratory courses offer the student an opportunity to make fundamental measurements of momentum, heat, and mass transport and to gain hands-on experience with bench scale and small scale pilot-plant equipment, which can be computer controlled. Effective report writing and technical communication are principal skills gained in the laboratory and design courses. Many students carry out individual research projects.

A specimen curriculum for a chemical engineering major follows. This standard program includes electives that students, in consultation with their faculty advisers, select to pursue breadth or a minor or focus area with their chemical engineering major. Specimen curricula with emphases in specific areas are available on the department website. Double majors may be arranged in consultation with a faculty adviser.

Students are recommended to take the Fundamentals of Engineering Examination (FE) in their senior year. This is the first step in obtaining a license as a professional engineer. The following courses are recommended for preparation for the FE: ECE 2112, CE 2200, and ME 2190.

Undergraduate Honors Program. The Honors Program in chemical engineering provides an opportunity for selected students to develop individually through independent study and research. General requirements are described in the Special Programs chapter. The chemical and biomolecular engineering department requires a minimum overall GPA of 3.5. Acceptance to the program is made by petition to the faculty during the junior year. Transfer students may be considered for admission after completing one semester at Vanderbilt. Candidates for honors choose their technical courses with the consent of a faculty honors adviser. Requirements include at least 6 hours of CHBE courses numbered 5000 or above, plus 6 hours of CHBE 3860 and 3861 taken in the junior and/or senior year under the direction of a faculty honors adviser. A formal written research report is submitted each semester CHBE 3860 or 3861 is taken with a final report and presentation given in the spring semester of the senior year to the CHBE faculty and students. The diploma designation is Honors in Chemical Engineering.

Facilities. The Chemical and Biomolecular Engineering department is located in Olin Hall. Undergraduate instructional laboratories are equipped for study of transport phenomena, unit operations, kinetics, and process control. Current research areas for which facilities are available include molecular modeling; colloid and surface science; biochemical engineering and biotechnology; materials processing and characterization; energy and the environment.

Curriculum Requirements

The B.E. in chemical engineering requires a minimum of 125 hours, distributed as follows:

1. Mathematics (14 hours): MATH 1300, 1301, 2300, 2420.
2. Basic Science (24 hours): CHEM 1601, 1601L, 1602, 1602L, 2221, 2221L, 2222, 2222L; PHYS 1601, 1601L, 1602, 1602L.
3. Engineering Fundamentals (6 hours): ES 1401, 1402, 1403; CS 1100 or 1101 or 1103 or 1104 (CS 1100 is recommended except for students minoring in Computer Science).
4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
5. Chemical and Biomolecular Engineering (42 hours): CHBE 2100, 2200, 2250, 2900W, 3200, 3250, 3300, 3350, 3600, 3900W, 4500, 4900W, 4950W, 4951W, 4959.
6. Chemical and Biomolecular Engineering electives: 6 hours selected from CHBE courses numbered 4200 or above and ENVE 4625.
7. Statistics (3 hours): One of DS 2100, BME 2400, CE 3300 or MATH 2810
8. Technical electives (6 hours). To be selected from: a) courses numbered 2000 or above in BME, CHBE, CE, CS, DF, ECE, ENVE, ME, MSE, NANO, and SC, except ME 2220 and any School of Engineering course numbered 2860; b) courses numbered 1500 or above in the College of Arts and Science listed in the mathematics and natural sciences (MNS) AXLE distribution category; c) ENGM 3000, 3010, 3300, 3650, 3700, 4500; and d) DS 3100. At least 3 hours must be selected from BSCI 2201, 2520; CHEM 3300, 3310; ENVE 4600 or CHBE courses numbered 4000 and above.
9. Open electives (6 hours).

Undergraduates in chemical engineering, including double majors with chemical engineering, may apply the pass/fail option only to courses taken as open electives, subject to the school requirements for pass/fail. No more than 6 total hours of courses numbered 2860 and courses numbered 3840 to 3885 inclusive may be applied toward degree requirements.

Double Majors

- I. The double major in chemical engineering and biomedical engineering requires a minimum of 131 semester hours distributed as follows:
 - a. Mathematics (15 hours): MATH 1300, 1301, 2300, 2400.
 - b. Engineering Fundamentals (6 hours): ES 1401, 1403, 1403; CS 1100 or 1101 or 1103 or 1104.
 - c. Basic Science (28 hours): CHEM 1601, 1601L, 1602, 1602L, 2221, 2221L, 2222, 2222L; PHYS 1601, 1601L, 1602, 1602L; BSCI 1510, 1510L.
 - d. Chemical and Biomolecular Engineering (29 hours): CHBE 2100, 2200, 3200, 3250, 3300, 3350, 4900W, 4950W, 4951W, 4959.
 - e. Biomedical Engineering (29 hours): BME 2100, 2301, 2302, 2400, 2900W, 3301, 3302, 3400, 3500, 3900W, 4959.
 - f. Electrical Engineering (3 hours): ECE 2112.
 - g. CHBE/BME Elective: 3 hours selected from CHBE 4500 (recommended), 4800, 4805, 4810, 4820, 4825, and BME courses numbered 4000 and above except BME 6110. BME 3890 and CHBE 3890 may be substituted upon approval of the Directors of Undergraduate Studies for BME and CHBE.
 - h. Liberal Arts Core (18 hours): To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
- II. The double major in chemical engineering and chemistry requires a minimum of 130 semester hours. The requirements include those numbered 1, 2, 3, 4, and 6 for the B.E. in chemical engineering and the following:
 - a. Chemical and Biomolecular Engineering (39 hours): CHBE 2100, 2200, 2250, 2900W, 3200, 3250, 3300, 3350, 3600, 4500, 4900W, 4950W, 4951W, 4959.
 - b. Science (23 hours): CHEM 2100, 2100L, 3010, 3315; 3 hours selected from CHEM courses numbered 3020 and above except 3320, 3600, 3841, 3842, 3860, 3902; either CHEM 4965 and 4966 or 6 hours selected from CHEM 3980, 4980, and 4999; BSCI 1510, BSCI 2520.
- III. The double major in chemical engineering and environmental engineering requires a minimum of 137 semester hours. The requirements include those numbered 1, 2, 3 and 5 for the B.E. in chemical engineering and the following:

- a. Environmental Engineering Core (24 hours): CE 2120, 3300, 3600, 3705; EES 1510; ENVE 3200, 3200L, 4600, 4625.
- b. Environmental Engineering Electives (6 hours) comprising:
 - 1. At least 3 hours selected from CE 4150, 4240, 4425, 4430; ENVE 4305, 4610,
 - 2. At most 3 hours selected from CE 4300; EES 3310, 4550, 4650, 4750; ENVE 4615, 4620,
- c. Chemical and Biomolecular Engineering electives: 3 hours selected from CHBE courses numbered 4000 or above (ChBE 4860 is recommended).
- d. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering. To include 6 hours of Global Perspective Electives selected from ANTH 2150, 2220W, 2224, 2225, 2400, 3130, 3345, 4154; ECON 2170; EES 3333; PHIL 3611; PSCI 3266; SOC 3311, 3312, 3314, 3315, 3316, 3317, 3318, 3319.

Specimen Curriculum for Chemical Engineering

		Semester hours	
SOPHOMORE YEAR		FALL	SPRING
CHEM 2221, 2222	Organic Chemistry	3	3
CHEM 2221L, 2222L	Organic Chemistry Laboratory	1	1
MATH 2300	Multivariable Calculus	3	-
MATH 2420	Methods of Ordinary Differential Equations	-	3
PHYS 1602, 1602L	General Physics II and Laboratory	4	-
CHBE 2100	Chemical Process Principles	3	-
CHBE 2200	Chemical Engineering Thermodynamics	-	3
CHBE 2250	Modeling and Simulation in Chemical Engineering	-	3
CHBE 2900W	Technical Communications for Chemical Engineers	-	1
	Liberal Arts Core	3	3
		17	17
JUNIOR YEAR			
CHBE 3200	Separations Processes	3	-
CHBE 3250	Chemical Reaction Engineering	-	3
CHBE 3300	Transport I	3	-
CHBE 3350	Transport II	-	3
CHBE 3600	Chemical Process Control	3	-
CHBE 3900W	Chemical Engineering Laboratory I	-	3
CHBE 4500	Bioprocess Engineering	-	3
	Statistics Elective: DS 2100, BME 2400, CE 3300, or MATH 2810	3	-

	Liberal Arts Core	3	3
		15	15
SENIOR YEAR			
CHBE 4900W	Chemical Engineering Laboratory II	3	-
CHBE 4950W	Chemical Engineering Process and Product Design	4	-
CHBE 4951W	Chemical Engineering Design Projects	-	3
CHBE 4959	Professional Practice of Safety in Chemical Engineering Design 1		-
	Chemical and Biomolecular Engineering Elective	3	3
	Liberal Arts Core	-	3
	Technical Elective*	3	3
	Open Elective	3	3
		17	15

*At least 3 hours must be selected from BSCI 2201, 2520; CHEM 3300, 3310; ENVE 4600 or CHBE courses numbered 4200 and above.

Specimen curricula for the double majors with biomedical engineering, with environmental engineering, and with chemistry can be found on the department's website.

Civil Engineering

[B.E./M.Eng. Five Year Program](#)

[Construction Management Five Year Program](#)

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Civil Engineering](#)

[Pre-Architecture Advising](#)

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COURSES OFFERED: [CE](#)

Vanderbilt's Department of Civil and Environmental Engineering offers a broad-based education in civil and environmental engineering fundamentals, coupled with development of leadership, management, and communications skills to establish a foundation for lifelong learning and flexible career development. This goal requires going beyond technical competence in a balanced education to develop future leaders in the fields of consulting, industry, business, law, government, and research.

B.E. in civil engineering. Civil engineers must be able to face complex problems of modern society involving the development of physical facilities that serve the public while protecting the environment and preserving social values. Challenges facing civil and environmental engineers concern housing, urban transportation, pollution control, water resources development, industrial development, maintaining and advancing our nation's aging infrastructure, and exploring space. Addressing these challenges with today's limited resources requires innovative and original ideas from highly-skilled engineers.

Undergraduates majoring in civil engineering receive a strong background in mathematics, science, engineering science, and engineering design. The program also includes courses in economics, humanities, social sciences, resources management, and public policy. Students participate in design teams and laboratory studies as well as classroom activities. Use of various computer-based methods is integral to problem solving and design.

Vanderbilt's B.E. in civil engineering prepares students for entry-level positions in many specialty areas of civil engineering, as well as many other types of careers, such as business, construction, and law. Today, however, and even more so in the future, professional practice at a high level will require an advanced degree. We recommend that students seriously consider pursuing the M.S. or M. Eng. soon after obtaining the B.E.

B.E./M.Eng. Five Year Program. Students seeking advanced study in civil and environmental engineering may be

interested in the combined B.E./M.Eng., enabling students to complete the B.E. in civil engineering and M.Eng. in civil engineering or environmental engineering in five years.

Construction Management Five Year Program. Students seeking advanced study in construction management may be interested in the combined B.E./M.Eng., enabling students to complete the B.E. in civil engineering and M.Eng. in civil engineering (construction management emphasis) in five years.

Undergraduate Honors Program. Recognized with the diploma designation Honors in Civil Engineering, exceptional students may be invited in their junior year to participate in the civil engineering Honors Program. Designed as a unique individualized educational experience, participants work closely with departmental faculty members to tailor a selection of courses that actively immerses them in a selected field of study. Experiences include enrollment in a 3 semester hour independent study course and participation in a summer research internship. Honors Program participants are especially well-prepared to enter graduate study, and they may count the independent study course towards their civil engineering technical electives.

Facilities. The civil engineering laboratory provides for static and dynamic testing of materials and structural components and assemblies. Testing facilities include capabilities of testing composites, metals, and concrete under static loads, fatigue, base acceleration (to simulate seismic events) and intermediate to high speed impacts (to simulate responses to blast events). Full soils testing facilities are available. Hydraulics facilities include several model flow systems to illustrate principles of fluid mechanics and hydrology. The transportation laboratory is computer-based, with emphasis on transportation systems and design, intelligent transportation systems, and geographic information systems. The environmental laboratories are fully supplied with modern instrumentation for chemical, physical, biological, and radiological analysis of soils, sediments, water, wastewater, air, and solid waste. They include equipment for the study of biological waste treatment, physical-chemical waste treatment, containment mass transfer, and state-of-the-art instrumentation. All are available for student use in courses, demonstrations, and research.

Curriculum Requirements

The B.E. in civil engineering requires a minimum of 125 hours, distributed as follows:

1. Mathematics (14 hours). Required courses: MATH 1300, 1301, 2300, 2420.
2. Basic science (16 hours). Required courses: CHEM 1601, 1601L; PHYS 1601, 1601L, 1602, 1602L; MSE 1500, 1500L.
3. Computing (3 hours). Required course: CS 1100 or 1101 or 1103.
4. Engineering Fundamentals (26 hours). Required courses: ES 1401, 1402, 1403; CE 2101, 2200, 2205, 2989, 3700, 3700L; ENGM 2160; ME 2190; MSE 2205.
5. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
6. Open electives (6 hours).
7. Technical electives (3 hours). To be selected from: (a) courses in BME, CHBE, CE, ENVE, ECE, ME, MSE (except any course numbered 2860); (b) MSE (except MSE 3860, 3889, 3890) (c) ENGM 3000, 3010, 3200, 3650; (d) CHEM 1602 and above; (e) PHYS courses above 2000 (astronomy not accepted); (f) MATH 2410 or 2600, and courses 2811 and above (except 3000); (g) all CS courses 2000 and above (except 2860 4959); and (h) DS 3100, 3262. Students with an interest in Structural Engineering are encouraged to take MATH 2410 or 2600 as their technical elective.
8. Civil Engineering Core (27 hours). Required courses: CE 2120, 3100W, 3200, 3205, 3300, 3501, 3705, 4400, 4950, 4951, and 4959.
9. Civil Engineering Program Electives (6 hours). To be selected from: CE 3250, 4150, 4250; ENVE 4610, 4615, 4625, 4800; ENVE 3600.
10. Civil Engineering Design Electives (6 hours). To be selected from: CE 4150, 4200, 4210, 4240, 4250, 4425, 4430, 4500, 4505, 4510; ENVE 4305, 4610, 4625, 4710.

Students may use CE program electives, CE design electives, technical electives, and open electives to gain additional depth and expertise. Students with interests in structural engineering are recommended to take electives such as CE 3250, 4200, 4210, 4211, 4250, 4300, ENVE 4305, and ME 4259, 4275. Students interested in environmental and infrastructure sustainability engineering are recommended to take electives such as CE 3600, 4100, 4150, 4240, 4300, ENVE 4305, 4600, 4605, 4610, 4615, 4620, 4700, 4705, 4707, 4710, 4715, 4716, and 4720. Specific courses selections should be discussed with their academic adviser. Students desiring advanced topic

coverage should also consider 5000- level courses, with approval of their adviser.

Undergraduates in civil engineering may apply the pass/fail option only to courses taken as liberal arts core or open electives, subject to the school requirements for pass/fail.

Specimen Curriculum for Civil Engineering

			Semester hours	
			FALL	SPRING
SOPHOMORE YEAR				
MATH 2300	Multivariable Calculus		3	-
PHYS 1602, 1602L	General Physics II and Laboratory		4	-
CE 2101	Civil and Environmental Engineering Information Systems		3	-
CE 2120	Sustainable Design in Civil Engineering		3	-
CE 2200	Statics		3	-
MATH 2420	Methods of Ordinary Differential Equations		-	3
CE 2205	Mechanics of Materials		-	3
CE 3501	Transportation Systems Engineering		-	3
ME 2190	Dynamics		-	3
CE 2989	Numerical Methods in Civil and Environmental Engineering		-	3
	Liberal Arts Core		-	3
			16	18
JUNIOR YEAR				
CE 3200	Structural Analysis		3	-
CE 3700, 3700L	Fluid Mechanics and Laboratory		4	-
MSE 2205	Strength and Structure of Engineering Materials		1	-
	CE Program Elective		3	-
	Elective*		3	-
	Liberal Arts Core		3	3
CE 3100W	Civil and Environmental Engineering Laboratory		-	2
CE 3205	Structural Design		-	3
CE 3300	Risk, Reliability, and Resilience Engineering		-	3
CE 3705	Water Resources Engineering		-	3
ENGM 2160	Engineering Economy		-	3
			17	17
SENIOR YEAR				
CE 4400	Construction Project Management		3	-
CE 4950	Civil Engineering Design I		1	-
CE 4959	Senior Engineering Design Seminar		1	-
	CE Design Elective		3	3
	Elective*		3	3
	Liberal Arts Core		3	3
CE 4951	Civil Engineering Design II		-	2
	Open Elective		-	3
			14	14

*To be selected toward satisfying the following degree requirements: 6 hours of Program Electives, 3 hours of Technical Electives, and 6 hours of Open Electives.

Pre-Architecture Advising

Civil engineering students interested in pursuing architecture at the graduate level should include courses that emphasize a broad sense of art and architectural history, including courses in studio art. Before applying to graduate programs, students will need to develop a portfolio of creative work that generally includes drawing, prints, sculpture, photographs, and creative writing. Further information is available at: as.vanderbilt.edu/paa/.

Computer Engineering

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Computer Engineering Areas of Concentration](#)

[Specimen Curriculum for Computer Engineering](#)

[Minor in Computer Engineering](#)

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COURSES OFFERED: [ECE](#)

The program in computer engineering deals with the organization, design, and application of digital processing systems as general-purpose computers or as embedded systems, i.e., components of information processing, control, and communication systems. The program provides a strong engineering background centered on digital technology combined with an understanding of the principles and techniques of computer science. Computer engineering is design-oriented. The basic principles of engineering and computer science are applied to the task at hand, which may be the design of a digital processor, processor peripheral, or a complete digital processor-based system.

Whatever the undertaking, the comprehensive academic training in this program enables engineers to evaluate the impact of their decisions, whether working with hardware, software, or the interface between the two.

The computer engineering program combines fundamental core requirements with flexibility to allow students to specialize in a variety of emphasis areas within the program. The curriculum includes requirements in the basic sciences, mathematics, and humanities; a primary core of hardware and software courses; and a set of electives that combine breadth and depth requirements as described below. Students who major in computer engineering who wish to apply for graduate study in electrical engineering or computer science are encouraged strongly to select their elective courses to demonstrate depth in that particular area; the structure of the program enables that option. The course of study leads to a bachelor of engineering.

Undergraduate Honors Program. With faculty approval, junior and senior students may be accepted into the Honors Program. To achieve honors status, the student must:

1. achieve and maintain a minimum GPA of 3.5.
2. complete 3 hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861) with final written report
3. complete 6 hours of ECE program elective credit from the following list:
 - a. up to 3 additional hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861), or
 - b. design domain expertise (DE) courses beyond the one course required by the program, or
 - c. CS 3259, CS 3892, CS 4287, or
 - d. 5000-level courses.

The diploma designation is Honors in Computer Engineering.

Facilities. Electrical and computer engineering supports undergraduate laboratories emphasizing the principal areas of the disciplines: analog and digital electronics, microcomputers, microprocessors, microelectronics, and instrumentation. In addition, several specialized facilities are available for graduate research: the advanced carbon nanotechnology and diamond labs, the Institute for Software Integrated Systems, the Institute for Space and Defense Electronics, the Medical Image Processing Laboratory, the Center for Intelligent Systems and Robotics Laboratories, the Embedded Computer Systems Laboratory, and biomedical, biosensing, and photonics laboratories.

The work in electrical and computer engineering is supported by a variety of computers and networks, including the high-performance computing facilities of the Advanced Computing Center for Research and Education. Vanderbilt is one of the founding partners in the Internet II initiative.

Students interested in the major or minor in Computer Engineering are encouraged to consider instead those in Electrical and Computer Engineering.

The major or minor in Computer Engineering may no longer be declared. CmPE students will be supported in completing the relevant program, including the pursuit of honors in the major if relevant.

Curriculum Requirements

The B.E. in computer engineering requires a minimum of 121 hours, distributed as follows:

1. Mathematics (18 hours). Required courses: MATH 1300, 1301, 2300, 2400, 2810
2. Basic Science (16 hours). Required courses: CHEM 1601, 1601L; PHYS 1601, 1601L, 1602, 1602L; MSE 1500, 1500L (or CHEM 1602, 1602L).
3. Engineering Fundamentals (6 hours). Required courses: ES 1401, 1402, 1403, 2100W.
4. Culminating Design Experience (7 hours). Required courses: ECE 4950, 4951, 4959.
5. Computer Engineering Core (at least 23 hours). Required courses: ECE 2112, 2123, 2123L, 2218, 2218L; either ECE 2213 (and 2213L) or 3214; CS 1101 or 1104; CS 2201, 3251.
6. Computer Engineering Electives (18 hours). To comprise:
 - a. at least six hours in each of two of the three Computer Engineering Areas of Concentration listed below. Embedded Systems must include ECE 4376, Computing Systems and Networks must include CS

- 3281, and Intelligent Systems and Robotics must include ECE 4257 among the six hours.
- b. at least one design domain expertise (DE) course as designated below
 - c. other courses listed in the Computer Engineering Areas of Concentration below, or ECE or CS courses numbered above 3000 (including CS 3860, 3861, and ECE 3860, 3861).
 - d. courses with associated labs require completion of both the lecture and lab portions to count as Computer Engineering Electives.
7. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
8. Technical electives (12 hours).
- a. CHBE (except 2150, 2900W); CE; CS (except 1000, 1101, 1103, 1104, 1151); ECE (hours above basic requirement in sections 5 and 6 above); ENGM 3010; ENVE; ES 3300; ME; MSE (except 1500, 1500L); NANO 3000; SC 3250, 3260 (6-12 hours). At least 6 hours must be taken from the following approved engineering technical electives: BME (except 2860)**;
 - b. (0-6 hours). Up to 6 hours may be taken from this list of optional technical electives: ENGM 2160, 2210, 3000, 3100, 3300, 3650, 4500; MSE 1500, 1500L (if CHEM 1602, 1602L is used for basic science requirement); ASTR (except 1010, 1111, 2130); BSCI (except 1111); CHEM (except 1010, 1020, 1601, 1602, 1111); EES (except 1080, 1111, 2150); MATH 2410 and above; NSC 2201, 3269, 4961; PHYS above 2000; PSY 2100, 3780
9. Open Elective (3 hours).

Undergraduates in computer engineering may apply the pass/fail option only to courses taken as open electives subject to the school requirements for pass/fail.

**Computer engineering majors may earn credit for only one of BME 3300 and BME 3302.

Computer Engineering Areas of Concentration

Embedded Systems	Computing Systems and Networks	Intelligent Systems and Robotics
ECE 4257	CS 3265	CS 4260
ECE 4275	CS 3274 (DE)	CS 4269 (DE)
ECE 4356 (DE)	CS 3281	ECE 4257
ECE 4358 (DE)	CS 3282 (DE)	ECE 4353 (DE)
ECE 4376 (DE)	CS 4266 (DE)	ECE 4354 (DE)
ECE 4377 (DE)	CS 4278 (DE)	ECE 4358 (DE)
ECE 4385 (DE)	CS 4279 (DE)	ME 4271
CS 3274 (DE)	CS 4383 (DE)	
	CS 4284 (DE)	
	CS 4285	
	CS 4288 (DE)	
	ECE 4371 (DE)	

(DE) designates a Design Domain Expertise course

Specimen Curriculum for Computer Engineering

		Semester hours
SOPHOMORE YEAR		FALL SPRING
MATH 2300	Multivariable Calculus	3 -
MATH 2400	Differential Equations with Linear Algebra	- 4
PHYS 1602, 1602L	General Physics II and Laboratory	4 -
ECE 2112	Circuits I	3 -
ECE 2123, 2123L	Digital Systems and Laboratory	4 -
ECE 2218, 2218L	Microcontrollers and Laboratory	- 4
CS 2201	Program Design and Data Structures	3 -
CS 3251	Intermediate Software Design	- 3
	Liberal Arts Core	- 3
		17 14
JUNIOR YEAR		
MATH 2810	Probability and Statistics for Engineering	- 3
ES 2100W	Technical Communications	3 -
ECE 4376, 4376L	Embedded Systems and Laboratory	4/3 -
or CS 3281	Principles of Operating Systems I	
ECE 2213, 2213L	Circuits II and Laboratory Signals and Systems	4/3 -
or ECE 3214		
	CMPE Program Electives ‡	3 6
	Liberal Arts Core	3 3
	Technical Electives	- 3
		15-17 15
SENIOR YEAR		
ECE 4950	Program and Project Management for EECE	3 -
ECE 4951	Electrical and Computer Engineering Design	- 3
ECE 4959	Senior Engineering Design Seminar	1 -
	CMPE Program Electives ‡	3 3
	Liberal Arts Core	3 3
	Technical Electives	6 3
	Open Electives	- 3
		16 15

‡ As described in “Computer Engineering Degree Requirements” subsection 6. At least one design domain expertise (DE) course required prior to ECE 4951.

The minor in computer engineering is available to all students except those majoring or minoring in electrical engineering or computer science. The computer engineering minor requires a minimum of 17 hours of EECS courses, including the completion of all laboratory corequisites for courses selected for the minor, distributed as follows:

1. Programming: CS 1101 or 1104	3 hours
2. Digital Systems: ECE 2123, 2123L	4 hours
3. Microcontrollers: ECE 2218, 2218L	4 hours
4. ECE 2112 or CS 2201 or CS 2204	3 hours
5. At least 3 hours of ECE or CS courses numbered 2000 or above (excluding ECE 3860, 3861 or CS 3860, 3861)	3 hours
Total:	17-18 hours

Computer Science

[Undergraduate Honors Program](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Computer Science](#)

[Second Major in Computer Science for Non-Engineering Students](#)

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COURSES OFFERED: [CS](#)

The program in computer science blends scientific and engineering principles, theoretical analysis, and actual computing experience to provide undergraduate students with a solid foundation in the discipline. Emphasis is on computing activities of both practical and intellectual interest, and on theoretical studies of efficient algorithms and the limits of computation. Computer facilities are available for class assignments, team projects, and individual studies.

Students are challenged to seek original insights throughout their study. Working in teams, participating in summer internships, supporting student professional organizations, and developing interdisciplinary projects are strongly encouraged.

The computer science major provides an excellent back-ground for medical studies, and the flexibility provided by its many open electives allows students to prepare for medical school while earning a degree in computer science with a normal load in four years. Interested students should discuss their plans with their computer science adviser in the fall of their first year.

In addition to the bachelor of science, the master of science and doctor of philosophy are also awarded in computer science. Computer Science majors in the School of Engineering are encouraged to consider a double major or minor to complement their CS studies. Popular double majors include Mathematics, Economics, HOD and Physics. The second major in Computer Science is accessible to students outside of the School of Engineering. Second major requirements can be found following the engineering specimen curriculum below.

Undergraduate Honors. Honors in Computer Science provides recognition for select undergraduates who have experienced advanced study in computer science. Students who have an overall GPA of 3.5 or better, a GPA of 3.5 or better in computer science classes, and six hours of any combination of undergraduate research (CS 3860, 3861, and 3862) and courses at or above the 6000-level will be granted honors in the computer science program. The diploma designation is Honors in Computer Science.

Curriculum Requirements

The B.S. in computer science requires a minimum of 120 hours, distributed as follows:

1. Mathematics (17-19 hours). Required components:
 - a. Calculus/Linear algebra (14-16 hours). A sequence selected from the following:
 - i. MATH 1300, 1301, 2300, and one of 2410 or 2600, or
 - ii. MATH 1300, 1301, 2500, 2501
 - b. Statistics/Probability (3 hours): MATH 2810, 2820, or 3640.
2. Science (12 hours). To be selected from the following list and include at least one laboratory course: BSCI 1100, 1100L, 1510, 1510L, 1511, 1511L, 2218, 2219; CHEM 1601, 1601L, 1602, 1602L; EES 1510, 1510L; MSE 1500, 1500L; PHYS 1601, 1601L, 1602, 1602L. Advanced Science Courses may be substituted by special

- permission. Recommended: CHEM 1601, 1601L; PHYS 1601, 1602.
- 3. Introduction to Engineering (3 hours): ES 1401, 1402, 1403.
 - 4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
 - 5. Computer Science Core (25 hours).
 - Software/Problem Solving: CS 1101 or 1104, and CS 2201, 3251, 3270.
 - Hardware/Systems: CS or ECE 2281, CS or ECE 2281L, CS 3281.
 - Foundations: CS 2212, 3250.
 - 6. Computer Science Depth (15 hours). To be selected from computer science courses numbered 3000 or higher (except CS 3262); ECE 4353, 4354, 4375, and no more than two from MATH 3320, 3620, 4600, 4620. A maximum of 6 hours may come from CS 3860, 3861.
 - 7. Computer Science Project (3 hours). To be selected from CS 3862, 3892, 4239, 4249, 4269, 4279, 4287, 4289, 4359.
 - 8. Computer Science Seminar (1 hour). CS 4959.
 - 9. Technical Electives (6 hours). To be selected from courses numbered 2000 or higher within the School of Engineering (except 2860 in any program, ENGM 2440, ENGM 4800, ES 2700, ES 3884, and CS courses numbered below 3000); or courses numbered 2000 or higher in the College of Arts and Science listed in the mathematics and natural science (MNS) AXLE distribution requirements.
 - 10. Open Electives (18-20 hours).
 - 11. Computers and Ethics (3 hours) CS 1151. May be used to satisfy three hours from the Liberal Arts Core (#4) or Open Electives (#10). May not be taken on a pass/fail grading basis by CS majors or minors.
 - 12. Writing Component (3 hours). At least one "W"-designated course or 1111 course in the English Language must be included from the Liberal Arts Core (#4), Technical Electives (#9), or Open Electives (#10).

Undergraduates in computer science may apply the pass/fail option only to courses taken as open electives, technical electives, or part of the liberal arts core, subject to the school requirements for pass/fail.

Specimen Curriculum for Computer Science

		Semester hours
		FALL SPRING
FIRST YEAR		
CHEM 1601, 1601L	General Chemistry and Laboratory	4 -
PHYS 1601, 1601L	General Physics I and Laboratory	- 4
MATH 1300	Accelerated Single-Variable Calculus I	4 -
MATH 1301	Accelerated Single-Variable Calculus II	- 4
ES 1401-1403	Introduction to Engineering	3 -
CS 1101	Programming and Problem Solving	- 3
	Liberal Arts Core	- 3
	Open Electives	3 -
		14 14
SOPHOMORE YEAR		
PHYS 1602, 1602L	General Physics II and Laboratory	4 -
MATH 2300	Multivariable Calculus	- 3
CS 2201	Program Design and Data Structures	3 -
CS 2212	Discrete Structures	3 -
CS 2281, 2281L	Computer Architecture	- 4
CS 3251	Intermediate Software Design	- 3
	Liberal Arts Core	- 3
	Open Electives	6 3
		16 16
JUNIOR YEAR		
MATH 2410	Methods of Linear Algebra	- 3
MATH 2820	Introduction to Probability and Mathematical Statistics	3 -
CS 3250	Algorithms	- 3
CS 3270	Programming Languages	3 -
CS 3281	Principles of Operating Systems I	3 -
	Computer Science Depth	- 3
	Liberal Arts Core	3 3
	Open Electives (ES 2100W recommended)	2 3
		14 15
SENIOR YEAR		
CS 4959	Computer Science Seminar	1 -
	Computer Science Project	- 3
	Computer Science Depth	9 3
	Technical Electives	3 3
	Liberal Arts Core	3 3
	Open Electives	- 3
		16 15

Second Major in Computer Science for Non-Engineering Students

The second major in computer science for students enrolled outside the School of Engineering requires 40 hours comprising items 5 and 7 of the curriculum requirements listed above as well as 12 hours of course work as described in item 6.

Courses taken toward the second major may not be taken pass/fail.

Electrical and Computer Engineering

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Electrical and Computer Engineering Areas of Concentration](#)

[Specimen Curriculum for Electrical and Computer Engineering](#)

[Minor in Electrical and Computer Engineering](#)

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COURSES OFFERED: [ECE](#)

The field of electrical and computer engineering has been pivotal in driving the information technology revolution currently transforming society. The creation of large-scale integrated circuits has paved way for increasingly powerful computers and advanced networks. These technological advancements have significantly impacted the methods engineers use for design and problem-solving.

The curriculum of the electrical and computer engineering major is multifaceted. It provides a broad foundation in mathematics, physics, and computer science and a traditional background in circuit analysis, digital systems, and electronics.

Several exciting areas of concentration are available, including photonics and nanomaterials, microelectronics, embedded systems, cyber-physical systems, signal processing and medical imaging. Students receive an education that prepares them for diverse careers in industry, government, law, medicine, and postgraduate education.

Undergraduate Honors Program. With faculty approval, junior and senior students may be accepted into the Honors Program. To achieve honors status, the student must:

1. achieve and maintain a minimum GPA of 3.5.
2. complete 3 hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861) with final written report.
3. complete 6 hours of ECE program elective credit from the following list:
 - a. up to 3 additional hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861), or
 - b. Design Domain Expertise courses beyond the one course required by the program, or
 - c. 5000-level ECE or CS courses.

The diploma designation is Honors in Electrical and Computer Engineering.

Facilities. Electrical and computer engineering supports undergraduate laboratories emphasizing the principal areas of the disciplines: analog and digital electronics, microcomputers, microprocessors, microelectronics, and instrumentation. In addition, several specialized facilities are available for graduate research: The Vanderbilt Institute of Nanoscale Science and Engineering (VINSE), the Institute for Software Integrated Systems (ISIS), the Institute for Space and Defense Electronics (ISDE), the Vanderbilt Lab for Immersive AI Translation (VALIANT), and the Vanderbilt Institute for Surgery and Engineering (VISE).

The work in electrical and computer engineering is supported by a variety of computers and networks, including the high-performance computing facilities of the Advanced Computing Center for Research and Education. Vanderbilt is one of the founding partners of the Internet II initiative.

Curriculum Requirements

The B.E. in electrical and computer engineering requires a minimum of 122 hours, distributed as follows:

1. Mathematics (18 hours). Required courses: MATH 1300, 1301, 2300, 2400, 2810.
2. Basic Science (16 hours). Required courses: CHEM 1601, 1601L; PHYS 1601, 1601L, 1602, 1602L; MSE 1500,

- 1500L or CHEM 1602, 1602L.
3. Engineering Fundamentals (6 hours). Required courses: ES 1401, 1402, 1403, ES 2100W.
 4. Culminating Design Experience (7 hours). Required courses: ECE 4950, 4951, 4959.
 5. Electrical and Computer Engineering Core (21 hours). Required courses: CS 1100 or 1101 or 1104; CS 2201 or 2204; ECE 2112, 2112L, 2123, 2123L (or CS 2123, 2123L), ECE 2214, 3235, 3235L.
 6. Electrical and Computer Engineering Electives (21 hours). To comprise:
 - a. At least 15 hours selected from the Gateway courses and ECE and CS Depth courses listed below.
 - b. other courses listed in the Electrical and Computer Engineering Areas of Concentration below, or ECE or CS courses numbered above 3000 (including ECE 3860, 3861 and CS 3860, 3861).

Additional requirements for (a) and (b) include:

- at least 9 hours completed in one of the four Areas of Concentration listed below.
- at least 6 additional hours completed in a second distinct Area of Concentration listed below.
- at least one Design Domain Expertise course as designated below taken before ECE 4951.
- courses with associated labs require completion of both the lecture and lab portions to count as Electrical and Computer Engineering Electives.
- courses count in only one Area of Concentration; they cannot be double counted

7. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.

8. Technical electives (12 hours).

- a. (6-12 hours). At least 6 hours must be taken from this list of approved engineering technical electives: (excluding all School of Engineering courses numbered 2860); BME; CHBE (except 2150, 2900W); CE; CS (except 1000, 1101, 1103, 1104, 1151); ECE (above basic requirement in sections 5 and 6 above); DS 3100, ENGM 3010; ENVE; ES 3300; ME; MSE (except 1500, 1500L); NANO 3000; SC 3250, 3260
- b. (0-6 hours). Up to 6 hours may be taken from this list of optional technical electives: ENGM 2160, 2210, 3000, 3100, 3300, 3650, 4500; MSE 1500, 1500L (if CHEM 1602, 1602L is used for basic science requirement); Astronomy (except 1010, 1111, 2130); Biological Sciences (except 1111); Chemistry (except 1010, 1020, 1601, 1602, 1111); Earth and Environmental Sciences (except 1080, 1111, 2150); Mathematics 2410 and above; Neuroscience 2201, 3269, 4961; Physics above 2000; Psychology 2100, 3780

9. Open Elective (3 hours).

Electrical and Computer Engineering Areas of Concentration

	Photonics & Nanomaterials	Microelectronics	Embedded Computing & Cyber-Physical Systems	Signal, Image, Data, and Medical Systems
Gateway Courses†	ECE 3233	ECE 3233	CS 3251 ECE 2218/2218L‡ ECE 2281/2281L‡	ECE 4356* ECE 4363
ECE and CS Depth Courses	ECE 4283 ECE 4284 ECE 4288* ECE 4334* ECE 4335 ECE 4287 ECE 4289 ECE 4334* ECE 4335 ECE 4380* ECE 4385*	ECE 4267 ECE 4268 ECE 4275 ECE 4283 ECE 4284 ECE 4287 ECE 4289 ECE 4334* ECE 4335 ECE 4257 ECE 4275 ECE 4356* ECE 4358* ECE 4371* ECE 4375/4375L‡* ECE 4377* ECE 4383‡ ECE 4385*	CS 3265 CS 3274* CS 4277 CS 4278* CS 4279* CS 4284* CS 4285 CS 4288* ECE 4239‡ ECE 4257 ECE 4275 ECE 4356* ECE 4358* ECE 4371* ECE 4375/4375L‡* ECE 4377* ECE 4383‡ ECE 4385*	CS 3251 CS 4260 CS 4262 CS 4266* CS 4269* ECE 4252 ECE 4286 ECE 4353* ECE 4354* ECE 4370
Non-ECE and Non-CS Depth Courses	BME 4100 ME 4265 NANO 3000 PHYS 2210 PHYS 2660 PHYS 3640		ME 4271	BME 3302 BME 4400 BME 4420 ME 3204

†Gateway courses provide recommended background and/or prerequisites for the Area of Concentration Depth courses.

*Designates a Design Domain Expertise course.

‡Indicates a crosslisted course also offered by the Department of Computer Science.

Double majors have special curricula that require more than 122 hours and a different distribution of electives. See the ECE webpage or the ECE double major adviser for these curricula.

A double major in Electrical and Computer engineering and Biomedical Engineering is offered as a unitary BME-ECE curriculum, which is described in the Biomedical Engineering section of the catalog under its curriculum requirements. It requires a minimum of 130 semester hours.

Undergraduates in electrical and computer engineering, including double majors in electrical and computer engineering, may apply the pass/fail option only to courses taken as open electives subject to the school requirements for pass/fail.

Specimen Curriculum for Electrical and Computer Engineering

			Semester hours
		FALL	SPRING
SOPHOMORE YEAR			
MATH 2300	Multivariable Calculus	3	-
MATH 2400	Differential Equations with Linear Algebra	-	4
PHYS 1602, 1602L	General Physics II and Laboratory	4	-
CS 2201 or 2204	Program Design and Data Structures	3	-
ECE 2112, 2112L	Circuits and Laboratory	4	-
ECE 2123, 2123L	Digital Systems and Laboratory	-	4
ECE 2214	Analog Circuits and Systems	-	3
	Liberal Arts Core	3	3
	ECE Program Elective or Technical Elective‡	-	3
		17	17
JUNIOR YEAR			
MATH 2810	Probability and Statistics for Engineering	3	-
ES 2100W	Technical Communications	-	3
ECE 3235, 3235L	Electronics I and Laboratory	4	-
	ECE Program Electives##	3	6
	Technical Elective	-	3
	Technical Elective or ECE Program Elective‡	3	-
	Liberal Arts Core	3	3
		16	15
SENIOR YEAR			
ECE 4950	Program and Project Management for ECE	3	-
ECE 4951	Electrical and Computer Engineering Design	-	3
ECE 4959	Senior Engineering Design Seminar	1	-
	ECE Program Electives##	6	3
	Liberal Arts Core	3	-
	Technical Electives	3	3
	Open Elective	-	3
		16	12

‡CS 3251 (Intermediate Software Design) is recommended in spring of the sophomore year as preparation for

advanced computer science courses, with a technical elective taken in fall of the junior year. Otherwise, students may choose a technical elective in spring of the sophomore year and an ECE program elective in fall of the junior year.

##As described in Electrical and Computer Engineering Degree Requirements section 6. At least one Design Domain Expertise (DE) course required prior to ECE 4951.

Engineering Science and Management

[Engineering Science Major \(Bachelor of Science\)](#)

[Engineering Management](#)

[Communication of Science and Technology](#)

[Minors](#)

[Curriculum Requirements](#)

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The Division of Engineering Science and Management administers the engineering science major, the engineering management minor, and the first-year introduction to engineering course. The division oversees non-traditional engineering study and advises students on course selection to meet specific career goals that traditional engineering majors may not provide.

COURSES OFFERED: [ENGM](#), [ES](#)

Engineering Science Major (Bachelor of Science)

The engineering science major is flexible and interdisciplinary—offering students the opportunity to select a program of study to meet special interests or objectives. Many students choose a program of study in engineering management, communication of science and technology, various engineering concentrations, environmental science or materials science; however, students may develop unique plans of study to specialize in areas for which facilities and faculty competence exist but which are not covered within a single existing degree program at Vanderbilt. Engineering science graduates may establish careers in engineering or science, interface with engineers (e.g., in marketing and sales), or use their analytical and problem-solving skills to build future professional careers. Defined areas of concentration exist in engineering management, communication of science and technology, secondary education, and materials science and engineering. Individual programs have been developed for students interested in careers in engineering mathematics, environmental engineering, transportation engineering, teaching, technical communications, and other areas requiring nontraditional combinations of engineering courses. Because of the flexible nature of the engineering science programs of study, accreditation has not been sought for these programs of study, and engineering science majors will not qualify for engineering licensure in most states.

Engineering Management. Engineering management is an interdisciplinary program of study designed to give students the tools to manage technology development and innovation, to enhance manufacturing quality and productivity in a competitive international environment, and to implement these objectives successfully in an

organization. Engineering management links engineering, science, and the management disciplines. In addition to the core science and math courses required of all engineering students, topics of study include entrepreneurship, human resources management, finance in technology-based organizations, technology strategy, communications, and operations.

Communication of Science and Technology. Many careers that are attractive to graduates of the engineering science program require the communication of engineering and science to people who are not technically trained. The Communication of Science and Technology interdisciplinary program prepares engineering students for careers in areas such as technical consulting, high-technology marketing and sales, environmental law, and journalism. The program combines traditional engineering and science courses with communications and humanities courses in a flexible curriculum. Engineering science majors may select from a set of program electives identified by the faculty committee of the School of Engineering and the College of Arts and Science that supervises the program.

Minors. Students may also pursue a minor consisting of at least five courses of at least three credit hours within a recognized area of knowledge. Minors are offered in engineering management, materials science and engineering, computer engineering, electrical engineering, computer science, scientific computing, environmental engineering, energy and environmental systems, nanoscience and nanotechnology, and most disciplines within the College of Arts and Science. Students must declare their intention to pursue minors by completing forms available in the Office of Academic Services of the School of Engineering.

Curriculum Requirements

The B.S. in engineering science requires a minimum of 122 hours, distributed as follows:

1. Basic Science (16 hours). CHEM 1601, 1601L plus 12 hours from BSCI 1510, 1510L, 1511, 1511L; CHEM 1602, 1602L; PHYS 1601, 1601L, 1602, 1602L; or MSE 1500, 1500L with two courses in a single discipline.
2. Mathematics (14 hours). MATH 1300, 1301, 2300 and 3 hours from MATH courses numbered 2400 and above.
3. Engineering (44 hours).
 - a. Engineering Fundamentals (12 hours): CS 1100 or 1101 or 1103 or 1104 or DS 1100; ES 1401, 1402, 1403, 2100W; ENGM 3700.
 - b. Engineering Core (12 hours): To be selected from courses in any of the following disciplines: BME, CHBE, CE, CS, DF, ECE, ENVE, MSE, ME, NANO, and SC (except BME 1105; CS 1000, 1151; DS 1000, 2100; and any School of Engineering courses numbered 2860).
 - c. Engineering Electives (15 hours): To be selected from any School of Engineering courses (including ES and ENGM), except BME 1015; CS 1000, 1151; DS 1000, 2100; ES 1115, 2700, 3884; ENGM 2440, 4800; and any School of Engineering courses numbered 2860.
 - d. Senior Capstone (5 hours): ES 4950, 4951, 4959.
4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
5. Open Electives (6 hours).
6. Program Concentration (24 hours). In consultation with the academic adviser, each student must identify a meaningful sequence of courses, not counting certain introductory-level courses, that directly contributes to meeting stated career goals. Program concentrations are approved by the academic adviser and the program director in advance and become part of the student's degree audit.

The preparation provided by the program concentration, together with a solid foundation in basic engineering courses, provides the engineering science student a strong and useful career base.

No more than 24 credit hours of business-related course work (BUS, BUSA, ENGM, FNEC, MGRL) may be applied to the ES degree program. Only one business-related minor (BUS, ENGM, FNEC, MGRL, HOD) may count to a student's academic program. No more than 6 credit hours of courses numbered 3840 to 3879 in any program may be applied to the ES degree program.

Undergraduates in engineering science may apply the pass/fail option only to courses taken as liberal arts core or open electives, subject to the school requirements for pass/fail. UNIV courses are eligible for open elective credit only. Credit for the senior capstone sequence (4 hours) satisfies the Immersion Vanderbilt requirement.

Environmental Engineering

[Curriculum Requirements](#)

[Specimen Curriculum for Environmental Engineering](#)

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LECTURER Phillip Collins

B.E. in environmental engineering. The curriculum includes analysis and design courses in environmental engineering. Vanderbilt's B.E. in environmental engineering prepares students for entry-level positions in many specialty areas of environmental engineering, as well as a variety of other careers, such as business, government, and law. The major will provide students with the tools necessary to develop effective solutions to solve emerging and existing issues such as water resources, quality, and treatment; aging infrastructures; climate change and carbon neutral innovations; energy and material resources; wastes and pollution; and other environmental challenges. Recognizing that environmental solutions cannot be realized without consideration of social, cultural, economic, and political factors, students will be required to extend the breadth of their studies with courses in data science and global perspectives courses in social sciences, economics, political sciences, and the humanities. These will be in addition to foundational courses in the basic and applied sciences, mathematics, engineering, and advanced courses in fate, transport, and treatment of contaminants in the environment. The curriculum culminates with a senior design project in which students will have the opportunity to draw on and integrate the broad knowledge they have gained from the data science and global perspectives courses with the science and engineering knowledge they gained in the major. Due to the complex interdisciplinary nature of the field, many undergraduate students continue their environmental engineering education and earn either a professional (MEng) degree or a graduate (MS or PhD) degree.

Undergraduate Honors Program. The Honors Program in environmental engineering provides an opportunity for selected students to develop individually through independent study and research. The environmental engineering honors program requires a minimum overall GPA of 3.5. Acceptance to the program is made by petition to the faculty during the junior year. Transfer students may be considered for admission after completing one semester at Vanderbilt. Candidates for honors choose their technical courses with the consent of a faculty honors adviser. A three-credit hour independent study course and a summer research internship with a final report and presentation given in the spring semester of the senior year to the ENVE faculty and students are required. The independent study course may also be counted towards the environmental engineering technical electives. The diploma designation is Honors in Environmental Engineering.

Facilities: The environmental laboratories are fully supplied with modern instrumentation for chemical, physical, biological, and radiological analysis of soils, sediments, water, wastewater, air, and solid waste. They include equipment for the study of biological waste treatment, physical-chemical waste treatment, contaminant mass transfer, and state-of-the-art instrumentation. All are available for student use in courses, demonstrations, and research.

Undergraduates in environmental engineering may apply the pass/fail option only to courses taken as open or liberal arts core electives, subject to the school requirements for pass/fail.

A double major in Environmental Engineering and Chemical Engineering is offered as a unitary ChE-ENVE curriculum, which is described in the Chemical Engineering section of the catalog under its curriculum requirements. It requires a minimum of 137 semester hours. Undergraduates in the double major may apply the pass/fail option only to courses taken as open electives, subject to the school requirements for pass/fail.

Curriculum requirements

The B.E. in environmental engineering will require a minimum of 121 hours, distributed as follows:

1. Mathematics (14 hours). Required courses: MATH 1300, 1301, 2300, 2420.
2. Basic science (18 hours). Required courses: CHEM 1601, 1601L, 1602, 1602L; PHYS 1601, 1601L; BSCI 1510; EES 1510.
3. Computing (3 hours). To be selected from: CS 1100 (recommended), 1101 or 1103.
4. Engineering Fundamentals (16 hours). Required courses: ES 1401, 1402, 1403; CE 2200, 3700, 3700L; CHBE 2200 (preferred) or ME 2220, ME 2190.
5. Environmental Engineering Core (25 hours). Required courses: CE 2120, 3300, 3705; ENGM 3700; ENVE 3200, 3200L, 3600, 4605, 4950, 4951, and 4959.
6. Environmental Engineering Program Electives (6 hours). To be selected from: CE 4150, 4240, 4300, 4425, 4430; EES 3310, 4550, 4650, 4750; ENVE 3610, 4305, 4600, 4610, 4615, 4620, 4625, 4700, 4710, 4800.
7. Environmental Engineering Design Electives (6 hours). To be selected from: CE 4150, 4240, 4425, 4430; ENVE 4305, 4610, 4625, 4710.
8. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed under Degree Programs in Engineering.
9. Global Perspective electives (6 hours). At least 6 hours of courses designated as Global Perspectives must be included in the Liberal Arts Core (#8) or Open Electives (#12). To be selected from ANTH 2150, 2220W, 2224, 2225, 2400, 3130, 3345, 4154; ECON 2170; EES 3333; PHIL 3611; PSCI 3266; SOC 3311, 3312, 3314, 3315, 3316, 3317, 3318, 3319.
10. Data science electives (6 hours). To be selected from: CE 4100, 4320, 4340; CS 2204, 3262, 4262, 4266; DS 3100, 3262; EES 4760; MATH 3620, 3670; ME 4263; SC 3250.
11. Technical electives (3 hours). To be selected from: a) MSE 1500; courses numbered 2000 or above in BME, CHBE, CE, CS, DF, ECE, ENVE, ME, MSE, and, ENGM 3000, 3010, 3200, and 3650, except any School of Engineering course numbered 2860; b) courses numbered 1500 or above in the College of Arts and Science listed in the mathematics and natural sciences (MNS) AXLE distribution category; and c) MATH 2410, 2600, and courses 2811 and above (except 3000).
12. Open electives (6 hours).

Specimen Curriculum for Environmental Engineering

Semester hours			
SOPHOMORE YEAR		FALL	SPRING
MATH 2300	Multivariable Calculus	3	-
CE 2200	Statics	3	-
BSCI 1510	Introduction to Biological Sciences	3	-
CE 2120	Sustainable Design in Civil and Environmental Engineering	3	-
	Liberal Arts Core	3	3
EES 1510	The Dynamic Earth: Introduction to Geological Science	-	3
MATH 2420	Methods of Ordinary Differential Equations	-	3
ME 2190	Dynamics	-	3
CHBE 2200*	Thermodynamics (or ME 2220)	-	3
		15	15

*preferred

JUNIOR YEAR			
CE 3700	Fluid Mechanics	3	-
CE 3700L	Fluid Mechanics Laboratory	1	-
ENVE 3600	Fundamentals of Environmental Engineering	3	-
	Technical Elective	3	-
	Open Elective	3	-
	Global Perspectives Elective (Liberal Arts Core)	3	3
ENVE 3200	Environmental Engineering Analysis	1	-
ENVE 3200L	Environmental Engineering Analysis Laboratory	-	2
CE 3705	Water Resources Engineering	-	3
CE 3300	Risk, Reliability and Resilience Engineering	-	3
ENGM 3700*	Program and Project Management	-	3
	Liberal Arts Core	-	3
		17	17

*CE 4400 Construction Project Management may be substituted for ENGM 3700

SENIOR YEAR			
ENVE 4950	Environmental Engineering Design I	1	-
ENVE 4959	Senior Engineering Design Seminar	1	-
ENVE 4605	Thermodynamics Kinetics and Mass Transfer	3	-
	ENVE Program Elective	3	3
	Data Science Elective	3	3
	ENVE Design Elective	3	3
ENVE 4951	Environmental Engineering Design II	-	2
	Open Elective	-	3
		14	14

Mechanical Engineering

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Mechanical Engineering](#)

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COURSES OFFERED: [ME](#)

The vitality of our nation depends upon innovation in the design of new machines, devices to satisfy society's needs, engines to produce power efficiently, equipment to condition the environment of our buildings, and the systems to use and control these engineered products. Mechanical engineers are involved in solving problems by originating design concepts, developing products and processes of manufacture, and designing hardware and the systems needed to satisfy society's demands. Mechanical engineers work in virtually all industries.

The study of mechanical engineering requires a basic understanding of mathematics, chemistry, physics, and the engineering sciences. Mechanical engineering education emphasizes solid mechanics; dynamics of machines; aerodynamics; propulsion devices; material behavior; power producing and environmental conditioning processes; control of dynamics of machines; energy conversion; and the synthesis, development, evaluation, and optimization of designs of devices and systems.

Degree Programs. The Department of Mechanical Engineering offers the B.E., M.Eng., M.S., and Ph.D. in mechanical engineering.

The curriculum in mechanical engineering leading to a bachelor of engineering provides a broad-based engineering education with opportunities for the student to elect courses in areas of study related to any industry and, with careful planning of the elective courses, to achieve some specialization. The mechanical engineering program prepares an individual to become a practicing engineer who can participate fully in the engineering activities of design, building, operation, production, maintenance, safety, marketing, sales, research, and administration.

Undergraduate Honors Program. See the Special Programs chapter for general requirements of the professional Honors Program in mechanical engineering. Honors candidates choose their technical elective courses with the advice and consent of an honors adviser. Each candidate is expected to take 3 hours of ME 3860 in a single semester and at least 6 hours of graduate courses numbered 5000 or higher, including one course numbered 8000 or higher. A formal written honors thesis on the candidate's research must be approved by the honors adviser and the department chair. Honors candidates shall meet all Engineering School requirements in the nontechnical areas. The diploma designation is Honors in Mechanical Engineering.

Facilities. Undergraduate instructional laboratories are equipped for studies in heat and power, refrigeration and air-conditioning, fluid flow, heat transfer, design, controls, robotics, instrumentation, and biomechanics. Specialized facilities for robotic surgery, rehabilitation robotics, energy storage, medical microfluidics, thermal transport, combustion characterization, and photonics are used for both faculty-led research and instruction. The department also maintains various maker spaces including machine shops and design studios for fabrication of experimental equipment and for instruction.

Curriculum Requirements

The B.E. in mechanical engineering requires a minimum of 126 hours, distributed as follows:

1. Mathematics (17 hours). Required courses: MATH 1300, 1301, 2300, 2420. Required elective: MATH courses numbered 2410 and above, except MATH 3000.
2. Basic Science (16 hours). Required courses: CHEM 1601, 1601L; MSE 1500, 1500L (or CHEM 1602, 1602L); PHYS 1601, 1601L, 1602, 1602L.
3. Engineering Science (25 hours). Required courses: ES 1401, 1402, 1403; CE 2200, 2205; CS 1100 or 1101 or 1103 or 1104 or DS 1100; ECE 2112; ME 2190, 2220, 3224; MSE 2205.
4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
5. Open electives (6 hours).
6. ME core (26 hours). ME 2160, 2171, 3202, 3204, 3234, 3248, 4213, 4950, 4951, and 4959
7. Technical electives (9 hours). To be selected from the following approved courses. Courses selected from the College of Arts and Science must be designated a Mathematics and Natural Sciences (MNS) course in the AXLE curriculum.
 - a. School of Engineering courses except CS 1000, 1151; DS 1000, 3850, 3851, 3891; ENGM 2440, 3350, 4800; ES 2700, 2900, 3884; and any course numbered 2860
 - b. Mathematics courses numbered 2420 or higher except MATH 3000
 - c. Chemistry courses numbered 2000 or higher
 - d. Physics courses numbered 2000 or higher
 - e. Astronomy courses
 - f. Biological Science courses
 - g. Earth and Environmental Science courses
 - h. Neuroscience courses

At least 3 hours of technical electives must be numbered 2000 or above.

8. Professional (ME) depth (a minimum of 9 hours). Each student must choose at least 9 hours of ME elective courses. No more than 6 hours of 3850 and 3860 combined can be credited toward ME depth electives.

No one-credit-hour ME course except 3841 can be used as a mechanical engineering elective. A maximum of three one-credit-hour ME courses may be used as technical electives. Additional ME one-credit-hour courses can be open electives. At least one "W"-designated course (3 hours) in the English language must be included on a graded basis.

Undergraduates in mechanical engineering may apply the pass/fail option only to non-departmental courses taken as open electives, technical electives, or part of the liberal arts core, subject to the school requirements for pass/fail.

Specimen Curriculum for Mechanical Engineering

		Semester hours
		FALL SPRING
SOPHOMORE YEAR		
ME 2160	Introduction to Mechanical Engineering Design	3 -
MATH 2300	Multivariable Calculus	3 -
MATH 2420	Methods of Ordinary Differential Equations	- 3
PHYS 1602, 1602L	General Physics II and Laboratory	4 -
CE 2200	Statics	3 -
ME 2171	Instrumentation Laboratory	- 2
ME 2190	Dynamics	- 3
ME 2220	Thermodynamics	- 3
ECE 2112	Circuits I	- 3
	Liberal Arts Core	3 3
		16 17
JUNIOR YEAR		
ME 3202	Machine Analysis and Design	3 -
ME 3204	Mechatronics	- 3
ME 3224	Fluid Mechanics	3 -
ME 3234	System Dynamics	4 -
ME 3248	Heat Transfer	- 3
CE 2205	Mechanics of Materials	3 -
MSE 2205	Strength and Structure of Engineering Materials	1 -
	Mechanical Engineering Elective	- 3
	Open Elective	- 3
	Liberal Arts Core	3 -
	Mathematics Elective	- 3
		17 15
SENIOR YEAR		
ME 4213	Energetics Laboratory	2 -
ME 4950	Design Synthesis	2 -
ME 4951	Engineering Design Projects	- 3
ME 4959	Senior Engineering Design Seminar	1 -

Mechanical Engineering Elective	3	3
Liberal Arts Core	3	3
Technical Elective	6	3
Open Elective	-	3
	17	15

School of Engineering Minors

[Computer Science](#)

[Data Science](#)

[Digital Fabrication](#)

[Electrical and Computer Engineering](#)

[Engineering Management](#)

[Energy and Environmental Systems](#)

[Environmental Engineering](#)

[Materials Science and Engineering](#)

[Nanoscience and Nanotechnology](#)

[Quantum Information Science and Engineering](#)

[Scientific Computing](#)

A minor consists of at least five courses of at least 3 credit hours each within a recognized area of knowledge. A minor offers students more than a casual introduction to an area, but less than a major. A minor is not a degree requirement, but students may elect to complete one or more. Courses may not be taken on a Pass/Fail basis. A minor for which all designated courses are completed with a grade point average of at least 2.000 will be entered on the transcript at the time of graduation.

When a minor is offered in a discipline that offers a major, only those courses that count toward the major may be counted toward the minor. Students should refer to the appropriate sections of this catalog for specific requirements. Minors are offered in computer science, digital fabrication, electrical and computer engineering, energy and environmental systems, engineering management, environmental engineering, materials science and engineering, nanoscience and nanotechnology, quantum information science and engineering, scientific computing, and most disciplines of the College of Arts and Science, Blair School of Music, and Peabody College.

Students declare their intention to pursue a minor by completing the online Major/Minor Declaration/Change workflow process found here: <https://registrar.vanderbilt.edu/registration/forms.php>. Departments and programs assign advisers to students who declare minors in their areas. Students are responsible for knowing and satisfying all requirements for the minors they intend to complete.

Computer Science Minor

DIRECTOR Aniruddha Gokhale

The program in computer science blends scientific and engineering principles, theoretical analysis, and actual

computing experience to provide undergraduate students with a solid foundation in the discipline. Emphasis is on computing activities of both practical and intellectual interest, and on theoretical studies of efficient algorithms and the limits of computation. Computer facilities are available for class assignments, team projects, and individual studies.

The minor in computer science requires 15-16 hours of computer science courses as follows:

1. Programming: CS 1101 or 1104	3 hours
2. Discrete Structures: CS 2212	3 hours
3. Intermediate Computer Concepts: CS 2201	3 hours
4. CS 2281 (and 2281L) or ECE 2281 (and 2281L), or CS 3250, or CS 3251	3-4 hours
5. One additional CS course numbered 3000 or above (excluding CS 3262)	3 hours
Total:	15-16 hour

COURSES OFFERED: [CS](#)

Data Science Minor

DIRECTOR Charreau Bell

Data Science is an emerging interdisciplinary field whose goal is to extract knowledge and enable discovery from complex data using a fusion of computation, mathematics, statistics, and machine learning. Datasets can be as varied as maps of the universe, MRI images, human genomes, medical records, stock market transactions, educational data, historical texts, infrastructure systems, or website clickstream data. Over the coming decades, Data Science is expected to have significant impacts on basic and applied research in the sciences, social sciences, arts and humanities, and engineering as well as impact all sectors of the economy from health care to education, government, transportation, finance, manufacturing, construction, and urban planning. Data Science has the potential to improve individual and community health and education; develop smart communities that enable efficient circulation of people, goods, and services; enable informed decision making in public and private sectors; and enhance environmental sustainability and overall quality of life. Given the wide range of applications and potential benefits, the powerful tools and techniques of Data Science must be used ethically and responsibly.

The faculty at Vanderbilt have created a unique trans-institutional undergraduate minor in Data Science that spans all four undergraduate colleges and is affiliated with the Vanderbilt Data Science Institute. Students in Data Science are introduced to the foundations of this interdisciplinary field, with coursework in computer programming, statistics, machine learning, and visualization, interwoven with ethical considerations of collecting, curating, analyzing, visualizing, and interpreting data. The minor in Data Science prepares students for advanced coursework in statistics and data analysis, scientific computing and simulation, machine learning and visualization, and high performance computing and big data. The minor strives to prepare students for unique immersion experiences in basic and applied research, for civic and professional engagement in the public and private sectors, and for international experiences in industry, government, or non-governmental organizations. The minor provides a solid foundation for future professions or graduate study in any field that collects, analyzes, models, or interprets data.

Minor Requirements:

1. Introduction to Data Science: DS 1000	3 ho
2. Computer Programming: One of DS 1100, CS 1100, CS 2201, or CS 2204	3 ho
3. Introduction to Statistics: One of DS 2100, BME 2400, BSCI 3270, CE 3300, ECON 1500 or 1510, MATH 2810 or 2821, PSY 2100, PSY-PC 2100, or SOC 2100	3 ho
4. Data Science Fundamentals: DS 3100	4 ho
5. Machine Learning: One of DS 3262, CS 3262, CS 4262, ECON 3750, or MATH 3670	3 ho
6. Elective: One course from the list of electives below or DS 3850	3 ho
	Total: 19 h

Electives in data science are courses with various combinations of computation, visualization, simulation, statistics, psychometrics, and/or machine learning aimed at understanding and explaining data in the physical, life, or social sciences, engineering, arts, or the humanities, or courses that examine the impact of data on society and its institutions. Students and faculty are encouraged to petition for new courses with data science content to be considered as electives for the minor.

Intermediate / Advanced Programming, Modeling, Simulation

ASTR 3800 Structure Formation in the Universe

BME 4310 Modeling Living Systems for Therapeutic Bioengineering

CHEM 5410 Molecular Modeling Methods

CHEM 5420 Computational Structural Biochemistry

EES 4760 Agent and Individual Based Computational Modeling

ME 4271 Fundamentals of Robotic Manipulators

ME 4284 Modeling and Simulation of Dynamic Systems

ME 4263 Computational Fluid Dynamics and Multiphysics Modeling

ME 4275 Finite Element Analysis

PHYS 3790 Computational Physics

PSY 4218 Computational Modeling

PSY 4219 Scientific Computing for Psychological and Brain Sciences

PSY 4775 Models of Memory

SC 3250 Scientific Computing Toolbox

Intermediate / Advanced Probability, Statistics, and Data Analysis

ASTR 8070 Astrostatistics

BIOS 6311 Principles of Modern Biostatistics

BIOS 6312 Modern Regression Analysis

BIOS 6341 Fundamentals of Probability

BIOS 6342 Contemporary Statistical Inference

BIOS 7362 Advanced Statistical Inference and Statistical Learning

BIOS 8366 Advanced Statistical Computing

BME 4420 Quantitative and Functional Imaging

CE 4320 Data Analytics for Engineers

ECON 3035 Econometric Methods

ECON 3330 Economics of Risk

ECON 4050 Topics in Econometrics

EES 3310 Global Climate Change

MATH 3640 Probability

MATH 3641 Mathematical Statistics

MATH 4650 Financial Stochastic Processes

PSY 3891 Bayesian Cognitive Modeling

PSY-PC 2120 Statistical Analysis

PSY-PC 3722 Psychometric Methods

PSY-PC 3724 Psychometrics

PSY-PC 3738 Introduction to Item Response Theory

PSY-PC 3743 Factor Analysis

PSY-PC 3749 Applied Nonparametric Statistics

PSY-PC 3746 Multivariate Statistics

PSY-PC 3737 Structural Equation Modeling

PSY-PC 3732 Latent Growth Curve Modeling

PSY-PC 3727 Modern Robust Statistical Methods

PSY-PC 7878 Statistical Consulting

Machine Learning, Visualization, Data Science

ANTH 3261 Introduction to Geographic Information Systems and Remote Sensing

ANTH 3867 Digital Archaeology

ASTR 8080 Data Mining in Large Astronomical Surveys

BME 4420 Quantitative and Functional Imaging

BMIF 6310 Foundations of Bioinformatics
BMIF 6315 Methodological Foundations of Biomedical Informatics
BMIF 7380 Data Privacy in Biomedicine
CS 3265 Database Management Systems
CS 4260 Artificial Intelligence
CS 4266 Topics in Big Data
CS 6362 Advanced Machine Learning
EECE 4354 Computer Vision
ECON 3750 Econometrics for Big Data
MATH 3130 Fourier Analysis
MATH 3670 Mathematical Data Science
MATH 4620 Linear Optimization
MATH 4630 Nonlinear Optimization
NSC 3270 Computational Neuroscience
PSY-PC 3751 Exploratory and Graphical Data Analysis

Students electing the undergraduate minor in Data Science must follow academic regulations regarding minors in their home school, including but not limited to regulations regarding unique hours. Additional credit hours in Data Science that must be earned because of college-specific regulations regarding unique hours must be earned by taking additional courses chosen from the list of electives.

Courses Offered: [DS](#)

Digital Fabrication Minor

DIRECTOR Scott A. Guelcher

Affiliated Faculty

PROFESSORS Scott A. Guelcher (Chemical and Biomolecular Engineering), Florence Sanchez (Civil Engineering)

PROFESSOR OF THE PRACTICE Thomas J. Withrow (Mechanical Engineering)

ASSOCIATE PROFESSOR Taylor Johnson (Computer Science)

RESEARCH ASSOCIATE PROFESSORS Kevin C. Galloway (Mechanical Engineering), W. Timothy Holman (Electrical and Computer Engineering)

ASSISTANT PROFESSOR OF THE PRACTICE Romina Del Bosque (Biomedical Engineering), David C. Florian (Chemical and Biomolecular Engineering)

COURSES OFFERED: [DF](#)

Industry 4.0, or the fourth industrial revolution, is rapidly changing how companies manage their supply chains and manufacture their products. New digital and physical technologies, including advanced materials, additive

manufacturing, and software packages that employ machine learning to optimize both the geometry and function of parts and processes, have reached a level performance that enables their widespread integration throughout manufacturing operations. Digital fabrication is the process of converting ideas to physical products through computer-driven design and manufacturing. Every aspect of the design process can be simulated, from materials selection to the toolpaths used to manipulate those materials. Consequently, digital fabrication technologies more efficient manufacturing of prototypes and commercial parts. This minor is intended for students who are interested in 3D printing, computer aided design (CAD), and product development.

The minor in Digital Fabrication prepares students for this area by providing both classroom and hands-on instruction in advanced technologies used to prototype physical devices through computer-controlled design and manufacturing. Students will learn how to scale-up production of their prototypes through both traditional and additive-based manufacturing techniques. Students will gain experience through foundational courses for the minor and expand their application through electives often related to their major. The Vanderbilt makerspace ecosystem provides students in the minor with hands-on experiences that allow them to design, construct, and iterate prototype devices using in-house state-of-the-art equipment. This laboratory component enhances the competitiveness of students to both employers and graduate schools.

The minor in digital fabrication requires 15 credit hours, distributed as follows:

1. Programming: One of CS 1100, DS 1100, CS 1103, CS 1104, or CS 2201	3 hou
2. Prototyping Core: DF 2100, CHBE 4200	6 hou
3. Elective courses: To be selected from the following list of approved subjects, which may include no more than one (3 hour) ENGM course	6 hou
	Total: 15 ho

School of Engineering:

BME 2210 Biomaterial Manipulation

BME 3500 Biomedical Materials: Structure-Property Relationships and Applications

BME 3750 Low Resource Bioengineering

BME 3800 3D Computer Drafting in Design

BME 4100 Lasers in Surgery and Medicine

BME 4250 Mobile Application Design for Healthcare

BME 4530 Synthetic Biology and Cell Design

CE 4211 Mechanics of Composite Materials

CE 4425 Building Information Modeling

CHBE 4840 Synthesis and Applications of 2D Nanomaterials

CHBE 4850 Semiconductor Materials Processing

CHBE 4870 Polymer Science and Engineering

CS 3258 Introduction to Computer Graphics
CS 3259 Computer Animation Design and Technology
CS 3270 Programming Languages
CS 3274 Modeling and Simulation
CS 4249 Projects in Virtual Reality Design
DF 3860 Undergraduate Research in Digital Fabrication
ECE 2123/2123L Digital Systems
ECE 2218/2218L Microcontrollers
ECE 4275 Microelectronic Systems
ECE 4354 Computer Vision
ECE 4375 Embedded Systems
ECE 4377 FPGA Design
ECE 4385 VLSI Design
ENGM 3300 Technology Assessment and Forecasting
ENGM 3600 Technology-Based Entrepreneurship
ME 1151 Laboratory in Machining
ME 2160 Introduction to Mechanical Engineering Design
ME 3202 Machine Analysis and Design
ME 3273 How to Make (Almost) Anything and Make it Matter
ME 4251 Modern Manufacturing Processes

College of Arts and Science:

ANTH 3867 Digital Archaeology
ARTS 1400 Ceramics
ARTS 2400 Ceramics II
CHEM 3630 Macromolecular Chemistry: Polymers, Dendrimers, and Surface Modifications
CSET 3257 Virtual Reality Design
MHS 2240 Bionic Bodies, Disability Cultures
PHYS 2660 Experimental Nanoscale Fabrication and Characterization

Electrical and Computer Engineering Minor

DIRECTOR W. Timothy Holman

The electrical and computer engineering minor requires a minimum of 17 hours of courses, including the completion of all laboratory corequisites for courses selected for the minor, distributed as follows:

1. Programming: CS 1101 or 1104	3 hours
2. Digital Systems: (ECE 2123, 2123L or CS 2123, 2123L) or Computer Architecture: (ECE 2281, 2281L or CS 2281, 2281L)	4 hours
3. Circuits: ECE 2112, 2112L	4 hours
4. At least 6 additional hours of ECE courses numbered above 2000 (excluding ECE 3860, 3861)	6 hours
	Total: 17 hours

COURSES OFFERED: [ECE](#)

Engineering Management Minor

DIRECTOR Yiorgos Kostoulas

Affiliated Faculty

PROFESSORS OF THE PRACTICE David A. Berezov, Yiorgos Kostoulas, David A. Owens, Christopher J. Rowe

ASSOCIATE PROFESSORS OF THE PRACTICE Courtney L. Johnson, Grayson McClain

ASSISTANT PROFESSORS OF THE PRACTICE Lynne Cooper, Lina Deng

ADJOINT PROFESSORS OF THE PRACTICE: John A. Bers, J. Caleb Clanton

Engineering management is an interdisciplinary program of study designed to expose engineering students to the concepts and theories of the management of the engineering function, the critical elements of technology development and innovation, and the implementation of such ideas in manufacturing, engineering, and technology environments. Approximately two-thirds of all engineers spend a substantial portion of their professional careers as managers. In the complex, competitive world of technology-driven industry, skilled engineers who understand the essential principles of management and business have a competitive advantage.

The program in engineering management prepares students to work effectively in developing, implementing, and modifying technologies and systems. The ability to manage and administer large technical engineering and research projects and budgets will continue to challenge engineering management skills.

The engineering management minor is designed to provide a working knowledge of the fundamentals of management and innovation.

The minor program consists of 15 hours of course work, some of which may be taken as electives associated with the student's major program. Five courses are required: four core courses and the remaining course chosen from a list of electives.

1. ENGM 2210 Technology Strategy	3 hours
2. ENGM 2440 Applied Behavioral Science	3 hours
3. ENGM 3010 Systems Engineering	3 hours
4. ENGM 3700* Program and Project Management	3 hours
5. One course from the list below	3 hours
	Total: 15 hours

The student must select one of the following courses:

ENGM 2160 Engineering Economy

ENGM 3100 Accounting and Finance for Engineers

ENGM 3200 Technology Marketing

ENGM 3300 Technology Assessment and Forecasting

ENGM 3350 Organizational Behavior

ENGM 3600 Technology-Based Entrepreneurship

ENGM 3650 Operations and Supply Chain Management

ENGM 4500 Product Development

CE 4300 Reliability and Risk Case Studies

ENVE 4305 Enterprise Risk Management

ES 2900 Engineering and Public Policy

*Students majoring in civil or electrical and computer engineering may substitute CE 4400 or ECE 4950 for ENGM 3700.

Energy and Environmental Systems Minor

DIRECTOR Lori Troxel

The minor in energy and environmental systems is designed to provide students with a working knowledge of the fundamentals of energy systems and their impact on the environment. The future health and well-being of humanity hinge in large part on smart production and use of energy, water, and related resources, as these are central determinants of climate change, habitable space, and human and ecological health. This program examines the relationships among individual, institutional, and societal choices for energy production and use, and the impacts and benefits of these choices on the environment and health through climate, water quality, and natural resources. It requires a total of 15 semester hours of course work, some of which may be taken as electives associated with the student's major program. Five courses are required: two core courses and three elective courses taken from at least 2 areas: Area I: Energy Systems, Area II: Environmental Engineering, and Area III: Environmental Survey.

1. ENVE 4615 Environmental Assessments	3 hou
2. CE 4150 Energy Systems Engineering	3 hou
3. Three elective courses taken from at least 2 areas below	9 hou
	Total: 15 hc

Area I: Energy Systems

ECE 4267 Power System Analysis
 ME 3890 Special Topics: Nuclear Power
 ME 4260 Energy Conversion I
 ME 4264 Internal Combustion Engines
 ME 4265 Direct Energy Conversion

Area II: Environmental Engineering

CE 3600 Environmental Engineering
 CE 3705 Water Resources Engineering
 ENVE 4305 Enterprise Risk Management
 ENVE 4605 Environmental Thermodynamics, Kinetics, and Mass Transfer
 ENVE 4620 Environmental Characterization and Analysis
 ENVE 4710 Hydrology
 ENVE 4800 Nuclear Environmental Engineering
 ME 4262 – Environmental Control

Area III: Environmental Survey

ANTH 4154 Energy, Environment, and Culture
 CE 4100 Geographic Information Systems
 CE 4430 High Performance and Green Buildings
 EES 1080 Earth and the Atmosphere
 EES 2110 Introduction to Climate Change
 PHIL 3611 Environmental Philosophy
 SOC 3315 Human Ecology and Society

Environmental Engineering Minor

DIRECTOR Lori Troxel

A minor in environmental engineering is available to all non-civil and non-environmental engineering students. It requires a total of 15 hours of environmental engineering courses, comprising 6 hours of required courses and 9 hours of electives, chosen from the following list:

1. CE 3600 Environmental Engineering	3 hours
2. ENVE 4600 Environmental Chemistry	3 hours
3. Three elective courses from the list below	9 hours
	Total: 15 hours

Elective Courses (9 hours)

CE 3705 Water Resources Engineering

CE 4100 Geographic Information Systems

ENVE 4305 Enterprise Risk Management

ENVE 4605 Environmental Thermodynamics, Kinetics, and Mass Transfer

ENVE 4610 Biological Processes in Environmental Systems

ENVE 4615 Environmental Assessments

ENVE 4620 Environmental Characterization and Analysis

ENVE 4625 Environmental Separations Processes

ENVE 4700 Energy and Water Resources

ENVE 4705 Physical Hydrology

ENVE 4710 Hydrology

ENVE 4715 Groundwater Hydrology

ENVE 4720 Surface Water Quality Modeling

ENVE 4800 Nuclear Environmental Engineering

Materials Science and Engineering Minor

DIRECTOR OF UNDERGRADUATE STUDIES Bridget R. Rogers

DIRECTOR OF GRADUATE STUDIES Joshua D. Caldwell

Affiliated Faculty

PROFESSORS Joshua D. Caldwell (Mechanical Engineering) David E. Cliffel (Chemistry), Craig L. Duvall (Biomedical Engineering), Philippe M. Fauchet (Electrical and Computer Engineering), Daniel M. Fleetwood (Electrical and Computer Engineering), Todd D. Giorgio (Biomedical Engineering), Scott A. Guelcher (Chemical and Biomolecular Engineering), Richard F. Haglund, Jr. (Physics), G. Kane Jennings (Chemical and Biomolecular Engineering), Weng P. Kang (Electrical and Computer Engineering), Paul E. Laibinis (Chemical and Biomolecular Engineering), Deyu Li (Mechanical Engineering), Sandra J. Rosenthal (Chemistry), Florence Sanchez (Civil Engineering), Jason D. Valentine

(Mechanical Engineering), Sharon M. Weiss (Electrical and Computer Engineering)

ASSOCIATE PROFESSORS Leon Bellan (Mechanical Engineering), Janet E. MacDonald (Chemistry), Bridget R. Rogers (Chemical and Biomolecular Engineering), Greg Walker (Mechanical Engineering)

RESEARCH ASSOCIATE PROFESSOR Enxia Zhang (Electrical and Computer Engineering)

ASSISTANT PROFESSORS Piran Kidambi (Chemical and Biomolecular Engineering), Carlos Silvera Batista (Chemical and Biomolecular Engineering)

COURSES OFFERED: [MSE](#)

Materials have been key to the solutions to many societal problems. Many of the barriers to widespread incorporation of alternate and renewable energy, from higher-capacity, more robust, less expensive batteries for energy storage, to high efficiency/low cost solar devices, involve the need for new materials. Materials will play an ever-increasing role in health care. New medical devices, drug delivery systems, and synthetic biological tissue are just a few of the health-related applications in need of new materials for their success. In addition, materials challenges are front and center in the ever-evolving areas of electronic devices. Engineers and scientists with knowledge of materials science and engineering concepts are needed to address these and many more materials challenges.

Materials science and engineering is an interdisciplinary program with affiliated faculty from all engineering disciplines, as well as faculty from chemistry, and physics. Two undergraduate options involving materials science and engineering are available. Students pursuing a B.S. in engineering science may choose a program concentration in materials science and engineering. This option requires the student to take MSE 1500, 1500L, and 2500, and other materials science and engineering elective courses to complete their 24 hours of engineering program electives. Students pursuing a B.E. in an engineering discipline can earn a minor in materials science and engineering.

The minor in materials science and engineering provides the student with an understanding of engineering materials. It complements and adds to the student's major in one of the engineering disciplines, exposing the student to an interdisciplinary approach to problem solving. The minor program in materials science and engineering requires 16 hours of program courses, of which 7 hours are devoted to MSE 1500, 1500L and MSE 2500. No more than 10 hours below the 2500 level may be applied to the minor.

1. MSE 1500, 1500L Materials Science I and Laboratory	4 hou
2. MSE 2500 Materials Science II	3 hou
3. Three elective courses from the list below*	9 hou
	Total: 16 hou

Electives

MSE 3860 Undergraduate Research

MSE 3889-3890 Special Topics

BME 2100 Biomechanics

BME 3500 Biomedical Materials: Structure, Property, and Applications
BME 4200 Principles and Applications BioMicroElectro Mechanical Systems (BioMEMS)
BME 4500 Nanobiotechnology
CHBE 4200 Additive and Polymer-based Manufacturing
CHBE 4825 Biomaterials for Drug Delivery
CHBE 4840 Synthesis and Applications of 2D Nanomaterials
CHBE 4850 Semiconductor Materials Processing
CHBE 4860 Molecular Aspects of Chemical Engineering
CHBE 4870 Polymer Science and Engineering
CHBE 4880 Corrosion Science and Engineering
CE 2205 Mechanics of Materials
CE 3205 Structural Design
CE 4200 Advanced Structural Steel Design
CE 4210 Advanced Reinforced Concrete Design
CE 4211 Mechanics of Composite Materials
ECE 4283 Principles and Models of Semiconductor Devices
ECE 4284 Integrated Circuit Technology and Fabrication
ME 3202 Machine Analysis and Design
ME 4251 Modern Manufacturing Processes
ME 4275 Finite Element Analysis
CHEM 3010 Inorganic Chemistry
CHEM 3300 Physical Chemistry: Quantum Mechanics, Spectroscopy, and Kinetics
CHEM 3630 Macromolecular Chemistry: Polymers, Dendrimers, and Surface Modification
PHYS 2250W Introduction to Quantum Physics and Applications I
PHYS 2290 Electricity, Magnetism, and Electrodynamics
PHYS 3640 Physics of Condensed Matter

*Please contact the MSE Director of Undergraduate Studies with requests to accept courses not on this list for elective credit.

Nanoscience and Nanotechnology Minor

DIRECTORS Paul E. Laibinis, Sandra J. Rosenthal

Affiliated Faculty

PROFESSORS Joshua D. Caldwell (Mechanical Engineering), David E. Cliffel (Chemistry), Craig L. Duvall (Biomedical Engineering), Philippe M. Fauchet (Electrical and Computer Engineering), Daniel M. Fleetwood (Electrical Engineering), Todd D. Giorgio (Biomedical Engineering), Scott A. Guelcher (Chemical and Biomolecular Engineering), Richard F. Haglund, Jr. (Physics), Timothy P. Hanusa (Chemistry), Frederick R. Haselton (Biomedical Engineering), De-en Jiang (Chemical and Biomolecular Engineering), G. Kane Jennings (Chemical and Biomolecular Engineering),

Paul E. Laibinis (Chemical and Biomolecular Engineering), Deyu Li (Mechanical Engineering), Sokrates T. Pantelides (Physics), Sandra J. Rosenthal (Chemistry), Florence Sanchez (Civil and Environmental Engineering), Ronald D. Schrimpf (Electrical Engineering), Jason G. Valentine (Mechanical Engineering), Kalman Varga (Physics), Sharon M. Weiss (Electrical and Computer Engineering), John P. Wikswo, Jr. (Physics), David W. Wright (Chemistry)

ASSOCIATE PROFESSORS Leon Bellan (Mechanical Engineering), Shihong Lin (Civil and Environmental Engineering), Ethan S. Lippman (Chemical and Biomolecular Engineering), Janet E. MacDonald (Chemistry), Bridget R. Rogers (Chemical and Biomolecular Engineering), D. Greg Walker (Mechanical Engineering), John T. Wilson (Chemical and Biomolecular Engineering),

ASSISTANT PROFESSORS Lauren Buchanan (Chemistry), Xiaoguang Dong (Mechanical Engineering), Mona Ebrish (Electrical and Computer Engineering), Piran Kidambi (Chemical and Biomolecular Engineering), Justus C. Ndukaife (Electrical and Computer Engineering), Marjan Rafat (Chemical and Biomolecular Engineering), Carlos A. Silvera Batista (Chemical and Biomolecular Engineering)

RESEARCH PROFESSORS Peter T. Cummings (Chemical and Biomolecular Engineering), James R. McBride (Chemistry), Clare M. McCabe (Chemical and Biomolecular Engineering), Peter Pintauro (Chemical and Biomolecular Engineering)

RESEARCH ASSISTANT PROFESSORS Dmitry Koktysh (Chemistry)

COURSES OFFERED: [NANO](#)

Faculty in the School of Engineering and the College of Arts and Science offer an interdisciplinary minor in nanoscience and nanotechnology. The minor is administered by the School of Engineering.

Nanoscience and nanotechnology are based on the ability to synthesize, organize, characterize, and manipulate matter systematically at dimensions of ~ 1 to 100 nm, creating uniquely functional materials that differ in properties from those prepared by traditional approaches. At these length scales, materials can take on new properties that can be exploited in a wide range of applications such as for solar energy conversion, ultra-sensitive sensing, and new types of vaccines. These activities require the integration of expertise from various areas of science and engineering, often relying on methods of synthesis, fabrication, and characterization that are beyond those encountered in an individual course of study.

Students who minor in nanoscience and nanotechnology learn the principles and methods used in this rapidly growing field. Its core originates in the physical sciences by providing key approaches for describing the behavior of matter on the nanoscale. Synthetic approaches are used to manipulate matter systematically, for creating uniquely functional nanomaterials that can be inorganic, organic, biological, or a hybrid of these. With a third component of characterization, a process for designing systems to have particular properties as a result of their composition and nanoscale arrangement emerges. Students are introduced to these areas through foundational and elective courses for the minor that are specified below, the latter of which can be selected to fulfill the degree requirements for their major.

The minor in nanoscience and nanotechnology is supported by the Vanderbilt Institute of Nanoscale Science and Engineering (VINSE) that brings together faculty from the College of Arts and Science, the School of Engineering, and the Medical Center. A specialized laboratory facility maintained by VINSE provides students in the minor with capstone experiences that allow them to prepare and characterize a variety of nanostructured systems using in-house state-of-the-art instrumentation. This hands-on laboratory component enhances the attractiveness of students to both employers and graduate schools.

The minor in nanoscience and nanotechnology requires a total of 15 credit hours, distributed as follows:

1. NANO 3000	3 hours
2. one of CHEM 2610 or CHBE 4840 or PHYS 2660	3 hours
3. Three elective courses from the list below*	9 hours
	Total: 15 hours

Electives

BME 4200 Principles and Applications of BioMicro ElectroMechanical Systems (BioMEMS)

BME 4500 Nanobiotechnology

CHBE 4830 Molecular Simulation

CHBE 4840 Synthesis and Applications of 2D Nanomaterials

CHBE 4850 Semiconductor Materials Processing

CHBE 4860 Molecular Aspects of Chemical Engineering

CHBE 4870 Polymer Science and Engineering

CHBE 4880 Corrosion Science and Engineering

CHEM 2610 Introduction to Nanochemistry

CHEM 3300 Physical Chemistry: Quantum Mechanics, Spectroscopy, and Kinetics

CHEM 3630 Macromolecular Chemistry: Polymers, Dendrimers, and Surface Modification

CHEM 5610 Chemistry of Inorganic Materials

ECE 4283 Principles and Models of Semiconductor Devices

ECE 4284 Integrated Circuit Technology and Fabrication

ECE 4288 Optoelectronics

ECE 4385 VLSI Design

ECE 6306 Solid-State Effects and Devices I

IMS 5320 Nanoscale Science and Engineering

IMS 6310 Atomic Arrangements in Solids

ME 8320 Statistical Thermodynamics

ME 8323 Micro/Nanoelectromechanical Systems

ME 8365 Micro/Nanoscale Energy Transport

PHYS 2255 Modern Physics and the Quantum World

PHYS 2660 Experimental Nanoscale Fabrication and Characterization

PHYS 3640 Physics of Condensed Matter

Courses taken to satisfy relevant degree requirements for majors in the College of Arts and Science and the School

of Engineering may also be counted toward fulfilling the minor.

Quantum Information Science and Engineering Minor

Faculty in the School of Engineering and the College of Arts and Science offer an interdisciplinary minor in Quantum Information Science and Engineering (QISE). The minor is administered by the College of Arts and Science. See the A&S section of the catalog for details.

Scientific Computing Minor

DIRECTORS Robert E. Bodenheimer, Thomas J. Palmeri, David A. Weintraub

Affiliated Faculty

PROFESSORS Ralf Bennartz (Earth and Environmental Sciences), Gautam Biswas (Electrical Engineering and Computer Science), Robert E. Bodenheimer Jr. (Computer Science), Mark N. Ellingham (Mathematics), David Furbish (Earth and Environmental Sciences), Guilherme Gualda (Earth and Environmental Sciences), Kelly Holley-Bockelman (Astronomy), Shane Hutson (Physics), Bennett Landman (Electrical and Computer Engineering), Gordon D. Logan (Psychology), Haoxiang Luo (Mechanical Engineering), Terry P. Lybrand (Chemistry and Pharmacology), Michael I. Miga (Biomedical Engineering), Mark Neamtu (Mathematics), Thomas J. Palmeri (Psychology and Neuroscience), Antonis Rokas (Biological Sciences), Jeffrey D. Schall (Psychology and Neuroscience), Larry Schumaker (Mathematics), Paul Sheldon (Physics), Kalman Varga (Physics), David A. Weintraub (Astronomy)

PROFESSOR OF THE PRACTICE Gerald H. Roth (Computer Science)

ASSOCIATE PROFESSORS Sean Polyn (Psychology and Neuroscience), Jennifer Trueblood (Psychology), Greg Walker (Mechanical Engineering), Steve Wernke (Anthropology)

ASSISTANT PROFESSOR William Holmes (Physics and Astronomy)

COURSES OFFERED: [SC](#)

Faculty in the School of Engineering and the College of Arts and Science offer an interdisciplinary minor in scientific computing to help natural and social scientists and engineers acquire the ever-increasing computational skills that such careers demand. The minor is administered by the School of Engineering. Students who complete this minor will have a toolkit that includes programming skills useful for simulating physical, biological, and social dynamics, as well as an understanding of how to take advantage of modern software tools to extract meaningful information from small and large datasets.

Computation is now an integral part of modern science and engineering. In science, computer simulation allows the study of natural phenomena impossible or intractable through experimental means. In engineering, computer simulation allows the analysis and synthesis of systems too expensive, dangerous, or complex to model and build directly. Astronomers studying the formation of massive black holes, neuroscientists studying neural networks for human memory, mechanical engineers studying the designs of turbines and compressors, and electrical engineers studying the reliability of electronics aboard spacecraft are united both in the computational challenges they face and the tools and techniques they use to solve these challenges.

Students in the program in scientific computing are taught techniques for understanding such complex physical, biological, and also social systems. Students are introduced to computational methods for simulating and analyzing models of complex systems, to scientific visualization and data mining techniques needed to detect structure in massively large multidimensional data sets, to high performance computing techniques for simulating models on computing clusters with hundreds or thousands of parallel, independent processors and for analyzing terabytes or more of data that may be distributed across a massive cloud or grid storage environment.

engineering disciplines. While the content domain varies, these disciplines often require similar computational approaches, high-performance computing resources, and skills to simulate interactions, model real-life systems, and test competing hypotheses. Scientific computing embodies the computational tools and techniques for solving many of the grand challenges facing science and engineering today.

The minor in scientific computing prepares students for advanced coursework that combines computational approaches with a substantive area of science or engineering. It prepares students for independent study with a faculty member on a research project. It prepares students for advanced study in graduate school. It provides skills that will be attractive to many employers after graduation.

The minor in scientific computing is distinct from the minor in computer science. Scientific computing uses computation as a tool to solve scientific and engineering problems in research and application. It is more focused on simulation, numerical techniques, high performance computing, and higher-level methods than the minor in computer science, which is focused on the algorithms, systems, and technologies that enable such methods to be developed and employed.

The minor in scientific computing requires 15 credit hours, distributed as follows:

1. CS 1101 or 1103 or 1104	3 hou
2. CS 2204 (CS 2201 may be substituted for 2204 with the approval of a program director)	3 hou
3. Elective courses. Three hours must come from course list A (Mathematical, Quantitative, and Data Science Methods); three hours must come from course list B (Computational, Simulation, and Modeling Methods); and three hours can come from either course list A or B, or from independent study (SC 3850/3851) with a faculty member affiliated with the SC minor.	9 hou
	Total: 15 hc

A. Computational, Simulation, and Modeling Methods

SC 3250 Scientific Computing Toolbox

ANTH 3261 Introduction to Geographic Information Systems and Remote Sensing

BMIF 6310 Foundations of Bioinformatics

BMIF 7380 Data Privacy in Biomedicine

BSCI 3272 Genome Science

BME 2400 Quantitative Methods I: Statistical Analysis

CE 4320 Data Analytics for Engineers

ECON 3032 Applied Econometrics

ECON 3035 Econometric Methods

ECON 3750 Econometrics for Big Data

ECE 6358 Quantitative Medical Image Analysis
HOD 3200 Introduction to Data Science
MATH 3620 Introduction to Numerical Mathematics
MATH 3670 Mathematical Data Science
MATH 4600 Numerical Analysis
MATH 4620 Linear Optimization
MATH 4630 Nonlinear Optimization

B. Computational, Simulation, and Modeling Methods

SC 3260 High Performance Computing
ASTR 3600 Stellar Astrophysics
ASTR 3700 Galactic Astrophysics
ASTR 3800 Structure Formation in the Universe
BME 7310 Advanced Computational Modeling and Analysis in Biomedical Engineering
BME 7410 Quantitative Methods in Biomedical Engineering
CHBE 4830 Molecular Simulation
CHEM 5410 Molecular Modeling Methods
CHEM 5420 Computational Structural Biochemistry
CS 3274 Modeling and Simulation
EES 4760 Agent and Individual Based Computational Modeling
MATH 3630 Mathematical Modeling in Biology
MATH 3660 Mathematical Modeling in Economics
ME 4263 Computational Fluid Dynamics and Multiphysics Modeling
ME 4275 Finite Element Analysis
NSC 3270 Computational Neuroscience
PHYS 3200 Statistical Physics
PHYS 3790 Computational Physics
PSY 4218 Computational Cognitive Modeling
PSY 4219 Scientific Computing for Psychological and Brain Sciences
PSY 4775 Models of Human Memory

School of Engineering Focus Areas

Focus areas provide guidance to students wishing to concentrate on a specialized topic within engineering. Focus areas are typically nine credit hours, and qualifying courses are listed in the catalog. Students can declare a maximum of three focus areas; however, a qualifying course cannot be applied to more than one focus area. Students interested in declaring a focus area must do so before the start of their final semester at Vanderbilt. Successful completion of a declared focus area will be designated on a student's transcript upon graduation.

Engineering Communications

FACULTY POINT OF CONTACT Yiorgos Kostoulas

Communication is an essential skill for every career path. In this collection of courses, students will learn how to communicate within and outside their fields and within project teams and organizations.

Students must take these three courses (9 credit hours):

- ES 2100W – Technical Communications
- ENGM 2440 – Applied Behavioral Science
- ENGM 3350 – Organizational Behavior

Human Computer Interaction (HCI)

FACULTY POINT OF CONTACT Graham Hemingway

HCI is valuable for creating technology that is not only functional but also user-friendly, accessible, and aligned with the diverse needs of users. This approach contributes to the success and sustainability of technological products and systems in a rapidly evolving digital landscape. Students who study HCI are well equipped for careers in user experience (UX) design, usability engineering, accessibility, product design and augmented and virtual reality.

Students must take at least three courses and 9 credit hours from:

- CS 3258 – Introduction to Computer Graphics
- CS 4376 – Foundations of Human Computer Interaction
- CS 4275 – Error Analysis in Safety Critical Systems
- CS 4247 – Data Visualization
- CS 4249 – Projects in Virtual Reality Design
- Special Topics if specified in the Class Note on YES.

Microelectronics

FACULTY POINT OF CONTACT W. Timothy Holman

The field of microelectronics has enabled technological developments in areas such as computing, robotics, manufacturing, communications, transportation, power systems, and medical instrumentation. This focus area provides students with a foundation in the science and engineering behind the field of microelectronics.

Students must take three courses (at least 9 credit hours) selected from the following list:

- ECE 4267 – Power System Analysis
- ECE 4268 – Distributed Energy Systems
- ECE 4275 – Microelectronic Systems
- ECE 4283 – Semiconductor Devices
- ECE 4284 – IC Technology and Fabrication
- ECE 4287 – Engineering Reliability
- ECE 4289 – Spacecraft Systems
- ECE 4334 – RF & Microwave Design
- ECE 4335 – Fundamentals of Quantum Engineering
- ECE 4380 – Electronics II
- ECE 4385 – VLSI Design
- MSE 2500 – Materials Science II

Nanotechnology

FACULTY POINT OF CONTACT W. Timothy Holman

Nanotechnology sits at the intersection of various scientific disciplines, promising revolutionary advancements across medicine, materials science, electronics, and energy production. This focus area equips students with the knowledge and skills to contribute to cutting-edge innovations. Students interested in this area may, with appropriate additional courses, complete the related minor in Nanoscience and Nanotechnology.

Students must take three courses (at least 9 credit hours) selected from the following list:

- ECE 3891 – Special Topics: Nanoscale Innovation and Making
- ECE 3892 – Special Topics: Optical Tweezers in Biology and Medicine
- ECE 4283 – Semiconductor Devices
- ECE 4284 – IC Technology and Fabrication
- ECE 4288 – Optoelectronics
- ECE 4335 – Fundamentals of Quantum Engineering
- MSE 2500 – Materials Science II
- BME 4200 – Principles and Applications of BioMEMS
- BME 4500 – Nanobiotechnology
- CHBE 4840 – Synthesis and Applications of 2D Nanomaterials
- CHBE 4850 – Semiconductor Materials Processing
- CHBE 4875 – Colloid Science and Engineering

Product Development

FACULTY POINT OF CONTACT Yiorgos Kostoulas

In this focus area, students will learn key stages for product planning, development, and marketing.

Students must take these three courses (9 credit hours):

- ENGM 3200 – Technology Marketing
- ENGM 3300 – Technology Assessment and Forecasting
- ENGM 4500 – Product Development

Strategic and Technical Consulting

FACULTY POINT OF CONTACT Yiorgos Kostoulas

In this focus area, students learn essential skills such as organizational leadership, finance, and technology strategy.

Students must take these three courses (9 credit hours):

- ENGM 2210 – Technology Strategy
- ENGM 3100 – Finance and Accounting for Engineering
- ENGM 3350 – Organizational Behavior

Technology Entrepreneurship

FACULTY POINT OF CONTACT Yiorgos Kostoulas

In this focus area, students will learn essential skills such as technology strategy, risk management, and venture

capital funding.

Students must take these three courses (9 credit hours):

- ENGM 2210 – Technology Strategy
- ENGM 3600 – Technology-Based Entrepreneurship
- ENGM 3891 – Special Topics with approval by associated faculty (*will be included in the course description in YES*)

Engineering Courses

[Biomedical Engineering](#)

[Civil Engineering](#)

[Chemical and Biomolecular Engineering](#)

[Computer Science](#)

[Digital Fabrication](#)

[Electrical Engineering and Computer Engineering](#)

[Engineering Management](#)

[Engineering Science](#)

[Environmental Engineering](#)

[Mechanical Engineering](#)

[Materials Science and Engineering](#)

[Nanoscience and Nanotechnology](#)

[Scientific Computing](#)

Peabody College

Peabody College Administration and Faculty

CAMILLA P. BENBOW, Ed.D., Dean

XIU CHEN CRAVENS, Ph.D., Associate Dean for International Affairs

ELLEN GOLDRING, Ph.D., Executive Associate Dean

CATHERINE GAVIN LOSS, Ph.D., Senior Associate Dean for Academic Affairs and Professional Education

JEANNETTE MANCILLA-MARTINEZ, Ed.D., Associate Dean for Graduate Education

JACCI L. RODGERS, Ph.D., Associate Dean for Data Analytics

SHARON L. SHIELDS, Ph.D., Senior Associate Dean for Community and Special Projects

ANITA A. WAGER, Ph.D., Senior Associate Dean for Undergraduate Academic Affairs and Teacher Education

NICOLE M. JOSEPH, Ph.D. Associate Dean for Equity, Diversity and Inclusion

MALINA C. HALMAN-PEGUILLAN, M.Ed., Assistant Dean for Academic Services

MEAGHAN MUNDY, Ph.D. Assistant Dean for Student Empowerment, Engagement, and Development

HASINA MOYHUDDIN, Ph.D. Assistant Dean, Equity, Diversity and Inclusion

SCOTT GUBALA, M.A., Assistant to the Dean

Endowed Chairs and Named Professorships

Patricia and Rodes Hart Dean of Education and Human Development
Patricia and Rodes Hart Professor of Educational Neuroscience
Patricia and Rodes Hart Professor of Psychology and Human Development
Patricia and Rodes Hart Professor of Educational Leadership and Policy
Frank W. Mayborn Professor
Dunn Family Chair in Educational and Psychological Assessment, Special Education
Currey-Ingram Chair in Special Education
Nicholas Hobbs Chair in Special Education
Betts Professor of Education and Human Development
Antonio M. and Anita S. Gotto Chair in Teaching and Learning
Margaret Cowan Chair in Teacher Education
Susan Gray Chair in Education and Human Development
Cornelius Vanderbilt Chair

Faculty Council

peabody.vanderbilt.edu/faculty/faculty-research/faculty_council.php

Council on Teacher Education

Camilla P. Benbow, Chair.

Faculty

For a list of current faculty, please visit vanderbilt.edu/faculty-affairs/faculty-registry/.

Education and Human Development at Vanderbilt

George Peabody College for Teachers, recognized for more than a century as one of the foremost independent colleges of teacher education, merged with Vanderbilt University in the summer of 1979 to become Vanderbilt University's Peabody College of education and human development. Since then, Peabody College has retained its heritage while achieving new stature as a place where world-class research is conducted and translated into teaching, practice, policy, and service. Peabody's mission is characterized by practice-oriented academic programs, a strong service ethic, groundbreaking research, and a pressing concern for addressing social problems in domestic and international contexts.

The college's faculty and students constitute a vibrant intellectual community answering pressing questions and expanding knowledge about PreK-12 and higher education, including special education; psychology, especially focused on families and children; the development of individuals and organizations; and educational administration, leadership, and policy. Peabody College understands the preparation of researchers, teachers, and leaders as among the most important things it does, and that building and sustaining an engaged academic community of learners is central to achieving its mission.

Peabody faculty and students engage in a broad spectrum of basic and applied research to generate new knowledge and translate that knowledge into practice. Current research findings inform classroom teaching at Peabody in every program. Moreover, Peabody faculty bring an interdisciplinary and entrepreneurial spirit to the research enterprise.

Working collaboratively, often through one of the college's research centers, faculty and students publish and present their findings, apply them in real-world settings, and help to shape public debate about the nature and future of education and human development.

The college is devoted to enhancing opportunity in an increasingly diverse society. More than 1,900 students are enrolled at Peabody, with more than one-third of them in post-baccalaureate graduate or professional degree programs.

All teacher education programs are accredited by the Council for the Accreditation of Education Preparation (CAEP). Counseling programs are accredited by the Council for the Accreditation of Counseling and Related Education Programs (CACREP).

Centers and Outreach Efforts

For more information about Peabody College's Centers and Outreach Efforts, please see here:
<https://peabody.vanderbilt.edu/research/research-centers>.

Next Steps at Vanderbilt University

Next Steps at Vanderbilt is a four-year, nonresidential certification program for students with intellectual and developmental disabilities, providing individualized programs of study in the areas of education, social skills, and vocational training. Next steps is a comprehensive transition program designated by the U.S. Department of Education. This status recognizes the program's merits and allows eligible students to apply for federal financial aid for tuition assistance. Learn more here: <https://peabody.vanderbilt.edu/nextsteps>.

The Undergraduate Program

Peabody College offers the bachelor of science with majors in elementary education, secondary education, special education, cognitive studies, child development, child studies, and human and organizational development. These undergraduate programs are designed to prepare students for professional careers in their chosen fields. Programs for Peabody students include course work in a Liberal Education Core, a professional core, a major area of specialization, and electives. Peabody also provides professional education courses for College of Arts and Science students who want to prepare for teacher licensure.

The bachelor of science is granted on the basis of 120 semester hours of college work with a final grade point average of 2.000, and completion of the Liberal Education Core and the requirements of the major.

Liberal Education Core Program

In pursuit of breadth of knowledge and understanding about the world in which they live, all undergraduates complete the requirements of the Liberal Education Core program. This Liberal Education Core component of all Peabody undergraduate majors is intended to provide students with a solid foundation in the arts and sciences. The core curriculum incorporates the study of human conditions that are universal. The Liberal Education Core involves study in the following areas:

Communications. The study of language in its written and spoken forms.

Mathematics/Quantitative Analysis. The study of mathematical concepts and procedures.

Social Sciences. The study of the past—both the heritage of the United States and the more global human story.

Humanities. The study of the universal language of the arts.

Natural Sciences. The study of scientific process and interrelationships among the sciences.

Through the study of these universal subjects, concepts, and modes of thought, students gain a broad foundation transferable to their futures. They will continue to grow within society and the classroom and will look at problems from different perspectives while maintaining curiosity.

Courses identified to fulfill the Liberal Education Core requirement for each undergraduate major are listed in Peabody's *Undergraduate Handbook* (<https://peabody.vanderbilt.edu/office-academic-services/>).

Courses used to satisfy these core requirements may also be counted toward the fulfillment of requirements in an academic major. Special topics courses are ordinarily not acceptable for meeting Liberal Education Core requirements. These courses require prior approval as substitute courses. Independent study courses are not acceptable for meeting Liberal Education Core requirements.

Transfer students may use credits from other colleges to fulfill Peabody's Liberal Education Core requirements if the credits are equivalent to the courses offered at Vanderbilt. For transfer students, credits are evaluated when the student enrolls at Peabody in order to determine which transfer courses will substitute for Peabody's Liberal Education Core requirements. Requirements still to be fulfilled will be noted at that time.

Licensure for Teaching

[Security Clearance](#)

[Degree Audits](#)

[Screening](#)

[Screening I \(Formal Admission to an Undergraduate Teacher Education Program\)](#)

[Screening II \(Admission to Student Teaching\)](#)

[Student Teaching](#)

[Application for Teacher Licensure and University Recommendation for Licensure](#)

[Accreditation](#)

Peabody offers programs leading to teacher licensure in the following areas: elementary (grades K-5), and secondary education (grades 6-12) with endorsement in English, math, biology, chemistry, physics, earth science, history, and political science. (Added endorsements are available also in economics, psychology, and sociology for those who will have a history endorsement.) An added endorsement program also is available in English as a Second Language (grades PreK-12). All of these programs are offered by the Department of Teaching and Learning.

Special education-interventionist (LD/BD for grades K-8 or 6-12) or comprehensive (multiple/severe for grades K-12) are offered by the Department of Special Education.

Vanderbilt's Blair School of Music and Peabody College offer a program for students interested in teacher licensure with endorsement in the following: (1) *instrumental/general music (grades K-12)*, or (2) *vocal/general music (grades K-12)*. Blair students complete the first part of the program as part of the bachelor of music degree and apply during the senior year to continue into the master of education degree for a final year of professional education.

Students seeking licensure may enroll in Peabody College, the College of Arts and Science, or the Blair School of Music. In all cases, most of the liberal arts course work is taken in the College of Arts and Science, and the professional education course work is taken at Peabody College.

All students completing a teacher education program at Vanderbilt are strongly advised to apply for a license in Tennessee whether or not they plan to teach in this state. In addition, licensure is available by application in other states. The student is responsible for applying for Tennessee licensure through the Office of Teacher Licensure. Each state has its own application forms and procedures for licensure; information is available on the Office of Teacher Licensure website: peabody.vanderbilt.edu/teacher-licensure/.

Licensure requirements continue to undergo revision. Students must meet licensure requirements in effect at the time of their program completion, which may be different from requirements in effect at the time they entered the program. Each year, teacher education students should consult the current Vanderbilt *Undergraduate Catalog* or the Peabody *Undergraduate Handbook*. The website peabody.vanderbilt.edu/teacher-licensure/ provides additional information.

Security Clearance

As part of the Peabody background check process you are required to pass a fingerprint criminal background check by the beginning of your first semester. Visit <https://peabody.vanderbilt.edu/criminal-background-clearance> for detailed information.

Degree Audits

Electronic degree audits enable students and faculty advisers to track each student's progress in the degree program at Peabody. The departmental handbooks describe access to and use of online Peabody major degree audits to view program requirements recognized as "met" or "unmet" at any time in the student's program. The degree audit also denotes permissions for waivers or course substitutions. Degree audits are managed in the Peabody Office of Academic Services.

SCREENING

Students seeking teacher licensure must be approved by each department through which licensure is sought. Secondary licensure candidates should contact an adviser or the director of undergraduate studies in the appropriate Arts and Science department(s) to be informed of any specific departmental requirements or standards. There are two points in each teacher education program when undergraduates must complete applications for screenings by departmental faculty. Screening requirements continue to undergo revision and are subject to change. Students must meet screening requirements in effect at the time of their application, which may be different from requirements stated below. Screening reviews, described below, are important checkpoints that allow successful students to advance in the program. Attainment of 2.75 (4.0) cumulative grade point average and completion of required courses do not automatically qualify a student for continuation in the program.

Faculty evaluation of a student's qualifications for continuation in a teacher education program include academic, performance, and disposition factors such as the following:

1. Dependability (as evidenced by good attendance in classes and practica and the completion of required assignments and procedures on time)
2. Professional and ethical behavior (honesty, acceptance of responsibility, emotional maturity, etc.)
3. Attitude and interpersonal skills (including the ability to work with children and with peers)
4. Academic competence (It is possible for a student to meet minimum grade point requirements and pass all courses and still have specific academic weaknesses which might cause denial of screening applications)
5. Teaching competence (as evidenced by successful completion of practica requirements). It is possible for a student to meet minimum grade point requirements and pass all courses and still have specific performance weaknesses which might cause denial of screening applications.

These criteria rest on the professional judgment of faculty members. Whether a student meets them or not is determined by a vote of appropriate faculty. Undergraduate students seeking secondary education licensure must be approved by the Department of Teaching and Learning faculty and also by the faculty of College of Arts and Science department(s) for the Arts and Science major(s).

Screening deadlines are October 1 and February 1. Undergraduates must apply for Screening I during spring of the sophomore year or fall of the junior year. Screening II must be done in the fall of the senior year, restricting undergraduate student teaching to the spring of the senior year. Deadlines are firm; late applications will not be accepted. The Screening I and II application form should be submitted online no later than the deadline. (NOTE: Screening II applications require additional documents when submitted. See specific requirements with the application.)

Students will be notified of results of the faculty vote at the end of the screening semester. In instances where there is a negative decision, the student wishing to appeal must do so in writing to the chairperson(s) of the department(s) denying the application. If the initial decision is upheld and the student wishes to continue the appeal, a written petition should be filed with the Administrative Committee of Peabody College.

Screening I (Formal Admission to an Undergraduate Teacher Education Program)

Each student seeking teacher licensure must be formally admitted to the teacher education program(s) by completing an online application for Screening I review by the faculty of the department(s) in which endorsement(s) is/are sought. Candidates normally apply for Screening I during spring of the sophomore year or fall of the junior year, depending on their program area (candidates should consult their department handbook for timelines in their program area). Deadlines are February 1 in the spring and October 1 in the fall. Students who transfer more than 60 hours to Vanderbilt from another institution must apply for admission to the teacher education program by the screening deadline of their second semester at Vanderbilt.

An initial screening review by the faculty will occur soon after the Screening I deadline. If there are concerns noted, the student will be counseled. The final faculty review and decision will be done toward the end of the semester.

Criteria for Screening I (formal admission to teacher education) are:

- A. Specific Academic Criteria
 - 1. Test scores (SAT composite score of 780 or ACT 21, OR passing scores on the Praxis I Core Academic Skills for Educators) or university credit in reading, writing, and mathematics courses.
 - 2. Minimum cumulative grade point average of 2.75 (4-point scale)
 - 3. Successful completion of at least two of the required professional education courses as defined by the program area with a minimum grade of C+
 - 4. Department interview
- B. Specific Faculty Evaluative Criteria: The faculty will consider the disposition criteria of dependability, professional and ethical behavior, attitude and interpersonal skills, and teaching competence as itemized at the beginning of the Screening section.

Screening II (Admission to Student Teaching)

Admission to Student Teaching is not automatic when prerequisite course work and field experiences have been completed. All students must submit the online Screening II application by October 1 in the fall of the senior year. At the time of screening application, the student should be enrolled in any remaining prerequisite courses. **No course work may be taken during the semester of student teaching and seminar.**

After an initial review in the Office of Teacher Licensure, the Screening II application and other submitted materials will be considered by departmental faculty according to the following criteria for Screening II approval to student teach:

- A. Specific Academic Criteria
 - 1. Formal admission to a teacher education program granted (completion of Screening I)
 - 2. First semester senior standing (for student teaching in the spring of the senior year)
 - 3. Successful completion (C+ or above) of all courses required and prerequisite to student teaching as defined by the program area
 - 4. Minimum cumulative grade point average of 2.75 (4.0 scale)
 - 5. Satisfactory performance (C+ or above) in course work in areas in which teacher licensure is sought
 - 6. Successful completion of Standard First Aid and CPR training (attach certificate copies to the Screening II application)
- B. Specific Faculty Evaluative Criteria: The faculty will consider the disposition criteria of dependability, professional and ethical behavior, attitude and interpersonal skills, and teaching competence as itemized at the beginning of the Screening section.

Each Screening II application requires additional documents, depending on the program. A copy of first aid and CPR verification of training completed within the previous two years must be submitted to the Office of Teacher Licensure by the October 1 or February 1 deadline. In addition, some programs have additional requirements that are prerequisite to Screening II application. Students should consult departmental handbooks. Screening II applicants who are approved to student teach will receive notification of their student teaching placements no later than during the Student Teacher Orientation at the beginning of the student teaching semester.

Students who have passed Screening II are assigned two specific student teaching placements in the Nashville area.

Student Teaching

Vanderbilt students seeking teacher licensure must successfully complete a 15-week semester of full-time student teaching in two different grade levels in Nashville area public schools and must be recommended for licensure by the supervisors of student teaching and departmental faculty. Student teaching may be done only in the spring semester. Prior to the start of student teaching, all prerequisite courses must have been completed, the cumulative GPA must be at least 2.75, and the appropriate departmental faculties must have voted to approve the candidate for student teaching during the previous semester as part of the Screening II application process. The Tennessee State Department of Education and Metropolitan Nashville Public Schools prohibit student teachers from taking courses during student teaching. See the departmental *Undergraduate Handbook* for details.

Application for Teacher Licensure and University Recommendation for Licensure

All students completing the teacher education program at Vanderbilt are strongly advised to apply for a license in Tennessee whether or not they plan to teach in this state. In addition, licensure is available in most other states.

The student is responsible for applying for Tennessee licensure through the Office of Teacher Licensure. Each state has its own application forms and procedures for licensure; information is available on the Office of Teacher Licensure website.

To be licensed through Vanderbilt's teacher education program, a graduate must earn a positive licensure recommendation from the university. The university's decision to recommend a candidate is based upon the following:

1. Maintaining the grade point average required for admission to the teacher education program (2.75 on a 4.0 scale).
2. For Tennessee licensure, achieving the state minimum score on all required parts of the PRAXIS II Series and edTPA (scores must be sent to the Vanderbilt Office of Teacher Licensure-code R 1871, and the Tennessee Department of Education-code R 8190).*
3. Receiving a positive recommendation from the student's department as a result of the student teaching experience (Pass in student teaching does not guarantee a favorable recommendation).

*Testing requirements are changing almost annually; check instructions in the Office of Teacher Licensure or at ets.org/praxis/ before registering to take the exam.

Accreditation

Vanderbilt University is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award baccalaureate, masters, and doctorate degrees. Degree-granting institutions also may offer credentials such as certificates and diplomas at approved degree levels. Questions about the accreditation of Vanderbilt University may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (www.sacscoc.org).

Vanderbilt is accredited by the Council for the Accreditation of Education Preparation (CAEP) and its teacher licensure programs also are approved by the Tennessee Department of Education and the following specialty professional associations:

National Council for Teachers of English (NCTE)

Council for Exceptional Children (CEC)

Council for Accreditation of Counseling and Related Educational Programs (CACREP)

Association for Childhood Education International (ACEI)

American Speech-Language-Hearing Association (ASHA)

National Council for the Social Studies (NCSS)

National Council for Teachers of Mathematics (NCTM)

National Science Teachers Association (NSTA)

Accreditation Council for Education in Nutrition and Dietetics (ACEND)

Special Program in Peabody College

Peabody Scholars Program

First-year students who achieve academic distinction during their first semester at Vanderbilt are invited to apply to the Peabody Scholars Program. The Peabody Scholars Honors Program was established to offer particularly promising undergraduates at Peabody College opportunities for intellectual adventure, community service, and research. Emphasizing a theme of personal, professional, and civic creativity, the program is designed to foster students' potential by offering breadth through exposing students to a variety of academic and social experiences and depth by engaging in service-learning and independent research.

To graduate with honors through Peabody Scholars, scholars need to earn 24 points within the program. Scholars earn points from a series of required components as well as optional enrichment programming. All freshman Peabody Scholars participate in a 3-credit-hour Honors Seminar during the spring semester of their first year. In the sophomore year, scholars work together on a meaningful immersive service project in the local community. Each Peabody Scholar is offered a summer stipend (between sophomore and junior years) to support engagement in an individual service or intensive research project (either domestic or abroad). In the junior year, scholars engage in independent research projects with a faculty member. Senior scholars participate in both scholarly and cultural events. The Peabody Scholars Program also offers professional development, networking, and mentoring. The full list of current programming is available on the program website. In sum, the Peabody Scholars Program offers a rich array of enrichment experiences and opportunities.

Peabody freshmen may apply for the Peabody Scholars Program in the fall of their first semester at Vanderbilt. Selections will be made prior to the beginning of the spring semester. To be accepted into the program, students must have a first-semester GPA of 3.6. To remain in good standing in the program, students must maintain a minimum grade point average of 3.0. Further information on the Peabody Scholars Program may be obtained from Professor Megan Saylor in the Psychology and Human Development Department.

Interdisciplinary Majors

[Language and Literacy Studies](#)

[Mathematics and Science Studies](#)

[Natural Science Studies](#)

[Multilingual/Multicultural Studies](#)

[Social Studies](#)

Peabody College, in conjunction with the College of Arts and Science, offers four interdisciplinary majors. These majors are to be taken as second majors only and are constructed around academic disciplines particularly appropriate for future teachers (except secondary), but are not limited to students entering teacher education. The interdisciplinary major consists of 36 hours of study and draws upon the academic resources of a number of departments throughout the University. Students follow the Liberal Education Core requirements of their first major.

Language and Literacy Studies (36 hours)

COMMUNICATIONS.

6 hours from:

CMST 1500, Fundamentals of Public Speaking; CMST 1850 Interpersonal Communications

ENGLISH.

9 hours from:

ENGL1230W, 1270W or 1260W and 1250W and 3210 and above

EDUCATION.

9 hours from:

ENED 2100, 2200 or 4963 (3 hours); ENED 2430, ENED 3310 (3 hours); SPED 2430 or PSY-PC 3150 (3 hours)

ADDITIONAL COURSES

12 hours from two areas:

ANTH 1601, Introduction to Language and Culture; ANTH 2601, Introduction to Linguistics; ANTH 2602, Anthropological Linguistics; ANTH 2603 Comparative Writing Systems; CMST 2800, Rhetoric of Civic Life; CMST 3000, Rhetoric of American Experience, 1640-1865; CMST 3001, Rhetoric of American Experience, 1865-1945; CMST 2900, Values of Modern Communication; CMST 3002, Rhetoric of the American Experience 1945-Present; CMST 2950, Rhetoric of Mass Media; PHIL1003, General Logic; PSCI 2242, Political Communication; THTR 1010, Fundamentals of Theatre

Mathematics and Science Studies (35-37 hours)

BIOLOGICAL SCIENCES.

4 hours from:

BSCI 1100 and 1100L, Biology Today; BSCI 1105, Human Biology; BSCI 1510 and 1510L, or BSCI 1511 and 1511L, Introduction to Biological Sciences; BSCI 1103, Green Earth, the Biodiversity and Evolution of Green Plants

CHEMISTRY.

4 hours from:

CHEM1010L and 1010, or CHEM 1020L and 1020, Introductory Chemistry; CHEM 1601 and 1601L, or CHEM 1602 and 1602L, General Chemistry

PHYSICS.

4 hours from:

PHYS 1010 and 1010L, Introductory Physics; PHYS 1601 and 1601L or 1602 and 1602L, General Physics

EARTH AND SPACE SCIENCES.

3-4 hours from:

ASTR 1010 and 1010L, Introductory Astronomy: Stars and Galaxies; EES 1510 and 1510L, The Dynamic Earth; EES 1030 and 1030L, Oceanography; EES 1080, Earth and Atmosphere; EES 1140, Ecology, Evolution, and Climate through Time

HISTORY/ PHILOSOPHY OF SCIENCE.

3 hours from:

ASTR 2130, Theories of the Universe; HIST 2800, Modern Medicine; PHIL 3616, Philosophy and the Natural Sciences

CALCULUS.

8-9 hours from:

MATH 1200, 1201, and 2200, Single-Variable Calculus I, II, and III; MATH 1300 and 1301, Accelerated Single-Variable Calculus I and II

PROBABILITY AND STATISTICS.

3 hours from:

MATH 2820 Introduction to Probability and Mathematics Statistics; MATH 3700, Discrete Mathematics; PSY-PC 2110 Introduction to Statistical Analysis

GEOMETRY.

3 hours from:

MATH 3200, Introduction to Topology; MATH 3210, Transformation Geometry; MATH 3310, Introduction to Mathematical Logic

ALGEBRA

3 hours from:

MATH 2410, Methods of Linear Algebra; MATH 2600, Linear Algebra; MATH 3300, Abstract Algebra

Natural Science Studies (35-36 hours)

BIOLOGICAL SCIENCES.

8 hours from:

BSCI 1100/1100L, Biology Today; BSCI 1105, Human Biology; BSCI 1510 and 1510L, and/or 1151 and 1151L, Introduction to Biological Sciences; BSCI 1103, Green Earth, the Biodiversity and Evolution of Green Plants

CHEMISTRY.

8 hours from:

CHEM 1010L and 1010 and/or 1020L/1020, Introductory Chemistry; CHEM 1601 and 1601L and/or 1602 and 1602L, General Chemistry

PHYSICS.

4 hours from:

PHYS 1010 and 1010L, Introductory Physics; PHYS 1601/1601L or 1602 and 1602L, General Physics

EARTH AND SPACE SCIENCES.

3-4 hours from:

ASTR 1010/1010L Introductory Astronomy: Stars and Galaxies; EES 1510 and 1510L, The Dynamic Earth; EES 1030 and 1030L, Oceanography; EES 1080 Earth and Atmosphere; EES 1140, Ecology, Evolution, and Climate through Time

HISTORY/ PHILOSOPHY OF SCIENCE.

3 hours from:

ASTR 2130, Theories of the Universe; HIST 2800, Modern Medicine; PHIL 3613, Philosophy and the Natural Sciences

ELECTIVES.

9 hours (3 additional courses) in:

Astronomy, Biological Sciences, Chemistry, Earth and Environmental Sciences, Physics, or History and Philosophy

Multilingual/Multicultural Studies (36 hours)

EDUCATION.

9 hours from:

EDUC 3730, ELL Educational Foundations; EDUC 3750, Linguistics and Language Acquisition for ELL Teachers; ENGL 1260W, Introduction to Literary and Cultural Analysis

PSYCHOLOGY.

3 hours from:

PSY-PC 1250, Developmental Psychology; PSY-PC 2600, Educational Psychology

LINGUISTICS.

3 hours from:

ANTH 1101, Introduction to Linguistics; ENED 2430, Fostering Language in Diverse Classrooms; SPED 2430, Introduction to Language and Communication

FOREIGN LANGUAGE.

12 hours of language courses from:

Arabic, Chinese, French, German, Hebrew, Italian, Japanese, Portuguese, Russian, or Spanish

ELECTIVES.

9 hours of elective courses are to be selected to reflect a concentration

within a specific foreign language. Students MUST consult with their advisers when selecting elective hours.

For elementary majors seeking an added endorsement in ELL, in addition to the above major requirements, the following 9 hours are required: EDUC 3740, ELL Methods and Materials (3 hours); EDUC 3760, Assessment of ELL (3 hours); EDUC 3731, 3742, and 3763, Practicum for ELL (3 hours)

Social Studies (36 hours)

Students selecting an interdisciplinary major in social studies will have seven options available to them. Each option requires 18 hours of study focused on a single social science discipline that is supplemented with 18 hours of course work drawn from studies within other social sciences. The seven options available to students include a focus on any of the following areas of study: Anthropology, Economics, American History, European History, American Politics, World Politics, or Sociology.

Anthropology

9 hours from:

ANTH 1101, Introduction to Anthropology; ANTH 1201 Introduction to Archaeology; ANTH 1301, Introduction to Biological Anthropology

9 hours in specified courses:

A Comparative Anthropology and Anthropological Theory Course (3 hours) An Archaeology and Physical Anthropology Course (3 hours)

An Ethnography, Ethnohistory, and Linguistics Course (3 hours)

Six courses (18 hours) drawn from at least three areas: Economics, History, Political Science, and Sociology

Economics

9 hours required from:

ECON 1010, Principles of Macroeconomics; ECON 1020, Principles of Microeconomics; ECON1500, Economic Statistics Additional 9 hours in Economics Courses

Six courses (18 hours) drawn from at least three areas: Anthropology, History, Political Science, and Sociology

United States History

6 hours from:

HIST 1390, America to 1776; HIST 1400, U.S. 1776-1877; HIST 1410, U.S. 1877-1945; HIST 1420, U.S. Post-1945

Additional four courses (12 hours) of United States History courses from:

HIST 1390-1440, 1660, 1690, 1720, 1730, 2580, 2590, 2610-2650, 2690-2722

Six courses (18 hours) drawn from at least three areas: Anthropology, Economics, Political Science, and Sociology

European History

6 hours from:

HIST 1350, History of Western Civilization to 1700; HIST 1360, History of Western Civilization since 1700

Additional four courses on European History from:

HIST 1600, 2130 2135, 2220-2410

Six courses (18 hours) drawn from at least three areas: Anthropology, Economics, Political Science, and Sociology

American Politics

3 hours from:

PSCI 1100, Intro. to American Government and Politics

Any five (15 hours) of the following PSCI courses: 2204, 2222, 2240-2246, 2248, 2251, 2255, 2256, 2259, 2262, 3247, 3249, 3250, 3252-3254,

3258, 3260, 4275

Six courses (18 hours) drawn from at least three areas: Anthropology, Economics, History, and Sociology

World Politics

3 hours from:

PSCI 1101, Introduction to Comparative Politics; PSCI 1102, Introduction to International Politics

Any five (15 hours) of the following PSCI courses: 2210, 2212-2216, 2218-2227, 2230-2234, 2236, 3211, 3217, 3228, 3229, 3235 Six courses (18 hours) drawn from at least three areas: Anthropology, Economics, History, Sociology

Sociology

6 hours from:

SOC 1010, Introduction to Sociology, or SOC 1020, Contemporary Social Problems (3 hours); SOC 3001, Sociological Perspectives (3 hours)

4 courses (12 hours) 3 hours from each of the following areas:

A sociology course drawn from the core area of Crime, Law, and Deviance

A sociology course drawn from the core area of Organizations, Politics, and Inequality A sociology course drawn from the core area of Family, Medicine, and Mental Health A sociology course drawn from the core area of Culture and Social Change

Six courses (18 hours) drawn from at least three areas: Anthropology, Economics, History, and Political Science

Psychology and Human Development

[Major in Child Development](#)

[Honors Program](#)

[Curriculum](#)

[Major in Child Studies](#)

[Honors Program](#)

[Curriculum](#)

[Major in Cognitive Studies](#)

[Honors Program](#)

[Curriculum](#)

[Minors](#)

[The Minor in Child Development](#)

[The Minor in Child Psychology and Mental Health](#)

[The Minor in Cognitive Studies](#)

[The Minor in Language Sciences](#)

[The Minor in Quantitative Methods](#)

Majors in Child Development, Child Studies, and Cognitive Studies

CHAIR Megan Saylor

ASSOCIATE CHAIR Kristopher Preacher

DIRECTOR OF GRADUATE STUDIES David Cole

DIRECTOR OF UNDERGRADUATE STUDIES Leigh Scheer

Major in Child Development

The child development major is designed for students who wish to study children (infancy through adolescence) and the family, cultural, peer, school, and neighborhood contexts in which they live. The major is designed to provide a strong background in the social and behavioral sciences related to child development, a focused understanding of the scientific study of children and the contexts in which they develop, and opportunities for supervised and independent research on aspects of child development in ways that enable students to link theories and prior research to research design and data on children's development. The major is excellent preparation for graduate study in selected social science and professional fields (e.g., psychology, medicine, nursing, education, public policy) and offers an excellent complementary (or second) major for undergraduate students simultaneously pursuing a major in cognitive studies, elementary education, human and organizational development, or special education.

The child development curriculum is designed to ensure that students develop a background in the liberal arts and sciences; a clear understanding of the theories, major research findings, and research methods central to the field of child development; and an area of focus or expertise in child development. Development of background in the liberal arts and sciences occurs within the context of the Liberal Education Core, composed of required and elective courses in communications, humanities, mathematics, natural sciences, and social sciences. A clear understanding of theory and research central to the field is developed through the major core courses. These include an overview of child development, courses focused on the domains of psychological processes central to human development (cognition; social and personality development), courses related to major epochs of child development (infancy and adolescence), and courses devoted to the major research methodologies in the field (experimental, observational, psychometric). Students select an area of concentration (major elective area) to complement the field as a whole.

Honors Program

The Honors Program in child development offers qualified majors the opportunity to conduct individual research projects in collaboration with faculty members. This research experience culminates in the writing and public presentation of a senior thesis. Students who major in child development are eligible to apply for the Honors Program at the end of their sophomore year if they have an overall grade point average of at least 3.2 and at least a 3.2 in child development courses.

Students who complete the program successfully and who have a final grade point average of at least 3.2 will receive Honors or Highest Honors in child development. The program should substantially aid those intending to do graduate work. More specific information concerning admission to and the requirements of the Honors Program is available from the director of the Honors Program, the director of undergraduate studies, or the department education coordinator.

Curriculum

Students take a minimum of 120 hours, distributed as follows:

Liberal Education Core Requirements. Minimum 40 hours.

The Liberal Education Core is composed of required course work from the areas of Communications, Humanities, Mathematics, Science, Cultural Studies, Social Science, and Electives. Listings of all courses that may fulfill these areas are located online in the Peabody Undergraduate Handbook (<http://peabody.vanderbilt.edu/admin-offices/oas/downloads.php>).

A score of 5 on the AP Statistics exam will waive students from the Statistics Liberal Education Core requirement (applied to all PSYHD majors). A score of 5 on the AP Statistics exam will serve as a pre-requisite in all places that PSY-PC 2110 currently serves as a pre-requisite.

Writing Requirement

See the "Writing Requirement" section of the general Peabody academic policy section of the Undergraduate Catalog.

NOTE: First-year Seminars (courses numbered 1111) offered through the College of Arts and Science and the Blair School of Music may count as writing intensive courses. Peabody freshmen may only register for First-year Seminars when open registration begins.

Major Requirements. 30 hours.

Students take a minimum of 30 hours in child development. The core consists of seven courses (21 hours) in developmental areas, epochs, and methods, and a minimum of three additional courses (9 hours) in an elective area of specialization.

Major Core. 21 hours.

PSY-PC 1250. Developmental Psychology

PSY-PC 2250. Cognitive Aspects of Human Development

PSY-PC 2400. Social and Personality Development

PSY-PC 2120. Statistical Analysis One of the following two courses:

PSY-PC 2500. Infancy

PSY-PC 2550. Adolescent Development

Two of the following courses:

PSY-PC 2170. Experimental Methods, or

PSY-PC 2150. Principles of Experimental Design

PSY-PC 3722. Psychometric Methods

PSY-PC 3724. Psychometrics

PSY-PC 3220. Pediatric Research Design

PSY-PC 3860, 3980, 3981, 4998, 4999; PSY 3840, 3980, 4998, 4999. Directed Research or Honors Research (Only 3 hours of either Directed Research or Honors Research can be applied to this requirement.)

Major Elective Area. A minimum of 9 hours.

Any course in the Department of Psychology and Human Development (Peabody) or the Department of Psychology (A&S) that is not being used to meet another psychology requirement can be used as an elective (except, PSY 1200, PSY 2100, PSY-PC 1205/1207, PSY-PC 1250, 2110, 3870).

Additionally, the following courses may serve as electives. With the approval of the adviser, program director, or director of undergraduate studies, other courses may also be used as part of the child development elective area.

EDUC 3120. Children in Families and Schools

EDUC 3140. Learning and Development in Early Childhood Education

ENED 2430. Fostering Language in Classrooms

ENED 2100. Literature and Drama for Young Children

ENED 2200. Exploring Literature for Children

HODC 3232. Ethics for Human Development Professionals

HODC 3342. Introduction to Community Psychology

NSC 2201. Neuroscience

NSC 3269. Developmental Neuroscience

PHIL 3617. Philosophy of Language

PSY-PC 3850.* Independent Study

PSY-PC 3860.* Directed Research

PSY-PC 3980 or Psychology 3980, 3981, 4998, 4999* Honors Research

SPED 2120. Family Interventions

SPED 2160. Cultural Diversity in American Education

SPED 2310. Managing Academic and Social Behavior

SPEDH 3348. Language and Learning

SPEDS 2430. Introduction to Language and Communication

NOTE: Research/experiential courses marked * above may be repeated freely for elective credit toward graduation. However, only a total of 6 hours from among these courses, in any combination, may be used as elective credit within the major.

Second Major or Electives. 50 hours (or less if additional hours are earned in the Liberal Education Core, Major Core, or Major Elective Area).

Major in Child Studies

Peabody has long had great strength in the area of child studies. The 36-hour interdisciplinary major in child studies draws on courses from psychology, education, special education, and human and organizational development. The major is excellent pre-professional preparation for students interested in graduate school in psychology or education, in law (e.g., child and family advocacy), or in various health related areas (e.g., medicine, nursing) involving children. It is also appropriate for students who are interested in gaining a broader understanding of children and families in contemporary society. The major areas covered are: developmental psychology; learning; research methods; language and literacy; and families, community, and diversity.

Honors Program

The Honors Program in child studies offers qualified majors the opportunity to conduct individual research projects in collaboration with faculty members. This research experience culminates in the writing and public presentation of a senior thesis. Students who major in child studies are eligible to apply for the Honors Program at the end of their sophomore year if they have an overall grade point average of at least 3.2 and a 3.2 in child studies courses. Students who complete the program successfully and who have a final grade point average of at least 3.2 will receive Honors or Highest Honors in child studies. The program should substantially aid those intending to do graduate work. More specific information concerning admission to and the requirements of the Honors Program is available from the director of the Honors Program, the director of undergraduate studies, or the department education coordinator.

Curriculum

Students take a minimum of 120 hours, distributed as follows*:

Liberal Education Core Requirements. Minimum 40 hours.

The Liberal Education Core is composed of required course work from the areas of Communications, Humanities, Mathematics, Science, Cultural Studies, Social Science, and Electives. Listings of all courses that may fulfill these areas are located online in the Peabody Undergraduate Handbook (<http://peabody.vanderbilt.edu/admin-offices/oas/downloads.php>).

*A score of 5 on the AP Statistics exam will waive students from the Statistics Liberal Education Core requirement (applied to all PSYHD majors). A score of 5 on the AP Statistics exam will serve as a pre-requisite in all places that 2110 currently serves as a pre-requisite.

Writing Requirement

See the "Writing Requirement" section of the general Peabody academic policy section of the Undergraduate Catalog.

NOTE: First-year Seminars (courses numbered 1111) offered through the College of Arts and Science and the Blair School of Music may count as writing intensive courses. Peabody freshmen may only register for First-year Seminars when open registration begins.

Child Studies Major Courses

DEVELOPMENT COURSES. (9 hours)

PSY-PC 1250. Developmental Psychology

PSY-PC 2250. Cognitive Aspects of Human Development

PSY-PC 2400. Social and Personality Development

PSY-PC 2500. Infancy

PSY-PC 2550. Adolescent Development

LEARNING. (3 hours)

MTED 2200. Mathematics for Elementary Teaching
SCED 2200 or SSED 2100
PSY-PC 2600. Educational Psychology
SPED 2310. Managing Academic and Social Behavior

RESEARCH METHODS. (3 hours)

PSY-PC 2170. Experimental Methods, or
PSY-PC 2150. Principles of Experimental Design
PSY-PC 3722. Psychometric Methods
PSY-PC 3724. Psychometrics
HOD 2500. Systematic Inquiry

FAMILIES, COMMUNITY, AND DIVERSITY. (6 hours)

EDUC 1220. Society, School, and the Teacher
EDUC/SPED 2160. Cultural Diversity in American Education
EDUC 3120. Children in Families and Schools
EDUC 3620. Social and Philosophical Aspects of Education
HODH 3221. Health Service Delivery to Diverse Populations
HODC 3202. Social Problems I
HODC 3342. Introduction to Community Psychology
SPED 1210. Introduction to Exceptionality
SPED 2120. Family Intervention

LANGUAGE AND LITERACY. (6 hours)

ANTH 2601. Introduction to Linguistics
EDUC 3114. Language and Literacy Learning in Young Children
EDUC 3214. Theory and Method of Reading Instruction in Elementary Schools
ENED 2430. Fostering Language in Classrooms
ENED 2100. Literature and Drama for Young Children
ENED 2200. Exploring Literature for Children
PHIL 3617. Philosophy of Language
PSY-PC 3130. Introduction to Formal Linguistics
PSY-PC 3190. Literacy and the Brain
PSY-PC 3140. Learning and Development in Early Childhood Education

PSY-PC 3150. Language Development

SPEDS 2430. Introduction to Language and Communication

SPEDH 3348. Language and Learning

ELECTIVES IN CHILD STUDIES. (*9 hours*)

Any course in the Department of Psychology and Human Development (Peabody) or the Department of Psychology (A&S) that is not being used to meet another psychology requirement can be used as an elective (except PSY 1200, PSY-PC 2100, PSY-PC 1205/1207, 1250, 2110, and 3870).

Additionally, the following courses may serve as electives. With the approval of the adviser, program director, or director of undergraduate studies, other courses may also be used as part of the child studies elective area.

ANTH 2601. Introduction to Linguistics

EDUC 1220. Society, the School, and the Teacher

EDUC 2160. Cultural Diversity in American Education

EDUC 3120. Children in Families and Schools

EDUC 3212. Introduction to Reading Processes and Assessment

EDUC 3214. Theory and Methods of Reading Instruction in Elementary Schools

EDUC 3620. Social and Philosophical Aspects of Education

ENED 2200. Exploring Literature for Children

ENED 2430. Fostering Language in Diverse Classrooms

HOD 2500. Systematic Inquiry

HODC 3342. Introduction to Community Psychology

MTED 2200. Mathematics for Elementary Teachers

PHIL 3617. Philosophy of Language

SPED 2160. Cultural Diversity in American Education

SPEDH 3348. Language and Learning

SPEDS 2430. Introduction to Language and Communication

PSY-PC 3850.* Independent Study

PSY-PC 3860.* Readings and Research for Undergraduates

PSY-PC 3980, 3981, 4998, 4999, or PSY 3980, 3981, 4998, 4999.* Honors Research

HOD 3232. Ethics for Human Development Professionals

HODC 3202. Community Development Theory

NOTE: Research/experiential courses marked * above may be repeated freely for elective credit toward graduation. However, only a total of 6 hours from among these courses, in any combination, may be used as elective credit within the major.

Major in Cognitive Studies

The cognitive studies major is designed for students who wish to become active inquirers into the processes by

which people learn to think, solve problems, and reason. The major encourages the development of flexible reasoning and problem-solving skills that are useful in a wide variety of endeavors. The major is excellent preparation for graduate study in the social and behavioral sciences as well as for areas (such as medicine and law) that place importance on inquiry and clear thinking.

The curriculum is planned to ensure that students receive a strong background in both science and the liberal arts, with an emphasis on problem solving and complex decision making. The courses in the core curriculum focus on various aspects of human cognition, including communication, cognitive development, basic cognitive processes, applications of theories of knowledge, and sociocultural aspects of learning. Students are encouraged to consult their advisers about pursuing a second major or developing an area of concentration that is consistent with their career plans. The major also emphasizes an appreciation of the scientific method and the research process; numerous opportunities exist to pursue independent study in close collaboration with faculty members.

Leadership and success in our society will depend increasingly on one's ability to process complex information, solve difficult problems using systematic analysis, and facilitate the learning of others. The knowledge and experience gained by students in cognitive studies will allow them to be full participants in the society of learners who represent the future.

Honors Program

The Honors Program in cognitive studies offers qualified majors the opportunity to conduct individual research projects in collaboration with faculty members. This research experience culminates in the writing and public presentation of a senior thesis. Students who major in cognitive studies are eligible to apply for the Honors Program at the end of their sophomore year if they have an overall grade point average of at least 3.2 and a 3.2 in cognitive studies courses. Students who complete the program successfully and who have a final grade point average of at least 3.2 will receive Honors or Highest Honors in cognitive studies. The program should substantially aid those intending to do graduate work. More specific information concerning admission to and the requirements of the Honors Program is available from the director of the Honors Program, the director of undergraduate studies, or the department education coordinator.

Curriculum

Students take a minimum of 120 hours, distributed as follows:

Liberal Education Core Requirements. Minimum 40 hours.

The Liberal Education Core is composed of required course work from the areas of Communications, Humanities, Mathematics, Science, Cultural Studies, Social Science, and Electives. Listings of all courses that may fulfill these areas are located online in the Peabody Undergraduate Handbook (<http://peabody.vanderbilt.edu/admin-offices/oas/downloads.php>).

A score of 5 on the AP Statistics exam will waive students from the Statistics Liberal Education Core requirement (applied to all PSYHD majors). A score of 5 on the AP Statistics exam will serve as a pre-requisite in all places that 2110 currently serves as a pre-requisite.

Writing Requirement

See the "Writing Requirement" section of the general Peabody academic policy section of the Undergraduate Catalog.

NOTE: First-year Seminars (courses numbered 1111) offered through the College of Arts and Science and the Blair School of Music may count as writing intensive courses. Peabody freshmen may only register for First-year Seminars when open registration begins.

Major Requirements. 33 hours.

Students take a minimum of 33 hours in Cognitive Studies. The core consists of four courses (12 hours), a minimum

five additional courses (15 hours) in the elective area, and two courses (6 hours) in the Methods of Inquiry area.

Major Core. 12 hours.

PSY-PC 1205 *or* 1207. Minds, Brains, Contexts, and Cultures

PSY-PC 2200. Psychology of Thinking *or* PSY-PC 3120. Cognitive Psychology

PSY-PC 3650. Advanced Topical Seminar

One of the following:

PSY-PC 2170. Experimental Methods *or* PSY 2150. Principles of Experimental Design

Methods of Inquiry. 6 hours.

May also be used to satisfy Liberal Education Core requirements

ANTH 1301, 2211

CHEM 2100

CS 1100. Applied Programming and Problem Solving with Python

CS 1104 or 2212

EES 2250

EES 3250

HOD 2500

HODC 3222

PHIL 1003, 3003, 3616

PSY-PC 2120, 3722, 3724

PSY 3840

PSY 3980

PSY 3981

PSY-PC 3220. Pediatric Research Design

PSY-PC or PSY 3980, 3981, 4998, 4999 (Only 3 hours from any of these courses can be applied to this requirement)

SOC 3002

SPED 2310

SPEDH 3871/SPEDS 3871

DS 1000. Data Science: How Data Shape our World

Major Elective Area. 15 hours.

Any course in the Department of Psychology and Human Development (Peabody) or the Department of Psychology (A&S) that is not being used to meet another psychology requirement can be used as an elective (except PSY-PC 1250, 2110, 3870, PSY 1200, PSY 2100).

Additionally, the following courses may serve as electives. With the approval of the adviser, program director, or director of undergraduate studies, other courses may also be used as part of the cognitive studies elective area.

ANTH 1301. Biological Anthropology

ANTH 2601. Introduction to Linguistics

ENED 2430. Fostering Language in Classrooms

EDUC 3140. Learning and Development in Early Childhood Education

NSC 2201. Neuroscience

NSC 3270. Computational Neuroscience

PHIL 3617. Philosophy of Language

PHIL 3630. Philosophy of Mind

PSY-PC 3850.* Independent Study

PSY-PC 3860, PSY 3840.* Directed Research

PSY-PC 3980, 3981, 4998, 4999, or PSY 3980, 3981, 4998, 4999.* Honors Research

SPEDS 2430. Introduction to Language and Communication

PSY 4218. Computational Cognitive Modeling

SPEDH 3348. Language and Learning

SPEDS 2430. Into Lang. & Communication

NOTE: Research/experiential courses marked * above may be repeated freely for elective credit toward graduation. However, only a total of 6 hours from among these courses, in any combination, may be used as elective credit within the major.

Second Major and Electives. 51-52 hours.

Minors

The Minor in Child Development

The minor in child development consists of 18 hours in the following courses:

PSY-PC 1250. Developmental Psychology

PSY-PC 2110. Introduction to Statistical Analysis (may be taken as part of the Liberal Education Core)

One of the following:

PSY-PC 2250. Cognitive Aspects of Human Development

PSY-PC 2400. Social and Personality Development

One of the following:

PSY-PC 2500. Infancy

PSY-PC 2550. Adolescent Development

One of the following:

PSY-PC 2170. Experimental Methods

PSY-PC 2150. Principles of Experimental Design

PSY-PC 3722. Psychometric Methods

PSY-PC 3220. Pediatric Research Design

One child development elective course

(Any of the courses above not taken to meet a minor requirement or any course listed as an elective for the child development major)

The Minor in Child Psychology and Mental Health

The minor in Child Psychology and Mental Health is offered through the Peabody Department of Psychology and Human Development. Its focus is on (a) the development of psychopathology, including depression, anxiety, and behavioral disorders, (b) evidence-based assessment and treatment of psychological disorders in children and adolescents, and (c) clinical science research methods. Given the centrality of emotional and behavioral functioning in human life, knowledge of these areas of scholarship will be useful to students interested in the behavioral sciences and education in general and is particularly relevant for those interested in clinical research careers.

Structure of the Minor

Required (Core) Courses (6 credit hours):

PSY-PC 3200 Introduction to Clinical Psychology

AND

PSY-PC 2700 Abnormal Child Psychology

Elective Courses (9 credit hours):

PSY-PC 2520 Infant and Early Childhood Mental Health

PSY-PC 3650 Developmental Disabilities

PSY-PC 3650 Clinical Interventions in Vulnerable Populations

PSY-PC 3650 Multiple Facets of Human Diversity

PSY-PC 3650 Coping with Stress

PSY-PC 3650 Developmental Disabilities

PSY-PC 3230 Play-Based Approaches to Family Stress and Coping

PSY-PC 3650 Grief and Loss

PSY-PC 3860 Directed Research (must involve work on a study or project related to clinical psychology; maximum 3 hours)

PSY 3625 Depression

PSY 3100 Abnormal Psychology

SPEDS 2120 Issues in Family Intervention

SPEDH 3308 Understanding Students with Severe and Persistent Academic and Behavior Difficulties

SPEDH 3318 Assessment for Students with Severe and Persistent Academic and Behavior Difficulties

***Important:** There must be 15 unique hours for the minor that are not being used for any other major or minor.

The Minor in Cognitive Studies

The minor in cognitive studies consists of 15 hours in the following courses:

REQUIRED COURSES. (*6 hours*)

PSY-PC 1205 *or* PSY-PC 1207. Minds, Brains, Contexts, and Cultures

PSY-PC 2200. Psychology of Thinking *or* Psy 3120. Cognitive Psychology

ELECTIVE COURSES. (*9 hours*)

ANTH 2601. Introduction to Linguistics

ENED 2430. Fostering Language in the Classroom

PSY-PC 1115 *or* PSY-PC 1157. First-Year Seminar

PSY-PC 2250. Cognitive Aspects of Human Development

PSY-PC 2300. Social and Emotional Context of Cognition

PSY-PC 2400. Social and Personality Development

PSY-PC 3150. Language Development

PSY-PC 3650. Advanced Topical Seminar (Intended for students beyond the first year. May be repeated if no duplication of content.)

PSY-PC 3775. Human Memory

PSY-PC 3635. Health Psychology

PSY-PC 3200. Introduction to Clinical Psychology

PSY-PC 3860, 3980, 3981, 4998, 4999. Directed Research/Honors Research (may *not* be repeated for minor credit)

SPEDS 2430. Introduction to Language and Communication

The Minor in Language Sciences

The minor in Language Sciences is offered through the Department of Psychology and Human Development. The emphasis is on language theory and research in the behavioral sciences. A working knowledge of the basic processes involved in speaking, understanding, and reading will be beneficial to students interested in the learning sciences. Total of 15 credit hours. Program or track requirements.

Two of the following (6 credit hours):

PSY-PC 3130: Introduction to Formal Linguistics

PSY-PC 3140: Psychology of Language

PSY-PC 3190; Language and the Brain

Three of the following (9 credit hours):

ANTH 1601: Introduction to Language and Communication

PSY-PC 3150: Language Development

PSY-PC 3160: Bilingualism

PSY-PC 3170: Cognitive Science of Reading

PSY-PC 3180: How We Talk

PSY-PC 3190: Language and the Brain

PSY-PC 3860: Directed Research - Must work on a study or project related to language sciences

SPEDH 3348: Language and Learning

SPEDS 2430: Introduction to Language and Communication

PHIL 3617: Philosophy of Language

*You may also use the additional third class from the required courses for this credit

The Minor in Quantitative Methods

Quantitative skills are highly valued in a variety of fields. Training provided by the quantitative methods minor can provide a competitive edge on the job market or for future graduate study. Many advances in quantitative methods used in the social sciences and education are not covered in standard undergraduate introductory statistics courses. This minor exposes students to more recent developments in quantitative methods with concrete applications to practice. The quantitative methods minor helps students become better consumers and producers of scientific research. Students will have the opportunity to learn from leading experts in the statistical analysis of social science data.

Structure of the Minor

Prerequisite for the minor is completion of the introductory statistics sequence that is already required by the undergraduate psychology majors. This sequence is:

PSY-PC 2110 or PSY 2100 or ECON 1500 or MATH 2810 or a 5 on AP Stat Exam

And

PSY-PC 2120. Statistical Analysis (*3 hours*)

The quantitative methods minor is an 18-hour minor. The 18 hours include both PSY-PC-2110 (or PSY 2100 or ECON 1500 or MATH 2810 or a 5 on AP Stat Exam) and PSY-PC 2120, and these serve as prerequisite courses for the electives. Following completion of these prerequisite courses (6 hours; required), the minor requires four additional courses (12 hours; electives). Any four courses offered by the Quantitative Methods program are applicable. At most, three hours of directed research/independent study can count toward the minor. Students with interest in directed research/independent study can contact individual quantitative methods faculty directly.

Courses that would satisfy the elective requirements (pick 4):

PSY-PC 3722. Psychometric Methods

PSY-PC 3724. Psychometrics

PSY-PC 3727. Modern Robust Statistical Methods

PSY-PC 3730. Applied Latent Class and Mixture Modeling

PSY-PC 3732. Latent Growth Curve Modeling

PSY-PC 3735. Correlation and Regression

PSY-PC 3738. Introduction to Item Response Theory

PSY-PC 3743. Factor Analysis

PSY-PC 3746. Multivariate Statistics

PSY-PC 3749. Applied Nonparametric Statistics

PSY-PC 3850. Independent Study

Prior to enrolling in a specific course, please contact the instructor regarding prerequisite courses. Undergraduates may request to be enrolled in QM graduate courses not yet cross-listed as undergraduate courses by using a substitution form, with permission of instructor. We anticipate adding more courses to the list of electives, which will be posted on the minor's [website](#).

For inquiries about the quantitative methods minor, email kris.preacher@vanderbilt.edu.

Teaching and Learning

Majors in Early Childhood and Elementary Education, and Secondary Education and Minor in Multilingual Learner Education

[Elementary Education](#)

[Secondary Education](#)

[Minor in Multilingual Learner Education](#)

CHAIR Noel Enyedy

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DIRECTOR OF GRADUATE STUDIES Heidi Carfone

DIRECTOR OF UNDERGRADUATE STUDIES Catherine McTamaney

Elementary Education

The specialization in elementary education is field-oriented and designed to prepare students to teach children in grades K-5. Beginning in the freshman year, students observe and participate in local schools and experimental classrooms on campus. Most Liberal Education Core courses are taken in the College of Arts and Science.

Students must combine a specialization in elementary education with a second major in the liberal arts, an interdisciplinary major, or another major offered by Peabody College or the College of Arts and Science. Course work beyond the standard 120-hour program may be required for some double majors.

Vanderbilt students seeking teacher licensure must apply through the Office of Teacher Licensure at Vanderbilt and must meet licensure requirements in effect at the time of their graduation, which may be different from licensure

requirements in effect at the time they entered the program. Licensure requirements are currently undergoing change. Each year, teacher licensure candidates should consult the current Vanderbilt *Undergraduate Catalog*, the *Undergraduate Guide to Teacher Licensure* published by the Vanderbilt Office of Teacher Licensure, and the *Undergraduate Handbook* published by the Office of Undergraduate Academic Affairs.

B.S. Degree Requirements

Elementary Education (K-5 Licensure)

Students take a minimum of 120 hours, distributed as follows:

Liberal Education Core Requirements. Minimum 60 hours.

The Liberal Education Core is composed of required course work from the areas of Communications, Humanities, Mathematics, Science, Cultural Studies, Social Science, and Electives. Listings of all courses that may fulfill these areas are located online in the Peabody Undergraduate Handbook (peabody.vanderbilt.edu/admin-offices/oas/downloads.php).

Writing Requirement

See the "Writing Requirement" section of the general Peabody academic policy section of the Undergraduate Catalog.

NOTE: First-year Seminars (courses numbered 1111) offered through the College of Arts and Science and the Blair School of Music may count as writing intensive courses. Peabody freshmen may only register for First-year Seminars when open registration begins.

Professional Education Core. 28 hours.

EDUC 1220, 1227, 3212, 3214, 3215, 3270; MTED 3250; SCED 3240; SSED 3240; HMED 2250; SPED 1210; PSY-PC 2600

Field Experiences. 15 hours.

EDUC 3216, 3240, 4952, 4962; MTED 3251

An approved second major is required.

Secondary Education

The major in secondary education is designed to prepare the student to teach one or more subjects at the secondary level (grades 6-12). Students must complete Liberal Education Core requirements, Professional Education requirements, and a primary area of emphasis in at least one endorsement field, which involves 31 to 40 hours of course work in the discipline and results in a major in that area as defined by the College of Arts and Science. Specific requirements for a second area of endorsement may be obtained from the Office of Teacher Licensure in the Peabody Administration Building. Students must take the appropriate methods course for each area of endorsement.

Vanderbilt students seeking teacher licensure must apply through the Peabody Office of Teacher Licensure and must meet licensure requirements in effect at the time of their graduation, which may be different from licensure requirements in effect at the time they entered Vanderbilt. Licensure requirements are currently undergoing

change. Each year, teacher licensure candidates should consult the current Vanderbilt *Undergraduate Catalog*, the *Undergraduate Guide to Teacher Licensure* published by the Vanderbilt Office of Teacher Licensure, and the *Undergraduate Handbook* published by the Office of Undergraduate Academic Affairs.

B.S. Degree Requirements

Secondary Education (6-12 Licensure)

Students take a minimum of 120 hours, distributed as follows:

Liberal Education Core Requirements. Minimum 60 hours.

The Liberal Education Core is composed of required course work from the areas of Communications, Humanities, Mathematics, Science, Cultural Studies, Social Science, and Electives. Listings of all courses that may fulfill these areas are located online in the *Peabody Undergraduate Handbook* (peabody.vanderbilt.edu/admin-offices/oas/downloads.php).

All Peabody College freshmen who have not earned a combined score of 660 on the evidence-based reading and writing component of the redesigned SAT with minimum scores of 27 on the reading component and 28 on the writing and language component, or ACT English test score of 30 or above, or AP or IB English scores above 4 and 6 respectively, are required to successfully complete English 1100. Before graduation, all Peabody students must successfully complete two writing courses. Writing-intensive courses either have a "W" after the course number (A&S courses) or end with the digit "7" (Peabody courses). ENGL 1220W, 1230W, and 1300W earned by testing credit such as AP or IB credit will not satisfy the Writing requirement.

NOTE: First-year Seminars (courses numbered 1111) offered through the College of Arts and Science and the Blair School of Music may count as writing intensive courses. Peabody freshmen may only register for First-year Seminars when open registration begins.

Secondary Education Undergraduate Courses

FOUNDATIONAL AND CORE COURSES

EDUC 1220. School and Society [3]

SPED 1210. Introduction to Exceptionality [3]

PSY-PC 2550. Adolescent Development [3]

EDUC 3620. Social and Philosophical Foundations of Education [3]

EDUC 3310. Classroom Ecology [3]

FIELD BASED COURSES

EDUC 3871. Practicum in Secondary Education I [1]

EDUC 3280: Planning & Assessment Strategies [3]

ENED, MTED, SCED, or SSED 3371. Professional Year Practicum [3]

EDUC 4953. Student Teaching in the Secondary School [9]

CONTENT AREA COURSES

English

- ENED 3340. Reading and Learning with Print and New Media [3]
ENED 3357. Literature, Pop Culture, and New Media [3]
ENED 3370. Teaching Literature and New Media in the Secondary Schools [3]
ENED 3380. Teaching Writing in Secondary Schools [3]
ENED 4963. Student Teaching Seminar: Secondary [3]

Mathematics

- MTED 3320. Introduction to Literacies in Mathematics [3]
MTED 3360. Computers, Teaching, and Mathematical Visualization [3]
MTED 3370. Teaching Mathematics in Secondary School [3]
MTED 4963. Student Teaching Seminar: Secondary [3]

Science

- SCED 3320. Introduction to Literacies in Science [3]
SCED 3400. Modeling in the Secondary Classroom [3]
SCED 3370. Teaching Science in Secondary Schools [3]
SCED 4963. Student Teaching Seminar: Secondary [3]

Social Studies

- SSED 3320. Introduction to Literacies in Social Studies [3]
SSED 3260. Human Geography [3]
SSED 3370. Teaching Social Studies in Secondary Schools [3]
SSED 4963. Student Teaching Seminar: Secondary [3]

		English Education	Mathematics Education	Science Education	Social Studies Education
F i r s t	Fall	EDUC 1220 (3) Liberal Core and 2nd Major (12-15 hrs)	EDUC 1220 (3) Liberal Core and 2nd Major (12-15 hrs)	EDUC 1220 (3) Liberal Core and 2nd Major (12-15 hrs)	EDUC 1220 (3) Liberal Core and 2nd Major (12-15 hrs)

Y e a r	Spring	SPED 1210 (3) Liberal Core and 2nd Major (12-15 hrs)	SPED 1210 (3) Liberal Core and 2nd Major (12-15 hrs)	SPED 1210 (3) Liberal Core and 2nd Major (12-15 hrs)	SPED 1210 (3) Liberal Core and 2nd Major (12-15 hrs)
S e c o n d Y e a r	Fall	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) Liberal Core and 2nd Major (12-15 hrs)	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) MTED 3360 (3) OR Fall Third Year Liberal Core and 2nd Major (8-10 hrs)	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) Liberal Core and 2nd Major (12-15 hrs)	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) Liberal Core and 2nd Major (12-15 hrs)
	Spring	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) Liberal Core and 2nd Major (12-15 hrs)	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) MTED 3320 (3) or Spring Third Year Liberal Core and 2nd Major (12-15 hrs)	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) SCED 3400 (3) Liberal Core and 2nd Major (12-15 hrs)	PSY-PC 2550 (3) & EDUC 3871 (1) OR EDUC 3620 (3) Liberal Core and 2nd Major (11-15)
T h i r d Y e a r	Fall	EDUC 3720 (3) ENED 3340 (3) ENED 3310 (3) EDUC 3280 (3) fall or spring Liberal Core, 2nd Major & Electives (6-9 hrs)	EDUC 3720 (3) MTED 3360 (3) or spring MTED 3320 (3) EDUC 3280 (3) fall or sping Liberal Core, 2nd Major & Electives (9-12 hrs)	EDUC 3720 (3) (or spring) SCED 3320 (3) or spring EDUC 3280 (3) fall or spring Liberal Core, 2nd Major & Electives (6-9 hrs)	EDUC 3720 (3) SSED 3260 (3) SSED 3320 (3) EDUC 3280 (3) fall or spring Liberal Core, 2nd Major & Electives (9-12 hrs)
	Spring STUDY ABROAD TERM	ENED 3350 (3) EDUC 3280 (3) fall or spring Liberal Core, 2nd Major & Electives (12-15 hrs)	EDUC 3280 (3) fall or spring MTED 3320 (3) or Spring Third Year Liberal Core, 2nd Major & Electives (15-18 hrs)	EDUC 3720 (3) (or fall) EDUC 3280 (3) fall or spring Liberal Core, 2nd Major & Electives (12-15 hrs)	EDUC 3280 (3) fall or spring Liberal Core, 2nd Major & Electives (15-18 hrs)

Four Year	Fall	EDUC 3310 (3)	EDUC 3310 (3)	EDUC 3310 (3)	EDUC 3310 (3)
		ENED 3371 (3)	MTED 3371 (3)	SCED 3370 (3)	SSED 3371 (3)
		ENED 3370 (3)	MTED 3370 (3)	SCED 3371 (3)	SSED 3370 (3)
		ENED 3380 (3)	2nd Major and Electives (9-11 hrs)	2nd Major and Electives (9-11 hrs)	2nd Major and Electives (6-8 hrs)
		2nd Major and Electives (5-8 hrs)			
	Spring	EDUC 4953 (9) ENED 4963 (3)	EDUC 4953 (9) MTED 4963 (3)	EDUC 4953 (3) SCED 4963 (3)	EDUC 4953 (3) SSED 4963 (3)

NOTE: When planning a **study abroad semester**, move any courses listed in bold for the spring semester of the third year to an earlier semester. EDUC 3720 is a required course. However, students seeking ESL endorsement may use EDUC 3730 to meet this requirement.

B.S. Degree Requirements

Educational Studies

Students take a minimum of 120 hours, distributed as follows:

Liberal Education Core Requirements. Minimum 60 hours.

The Liberal Education Core is composed of required course work from the areas of Communications, Humanities, Mathematics, Science, Cultural Studies, Social Science, and Electives. Listings of all courses that may fulfill these areas are located on the online *Peabody Undergraduate Handbook* (peabody.vanderbilt.edu/admin-offices/oas/downloads.php).

Writing Requirement

See the "Writing Requirement" section of the general Peabody academic policy section of the Undergraduate Catalog.

NOTE: First-year Seminars (courses numbered 1111) offered through the College of Arts and Science and the Blair School of Music may count as writing intensive courses. Peabody freshmen may only register for First-year Seminars when open registration begins.

Major Foundations. 9 hours.

EDUC 1220 Society, School & Teacher, SPED 1210 Introduction to Exceptionality, PC-PSY 1250 or 2550 Developmental Psychology

Learning and Equity in Diverse Contexts Specialization

Learning and equity in diverse contexts is focused on the interaction of learning, design, and context in out-of-school settings, attracting students who are interested in learning in informal settings. This specialization is appropriate for

students who envision themselves working and learning with students out of traditional classroom settings.

Note: Students may enroll in this specialization after matriculation to the university, but may not be admitted directly into this program. Educational Studies can serve as a student's first or second major, but must be a third major or minor if combined with a licensure program. Students must use the Change of Major/Minor Declaration/Change form to declare educational studies as their first, second, or third major.

LEARNING, DEVELOPMENT AND CONTEXT CORE (*9 hours chosen from the following*)

EDUC 3140. Learning and Development in Early Childhood Education

EDUC 2160. Cultural Diversity in American Education

EDUC 3120. Children in Families and Schools

EDUC 2920. Social & Philosophical Aspects of Education

FIELD WORK IN EDUCATIONAL STUDIES (*12 hours*)

EDUC 3861. Initial Fieldwork in Educational Studies [3]

EDUC 3862. Advanced Fieldwork in Educational Studies [3]

EDUC 4950. Capstone Fieldwork in Educational Studies [6]

PLUS ELECTIVE COURSES (*3 hours*)

EDUC 3180/3270. Managing Instructional Settings

ENED 2430. Fostering Language in Diverse Classrooms

ENED 3350. Literature, Popular Culture & New Media

HMED 2150/2250. Children's Development in the Arts

MTED 2200. Children's Mathematical Thinking and Learning

MTED 3320. Intro to Math Literacies

MTED 3360. Math Visualizations

PSY-PC 2600. Educational Psychology

PHIL 3603. Philosophy of Education

SCED 3320. Intro to Science Literacies

SSED 2200. Scientific and Historical Reasoning in Children

SSED 3260. Human Geography

SPED 3332. High Poverty Youth

Additional courses as approved by adviser and UAC

Elementary Education and Secondary Education Specializations

These are alternative education studies specializations that are available only to students with these first majors

who discover they are unable to complete their major requirements pre-student teaching after it is too late to complete a different first major to graduate. These educational studies specializations are initiated by the director of undergraduate studies, in consultation with the student and the elementary or secondary education major advisers. Students must use the Change of Major/Minor Declaration/Change form to declare education studies as their first or second major.

Elementary Specializations (23 hours)

- EDUC 3212. Introduction to Reading Processes and Assessment [3]
- EDUC 3214. Reading in Elementary Schools [3]
- EDUC 3215. Language Arts in Elementary Schools [3]
- MTED 3250. Teaching Mathematics in Elementary Schools [2]
- SSED 3240. Teaching Social Studies in Elementary Schools [2]
- SCED 3250. Teaching Science in Elementary Schools [2]
- HMED 2250. Introduction to Arts Education [2]
- EDUC 3270. Managing Instructional Settings [2]
- EDUC 3216. ELE Practicum: Language and Literacy [1]
- EDUC 3240. ELE Practicum: Science and Social Studies [1]
- MTED 3251. ELE Practicum: Mathematics and Science [1]
- PSY-PC 2600. Educational Psychology [3]

Secondary Specialization (21 hours)

- EDUC 3310. Teaching in Secondary Schools [3]
- EDUC 3720. Foundations for Teaching Linguistically Diverse Students [3]
- EDUC 3620. Foundations of Education [3]
- SCED/MTED/SSED 3370 [3] or ENED 3380. Teaching Methods in Secondary Schools [3]
- ENED/SCED/MED/SSED 3370. Teaching Methods in Secondary Schools [3]
- EDUC 3871. Practicum in Secondary Education I [1]
- EDUC 3280. Planning & Assessment Strategies [3]
- ENED/SCED/MTED/SSED 3371. Professional Year Practicum [3]
- SCED 3400. Modeling in the Secondary Classroom [3]
- MTED 3360. Computers, Teaching, and Mathematical Visualization [3]
- SSED 3260. Human Geography [3]
- ENED 3357. Literature, Pop Culture, and New Media [3]
- ENED 3310. Language Study in the Secondary Classroom [3]

Plus 3 hours of electives

Minor in Multilingual Learner Education

Required Core: (15 hours)

- EDUC 3730, ELL Educ Foundations – 3 hours
- EDUC 3740, English Language Learner Methods and Materials – 3 hours
- EDUC 3742, Practicum: Multilingual Learners – 3 hours
- EDUC 3750, Linguistics and Language Acquisition for English Language Learner Teachers – 3 hours
- EDUC 3760, Assessment of English Language Learners – 3 hours

Human and Organizational Development

[Major in Human and Organizational Development](#)

[Curriculum](#)

[Honors Program](#)

[The Minor in Human and Organizational Development](#)

[Potential Peabody Second Majors](#)

CHAIR Nicole E. Allen

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Major in Human and Organizational Development

The Human and Organizational Development (HOD) major prepares students to address complex social problems in organizations and communities. The HOD curriculum challenges students to view human problems and their solutions in organizations and communities. The HOD curriculum challenges students to view human problems and their solutions as embedded in broader social ecological systems. HOD coursework draws on a range of disciplinary perspectives (e.g., psychology, organizational studies, sociology, political science, anthropology, geography, economics), and explores societal issues across distinct levels of analysis (e.g., individual, group, organization, community, policy, international). HOD coursework engages students through active learning approaches involving teams, simulations, case studies, field experiences, and interaction with academic researchers and professionals in the field. These experiences support the development of the following *HOD Core Competencies* that will help students succeed in people-oriented organizational roles:

1. *Written communication* - with emphasis on developing a clear, concise, expository style and mastering the practical forms used in professional situations.
2. *Oral presentation* - with emphasis on making informative and persuasive presentations with the effective use of technology and media.
3. *Analytic and critical thinking* - with emphasis on data-driven analysis, creativity, and systems thinking to recognize, define and work to solve personal, professional, organizational, and social problems.
4. *Interpersonal communication* - with emphasis on inquiry, advocacy, leadership, and conflict resolution skills.
5. *Collaborative work behaviors* - with emphasis on motivating others, managing talent, and teamwork.

HOD requirements consist of the Peabody Liberal Education Core and HOD Major Requirements, plus the successful completion of an HOD capstone experience.

Peabody Liberal Education Core

The Liberal Education Core provides students with a strong liberal arts foundation. It is composed of required coursework from the areas of Communications, Humanities, Quantitative Analysis, Natural Science, Social Science, and Electives. Listings of all courses that may fulfill these areas are located online in the Peabody Undergraduate Handbook (peabody.vanderbilt.edu/admin-offices/oas/downloads.php). In addition, students must complete two writing intensive courses. See the "Writing Requirement" section of the general Peabody academic policy section of

the Undergraduate Catalog.

HOD Major Requirements

Human and Organizational Development Professional Core (15 hours): The HOD Core introduces students to ecological systems thinking, theories of human, group, community, organizational, and policy development, and quantitative & qualitative approaches to research and problem solving. Professional core courses are designed to help students:

1. Understand the basic principles and typical patterns of human development across the life span and use this knowledge to understand their own behavior and the behavior of others;
2. Understand the principles of group dynamics and use this knowledge to provide leadership and facilitate decision making in small group and team settings;
3. Understand theories of organizations and apply them to the solution of organizational problems;
4. Understand the critical role that community contexts play in shaping individual, group, and organizational well-being;
5. Apply quantitative and qualitative methods of systematic inquiry and analysis;
6. Understand public policy processes and the factors that influence policy making;
7. Understand the ethical dimensions of personal and organizational decisions and apply this understanding to analyze social issues and make professional and personal decisions;
8. Develop enhanced skills of synthesis including the ability to integrate ideas from various sources and to design innovative programs.
9. Understand and engage in practices and policies that ensure inclusion of diverse populations and perspectives.

The program design will endow you with the skills and knowledge needed to succeed in a people-oriented organizational role.

Human and Organizational Development Domains: Domain courses build on the foundational courses in the HOD Professional Core. Students will choose courses that will help them develop breadth and depth across levels of analysis in topic areas of interest. Students must complete two courses in each of the following three domains:

Individual/Interpersonal Domain: Courses in this domain delve deeper into personal and professional development and explore topics, including but not limited to, leadership, professional ethics, youth development, professional development, and mental health and well-being. Through these courses students will develop professional skills in data management, research, individual and team leadership, human-centered design, and interpersonal conflict resolution.

Organizational/Group Domain: Courses in this domain explore recent advances in organizational theory and innovative management strategies in for-profit, non-profit, and public sector organizations in the U.S. and international contexts. Course topics include, but are not limited to organizational effectiveness, organizational change management, and social entrepreneurship. Courses use case studies and practical application to prepare students to engage organizational challenges in an increasingly complex and dynamic world.

Community/Policy Domain: Courses in this domain invite students to critically examine the causes and consequences of complex social problems from a systems perspective and explore community- and policy-level approaches to change and intervention. Courses address a range of local and global topics and consider the diverse perspectives of marginalized communities. These topics include, but are not limited to educational equity, environmental justice and sustainability, violence prevention, and economic development, as well as poverty-related challenges such as fair and affordable housing, employment, health disparities, transportation, neighborhood safety, and resource provision.

semesters): The Capstone is the immersive learning academic semester for junior and senior students in the Human and Organizational Development (HOD) major at Vanderbilt University. Successful completion of the HOD Capstone semester satisfies the Vanderbilt Immersion requirement. The Capstone is designed for students to apply the core HOD coursework and develop data-driven and research-grounded contributions to address human problems in organizations and communities. The HOD capstone requires 28 hours a week, at least 30% in person, fully in person preferred with the confirmed site and a weekly 3-hour seminar. The experience is possible in fall, spring or summer semesters. The HOD Capstone office has preexisting relationships with sites in Nashville, Chicago, New York City, San Francisco, Washington D.C. and London, England. However, students are not limited to these cities.

The HOD philosophy emphasizes the importance of connecting academic knowledge and theories to professional practice. HOD undergraduate core requirements offer an applied liberal arts education that will endow students with the skills and knowledge needed to succeed in organizations and communities. The capstone semester is designed to provide students the opportunity to synthesize the HOD coursework and learning experiences in an organizational context - which is central to the foundation of the applied learning experience and mission of our degree.

HOD majors (juniors and seniors) who have successfully completed the HOD 4949 Capstone Design requirements, approved for the HOD Capstone by the HOD Capstone Office, and completed the HOD core class prerequisites including HOD 1250, 1300, 2100, 2400 (not required for students who entered Summer 2023 or later), 2500, and 2700 are eligible to register for HOD 4950, 4951, 4952 and 4953.

Students enroll in a semester-long course, HOD 4949 in the ***fall to design a spring capstone and enroll in spring to design a summer or fall capstone. Note HOD 4949 Capstone Design is not offered in the summer.*** The capstone design semester is an opportunity for students to explore, develop and confirm a successful capstone experience. They partner with the HOD Capstone team for mentoring, coaching, connection events, and a variety of campus partners to confirm their capstone site. The capstone semester provides a variety of opportunities for students to integrate and apply earlier coursework in a civic/professional, research, international or creative partnership. Students design their capstone to align with their field of interest. They select opportunities that provide valuable applied work experiences, build professional development competencies, and help launch their post-graduation careers. During the HOD capstone semester, students enroll in four courses that accompany their capstone experience: HOD 4950 (P/F - 3 credit hours during summer; 6 hours during fall or spring) *Organizational Partnership*, HOD 4951 (3 hours) *Critical Reflexivity and Systems Thinking*, HOD 4952 (3 hours) *Mapping Future Development*, and HOD 4953 (3 hours) *Analysis and Contribution*. For additional information on the HOD Capstone visit our website [HERE](#).

Curriculum

Students take a minimum of 12 hours, distributed as follows:

Liberal Education Core Requirements. Minimum of 40 hours

The Liberal Education Core is composed of required coursework from the areas of Communications, Humanities, Mathematics, Natural Science, Social Science and Electives. A listing of all courses that may fulfill these areas are located online in the Peabody Undergraduate Handbook (<https://www.vanderbilt.edu/peabody-intranet/admin-offices/oas/downloads.php>).

Hours in required core areas are listed below. The same course may not count in more than one Liberal Education Core area.

- Writing Requirements - 2 W courses
- English 1100
- Communications, 6 hours
- Philosophy, 3 hours
- Humanities, 6 hours
- Quantitative Analysis, (3 hours Statistics required), 6 hours

- Natural Science (one Lab Science required), 7 hours
- Social Science (3 hours Economics required), 9 hours
- Liberal Core Electives, 3 hours

Writing Requirement

Before graduation, all students must successfully complete two writing courses. It is suggested that one of these courses be at the 1000-level and taken prior to the end of the student's fourth semester. Writing-intensive courses either have a "W" after the course number (A&S, Blair, or Engineering) or end with the digit "7" (Peabody). **ENGL 1220W, 1230W, and 1300W earned by testing credit such as AP or IB credit will NOT satisfy the Writing Requirement.**

Note: First Year Seminars (courses labeled 1111) offered through the College of Arts & Science and Blair School of Music may count as writing intensive courses. Peabody freshmen may only register for First Year Seminars during the first week of the fall and spring semesters if the courses are open.

English 1100 Requirement

English 1100 is required unless the students have satisfied one of the following:

1. SAT
 - a. Reading score of at least 27
 - b. Writing and Language score of at least 28
 - c. Evidence-Based Reading and Writing score of at least 660
2. ACT English test score of 30
3. AP/IB English test scores of 4 and 6 respectively

English 1100 counts for elective credit only toward the hours required for the B.S. Degree.

Academic credit is not awarded for SAT or ACT test scores.

Liberal Core Elective

Any course listed to satisfy any area of the Liberal Education Core that is not already being used to fulfill a core area.

Courses chosen to fulfill an area of the Liberal Education Core can only be used to satisfy one requirement. A single course cannot be used to fulfill two requirement areas. The only exception is courses used to fulfill the Writing Requirement may also be used to satisfy the appropriate Liberal Education Core area.

NOTE: Special topic courses are not ordinarily acceptable to meet liberal education core requirements. These courses require prior approval as substitute courses. Independent study courses are not acceptable to meet Liberal Education Core requirements.

Major Requirements. 45-48 hours

Students take 15 hours of HOD Professional Core courses, 18 hours of Domain-level courses, and 12-15 hours of Capstone courses to fulfill requirements for the HOD major.

HOD Professional Core

HOD 1250. Applied Human Development [3]

HOD 1300. Small Group Behavior [3]

HOD 2100. Understanding Organizations [3]

HOD 2500. Systematic Inquiry [3]

HOD 2700. Public Policy [3]

HOD Domains. 18 hours

HOD majors will choose a total of 6 courses, two from each of the three domain areas.

Note that students may substitute up to a maximum two courses (including HOD 2501) across all Domains. Students cannot double count a course in both HOD and the Business minor.

Some domain courses listed below may not be offered every semester. Classes denoted with * are seminar or special topic courses, not permanent.

Domain 1: Individual/Interpersonal, select two:

HOD 2051. Study Abroad/Transfer Coursework [3]

HOD 2260. Economics of Human Resources [3]

HOD 2400. Talent Management and Organizational Fit [3]

HOD 3200. Introduction to Data Science [3]

HOD 3300. Judgment and Analytical Reasoning [3]

HOD 4981. HOD Honors Seminar (with instructor permission) [3]

HODC 3232. Ethics for Human Development Professionals [3]

HODC 3650. CLD Seminar: Positive Youth Development [3]*

HODH 3211. Introduction to Counseling [3]

HODH 3650. HHS Seminar: The Self & Personal Development [3]*

HODH 3650. HHS Seminar: Alcohol, Drugs & Emerging Adulthood [3]*

HODH 3650. HHS Seminar: Sexualities, Health, & Society [3]

HODH 3650. HHS Seminar: Societal Norms & Health Behaviors [3]*

HODL 3204. Leadership Theory and Practice [3]

HODL 3254. Human Resource Management [3]

HODL 3284. Gender and Leadership [3]

Domain 2: Organizational/Group, select two:

HOD 2051. Study Abroad/Transfer Coursework [3]
HOD 3890. Special Topics in Human and Organizational Development [1-3]
HOD 4987. HOD Honors Seminar (with instructor permission) [3]
HODC 3262. Social Entrepreneurship: Principles and Application [3]
HODC 3650. CLD Seminar: Non-Profit Management [3]*
HODI 3220. International Organizations and Economic Development [3]
HODI 3240. Effectiveness in International For-Profit Organizations [3]
HODL 3224. Analyzing Organizational Effectiveness [3]
HODL 3234. Advanced Organizational Theory [3]
HODL 3264. Evidence-based Practice in Organizations [3]
HODL 3274. Managing Organizational Change [3]
HODL 3890. LOE Special Topic: Continuous Improvement in Organizations [3]*

Domain 3: Community/Policy, select two:

HOD 2051. Study Abroad/Transfer Coursework [3]
HOD 4987. HOD Honors Seminar (with instructor permission) [3]
HODC 3202. Community Development Theory [3]
HODC 3242. Environmental Politics and Justice [3]
HODC 3342. Introduction to Community Psychology [3]
HODC 3352. Philanthropy and Social Problem Solving [3]
HODC 3650. CLD Seminar: Building a Design Driven Culture [3]*
HODC 3650. CLD Seminar: Environmental Health: Water Justice [3]*
HODC 3650. CLD Seminar: Homelessness & What to Do About It [3]*
HODC 3650. CLD Seminar: Social Determinants of Health [3]*
HODC/H 3650. CLD/HHS Seminar: Food & Community Development [3]*
HODC/H 3650. CLD/HHS Seminar: Health Equity & Community Power [3]*
HODE 3205. Education Policy Analysis Methods [3]
HODE 3215. Education and Public Policy [3]
HODE 3225. Introduction to Public Finance of Education
HODH 3221. Health Service Delivery to Diverse Populations [3]
HODH 3650. HHS Seminar: Environmental Health [3]*
HODH 3650. HHS Seminar: Art, Community and Society [3]*
HODI 3200. Global Dimensions of Community Development [3]
HODI 3230. Education and Economic Development [3]

HODI 3260. Education in the Asia-Pacific Region: Development, Reform, and Innovation [3]

HODI 3270. Global Sustainable Development [3]

HOD Capstone. 12-15 hours

HOD 4949. Capstone Design [3]

HOD 4950. Capstone Partnership [3 in summer, 6 in Fall or Spring]

HOD 4951. Critical Reflex & Systems Thinking [3]

HOD 4952. Map Future Personal and Professional Development [3]

HOD 4953. Analysis and Contribution [3]

Honors Program

The HOD Honors Program is designed for highly motivated students who want to pursue intensive research. It offers outstanding undergraduate HOD majors an opportunity to become involved in research teams with professors and graduate students. The program will help students develop skills in empirical research methods, writing, and presentation to provide a firm foundation for advanced graduate or professional training. The HOD Honors Programs requires a serious time commitment to a research project.

Application: Students may apply for the honors program at any time from the second semester of their sophomore year to the summer before their senior year. The application must be approved by the faculty member with whom the student will work, and will outline the nature of the research project, which will ordinarily be an extension of the faculty member's ongoing research. Students must have completed HOD 1250, HOD 1300, HOD 2100, HOD 2500, and a college statistics course and have an overall GPA of at least 3.6. This minimum GPA must be maintained to graduate with honors.

Applications will be evaluated by the HOD Honors Director, who will decide on admission, taking into consideration the numbers of applicants.

Requirements: Upon admission students will complete two (not necessarily back-to-back) semesters of honors seminar (for six total hours of credit), which satisfy one course in two HOD domains of the student's choosing, plus the writing course requirement. In the course, they will learn advanced research methods. In addition to the honors seminar, the student will work with the faculty sponsor on research for up to ten hours per week. Students must complete a pilot study (first semester) and an empirical (quantitative or qualitative) honors thesis (second semester) that is approved by two faculty readers, and orally present both pilot study and thesis. Although not required, honors projects may be coordinated with the HOD Capstone with permission of the instructor, the student's Honor's advisor, and HOD Capstone Director, and may be taken in the same semester as Capstone. Students are additionally encouraged to attend departmental colloquia and to take at least one graduate course in their area of interest.

Awards of departmental Honors in HOD will depend on successful completion of the course and the thesis. Highest Honors and Best HOD Honors Thesis may be awarded by vote of the Honors Committee.

The Minor in Human and Organizational Development

The HOD minor requires 15 unique hours that are not counted toward any other major or minor. The minor in human and organizational development consists of 18 hours in the following courses:

REQUIRED COURSE. *3 hours.*

HOD 1250. Applied Human Development

CHOOSE TWO ADDITIONAL CORE COURSES. *6 hours.*

HOD 1300. Small Group Behavior

HOD 2100. Understanding Organizations

HOD 2500. Systematic Inquiry

HOD 2700. Public Policy

DOMAIN COURSES: *9 hours.*

Students will choose 3 HOD Domain level courses (9 hours) to count towards the HOD minor. *Only one approved substitution and/or HOD 2051 will be permitted within the Domain area of the minor.*

Potential Peabody Second Majors

For students with a First Major in Human and Organizational Development (21 unique hours required for Peabody second majors)

Child Development (CD) (30 hours)

(See the CD major requirement pages for all required classes)

Courses that may be applied to both majors:

- HODC 3232 and HODC 3342 may be used for CD electives
- HOD 2500 may be used for the CD methods requirement
- PSY-PC or PSY courses used to satisfy the HOD Liberal Education core social studies area as CD electives

Students may only apply nine hours from the courses used for the Human and Organizational Development major to fulfill the Child Development second major.

Child Studies (CST) (36 hours)

(See the CST major requirement pages for all required classes)

Courses that may be applied to both majors:

- HOD 2500 may satisfy the CST Research Methods requirement
- HODH 3221, HODC 3202 and/or HODC 3342 may be used to partially satisfy the Families, Community, & Diversity CST area or be used in the CST elective category
- HODC 3232 may also be used as a CST elective course.
- PSY-PC or PSY courses used to satisfy the H&OD Liberal Education core social studies area may be used to partially satisfy CST Area categories or CST electives.

Students may only apply a maximum of **fifteen hours** from the courses used for the Human and Organizational Development major to fulfill the Child Studies second major.

Cognitive Studies (CGS) (33 hours)

(See the CGS major requirement pages for all required classes)

Courses that may be applied to both majors:

- Six hours of HOD 2500 and HODC 3222 may be used to satisfy CGS Methods of Inquiry
- PSY-PC or PSY courses used to satisfy the H&OD Liberal Education core social studies area may be used to partially satisfy CGS Area categories or CGS electives.
- HODC 3232 and HODC 3342 may also be used as CGS elective courses.

Students may apply a maximum of **twelve hours** from the courses used for the Human and Organizational Development major to fulfill the Child Studies second major.

Note: Students who want to double-major in Human and Organizational Development and Early Childhood Education, Elementary Education or Special Education must take H&OD as their second major, due to state teacher licensure regulations.

Human and Organizational Studies

Human and Organizational Studies (HOS) is an alternative major that is available only to Human and Organizational Development (HOD) majors who, due to extenuating circumstances, are unable to complete the required HOD capstone internship after it is too late to complete a new first major. This alternative is initiated and approved by the director of the HOD Capstone Program and the Director of Undergraduate Studies for HOD. In lieu of the HOD Capstone, students complete 30 hours of upper-level approved HOD courses to meet the major's 45-hour degree requirement.

Students must complete the Human and Organizational Development liberal education core, the writing requirement, and earn a minimum of 120 hours and a 2.0 cumulative GPA.

Special Education

Major in Special Education

[Honors Program](#)

[B.S. Degree Requirements](#)

[Minors](#)

[Minor in Special Education](#)

[Minor in Instruction in Special Education](#)

[Disability Studies](#)

CHAIR Joseph H. Wehby

ASSOCIATE CHAIR Kimberly Paulsen

DIRECTOR OF GRADUATE STUDIES Robert M. Hodapp

DIRECTOR OF PROFESSIONAL STUDIES Alexandra Da Fonte

DIRECTOR OF UNDERGRADUATE STUDIES Andrea M. Capizzi

The undergraduate program in special education prepares students to work with persons with disabilities and leads to licensure in special education. Students pursue an interdisciplinary major in exceptional learning with emphasis in one of the two specialty areas: high-incidence disabilities (interventionist program K-8 and/or 6-12) or multiple and severe disabilities (comprehensive program). This major can be combined with other majors such as cognitive studies, child development, or majors in the College of Arts and Science. The program is field-oriented and problem centered, with most professional courses requiring direct involvement with individuals with disabilities. Beginning in

the freshman year, students observe and work in a variety of educational settings in local schools and in classrooms off campus.

Vanderbilt students seeking teacher licensure must apply through the Office of Teacher Licensure at Vanderbilt and must meet licensure requirements in effect at the time of their graduation, which may be different from licensure requirements in effect at the time they entered the program. Each year, teacher licensure candidates should consult the current Vanderbilt *Undergraduate Catalog*, the *Undergraduate Guide to Teacher Licensure* published by the Vanderbilt Office of Teacher Licensure, and the *Undergraduate Handbook* published by the Office of Administration and Records.

Honors Program

The Honors Program in Special Education offers qualified majors the opportunity to gain experience in conducting research in collaboration with a faculty mentor. This experience culminates in the writing and presentation of a senior project. Students who major in special education are eligible to apply for the Honors Program in the spring of their sophomore year if they have an overall grade point average of at least 3.5. Students who are accepted into the Honors Program, successfully complete the program, and maintain the required grade point averages, will graduate with Honors in Special Education. Specific information concerning admission to and the requirements of the Honors Program in Special Education is available from Professor Andrea Capizzi, director of undergraduate studies for the Department of Special Education. Students should be aware that participation in the Honors Program is quite time-intensive and represents a substantial commitment of effort across at least three semesters. Therefore, potential participants must carefully consider whether they are able to, and want to, devote the required time and energy to this program.

B.S. Degree Requirements

Specializations are available in high-incidence disabilities/interventionist (grades K-8/6-12 interventionist licensure), and severe disabilities (grades K-12 comprehensive licensure). Total hours will vary depending on the area of specialization.

Students take a minimum of 120 hours, distributed as follows:

Liberal Education Core Requirements. Minimum 60 hours.

The Liberal Education Core is composed of required course work from the areas of Communications, Humanities, Mathematics, Science, Cultural Studies, Social Science, and Electives. Listings of all courses that may fulfill these areas are located online in the Peabody Undergraduate Handbook (<https://peabody.vanderbilt.edu/admin-offices/oas/downloads.php>).

Writing Requirement

See the "Writing Requirement" section of the general Peabody academic policy section of the Undergraduate Catalog.

Specializations

The following SPED course is taken as part of the Liberal Education Core, but is also required in each area of specialization.

SPED 1210. Introduction to Exceptionality

The following courses are required in each area of specialization.

SPED 1175. Freshman Seminar

SPED 2310. Managing Academic and Social Behavior

SPED 4950. Student Teaching Seminar

SPED 4954 or 4951. Student Teaching

SEVERE DISABILITIES PROGRAM/COMPREHENSIVE CORE.

SPEDS 2120. Issues in Family Intervention

SPEDS 2450. Augmentative and Alternative Communications SPEDS 2430. Introduction to Language and Communications*

SPEDS 3300. Methods of Instruction for Students with Severe and Multiple Disabilities

SPEDS 3312. Procedures in Transition to Adult Life

SPEDH 3328. Teaching Mathematics to Students with Severe and Persistent Academic and Behavior Difficulties: K-8

SPEDH 3338. Teaching Reading to Students with Severe and Persistent Academic and Behavior Difficulties

SPEDS 3330. Characteristics of Students with Severe and Multiple Disabilities

SPEDS 3350. Access to General Education and Teaching Functional Academics

SPEDS 3661. Fieldwork in Special Education: Severe Disabilities

SPEDS 3667. Seminar in Severe Disabilities Fieldwork

SPEDS 3871. Field Work in Special Education: Autism, Intellectual, and Multiple Disabilities

HIGH-INCIDENCE PROGRAM/INTERVENTIONIST CORE.

(Courses are specific to choice of K-8 or 6-12 licensure track.)

SPED 2160. Cultural Diversity in American Education*

SPEDH 3308. Understanding Students with Severe and Persistent Academic and Behavior Difficulties

SPEDH 3318. Assessment for Students with Severe and Persistent Academic and Behavior Difficulties

SPEDH 3328. Teaching Mathematics to Students with Severe and Persistent Academic and Behavior Difficulties: K-8

SPEDH 3338. Teaching Reading to Students with Severe and Persistent Academic and Behavior Difficulties

SPEDH 3348. Language and Learning*

SPEDH 3358. Advanced Reading Methods for Students with Severe and Persistent Academic and Behavior Difficulties

SPEDH 3661. Fieldwork in Special Education: High Incidence Disabilities

SPEDH 3368. Teaching Middle School Students with Severe and Persistent Academic and Behavior Difficulties

SPEDH 3378. Teaching High School Students with Severe and Persistent Academic and Behavior Difficulties

SPEDH 3388. Teaching Mathematics to Students with Severe and Persistent Academic and Behavior Difficulties 6-12

SPEDH 3777. School and Classroom Supports for Teaching Students with Academic Behavior Difficulties

SPEDH 3871. Field Work in Special Education for Mild/Moderate Disabilities

*Taken as part of the Liberal Education Core

Minors

Minor in Special Education

The minor in special education provides students with an opportunity to develop familiarity and expertise in working with children who have learning and social behavior problems. The minor requires 15 hours (15 unique to the minor) as detailed below.

Required (3 hours)

SPED 1210. Introduction to Exceptionality (3)

Electives (12 hours)

SPED 2310/3871. Managing Academic and Social Behavior (fieldwork) [3/1]

SPEDH 3308. Understanding Students with Severe and Persistent Academic and Behavior Difficulties [3]

SPEDH 3328/3871. Teaching Math to Students with Academic and Behavior Difficulties (fieldwork) [3/1]

SPEDH 3338/3871. Teaching Reading to Students with Academic and Behavior Difficulties (fieldwork) [3/1]

SPEDH 3348. Language and Learning [3]

SPED 2160. Cultural Diversity in American Education [3]

SPEDS 2120. Family Intervention [3]

SPED 2340. Introduction to Language and Communication [3]

SPED 3330/3871. Characteristics of Severe and Multiple Disabilities (fieldwork) [3/1]

SPED 3312/3871. Procedures in Transition to Adult Life (fieldwork) [3/1]

SPEDS 3350. Access to General Education and Teaching Functional Academics [3]

ASL 2100. American Sign Language I [3]

ASL 2110. American Sign Language II [3]

SPEDV 3305. Medical & Educational Implications of Visual Impairments [3]

SPEDV 3315. Issues & Trends for Students with Visual Impairments [3]

*Most courses are taught in sequence and have prerequisite courses.

Minor in Instruction in Special Education

The minor in Instruction in Special Education is designed for general education teacher education majors (e.g., Early Childhood Education, Elementary Education, Secondary Education) to prepare them for working with students with disabilities they will encounter in their general education teaching. To be eligible for this minor, students must be enrolled in a teacher education program through the Department of Teaching & Learning. The minor covers academic and behavioral pedagogy and intervention for students with a range of disabilities. The minor requires 19 hours (15 unique to the minor) as detailed below.

SPED 1210: Intro to Exceptionality (3)

SPEDH 3308: Understanding Students with Severe and Persistent Diff. (3)

SPED 2310: Managing Academic and Social Behavior (3)*

SPEDH 3871: Field Work in Mild/Moderate (1)*

SPEDH 3328: Teaching Math to Students with Severe and Persistent Diff. (3)

SPEDH 3358: Advanced Reading Methods for Students with Severe and Persistent Diff. (3)

SPEDS 3358: Access to General Education and Teaching Functional Academics (3)

*Most courses are taught in sequence and have prerequisite courses.

Disability Studies

Disability studies is an alternative major that is available *only* to special education (SPED) majors who discover they are unable to complete required SPED pre-student teaching and/or student teaching capstone after it is too late to complete a different first major. This alternative is initiated by the director of undergraduate studies, with consultation with SPED track directors and the Teacher Preparation Committee. Students completing the disability studies degree do not choose a track.

Honors in Peabody College

[Founder's Medal](#)

[Latin Honors Designation](#)

[Dean's List](#)

[Kappa Delta Pi](#)

[Honor Societies for Freshmen](#)

[Awards](#)

Founder's Medal

The Founder's Medal, signifying first honors, was endowed by Commodore Cornelius Vanderbilt as one of his gifts to the university. The recipient is named by the Dean after consideration of faculty recommendation and overall academic achievements, as well as grade point averages of the year's highest ranking summa cum laude graduates.

Latin Honors Designation

Honors, which are noted on diplomas and published in the Commencement Program, are earned as follows:

Summa Cum Laude. Students whose grade point average equals or exceeds that of the top 5 percent of the previous three years' graduating seniors.

Magna Cum Laude. Students whose grade point average equals or exceeds that of the next 8 percent of the previous three years' graduating seniors.

Cum Laude. Students whose grade point average equals or exceeds that of the next 12 percent of the previous three years' graduating seniors.

Dean's List

The Dean's List recognizes outstanding academic performance in a semester. Students are named to the Dean's List when they earn a grade point average of at least 3.500 while carrying 12 or more graded hours, with no temporary or missing grades in any course (credit or non-credit), and no grade of F.

Kappa Delta Pi

Kappa Delta Pi is an education honor society organized in 1911 at the University of Illinois to foster excellence in scholarship, high personal standards, improvement in teacher preparation, distinction in achievement, and contributions to education. Membership is limited to juniors and seniors with a grade point average of 3.500 or better, and graduate students with a grade point average of 3.750 or better. Candidates for membership must have completed at least 9 hours in education or psychology.

Honor Societies for Freshmen

Freshmen who earn grade point averages of 3.500 or better for their first semester are eligible for membership in the Vanderbilt chapters of Phi Eta Sigma and Alpha Lambda Delta.

Awards

ALGERNON SYDNEY SULLIVAN AWARD. Established in 1925 to recognize an undergraduate student that has demonstrated excellence of character and service to humanity.

THE PEABODY ALUMNI AWARD. Awarded by the Peabody Alumni Association to a member of the graduating class who has demonstrated outstanding qualities of scholarship and leadership.

THE WILLIS D. HAWLEY AWARD. Awarded by students of Peabody College to a senior who exemplifies Peabody's commitment of service to others.

DEAN'S AWARD FOR OUTSTANDING SCHOLARSHIP. Awarded to each *summa cum laude* graduate.

Human Organization and Development

SENIOR THESIS AWARD. Awarded to the graduating senior in the Human and Organizational Development Program who has submitted the most outstanding senior thesis. The winner is selected from a group of five finalists who make an oral presentation of their theses to a panel of five professors.

HUMAN AND ORGANIZATIONAL DEVELOPMENT AWARDS. Established in 1999 and presented to the graduating seniors who exemplify the highest levels of scholarship and leadership in the Human and Organizational Development Program. The awards are given in these areas: Community Service, Outstanding Community Development and Social Policy, Outstanding Health and Human Services, and Outstanding Leadership and Organizational Effectiveness.

HUMAN ORGANIZATION AND DEVELOPMENT CAPSTONE AWARD: Established in 2011 to recognize the human and organizational development senior whose overall capstone performance had the most significant impact within their host internship organization, as determined by nominating faculty, peers, and site supervisors.

Psychology and Human Development

PSYCHOLOGY AND HUMAN DEVELOPMENT UNDERGRADUATE HONORS AWARD. Awarded to the graduating senior who has successfully completed the Undergraduate Honors program in Cognitive Studies, or Child Development, or Child Studies and who has produced the best overall honor project.

EXCELLENCE IN CHILD DEVELOPMENT AWARD. Awarded to the graduating senior majoring in Child Development whose work in the opinion of the faculty of the Department of Psychology and Human Development exemplifies academic excellence.

EXCELLENCE IN CHILD STUDIES AWARD. Presented annually by the Department of Psychology and Human Development to the graduating senior who most clearly exemplifies the goals of the Child Studies Program.

EXCELLENCE IN COGNITIVE STUDIES AWARD. Presented annually by the Department of Psychology and Human Development to the graduating senior who most clearly exemplifies the goals of the Cognitive Studies Department.

Special Education

THE DEPARTMENT OF SPECIAL EDUCATION DISTINGUISHED ACADEMIC ACHIEVEMENT AWARD. Awarded annually to the graduating senior in the Department of Special Education who exemplifies the highest level of academic achievement.

THE DISTINGUISHED SERVICE IN SPECIAL EDUCATION AWARD. Presented annually to the graduating senior in the Department of Special Education who exemplifies the highest commitment to professional service in special education.

DISTINGUISHED TEACHER OF EXCELLENCE IN SPECIAL EDUCATION AWARD. Established in 1999. Awarded annually by the Department of Special Education to the graduating senior who has demonstrated the highest level of excellence in teaching in the area of special education.

DISTINGUIED UNDERGRADUATE RESEARCH PROMISE AWARD IN SPECIAL EDUCATION. Presented annually to the graduating senior in special education, who has demonstrated exemplary academic scholarship and engagement in research.

Teaching and Learning

DOROTHY J. SKEEL AWARD FOR OUTSTANDING PROFESSIONAL PROMISE (ELEMENTARY/EARLY CHILDHOOD EDUCATION). Presented annually to the graduating senior in the Department of Teaching and Learning who has shown exceptional promise as a future teacher at the elementary school or early childhood level.

KEVIN LONGINOTTI AWARD. Awarded annually to a graduating senior in the Department of Teaching and Learning who shows exceptional promise as a future teacher at the secondary school level.

OUTSTANDING PROFESSIONAL PROMISE AWARD IN EARLY CHILDHOOD EDUCATION. Presented annually to a graduating senior who shows exceptional promise as a future teacher at the early childhood level.

UNDERGRADUATE AWARD FOR RESEARCH IN THE PRACTICE OF TEACHING AND LEARNING. Presented to a graduating senior who has, in or out of the classroom, integrated research and practice in the field of teaching and learning.

UNDERGRADUATE SERVICE IN DIVERSE CONTEXTS AWARD. Presented to a graduating senior who has demonstrated exemplary service out of the classroom in diverse settings.

Peabody College Courses

Human and Organizational Development

Community Development and Leadership

Education Policy

Health and Human Services

International Leadership and Policy

Leadership and Organizational Effectiveness

Psychology and Human Development

Special Education

Special Education - Interventionist/High Incidence/Modified

Special Education - Severe/Comprehensive

Special Education - Vision

Teaching and Learning

Education

English Education

Foreign Language Education

Humanities Education

Math Education

Science Education

Social Studies Education

Peabody Honors Scholars

Military Science - Peabody

Naval Science - Peabody

Undergraduate Programs of Study

African American and Diaspora Studies

Program of Concentration in African American and Diaspora Studies

Honors Program

Minor in African American and Diaspora Studies

Areas of Study

Other Electives

CHAIR Tiffany Patterson

DIRECTOR OF UNDERGRADUATE STUDIES Claudine Taaffe

DIRECTOR OF GRADUATE STUDIES Gilman W. Whiting

Professors, Emeriti: Houston Baker, Hector Myers

Professors: Michael Dyson, David Ikard, Tracy D. Sharpley-Whiting, Gilman W. Whiting

Associate Professors: Brandon Byrd, Tiffany Patterson

Assistant Professor: Matthew Joseph

Principal Senior Lecturer: Claudine Taaffe

Writer in Residence: Alice Randall

COURSES OFFERED: [AADS](#)

The concentration in African American and Diaspora Studies requires 36 credit hours of course work. Approved courses taken at Fisk University may be counted as electives in the program. The course of study in the African American and Diaspora Studies program is divided into three areas: Area of Study I, Gender and Sexuality; Area of Study II, Literature, Theory, and Visual Culture; and Area of Study III, Social Sciences. Courses that satisfy each area are listed under "Areas of Study and Electives" below.

Program of Concentration in African American and Diaspora Studies

Requirements for the major include at least 36 hours of credit as follows:

1. 3 credit hours from 1010, Introduction to African American and Diaspora Studies.
2. 6 credit hours from Area of Study I, Gender and Sexuality.
3. 6 credit hours from Area of Study II, Literature, Theory, and Visual Culture.
4. 6 credit hours from Area of Study III, Social Sciences.
5. 12 credit hours of electives chosen from Areas of Study I, II, and III, not used to satisfy requirements 2 through 4 above.
6. 3 credit hours in either 4978 (fall) or 4979 (spring), Senior Thesis in African American and Diaspora Studies.

At least 6 credit hours of the concentration must focus on the Americas (outside of the United States) and/or Africa. No more than 9 credit hours of course work may be taken at the 1000 level (excluding 1010).

Honors Program

The only route to honors in the major is writing a 3-credit hour Senior Honors Thesis in AADS 4998 (fall) or 4999 (spring) and passing an oral examination. Admission to the Honors Program requires a student have a grade point average of at least 3.5 in all AADS courses and a cumulative GPA of 3.3. A committee of three faculty members (two of whom must be involved in undergraduate teaching in the African American and Diaspora Studies program) will evaluate the thesis. Students pursuing the Senior Honors Thesis may apply to the program for nominal funding to assist with research projects. The chair of the student's thesis committee and two readers must attend the oral examination. The oral defense will typically take place in the second semester of the student's senior year.

Minor in African American and Diaspora Studies

Requirements for completion of the minor include at least 21 credit hours as follows:

1. 3 credit hours in 1010, Introduction to African American and Diaspora Studies.
2. 3 credit hours from Area of Study I, Gender and Sexuality.
3. 3 credit hours from Area of Study II, Literature, Theory, and Visual Culture.
4. 3 credit hours from Area of Study III, Social Sciences.

5. 9 credit hours of electives chosen from Areas of Study I, II, and III, not used to satisfy requirements 2 through 4 above.

At least 6 credit hours of the minor must focus on the Americas (outside of the United States) and/or Africa, and no more than 6 credit hours of the minor can be taken at the 1000 level (excluding 1010).

Areas of Study

Courses with an asterisk in the lists below fulfill the Africa and Americas outside of the United States portion of the major and minor. Approved courses offered at Fisk may count toward elective requirements.

Area of Study I, Gender and Sexuality

AADS: 1204* Diaspora Feminisms; 1404 Comparative Black Male Writers; 2104* Popular Culture and Black Sexual Politics; 2204* Black Women and the Politics of Blackness and Beauty; 2214 History & Myth: Black Women in the United States; 2294* Black Paris-Paris Noir: The African Diaspora and the City of Light; 2514* Insider/Outsider: Lesbian, Gay, Bisexual, Queer, and Trans Black Histories; 2654* Memoirs and Biographies; 3104W* Soul Food as Text in Text: An Examination of African American Foodways; 3204W* African American Children's Literature; 3214* Black Masculinity: Social Imagery and Public Policy; 4104 Environmental History, Sustainability, and African American Foodways; 4264* Black Diaspora Women Writers.

Area of Study II, Literature, Theory, and Visual Culture

AADS: 1016* Race Matters; 1506* Reel to Real: Film Aesthetics and Representation; 1706* Capoeira; 1716* The African City; 1906* Curating Black Lives: Imagination, Art, and Global Social Change; 2106* African Diaspora: A Problem for Thought; 2166 Blacks in Country Music; 2306* Race, Mixed Race, and "Passing"; 2356* African Spirits in Exile: Diaspora Religions in the Americas; 3004 The Morrisonian Era: Toni Morrison and American Social Reality; 3006* James Baldwin: Five Ways of Looking at His Life, Writing and Place; 3106* GOAT: Life, Times, and Politics of Muhammad Ali; 3206 Mystery, Murder, and Mayhem in Black Detective Fiction; 3306 Black Detroit; 3556 The Political Economy of Racism; 4126* The Black Classics; 4256* Haiti: Freedom, Democracy; 4506* Slavery and Public Memory.

Area of Study III, Social Sciences

AADS: 1108* Making of the African Diaspora; 1408* Blacks in Latin America and the Caribbean; 1808* On Whiteness: Whiteness, Race, and Identity; 2168* Black Migrations in the African Diaspora; 2178* Global Africa; 3178* Colonialism and After; 3208W* Blacks in the Military; 3258 Black Issues in Education; 3278* Black Europe; 3458* Atlantic African Slave Trade; 4198* Global Anti-Blackness and Black Power; 4228W Black Girlhood: History, Performance, and Counter-Narratives; 4270 Research Methods; 4588* The Black Studies Movement.

Other Electives

Any course from the above three areas may serve as an elective if it is not already being used to satisfy an Area of Study requirement. Please consult the director of undergraduate studies for periodic updates about electives including courses that can be taken at Fisk as electives for AADS.

AFRICAN AMERICAN AND DIASPORA STUDIES: 1111* First Year Writing Seminar.

ANTHROPOLOGY: 2105* Race in the Americas; 2106* Culture and Power in Latin America. 2375 Making Racism Visible: Media and Civil Rights from MLK to Black Lives Matter.

ASIAN AMERICAN STUDIES: 3155* Blackness and the Asian Century. ECONOMICS: 2150 Economic History of the United States.

ENGLISH: 3654/3654W African American Literature; 3658 Latino-American Literature; 3674* Caribbean Literature; 3742* Feminist Theory.

FRENCH: 3232* Introduction to Francophone Literature; 4023* The African Novel.

GENDER AND SEXUALITY STUDIES: 1150/1150W Sex and Gender in Everyday Life; 2240 Introduction to Women's Health; 3250/3250W Contemporary Women's Movements.

HISTORY: 1269* Introduction to African Studies; 1270* Sub-Saharan Africa 1400–1800; 1270W History of Sub-Saharan Africa; 1280* Africa since 1800; 1281W* Making of African Cities; 1383* Slave Resistance in the Americas; 1395 The Underground Railroad; 1410 U.S. 1877–1945: Reconstruction through World War II; 1440 African American History since 1877; 2137* The Mandelas: Biography, Struggle, and Legacies; 2450* Reform, Crisis, and Independence in Latin America, 1700–1820; 2139* Technology, Nature, Power in Africa; 2490* Brazilian Civilization; 2570* Caribbean History 1492–1983; 2620 The Old South; 2630 The New South; 2684* The History of Black Power; 2686 Race, Rights, American Dream; 2689 "Women of Color": History, Theorizing and Organizing in the United States; 2690 The Civil Rights Movement; 2691 Barack Obama: Man and President; 2692W* Biographies of Struggle; 2749 American Intellectual History to 1865; 2752 African American Intellectual History Since 1776; 3040 Health and African American Experience; 3200* Poverty, Economy, Society in Sub-Saharan Africa.

HISTORY OF ART AND ARCHITECTURE: 1750W African American Arts; 4960* Advanced Seminar in History of Art.
JEWISH STUDIES: 2240W Black-Jewish Relations in Post-War American Literature and Culture.

MEDICINE, HEALTH AND SOCIETY: 1940 Racial and Ethnic Health Disparities; 3140 Afrofuturism and Cultural Criticisms of Medicine.

MUSIC: 1100* World Music; 1105* African Music; 1600 American Popular Music; 1620 Survey of Jazz; 1630 The Blues; 2150* Music, Identity, and Diversity.

PHILOSOPHY: 2665 Race and Racism.

POLITICAL SCIENCE: 2237* African Politics.

RELIGIOUS STUDIES: 1100 Introduction to African American Religious Traditions; 3119 Martin Luther King, Jr., and the Social Roles of Religion; 3142 Slave Thought and Culture in the American South.

SOCIOLOGY: 3207 Popular Culture Dynamics; 3701 Racial Domination, Racial Progress; 3304 Race, Gender, and Health; 3702 Racial and Ethnic Minorities in the United States; 3704 Race, Gender, and Sport; 3624 Prison Life; 3711* Women, Gender, and Globalization; 3722* Gender in Society; 3723* Gender, Sexuality, and the Body.

SPANISH: 3835* Latino Immigration Experience*; 4750* Afro-Hispanic Literature.

Anthropology

[Program of Concentration in Anthropology](#)

[Honors Program](#)

[Minor in Anthropology](#)

CHAIR Steven A. Wernke

DIRECTOR OF UNDERGRADUATE STUDIES Jacob J. Sauer

DIRECTOR OF GRADUATE STUDIES Jada Benn-Torres

Professors, Emeriti: Tom Dillehay, Lesley Gill, William Fowler, Thomas Gregor, Ronald Spores

Professors: Arthur Demarest, Edward Fischer, Tiffiny Tung, Steven Wernke

Associate Professors: Jada Benn Torres, Carwil Bjork-James, Beth Conklin, Markus Eberl, T. S. Harvey, Norbert Ross

Assistant Professors: Sophie Bjork James, Ari Caramanica, Rebeca Gamez-Djovic, Monica Keith, Kimberly McKinson, Gabriel Torres Colon, Michelle Young

Associate Professor of the Practice: Tiffany Saul

Principal Senior Lecturers: Mareike Sattler, Jacob J. Sauer

COURSES OFFERED: [ANTH](#), [KICH](#)

Anthropology is the study of human diversity in all times and places. It brings together perspectives from the sciences and humanities to illuminate different aspects of the human past, the human body, and contemporary social life. Global perspectives, fieldwork and experiential learning, and concerns with ethics, justice, and social well-being are hallmarks of anthropology.

Vanderbilt's program has a strong research focus on Latin America and historically marginalized groups, especially indigenous people and descendants of the African diaspora.

Students majoring in anthropology take courses in several subfields, each of which looks at humanity from a different perspective. Cultural anthropology examines the relationships, beliefs, values, and political-economic practices that shape individual behavior, community life, and power in modern societies. Archaeology studies societies through their material remains, enabling long-term perspectives on the human past as well as connections to present-day descendant communities. Linguistics explores relations between language and culture. Biological anthropology examines topics such as community health in the past and present, forensic science, genetics, evolution, human biology, and bioethics. Courses cluster around themes of cross-cultural health, biology, food, and medical systems; inequality, power, and social-political relations; material culture, human-environment relations, and spatial analysis; religion and politics; and worldviews, language, and cognition. Many courses are interdisciplinary in nature, with connections to programs such as Biology; Earth and Environmental Science; Medicine, Health, and Society; Human and Organizational Development; History; Classics and Mediterranean Studies; Sociology; Jewish Studies; African American and Diaspora Studies; Latin American Studies; Asian Studies, and others, and attracts students from all four Undergraduate colleges. Unless indicated otherwise in the course description, anthropology courses have no prerequisites and are open to all majors and non-majors.

Knowledge of the diversity of human histories and lifeways is vital to imagining alternative paths to a better society. Anthropology develops this knowledge through experiential learning that challenges students to go beyond the familiar, to see, understand, create, and interact in new ways. This preparation is useful in all professional careers that involve understanding human behavior, working with people from different backgrounds, analyzing complex information, and thinking holistically about the conditions that shape people's lives.

Program of Concentration in Anthropology

The major in anthropology requires completion of at least 30 credit hours of course work, as follows:

1. *6 credit hours.* Two 1000-level surveys selected from the subfields of anthropology: 1101 (Cultural

Anthropology), 1201 (Archaeology), 1301 (Biological Anthropology), 1601 (Linguistic Anthropology). A course in a third subfield is strongly recommended (in consultation with the adviser).

2. *3 credit hours.* A seminar on anthropological theory (2101 or 2102). The seminar may not be used to count toward theme credit below.
3. *3 credit hours.* A course on anthropological methods; this class may not count towards the theme requirement. Courses that satisfy the methods requirement include 2211, 2601, 2602, 2602W, 2603, 3120, 3125, 3142, 3150, 3260, 3260W, 3261, 3262, 3347, 3372, 3860W, 3865, 3866, 3867, 3868, 4152, 4160, 4373. Other anthropology courses, including those at the 5000- and 6000-level, can count in consultation with the adviser and instructor.
4. *12 credit hours.* Students take four upper-level courses from a predesigned theme or from a theme that they design in consultation with their adviser:
 - A. Environment, landscape, and place (2108, 2109, 2113, 2114, 2117W, 2150, 2160, 2160W, 2170W, 2214, 2220, 2220W, 2221, 2222, 2223, 2224, 2225, 2226W, 2227, 2228W, 2230, 2231, 2242, 2242W, 2275, 2370, 2380W, 2381W, 3121, 3122, 31363138, 3200, 3240, 3250, 4154, 4155)
 - B. Healing, medicine, and culture (2113/W, 2227, 2342, 2370, 2371, 3121, 3125, 3132, 3138, 3141, 3143, 3144, 3145, 3343, 3344, 3345, 3346, 3371, 3372, 3401W, 4201W, 4345, 4373)
 - C. Social politics and power (2105, 2106, 2108, 2109, 2110, 2116W, 2117W, 2120, 2130, 2150, 2170W, 2220, 2220W, 2223, 2225, 2226W, 2231, 2242, 2275, 2342, 2370, 2375, 2380W, 2381W, 2385W, 2400, 2602W, 2800, 3050, 3121, 3122, 3125, 3130, 3132, 3133, 3134, 3135, 3136, 3138, 3140, 3144, 3145, 3161, 3162, 3202, 3241, 3232, 3243, 3250, 3343, 3345, 4152, 4153)
 - D. Identity, ethnicity, gender (2105, 2106, 2108, 2110, 2113W, 2114, 2117W, 2120, 2130, 2160/W, 2170W, 2220/W, 2227, 2229W, 2230, 2231, 2242/W, 2275, 2370, 2375, 2380W, 2381W, 2385W, 2400, 2602W, 3050, 3121, 3122, 3132, 3134, 3135, 3144, 3145, 3202, 3243/W, 3241, 3250, 3343, 3346, 3401W, 4152, 4155, 4156, 4201W, 4345, 4373)
 - E. Biocultural foundations in health, genetics, forensics, and ethics (2105, 2110, 2117W, 2170W, 2220/W, 2227, 2228W, 2275/W, 2342, 2370, 2371, 2375, 2380W, 2400, 3121, 3122, 3134, 3138, 3141, 3143, 3144, 3145, 3162, 3262, 3344, 3345, 3346, 3347, 3371, 3372, 3401W, 4156, 4201W, 4345, 4373)
 - F. Language, cognition, and culture (2160/W, 2170W, 2380W, 2385W, 2601, 2602, 2602W, 2603, 3140, 3145, 3150/W, 3243/W, 3620, 3622/W, 4155, 4201W; KICH 1101, 1102, 2201, 2202)
5. *3 credit hours.* One capstone experience in engaged anthropology. In consultation with their adviser, students may fulfill this requirement by taking a formal course (3125) or by completing an independent study, internship, or honors thesis, or by doing a special capstone project in any 2000-level or higher anthropology course with the approval of their adviser and the course instructor.
6. Minimum 3 credit hours of electives chosen from ANTH courses not already used to satisfy the requirements listed above, to total 30 credit hours toward the major.
7. With the approval of the student's major adviser, a maximum of 3 credit hours for a course taken in another department or program may be counted toward the major requirement. A variety of courses is possible, including but not limited to those listed below. In each case, the course must be relevant to the student's program and the student must receive the approval of the director of undergraduate studies: African American and Diaspora Studies 2178, 3178; Biological Sciences 2205; Classics 1020, 1150, 2180, 2200, 2210, 2250, 2260, 2270, 2300, 3030, 3100, 3110, 3310, 3710, 3730; History 1270, 2490; History of Art and Architecture 1330, 2210; Latin American Studies 2301, 2601; Mathematics 1010, 1011; Medicine, Health, and Society 1930, 2130, 2240, 2250, 2420, 2430, 3010, 3020, 3110, 3140, 3150, 3210, 3212, 3220, 3250; Music Literature 1100, 1105, 2110; Religious Studies 4554; Sociology 3001, 3221, 3232, 3311, 3313, 3314; Spanish 3360.

Honors Program

The Honors Program in Anthropology allows exceptional undergraduate students to undertake independent research on a topic in consultation and mentorship with faculty members. This program is open to all Anthropology majors with junior standing who have a 3.3 GPA in all general University courses and Anthropology courses who are approved for acceptance into the Honors Program by Department faculty. Completion of the program requires:

1. 3-6 credit hours in ANTH 4998 (Honors Research, select the section under your adviser's name), evaluated by the Honors Thesis Adviser, generally in the fall semester of the student's senior year. If the student plans to graduate in December, they may take 4998 in the spring semester.
2. 3-6 credit hours in ANTH 4999 (Honors Thesis), evaluated by Honors Thesis Adviser, generally in the spring semester of the student's senior year. If the student plans to graduate in December, they may take 4999 in the fall.
3. Submission of a written thesis, evaluated by the student's Honors Committee.
4. Oral presentation of the thesis (15-20 mins.), which includes invited guests and members of the department, evaluated by the student's Honors Committee.
5. Oral examination (defense) of the thesis, administered by the student's Honors Committee, usually after the

public presentation.

The honors thesis hours are expected to be in excess of the 30 hours required for the Major in Anthropology and are typically done in the student's senior year. This timeline may be modified after consultation with the thesis adviser, Departmental Director of the Honors Program, and Faculty approval.

Students meeting these requirements receive Honors or High Honors in Anthropology, depending on the quality of their thesis, grades in anthropology courses, and examination results. Successful Departmental Honors students will receive a Vanderbilt diploma that records Honors or High Honors in Anthropology.

Minor in Anthropology

The minor in anthropology requires 18 credit hours of course work, as follows:

1. *3 credit hours.* One introductory course from one of the four subfields in Anthropology: 1101 (cultural anthropology), 1301 (biological anthropology), 1201 (archaeology), 1601 (linguistics).
2. *3 credit hours.* One methods or one theory course listed in the major; see above.
3. *12 credit hours.* Four courses from a theme in the major designed in consultation with the adviser; see above.

Arabic

SENIOR LECTURERS M. Issam Eido, Bushra Hamad

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language. Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

COURSES OFFERED: [ARA](#)

Art

[Program of Concentration in Art](#)

[Requirements for the Program of Concentration in Art](#)

[Honors Program in Art](#)

[Minor in Art](#)

CHAIR Vesna Pavlovic

DIRECTOR OF UNDERGRADUATE STUDIES Angus Galloway

Professors, Emeriti: Michael Aurbach, Marilyn Murphy, Melvin Ziegler

Professors: Maria Campos-Pons, Vesna Pavlovic

Associate Professors: Mark Hosford, Jonathan Rattner

Assistant Professors: Raheleh Filsoofi, Haein Kang

Professor of the Practice: Jana Harper

Assistant Professors of the Practice: Angus Galloway, Sarah Dunham

Principal Senior Lecturer, Retired: Susan DeMay

Senior Lecturer, Retired: Farrar Hood Cusomato

Affiliated Faculty

ASSOCIATE PROFESSOR Jonathan Rattner

COURSES OFFERED: [ARTS](#)

Courses in art are offered in a variety of media, which provide wide-ranging methods and perspectives. Our courses emphasize creative and critical approaches to learning. The department of art offers a rigorous, socially minded, and research-driven curriculum. Students engage in an immersive laboratory of fearless experimentation and challenge the rapidly expanding role of art in our society. Through trans-disciplinary thinking and experimental methodologies, students utilize a range of artistic disciplines in a state-of-the-art facility. Equal emphasis is placed on both individual and collective exploration, where students are encouraged to develop relationships across the university and broader communities.

Many students will use the program in art as a foundation for careers in which creativity and visual studies are especially valued, as the basis for advanced training in professional schools (such as art, architecture, museum studies), and for employment in galleries, museums, commercial art, or design-related fields. An important goal of the department is to help students become readers of the rich visual environment in our culture throughout their lives, as well as to encourage creative approaches to learning in all disciplines.

The Department of Art offers several opportunities for extracurricular activities in the arts including a student-run art gallery, and Space 204 arts laboratory which hosts exhibitions and workshops throughout the year. Studio VU lecture series brings some of the most important artists working today to campus for lectures and one-on-one studio visits with students.

Since 1984 the Department of Art has supervised the Margaret Stonewall Wooldridge Hamblet Award given to an eligible senior art major. This prestigious award provides the means for travel and independent art activity for one year, culminating in a one-person exhibition at Vanderbilt. Our immersive program includes both junior and senior major trips to New York and other important art destinations.

Many other prizes are awarded in our department. The Allan P. Deloach Memorial Prize in Photography was established in 2000 in memory of Allan Deloach (B.A. 1963) by two of his colleagues at IBM. This cash award is open to any student who has taken a studio class in any discipline at Vanderbilt. Midsouth Ceramics awards are given to the top three ceramic projects in the annual open house, and the Plaza Artists Materials awards are given to four students each year. All competitions are judged by outside professional artists.

Program of Concentration in Art

The art major requires 30 credit hours and presents students the opportunity to explore their ideas conceptually, as well as to learn the technical skills involved in the creation of art. The program offers a wide range of classes and media. Our students are offered a strong grounding in traditional processes such as drawing, painting, ceramics, and sculpture, as well as the opportunity to explore contemporary processes involving video, performance, digital photographic, and new media, installation, and social interactive art practice. Our diverse faculty utilizes a wide range of teaching styles and aesthetic philosophies. We consider how ideas have been developed through the centuries as well as how specific techniques have been used to enrich the expression of an idea. In addition to modern art history offerings, art majors are encouraged to take courses in pre-Renaissance, non-Western art history, philosophy of aesthetics, and film. The Contemporary Art Maymester offers an opportunity to study

contemporary art in a concentrated manner.

Requirements for the Program of Concentration in Art

Foundation Requirement (3 credit hours)

- ARTS 1101, 1102, or 1104

Studio Requirements (15 credit hours)

- Any **ARTS** courses with the exception of ARTS 1099 or ARTS 1800.

Within the 15 credit hours, students must take at least one 2000-level or higher ARTS course.

Related Requirement (6 credit hours), which must include one course (3 credit hours) of each of the following:

- ARTS 1800, Sources of Contemporary Art
- Any HART course or one course from the following: ARTS 1099; CMA 1600, 2300; PHIL 3014

The department highly recommends taking ARTS 1800, Sources of Contemporary Art course prior to the senior year.

Directed Study (6 credit hours)

- ARTS 3970, Directed Study: Senior Show and Contemporary Practices
- ARTS 3971, Independent Research: Senior Show

Majors are required to complete the Independent Research course, ARTS 3971, their senior year. This course is designed specifically to help prepare majors for their Senior Show and is typically taken in the second semester of the senior year. No other independent research/study course may be counted toward the major.

Honors Program in Art

The Honors Program in the Department of Art offers an opportunity to art majors to pursue their interest in art on a higher level. To be admitted to the Honors Program in Art, students must have:

- At least a 3.0 cumulative GPA.
- At least a 3.5 GPA in courses that count toward the major in art.
- Completed the sophomore year.

Students interested in pursuing the honors program should contact the director of undergraduate studies. Application materials must be submitted to the director of undergraduate studies in the applicant's junior year; applications may be submitted electronically. Applications must include ten digital images of recent work with written explanations for each image. Applicants will be notified in writing of the department's decision.

Each honors student shall have a committee consisting of one faculty member appointed by the department chair, the student's selected honors adviser, and the director of undergraduate studies.

Requirements for graduation with honors in art:

1. Successful completion of the requirements for the major in art,
2. During the senior year the student is required to register for ARTS 4998 (3 credit hours) in the first semester and 4999 (3 credit hours) in the second semester in order to complete a written thesis, expanding concepts explored in the senior exhibition.
3. Successful oral defense of the thesis and senior exhibition during the final semester of undergraduate study.
4. At least a final 3.30 cumulative GPA.
5. At least a final 3.5 GPA in courses that count toward the major in art.

Minor in Art

The minor in art requires 18 credit hours of course work, including the following:

- HART 1105 or ARTS 1800
- ARTS 1102 (Drawing and Composition I); and four other ARTS courses, with at least one at the 2000-or-higher level.

Asian Studies

[Program of Concentration in Asian Studies](#)

[Program of Concentration in Asian American and Asian Diaspora Studies](#)

[Honors Program in Asian Studies](#)

[Minor in Asian Studies](#)

[Minor in Chinese Language and Culture](#)

[Minor in Japanese Language and Culture](#)

[Minor in Korean Language and Culture](#)

[Minor in South Asian Language and Culture](#)

[Minor in Asian American and Asian Diaspora Studies](#)

[Asian Studies Course List](#)

CHAIR Gerald Figal

DIRECTOR OF UNDERGRADUATE STUDIES Pengfei Li

Professors: Robert Campany, Gerald Figal

Associate Professor: Ben Tran

Assistant Professors: Mabel Gergan, Mark John Sanchez, We Jung Yi

Principal Senior Lecturers: Divya Chaudhry, Seok Bae Jang, Xianmin Liu

Senior Lecturers: Yinghui Guo, Pengfei Li, Elliott McCarter, Asami Nakano, Hideko Shimizu, Qing Wei, Ji You Whang

Interdepartmental Faculty

PROFESSOR Yoshikuni Igarashi (History)

PROFESSOR EMERITUS Tony K. Stewart (Religious Studies)

ASSOCIATE PROFESSORS Brett Benson (Political Science), Peter Lorge (History), Tracy Miller (History of Art and Architecture), Ruth Rogaski (History), Samira Sheikh (History), Lijun Song (Sociology and Medicine, Health, and Society), Anand V. Taneja (Religious Studies)

ASSISTANT PROFESSORS Calynn Dowler (Religious Studies), Bohyeong Kim (Communication Studies), Adeana McNicholl (Religious Studies), Isidora Miranda (Blair School of Music), Akshya Saxena (English), Meng Zhang (History)

MELLON ASSISTANT PROFESSOR Boyoung Chang (History of Art and Architecture)

SENIOR LECTURER Susan Dine (History of Art and Architecture)

COURSES OFFERED: [ASAM](#), [ASIA](#), [CHIN](#), [HNUR](#), [JAPN](#), [KOR](#), [SNSK](#), [TBTN](#)

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level

language course if they previously have earned credit for a higher-level course taught in that same language. Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

The Department of Asian Studies provides students with a foundation in the languages, cultures, and societies of Asia and the Asian diaspora necessary to pursue a career among a wide host of global companies, institutions, and agencies that do business in the United States and abroad with the many countries of Asia. Rich in diverse histories and cultures, present-day Asia and the Asian diaspora are at the center of the global future. A degree in Asian Studies equips its students with the linguistic competence and cultural knowledge to join in that global future, whether it be as a foreign press correspondent, investment banker, video game designer, translator/interpreter, educator, diplomat, tour operator, ad firm consultant, or traditional Chinese medicine practitioner. With the study of modern Asian languages at its core, the program embraces a wide variety of courses in the art, culture, economics, history, film and media, politics, religion, medicine, and sociology of East Asia, South Asia, Southeast Asia, Asian America, and Asian diasporic communities throughout the world. Through their teaching and research, faculty members promote a better understanding of multiple facets of life in Asia and the region's past and present relationship with the rest of the world.

Majors and minors are strongly encouraged to complete a study abroad program in Asia. Up to 6 credit hours of Asia-related courses from Vanderbilt-approved study abroad programs may be applied toward the major or minor upon approval of the department chair or director of undergraduate studies. Additional study abroad credit hours may be granted on a case-by-case basis at the discretion of the chair or DUS. Students should consult with the chair or DUS before applying to a study abroad program.

Program of Concentration in Asian Studies

The major in Asian studies requires a minimum of 36 credit hours of course work and is designed to ensure that graduates have both depth and breadth in their understanding of Asia.

For the major in Asian studies, students must formally declare an area of concentration at the time the major is declared (China, Japan, Korea, or South Asia) and complete at least 36 credit hours from the Asian Studies Course List (see below), according to these rules:

1. At least 3 credit hours in an Asian language taught in the Department of Asian Studies at the 3301 (Advanced I) level or above. Asian languages not offered by the Asian studies department require the approval of the department chair or the director of undergraduate studies.
2. At least 9 non-language credit hours of courses in area of concentration.
3. At least 6 non-language credit hours of courses eligible for Asian Perspectives.
4. No more than 18 credit hours of courses in any Asian language may be applied to the total 36 credit hours.

Advanced Placement credits in language do not count toward credit hours required for the major or minors, but can figure into the assessment of initial placement within a language track.

Program of Concentration in Asian American and Asian Diaspora Studies

For the major in Asian American & Asian Diaspora Studies, students must complete at least 36 credit hours from the Asian Studies Course List (see below), according to these rules:

1. At least 3 credit hours in an Asian language taught in the Department of Asian Studies at the 2202 (Intermediate II) level or above. Asian languages not offered by the Asian studies department require the approval of the department chair or the director of undergraduate studies.
2. At least 12 credit hours of Asian American & Asian Diaspora-eligible courses (code "AA" on Asian Studies course list, including ASAM 2101 or ASAM 2102).
3. At least 6 credit hours of courses eligible for Asian Perspectives at the 3000-level or higher.
4. No more than 18 credit hours of courses in any Asian language may be applied to the total 36 credit hours.

Advanced Placement credits in language do not count toward credit hours required for the majors or minors, but can figure into the assessment of initial placement within a language track.

Honors Program in Asian Studies

Students interested in the Honors Program in Asian Studies should consult with Asian Studies department chair or the director of undergraduate studies no later than the fall semester of their junior year to discuss qualifications and requirements. In addition to following the requirements set by the College of Arts and Science, the following must be satisfied:

1. All of the requirements for the major in Asian studies.
2. 3 credit hours of ASIA 3980 Juniors Honors Readings. If ASIA 3980 is not offered, this requirement may be substituted by an alternative course, with approval by the Asian Studies department chair or the director of undergraduate studies.
3. ASIA 4998 (3 credit hours) and 4999 (3 credit hours). Honors Research must be taken while in residence at Vanderbilt. The candidate will write an honors thesis while completing the two-semester Honors Research sequence. The honors thesis is a research paper or creative production on a topic defined by the student in consultation with a principal faculty adviser. At least two Asian Studies departmental or interdepartmental faculty, including the principal faculty advisor, serve as the candidate's Honors Committee. The committee assesses on-going progress on the thesis and administers the oral examination.

Note: 3980, 4998, and 4999 may count toward the 36 credit hours required for the major.

4. A minimum 3.30 cumulative grade point average with a minimum 3.50 grade point average in courses that count toward the major in Asian Studies upon completion of the Honors requirements.
5. An oral examination on the thesis typically scheduled within the two months prior to graduation.

Study abroad in a country relevant to the Honors Research project is strongly recommended, but not required.

Minor in Asian Studies

The minor in Asian Studies provides a broad knowledge of the languages, literatures, politics, histories, film and media, arts, and religions of China, Japan, Korea, and South Asia. Students cannot combine the Asian Studies minor with other minors within the Asian Studies Department.

For the minor in Asian Studies, students must complete at least 17 credit hours from the Asian Studies Course List (see below), according to these rules:

1. At least 5 credit hours in any Asian languages taught in the Asian Studies Department at the 2201 (Intermediate I) level or above
2. At least 6 credit hours of History Survey Courses
3. At least 3 credit hours of Humanities Courses
4. At least 3 credit hours of Social Sciences Courses
5. No more than 5 credit hours of any Asian language courses taught in the Asian Studies Department may be applied to the total 17 credit hours

Minor in Chinese Language and Culture

The minor in Chinese Language and Culture is anchored by a firm foundation in language study that is complemented by electives in art, history, literature, film and media, politics, and religion. Students cannot combine the Chinese Language and Culture minor with other minors within the Asian Studies Department.

For the minor in Chinese Language and Culture, students must complete at least 18 total credit hours in China Concentration (CC) courses from the Asian Studies Course List (see below), according to these rules:

1. At least 3 credit hours in Chinese language at the 3301 (Advanced I) level or above
2. No more than 13 credit hours of Chinese language (CHIN) courses may be applied to the total 18 credit hours

Minor in Japanese Language and Culture

The minor in Japanese Language and Culture is anchored by a firm foundation in language study that is complemented by electives in art, history, literature, film and media, politics, and religion. Students cannot combine the Japanese Language and Culture minor with other minors within the Asian Studies Department.

For the minor in Japanese Language and Culture, students must complete at least 18 total credit hours in Japan Concentration (JC) courses from the Asian Studies Course List (see below), according to these rules:

1. At least 3 credit hours in Japanese language at the 3301 (Advanced I) level or above
2. No more than 13 credit hours of Japanese language (JAPN) courses may be applied to the total 18 credit hours

Minor in Korean Language and Culture

The minor in Korean Language and Culture is anchored by a firm foundation in language study that is complemented by electives in history, literature, film, and media. Students cannot combine the Korean language and culture minor with other minors within the Asian Studies Department.

For the minor in Korean Language and Culture, students must complete at least 18 total credit hours in Korean Concentration (KC) courses from the Asian Studies Course List (see below), according to these rules:

1. At least 3 credit hours in Korean language at the 3301 (Advanced I) level or above
2. No more than 13 credit hours of Korean language (KOR) courses may be applied to the total 18 credit hours

Minor in South Asian Language and Culture

The minor in South Asian Language and Culture is anchored by a firm foundation in language study that is complemented by electives in art, history, literature, film and media, politics, and religion. Students cannot combine the South Asian language and culture minor with other minors within the Asian Studies Department.

For the minor in South Asian language and culture, students must complete at least 18 total credit hours in South Asia Concentration (SA) from the Asian Studies Course List (see below), according to these rules:

1. At least 3 credit hours in a South Asian language (Hindi-Urdu or Sanskrit) at the 3301 (Advanced I) level or above
2. No more than 13 credit hours of South Asian language (HNUR or SNSK) courses may be applied to the total 18 credit hours

Minor in Asian American and Asian Diaspora Studies

The minor in Asian American & Asian Diaspora Studies provides a broad knowledge of the histories, cultures, societies, and languages of Asian American and global Asian diasporas. Students cannot combine the Asian American & Asian Diaspora Studies minor with other minors within the Asian Studies Department.

For the minor in Asian American & Asian Diaspora Studies, students must complete at least 17-18 credit hours from the Asian Studies Course List (see below), according to these rules:

1. 3 credit hours in either ASAM 2101 or ASAM 2012
2. At least 3 credit hours in any Asian languages taught in the Asian Studies Department at the 2201 (Intermediate I) level or above
3. At least 6 credit hours of Asian American & Asian Diaspora (AA) courses and either
4. 6 credit hours of courses eligible for Asian Perspectives, to total 18 credit hours (not double counting courses above), OR

Up to 5 credit hours of any Asian language courses taught in the Asian Studies Department may be applied to total 17 credit hours.

Asian Studies Course List

All courses on this list count toward the credit-hour requirements for the major and the minors within the Program in Asian Studies. Their eligibility for specific requirements within the major and minors is indicated by the following codes:

China Concentration = CC

Japan Concentration = JC

Korea Concentration = KC

South Asia Concentration = SA

Asian Perspectives = AP

Asian American/Asian Diaspora = AA

History Survey Course = HS

Humanities Course = HU

Social Science Course = SS

Any given course may be applied to only one category of requirement even if it may be eligible for more than one.

Courses marked with an * require approval from the Asian Studies chair or director of undergraduate studies.

Chinese Language Courses

CHIN 1011. Basic Chinese (CC)

CHIN 1012. Basic Chinese (CC)

CHIN 1101. Elementary Chinese I (CC)

CHIN 1102. Elementary Chinese II (CC)

CHIN 1231. Calligraphy (CC, HU)

CHIN 2201. Intermediate Chinese I (CC)

CHIN 2202. Intermediate Chinese II (CC)

CHIN 2211. Chinese for Heritage Learners I (CC)

CHIN 2212. Chinese for Heritage Learners II (CC)

CHIN 3301. Advanced Chinese I (CC)

CHIN 3302. Advanced Chinese II (CC)

CHIN 3302W. Advanced Chinese II (CC)

CHIN 3851. Independent Study (CC)*

CHIN 3852. Independent Study (CC)*

CHIN 4001. Fourth-year Conversational Chinese (CC)

CHIN 4002. Fourth-year Conversational Chinese (CC)

CHIN 4401. Business Chinese I (CC)

CHIN 4402. Business Chinese II (CC)

CHIN 4403. Readings in Modern Chinese Media (CC)

CHIN 4404. Readings in Modern Chinese Media (CC)

CHIN 4405. Classical Chinese Literature and Philosophy. (CC, HU)

Hindi-Urdu Language Courses

- HNUR 1101. Elementary Hindi-Urdu I (SA)
- HNUR 1102. Elementary Hindi-Urdu II (SA)
- HNUR 2201. Intermediate Hindi-Urdu I (SA)
- HNUR 2202. Intermediate Hindi-Urdu II (SA)
- HNUR 3301. Advanced Hindi-Urdu I (SA)
- HNUR 3302. Advanced Hindi-Urdu II (SA)
- HNUR 3851. Independent Study (SA)*
- HNUR 3852. Independent Study (SA)*

Japanese Language Courses

- JAPN 1011. Basic Japanese I (JC)
- JAPN 1012. Basic Japanese II (JC)
- JAPN 1013. Practical Japanese Conversation (JC)
- JAPN 1101. Elementary Japanese I (JC)
- JAPN 1102. Elementary Japanese II (JC)
- JAPN 1231. Tadoku: Extensive Reading in Japanese (JC)
- JAPN 2201. Intermediate Japanese I (JC)
- JAPN 2202. Intermediate Japanese II (JC)
- JAPN 2232. Japanese through Manga (JC)
- JAPN 2233. Language through Japanese Food Culture (JC, HU)
- JAPN 3301. Advanced Japanese I (JC)
- JAPN 3302. Advanced Japanese II (JC)
- JAPN 3851. Independent Study (JC)*
- JAPN 3852. Independent Study (JC)*
- JAPN 3891. Special Topics in Advanced Japanese (JC)

Korean Language Courses

- KOR 1101. Elementary Korean I (KC)
- KOR 1102. Elementary Korean II (KC)
- KOR 2201. Intermediate Korean I (KC)
- KOR 2202. Intermediate Korean II (KC)
- KOR 3301. Advanced Korean I (KC)
- KOR 3302. Advanced Korean II (KC)

KOR 3851. Independent Study (KC)

KOR 3852. Independent Study (KC)

Sanskrit Language Courses

SNSK 1101. Elementary Sanskrit I (SA, AP)

SNSK 1102. Elementary Sanskrit II (SA, AP)

SNSK 2201. Intermediate Sanskrit I (SA, AP)

SNSK 2202. Intermediate Sanskrit II (SA, AP)

SNSK 3301. Advanced Sanskrit I (SA, AP)

SNSK 3302. Advanced Sanskrit II (SA, AP)

Asian Studies

ASIA 1001. Commons iSeminar: Cultures of India & Japan (AP, HU)

ASIA 1111. First-Year Writing Seminar (as appropriate)*

ASIA 1201. Writing Southeast Asia (AP, HU)

ASIA 1680. Inside China (CC, SS)

ASIA 1682. Chinese Culture through Tai Chi and Qi Gong (CC)

ASIA 1780. Health and Well-being at the Margins of Indian Society (SA, SS)

ASIA 1881W. The Body in Modern Japanese Culture (JC, HU)

ASIA 2100W. Fashioning the Self: Coming of Age and Asian Modernities (AP, HU)

ASIA 2210W. Hollywood Hanoi (AP, HU)

ASIA 2206. War and the Environment in Southeast Asia (SA, AA, HU)

ASIA 2214W. Food of SE Asia and the Diaspora (SA, AA, AP)

ASIA 2220. Violence and Media in Southeast Asia (AP, HU)

ASIA 2302. Popular Culture of South Asia (SA, HU)

ASIA 2303. Classical India in the Modern World (SA, HS, AP)

ASIA 2304. The Bhagavad Gita (SA, HU)

ASIA 2305. Indigenous Peoples and Decolonial Futures in Asia and Beyond (AP, HU, SS)

ASIA 2306. Environment & Development in South Asia (SA, SS, AP)

ASIA 2307. Transnational South Asia (AA, SA, SS, AP)

ASIA 2308. Narratives of Disaster & Apocalypse (AP)

ASIA 2411. Cultural History of Korea (KC, HS, AP)

ASIA 2412. Global Korean Cinema (KC, HU, AP)

ASIA 2413. History of Modern Korea (KC, HS, AP)

ASIA 2414. Food and Family in Korean Pop Culture (KC, HU, AP)

ASIA 2415W. Blood, Sweat, and Tears in Korean Literature (KC, HU)

ASIA 2416. The Korean War through Film & Fiction (KC, HU)

- ASIA 2511. Popular Culture in Modern Japan (JC, HU)
ASIA 2512. Explorations of Japanese Animation (JC, HU)
ASIA 2513W. Media Monsters in Contemporary Japan (JC, HU)
ASIA 2514W. Contemporary Japan through Film & Fiction (JC, HU)
ASIA 2520. Navigating Japan (JC, HU)
ASIA 2605. Romancing the Nation in Modern Chinese Literature (CC, HU)
ASIA 2606. Martial Tradition in Chinese Literature (CC, HU)
ASIA 2607. Self and Society in Pre-modern Chinese Literature (CC, HU)
ASIA 2608. Chinese Drama: 13th to 20th Centuries (CC, HU)
ASIA 2609W. Writing and Gender in Traditional China (CC, HU)
ASIA 2610. Overseas Encounters (AA, AP, HU)
ASIA 2620. Chinese Culture through Calligraphy (CC, HU)
ASIA 2630. Chinese Medicine (CC, SS)
ASIA 2710. Embodied Harmony and Balance: Tai Chi, Ikebana, and Cultural Connections (AP, HU)
ASIA 2720. Encountering China (CC, HU)
ASIA 3151. The Third World and Literature (AP, HU)
ASIA 3155. Blackness and the Asian Century (AP, HU)
ASIA 3210W. The Philippines and the World (AA, AP, HU)
ASIA 3633. Self-Cultivation in Ancient China (CC, HU)
ASIA 3851. Independent Study (as appropriate)*
ASIA 3852. Independent Study (as appropriate)*
ASIA 3891. Special Topics (as appropriate)*
ASIA 3892. Special Topics* (as appropriate)
ASIA 3980. Junior Honors Readings (as appropriate)*
ASIA 4998. Honors Research (as appropriate)*
ASIA 4999. Honors Research (as appropriate)*

Asian American Studies

- ASAM 2101. Asian American History until 1924 (AA, AP)
ASAM 2102. Asian American History, 1924 to the Present (AA, AP)
ASAM 2106. Sociology of Asian America (AA, AP)
ASAM 2107. Social Movements in Asia and Asian America (AA, AP)
ASAM 3101. Southeast Asian Americans (AA, AP)
ASAM 3102. Cold War Asian America (AA, AP)
ASAM 3106. Race and the Environment in Asian America (AA, AP)
ASAM 3107. Science, Technology, and the Body in Global Asia (AA, AP)

Cinema and Media Arts

CMA 3892. Special Topics in the Study of Film (as appropriate)*

English

ENGL 1210W. Prose Fiction: Forms and Techniques (as appropriate)*

ENGL 1260W. Introduction to Literary and Cultural Analysis (as appropriate)*

ENGL 2319W. World Literature, Modern (as appropriate)*

ENGL 3662. Asian American Literature (AA, AP, HU)*

ENGL 3670. Colonial and Post-Colonial Literature (as appropriate)*

ENGL 3670W. Colonial and Post-Colonial Literature (as appropriate)*

Hindi/Urdu

HNUR 3322. Introduction to Urdu Literature (SA, HU)

History

HIST 1050. East Asia since 1800 (AP, SS, HS)

HIST 1060. Premodern China (CC, SS, HS)

HIST 1070. China from Empire to the People's Republic (CC, SS, HS)

HIST 1080. Premodern Japan (JC, SS, HS)

HIST 1090. Modern Japan (JC, SS, HS)

HIST 1111 First-Year Writing Seminar (as appropriate)*

HIST 1160. Modern South Asia (SA, SS, HS)

HIST 1161. India Before Europe: 3000 B.C.E.-1750 C.E. (SA, SS, HS)

HIST 1162. The East India Company, 1600-1858 (AP, SS)

HIST 1881. The Body in Modern Japanese Culture (JC, HU)

HIST 1882W. Japan Through Historical Fiction (JC, HU)

HIST 2100. Politics and Catastrophe in Modern China (CC, SS)

HIST 2105. Chinese Thought (CC, HU)

HIST 2106. A Global History of Tea (AP, SS)

HIST 2107. Chinese Economic History (CC, SS)

HIST 2108. Environment and Economy in China since 1700 (CC, SS)

HIST 2110. Crisis Simulation in East Asia (AP, SS)

HIST 2111. China and the United States: Intertwined Histories (AP, CC, SS)

HIST 2115. Play and Pleasure in Early Modern Japan (JC, HU)

HIST 2119. The Pacific War in Cinematic Memory (JC, HU)

HIST 2120. Japan's War and Postwar, 1931-1989 (JC, SS)

HIST 2140. The Mughal World (SA, SS)

HIST 2150. India and the Indian Ocean (SA, AP, SS)

HIST 3090 Tokyo: History and Image (JC, SS)

HIST 3112W. China and the World (CC, AP, SS)

HIST 3220W. Images of India (SA, HU)

History of Art and Architecture

HART 1200. Arts of East Asia (AP, HU)

HART 1205. Arts of South and Southeast Asia (SA, AP, HU)

HART 1210W. Art and Ritual in Asia (AP, HU)

HART 1220. History of Asian Architecture (AP, HU)

HART 2100. Architecture and the Mapping of Empire in Asia (AP, HU)

HART 2110. Arts of China (CC, HU)

HART 2120. Arts of Korea (KC, HU)

HART 2130. Arts of Japan (JC, HU)

HART 2150. East Asian Architecture and Gardens (AP, HU)

HART 2155W. Healing and Art in China (CC, HU)

HART 2170. Religion and Politics in South and Southeast Asian Art (SA, AP, HU)

HART 2175. Modern and Contemporary Indian Architecture (AP, HU)

HART 2815. Digital Heritage, Methods, and Practice: The Chinese Temple ((CC, HU)

HART 3112. The Arts of China during the Liao-Song Period (CC, HU)

HART 3140. Healing and Art in East Asia. (AP, HU)

HART 3164W. Art of Buddhist Relic and Reliquary (AP, HU)

HART 3172. Himalayan Art: Art of the Divine Abode (AP, HU)

HART 3174. The South Asian Temple (SA, HU)

Human and Organizational Development — International Leadership and Policy

HODI 3260. Education in the Asia-Pacific Region: Development, Reform, and Innovation (AP, SS)

Medicine, Health, and Society

MHS 2310. Chinese Society and Medicine (CC, SS)

Political Science

PSCI 2216. The Chinese Political System (CC, SS)

PSCI 3894. Selected Topics in Comparative Politics (as appropriate)*

PSCI 3895. Selected Topics in International Politics (as appropriate)*

Religious Studies

RLST 1010. Encountering Religious Diversity (AP, HU)
RLST 1111. First-Year Seminar (as appropriate)*
RLST 1500. Introduction to Islam (AP, HU)
RLST 1637. Religions of Tibet and the Himalaya (AP, HU)
RLST 1700. Religions in China (CC, HU)
RLST 1710. Religions of Japan (JC, HU)
RLST 2134. Asian and Asian American Religions in the United States (AP)
RLST 2644. Buddhist Traditions (AP, HU)
RLST 2664. Foundations of Hindu Traditions (SA, AP, HU)
RLST 3561. Islam in South Asia (SA, HU)
RLST 3650. Classical Philosophies of India (SA, HU)
RLST 3669. Sacred Space in the Tibetan World (AP, HU)
RLST 3670W. Buddhism and the State (AP, HU)
RLST 3747. Daoist Tradition (AP, HU)
RLST 3749. Zen Buddhism (AP, HU)
RLST 3753. East Asian Buddhism (AP, HU)
RLST 3775. Chinese Religions through Stories (CC, HU)
RLST 4665. Mythologies and Epics of South Asia (SA, HU)
RLST 4666. Devotional Traditions of South Asia: Hindu, Muslim, Sikh (SA, AP, HU)
RLST 4774. Japanese Mythology (JC, HU)

Biochemistry and Chemical Biology

[Program of Concentration](#)

[Honors Program](#)

CO-DIRECTORS Brian O. Bachmann, Alissa Hare

Advisory Committee

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ASSOCIATE PROFESSOR Bruce M. Damon (Radiology and Radiological Sciences)

ASSISTANT PROFESSOR Lauren Parker Jackson (Biological Sciences)

SENIOR LECTURER Cynthia T. Brame (Biological Sciences), Alissa Hare (Chemistry)

COURSES OFFERED: [BCB](#)

The study of chemical processes within living systems is an interdisciplinary enterprise that spans the fields of

chemistry, molecular and cellular biology, biophysics, and engineering. Chemical biology and biochemistry use chemical insight, techniques, and tools to study or manipulate biological systems. They are the cornerstones of medical technology and therapeutics. To provide students with training in modern principles at a chemistry-biology interface, Vanderbilt's interdisciplinary major in biochemistry and chemical biology incorporates expertise from multiple departments in the university. Students receive a broad background in the natural sciences (chemistry, biology, physics) and mathematics, followed by fundamental core training in principles of biochemistry and chemical biology that involves both theoretical and laboratory course work. Students then pursue an area of emphasis in either biochemistry or chemical biology through upper-level elective courses. Students participate in independent research in laboratories of biochemistry and chemical biology faculty. Additional research experience is available in the Honors Program.

Program of Concentration

The biochemistry and chemical biology major tracks share fundamental core elements but have a distinct set of foundational courses, track-specific electives, and laboratory requirements. All students are required to complete a set of basic science and mathematics courses. The major consists of 32 credit hours beyond these basic science and mathematics courses. All students complete 12 credit hours of core courses, 14 credit hours of either biochemistry or chemical biology track, and 6 credit hours of general electives. For suggested paths of completion, see the [Program in Biochemistry and Chemical Biology website](#).

Required Math and Science Courses for Both Tracks

(38 credit hours)

Biological Sciences — BSCI 1510, 1511, 1510L, and either 1511L or 1512L

Chemistry — CHEM 2221 or 2211, CHEM 2222 or 2212, CHEM 2221L and CHEM 2222L

Mathematics — MATH 1200 or 1300 and MATH 1201 or 1301

Physics — PHYS 1501 or 1601, PHYS 1502 or 1602, PHYS 1501L or 1601L, and PHYS 1502L or 1602L

Note: These credit hours do not count toward the major. AP credit may satisfy some of these requirements.

Fundamental Core Courses for all Tracks (12 credit hours)

BCB 4965, BSCI 2520, CHEM 3710, CHEM 3320

Tracks (14 credit hours)

Biochemistry Track

Biochemistry Foundations (3 credit hours) — BSCI 4265

Biochemistry Electives (9 credit hours) — BCB 2101, BCB 4320, BSCI 2201, BSCI 2210, CHEM 2100, CHEM 4720

Laboratory (2 credit hours) — BCB 3201

Chemical Biology Track

Chemical Biology Foundations (5 credit hours) — CHEM 2100 and 2100L, BCB 2101

Chemical Biology Electives (6 credit hours) — BCB 4320, BSCI 4265, CHEM 4720

Chemical Biology Laboratory (3 credit hours) — BCB 3201, BCB 4966

General Electives (6 credit hours)

Electives may be chosen from any of the following:

BCB 2101, BCB 3101, 3201, 4320, 4966; BME 2200, 3000, 4400, 4410, 4500; BSCI 2201, 2210, 3230, 3234, 3245, 3247, 3252, 3256, 3270, 3630, 4265, 4266, 4274; CHEM 2100, 3020, 3300, 4230, 4720; CS 1101, 1103, 2204; NSC 2201, 3245, 3260, 3269, 3274, 3891, 4961

Courses taken to fulfill track requirements are not eligible for elective credit.

Honors Program

Students in either Biochemistry or Chemical Biology track may apply to the Honors Program if they hold a minimum cumulative GPA of 3.3 and a GPA of at least 3.4 in courses that count toward the major at the end of their junior year. The purpose of the Honors Program is to provide students with an intensive independent research experience in a host laboratory. Honors candidates must complete two semesters (3 credit hours each semester) of Honors Research (BCB 4999). The successful completion of one semester of BCB 4999 may substitute for the BCB 4965 course requirement. Upon entering the program at the end of the junior year, candidates assemble a committee of the major research adviser and two additional faculty members appropriate to the area of research. As part of the research course work, the candidate will write an honors thesis. At the end of the graduating semester, honors candidates must submit a written thesis and give an oral defense of their research.

Biological Sciences

[General Requirements](#)

[Minor in Biological Sciences](#)

[Specific Requirements for Individual Majors](#)

[Biological Sciences \(BSCI\) Major](#)

[Ecology, Evolution, and Organismal Biology \(EEOB\) Major](#)

[Molecular and Cellular Biology \(MCB\) Major](#)

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Principal Senior Lecturers: Ava Due-Goodwin, Mark Woelfle

Senior Lecturers: Amanda Benson, Brian Bill, Thomas Clements, Allison Leich Hilbun, James Pask

COURSES OFFERED: [BSCI](#)

The biological sciences encompass the study of living organisms and life processes at all levels: ecosystems, populations, individual organisms, tissues, cells, subcellular structures, and molecules. The Department of Biological Sciences offers courses that address all of these levels and programs of study for undergraduates and for graduate students seeking the Ph.D.

For undergraduates, the department offers three majors and a minor. All three majors have honors tracks. The Biological Sciences (BioSci) major is designed for the student seeking a broad base in the biological sciences; it is a highly flexible program that allows a certain amount of specialization in upper-level courses. The Molecular and Cellular Biology (MCB) major is designed for students with an interest in developing an in-depth understanding of how living systems function at the molecular and cellular levels, with upper-level course options ranging in content from biophysics and biochemistry to developmental biology, and to molecular aspects of evolution. The Ecology, Evolution, and Organismal Biology (EEOB) major is designed for students with an interest in the areas of biology that span genomics, ecology, evolutionary biology, comparative genomics, organismal biology, and conservation biology. The department also offers a minor in biological sciences for students majoring in other disciplines. Interested students should consult the director of undergraduate studies.

The department offers undergraduates opportunities for engaging in faculty-led research projects for course credit. Students may receive an introduction to the workings of a scientific laboratory through an internship, or a more intensive, hands-on experience in directed or independent laboratory research. Students on the honors track of any of the three majors carry out a major honors research project and write an honors thesis. More information about the majors and minor offered by the department, the honors track of each major, and research opportunities open to undergraduates is available at our website: as.vanderbilt.edu/biosci.

Students may declare only one of the majors offered by the Department of Biological Sciences; double or triple majors within the department are not permitted. It is strongly recommended that all students take one year of calculus or calculus/statistics, and one year of physics. Students are encouraged to work with their major advisers to choose upper-level courses appropriate to their chosen majors.

General Requirements

- All students in programs of concentration offered by the Department of Biological Sciences must take two semesters of general chemistry and lab (Chemistry 1601-1602 and 1601L-1602L) and two semesters of organic chemistry (Chemistry 2211/2221-2212/2222) and lab (2221L-2222L).
- A total of 30 credit hours of Biological Sciences courses, including the 8 credit hours of 1510-1511 and 1510L and either 1511L or 1512L, is required in all majors.
- Courses numbered below 1500 do not count toward the major or minor.
- Below is a listing of the required courses for the Biological Sciences (BioSci) major, for the Molecular and

Cellular Biology (MCB) major, and for the Ecology, Evolution, and Organismal Biology (EEOB) major. Students with specialized interests within either of the specialized majors may substitute one of the intermediate courses with an upper- level course with the permission of the director of undergraduate studies and the Biological Sciences Curriculum Committee (Intermediate Biological Sciences courses: 2101, 2201, 2201L, 2205, 2210, 2210L, 2218, 2219, 2238, 2238L, 2520).

- All majors must complete at least 2 credit hours of 3965, 3850, or 3861, though only one semester of 3965 may count toward the 30 credit hours.
- A total of no more than 7 credit hours of 3850, 3861, or 3961 may count toward the major.
- If option 1 (see below) is used to meet the laboratory requirement, then BSCI 3965 or 2 credit hours of 3850 is required.
- Either BSCI 3229 or BSCI 3270, but not both, may count toward the major or minor.

For Honors, additional requirements must be met. For entry into Honors, students must satisfy the conditions required by the College of Arts and Science for admission to departmental honors programs. Students must have an overall grade point average equal to or greater than 3.3, and a grade point average in courses required for the appropriate biological sciences major equal to or greater than 3.4 at the time of entry. Applications must be approved by a majority vote of the faculty of the department. To receive honors or highest honors in biological sciences, a student in the departmental Honors Program must:

- Complete the requirements for either the MCB, BioSci, or EEOB major, achieving a minimum cumulative grade point average of 3.4 in all courses that count toward the major;
- Satisfactorily pursue a research project under the supervision of the adviser with a minimum of 10 credit hours of Honors Research, BSCI 4999;
- Give a progress report to the Honors Committee at the end of the first semester of This will consist of a short, written progress report to be distributed to the Honors Committee one week before an oral presentation and meeting with the committee. The meeting must be scheduled before the start of finals week;
- At the end of the second semester of Honors Research, prepare a thesis based on the research project, to be read and evaluated by the Honors Committee;
- Present the thesis orally before the Honors Committee and faculty in the Department of Biological Sciences.

Minor in Biological Sciences

A minor in biological sciences requires a minimum of 18 hours including at least 9 credit hours earned in residence at Vanderbilt. Credit hours for the minor must include BSCI 1510-1511b; 1510L and either 1511L or 1512L; 2210; and one other intermediate course. No more than 2 credit hours of 3860, 3861, 3850, and 3961 may be counted toward the minor.

Specific Requirements for Individual Majors

BIOLOGICAL SCIENCES (BSCI) MAJOR

BSCI 2205, 2210, and one additional intermediate course (2101, 2201, 2218, 2219, 2238 or 2520)

Intermediate Courses

*BSCI 2101 or BSCI 3101 (but not both) can be used to fulfill elective credits. If BSCI 2101 is used to fulfill the intermediate course requirement, then BSCI 3101 can be used to fulfill elective credits.

Laboratory	Option 1: Lab	Option 2: Lab and Research	Option 3: Research Intensive
	2 labs (BSCI 2201L, 2210L, 2218, 2219, or 2238L). See note above regarding BSCI 3965 or 3850.	1 lab plus 2 semesters (at least 6 credit hours total) of research in directed, directed & independent research (BSCI 3861, 3961, 4999)	At least 12 credit hours of research in directed, independent and as needed, honors research courses (BSCI 3861, 3961, 4999)

ECOLOGY, EVOLUTION, AND ORGANISMAL BIOLOGY (EEOB) MAJOR

BSCI 2205, 2210, and one of 2218 or 2219 or 2238

Intermediate Courses

*BSCI 2101 or BSCI 3101 (but not both) can be used to fulfill elective credits. If BSCI 2101 is used to fulfill the intermediate course requirement, then BSCI 3101 can be used to fulfill elective credits.

Laboratory	Option 1: Lab	Option 2: Lab and Research	Option 3: Research Intensive
	2 labs (one of BSCI 2210L, 2218, 2219, or 2238L; plus one of the following: BSCI 2201L, 2210L, 2218, 2219, or 2238L). See note above regarding BSCI 3965 or 3850.	1 lab (BSCI 2210L, 2218, 2219, or 2238L) plus 2 semesters (at least 6 credit hours total) of directed and independent research (BSCI 3861, 3961, 4999)	At least 12 credit hours of research in directed, independent and, as needed, honors research courses (BSCI 3861, 3961, 4999)

MOLECULAR AND CELLULAR BIOLOGY (MCB) MAJOR

BSCI 2201, 2210, and 2520

Intermediate Courses

BSCI 2101 or BSCI 3101 (but not both) can be used to fulfill elective credits.

Laboratory	Option 1: Lab	Option 2: Lab and Research	Option 3: Research Intensive
	2 labs (one of BSCI 2201L or 2210L is required; plus one of the following: 2201L, 2210L, 2218, 2219, or 2238L). See note above regarding BSCI 3965 or 3850.	1 lab (BSCI 2201L or 2210L) plus 2 semesters (at least 6 credit hours total) of directed and independent research (BSCI 3861, 3961, 4999)	At least 12 credit hours of research in directed, independent and, as needed, honors research courses (BSCI 3861, 3961, 4999)

Biomedical Engineering

[Degree Programs](#)

[Facilities](#)

[Undergraduate Honors Program](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Biomedical Engineering](#)

[Double Majors](#)

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ASSOCIATE PROFESSORS OF THE PRACTICE Amanda Lowery, Marc Moore

RESEARCH ASSOCIATE PROFESSORS Justin Baba, Rebecca Cook, Mukesh Gupta, Lisa McCawley, Bryan Millis, Shu-Qun Shi, Zhongliang Zu

ADJOINT ASSOCIATE PROFESSORS Rick Abramson, Nick Adams

ASSISTANT PROFESSORS Sarah Bick, Jonathan Brunger, Catie Chang, Garrett Coyan, Rachelle Crescenzi, Ryan Darby, Xiaoguang Dong, Daniel Gonzales, Andrea Locke, Jack H. Noble, Kristen O'Grady, Ipek Oguz, Sun Peck,

Marjan Rafat, Mikail Rubinov, Nadia Sutton, Eric R. Tkaczyk, Michael Topf, Imam Uddin, Lauren Woodard, James Weimer, Shawniqua Williams Roberson, Jie Ying Wu, Xin Maizie Zhao

ASSISTANT PROFESSORS OF THE PRACTICE Romina Del Bosque, Eric Spivey, Jonathan Ehrman

RESEARCH ASSISTANT PROFESSORS Charleson S. Bell, Wenhao Dang, Yurui Gao, Kevin Harkins, Jon Heiselman, Kyle Hocking, Dmitry Markov, Aditya Nanda, Kyvia Pereira, Pratheepa Rasiah, Veniamin Sidorov, Balbir Singh, Caleb Snider, Rei Ukita

ADJUNCT ASSISTANT PROFESSORS Valerie Guenst, Josh Trantum

ADJOINT ASSISTANT PROFESSORS Frank Block, Judy T. Lewis, Marlon Thomas

COURSES OFFERED: [BME](#)

The foundations of biomedical engineering are the same as those in other engineering disciplines: mathematics, physics, chemistry, and engineering principles. Biomedical engineering builds on these foundations to solve problems in biology and medicine over the widest range of scales—from the nanoscale and molecular levels to the whole body. Biomedical engineering provides a robust platform for employment in the medical device and instrumentation industries as well as careers in companies that specialize in the development and application of biologics, biomaterials, computation, implants and processes. Our graduates gain entry into nationally recognized graduate schools for continuing studies in biomedical engineering.

Biomedical engineering is also a rigorous path for admission to and success in medical school for those students willing and able to excel in mathematics, physics, chemistry, biology, physiology, and engineering.

The Department of Biomedical Engineering at Vanderbilt is unique among biomedical engineering programs in its immediate proximity to the world class Vanderbilt Medical Center, located on our compact campus. Our School of Medicine is among the top ten in funding from the National Institutes of Health and includes a National Cancer Institute-recognized Comprehensive Cancer Center, a major children's hospital and a Level I trauma center. This proximity and the strong relationships among faculty across multiple schools stimulate high impact research and provide unique educational and research opportunities for students.

Degree Programs. The Department of Biomedical Engineering offers courses of study leading to the B.E., M.S., M.Eng., and Ph.D. Vanderbilt biomedical engineering is a well-established program with undergraduate degrees granted continuously since 1965. Our undergraduate curriculum undergoes regular review and revision to ensure relevancy and to maintain full ABET accreditation. Students have complete flexibility in the selection of biomedical engineering, technical, and open electives. This allows students to design their own focus areas such as regenerative medicine and tissue engineering, wearables and point-of-care diagnostics, global health, surgery and engineering, robotics and prosthetics, lasers and medicine, medical imaging, biotechnology and nanomedicine, medical technology and entrepreneurship.

Facilities. The Department of Biomedical Engineering is located in Stevenson Center. Undergraduate instructional laboratories are equipped for study of biomedical processes, measurement methods and instrumentation. These facilities are equipped with embedded systems for instrumentation, design, and testing that mirror professional practice. Specialized facilities for biomedical imaging, biophotonics, cell and tissue culture, microfabrication, surgery and intervention, and nanoengineering are used both for faculty-led research and instructional purposes.

Undergraduate Honors Program. With approval of the Honors Program director, junior and senior students in biomedical engineering who have achieved a minimum grade point average of 3.5 may be accepted into the undergraduate Honors Program. Students in the program take at least 6 credit hours of 5000-level or above (graduate) biomedical engineering courses, which can be counted toward the 127-hour undergraduate degree requirements as biomedical engineering electives or which can be taken for graduate school credit. Students in the

Honors Program must also complete a two-semester-long research project and present a research report; this is generally accomplished through the BME 3860 and 3861 Undergraduate Research elective courses. Honors students must make a grade point average of 3.0 in these classes and maintain an overall 3.5 GPA to be designated as an honors graduate. The diploma designation is Honors in Biomedical Engineering.

Curriculum Requirements

The B.E. in biomedical engineering requires a minimum of 127 hours, distributed as follows:

1. Mathematics (15 hours): MATH 1300, 1301, 2300, 2400.
2. Basic Science (20 hours): CHEM 1601, 1601L, 1602, 1602L; PHYS 1601, 1601L, 1602, 1602L; BSCI 1510, 1510L.
3. Engineering Fundamentals (6 hours): ES 1401, 1402, 1403; CS 1100 or 1101 or 1103 or 1104. (CS 1103 is strongly recommended except for students minoring in Computer Science).
4. Electrical Engineering (3 hours): ECE 2112.
5. Biomedical Engineering (38 hours): BME 2100, 2301, 2302, 2400, 2900W, 3000, 3301, 3302, 3400, 3500, 3900W, 4901W, 4950, 4951, 4959.
6. Biomedical Engineering electives (12 hours) comprising:
 1. BME courses numbered 2210 and higher (except BME 2860 and designated sections of 3890–3893) to include up to 6 hours total of BME 3860, 3861.
 2. Any one of the following: CHBE 4500, 4800, 4805, 4810, 4820, 4870; EECE 3214, 4353, 4354; ENVE 4610; ME 2220.
7. Technical electives (9 hours) comprising:
 1. BME, CHBE, CE, CS, DF, DS, ECE, ENGM, ENVE, ME, MSE, NANO, and SC courses numbered 2000 or higher except CHBE 3300, CE 2200, DS 2100, 3850, 3851, ENGM 2160, 2440, 3100, 3350, 4800, ME 2171, and any School of Engineering courses numbered 2860. Up to 3 hours of independent study courses in the School of Engineering may be taken as technical electives. Up to 6 hours of Undergraduate Research (3860, 3861), summed across all programs, may be counted as BME electives and/or technical electives.
 2. ES 3230, 3231, and 3232
 3. Courses numbered 2000 or higher in the College of Arts and Science listed in the mathematics and natural sciences (MNS) AXLE distribution category except MATH 2610, 2810, 2820, and 3000.
 4. BSCI 1511, 1511L; MHS 1500, 1600.
8. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
9. Open electives (6 hours).

Undergraduates in biomedical engineering may apply the pass/fail option only to courses taken as liberal arts core or open electives, subject to school requirements for pass/fail.

Specimen Curriculum for Biomedical Engineering

Semester hours

SOPHOMORE YEAR		FALL	SPRING
BSCI 1510, 1510L	Molecules & Cells, Biological Sciences Laboratory	4	-
BME 2100	Biomechanics	-	3
BME 2301, 2302	Systems Physiology I, II	3	3
BME 2400	Quantitative Methods I: Statistical Analysis	-	3
BME 2900W	Biomedical Engineering Laboratory I	-	1
ECE 2112	Circuits I	-	3
MATH 2300	Multivariable Calculus	3	-
MATH 2400	Differential Equations with Linear Algebra	-	4
PHYS 1602, 1602L	General Physics with Laboratory II	4	-
	Liberal Arts Core	3	-
		17	17
JUNIOR YEAR			
BME 3000	Physiological Transport Phenomena	3	-
BME 3301, 3302	Biomedical Instrumentation I, II	4	4
BME 3400	Quantitative Methods II: Signals and Modeling	3	-
BME 3500	Biomedical Materials	-	3
BME 3900W	Biomedical Engineering Laboratory II	1	-
	Biomedical Engineering and/or Technical Elective	3	6
	Liberal Arts Core	3	3
		17	16
SENIOR YEAR			
BME 4901W	Biomedical Engineering Laboratory III	1	-
BME 4950, 4951	Design of Biomedical Engineering Systems I, II	2	3
BME 4959	Senior Engineering Design Seminar	1	-
	Biomedical Engineering and/or Technical Elective	6	6
	Liberal Arts Core	3	3
	Open Elective	3	3
		16	15

Double Majors

- I. The double major in biomedical engineering and electrical and computer engineering requires a minimum of 130 semester hours. A specimen curriculum for the double major with electrical and computer engineering can be found on the biomedical engineering department's website. The requirements include those numbered 1, 2, and 8 for the B.E. in biomedical engineering and the following:
 - a. Engineering Fundamentals (6 hours): ES 1401, 1402, 1403; CS 1101 or 1104.
 - b. Biomedical Engineering Core (32 hours): BME 2100, 2301, 2302, 2400, 2900W, 3000, 3302, 3500, 3900W, 4901W, 4950, 4951, 4959.
 - c. Biomedical Engineering Electives (3 hours): BME courses numbered 2210 and higher (except BME 2860, 3301, 3400 and designated sections of 3890-3893).
 - d. Electrical Engineering Core (18 hours): EECE 2112, 2112L, 2123, 2123L, 2214, 3235, 3235L; CS 2201 or 2204.
 - e. Electrical and Computer Engineering Electives (18 hours) selected as described by item 6 of the Curriculum Requirements in the Electrical and Computer Engineering section of the catalog, but totaling at least 18 hours. The courses must include:
 - at least 9 hours in one and at least 6 hours in another of the Areas of Concentration listed under

Electrical and Computer Engineering in the Undergraduate Catalog. BME 3302 may be included toward satisfying the Area of Concentration requirement but cannot be counted as an Electrical and Computer Engineering elective.

- at least one Design Domain Expertise course as designated in the catalog.

II. The double major in biomedical and chemical engineering requires a minimum of 131 hours and is described in the chemical engineering section of the catalog under its curriculum requirements.

Business Studies

DIRECTOR Joseph J. Rando

ASSOCIATE PROFESSORS OF THE PRACTICE Marcy Binkley, Willis J. Hulings, Jamie Leddin, Patrick R. Leddin, Joseph J. Rando, Garnett H. Slatton, Leonora Williamson

LECTURERS Jonathan Dyke, Stuart Garber, Gary McClure, Bob Spieth, Brad White

COURSES OFFERED: [BUS](#), [BUSA](#)

The College of Arts and Science offers select courses under the Business Studies Program to help students understand marketing, accounting, entrepreneurship, management, corporate strategy, negotiation, and analytics. These elective courses are offered by the Business Studies program. The program is directed by Joseph J. Rando, 215 Calhoun Hall, (615)-322-4021.

Chemical Engineering

[Mission](#)

[Degree Programs](#)

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Double Majors](#)

[Specimen Curriculum for Chemical Engineering](#)

CHAIR Paul E. Laibinis

DIRECTOR OF GRADUATE PROGRAM Jamey D. Young

DIRECTOR OF GRADUATE RECRUITING G. Kane Jennings

DIRECTOR OF UNDERGRADUATE STUDIES Ethan Lippman

PROFESSORS EMERITI Peter T. Cummings, Thomas R. Harris, M. Douglas LeVan, K. Arthur Overholser, Peter N. Pintauro, Robert J. Roselli, Robert D. Tanner

PROFESSORS Craig L. Duvall, Todd D. Giorgio, Scott A. Guelcher, G. Kane Jennings, David S. Kosson, Paul E. Laibinis, Matthew J. Lang, Sandra J. Rosenthal, Krishnendu Roy, Florence Sanchez, Jamey D. Young, Marija Zanic

PROFESSOR OF THE PRACTICE Russell F. Dunn

RESEARCH PROFESSORS Peter T. Cummings, Clare M. McCabe, Peter N. Pintauro

ASSOCIATE PROFESSOR EMERITUS Kenneth A. Debelak

ASSOCIATE PROFESSORS Ivelin Georgiev, Shihong Lin, Ethan S. Lippmann, Bridget R. Rogers, John T. Wilson

ASSISTANT PROFESSORS Mona Ebrish, Piran Kidambi, Marjan Rafat, Carlos A. Silvera Batista, Zhongyue Yang

ASSISTANT PROFESSORS OF THE PRACTICE Davud C. Florian, Julianne Vernon

RESEARCH ASSISTANT PROFESSORS Karan Arora, Vijaya Bharti, Peifu Chang, Clinton Hasenour, Hyosung Kim, Bo Li, Hongjun Liu

ADJUNCT ASSISTANT PROFESSOR Bryan R. Beyer

COURSES OFFERED: [CHBE](#)

Chemical engineers play key roles in the development and production of commodity chemicals, pharmaceuticals, and bioengineered materials, high strength composites and specialty polymers, semiconductors and microelectronic devices, and a wide range of ultrapure fine chemicals. Indeed, chemical engineering is essential for the operation of contemporary society. The solutions to many of the problems that we face today—e.g., energy, the environment, development of high-performance materials—will involve chemical engineers.

The undergraduate program in chemical engineering prepares students to contribute to the solution of these and similar problems. Graduates find meaningful careers in industry, in government laboratories, and as consultants. Some continue their education through graduate studies in chemical engineering, business, law, or medicine.

Mission. The mission of the Department of Chemical and Biomolecular Engineering is to educate those who will advance the knowledge base in chemical engineering, become practicing chemical engineers, and be leaders in the chemical and process industries, academia, and government; to conduct both basic and applied research in chemical engineering and related interdisciplinary areas; and to provide service to the chemical engineering profession, the School of Engineering, Vanderbilt University, the country, and the world.

Degree Programs. The Department of Chemical and Biomolecular Engineering offers the B.E. in chemical engineering and graduate study leading to the M.Eng., M.S., and Ph.D.

Undergraduate chemical engineering students acquire a solid background in mathematics, chemistry, biology, physics, and computing. The chemical and biomolecular engineering program has as its basis courses in transport phenomena, thermodynamics, separations, and kinetics. Other courses deal with the principles and techniques of chemical engineering analysis and design, along with economic analysis, process control, chemical process safety, bioprocessing, process simulation, and engineering ethics. Laboratory courses offer the student an opportunity to make fundamental measurements of momentum, heat, and mass transport and to gain hands-on experience with bench scale and small scale pilot-plant equipment, which can be computer controlled. Effective report writing and technical communication are principal skills gained in the laboratory and design courses. Many students carry out individual research projects.

A specimen curriculum for a chemical engineering major follows. This standard program includes electives that students, in consultation with their faculty advisers, select to pursue breadth or a minor or focus area with their chemical engineering major. Specimen curricula with emphases in specific areas are available on the department website. Double majors may be arranged in consultation with a faculty adviser.

Students are recommended to take the Fundamentals of Engineering Examination (FE) in their senior year. This is the first step in obtaining a license as a professional engineer. The following courses are recommended for preparation for the FE: ECE 2112, CE 2200, and ME 2190.

Undergraduate Honors Program. The Honors Program in chemical engineering provides an opportunity for selected

students to develop individually through independent study and research. General requirements are described in the Special Programs chapter. The chemical and biomolecular engineering department requires a minimum overall GPA of 3.5. Acceptance to the program is made by petition to the faculty during the junior year. Transfer students may be considered for admission after completing one semester at Vanderbilt. Candidates for honors choose their technical courses with the consent of a faculty honors adviser. Requirements include at least 6 hours of CHBE courses numbered 5000 or above, plus 6 hours of CHBE 3860 and 3861 taken in the junior and/or senior year under the direction of a faculty honors adviser. A formal written research report is submitted each semester CHBE 3860 or 3861 is taken with a final report and presentation given in the spring semester of the senior year to the CHBE faculty and students. The diploma designation is Honors in Chemical Engineering.

Facilities. The Chemical and Biomolecular Engineering department is located in Olin Hall. Undergraduate instructional laboratories are equipped for study of transport phenomena, unit operations, kinetics, and process control. Current research areas for which facilities are available include molecular modeling; colloid and surface science; biochemical engineering and biotechnology; materials processing and characterization; energy and the environment.

Curriculum Requirements

The B.E. in chemical engineering requires a minimum of 125 hours, distributed as follows:

1. Mathematics (14 hours): MATH 1300, 1301, 2300, 2420.
2. Basic Science (24 hours): CHEM 1601, 1601L, 1602, 1602L, 2221, 2221L, 2222, 2222L; PHYS 1601, 1601L, 1602, 1602L.
3. Engineering Fundamentals (6 hours): ES 1401, 1402, 1403; CS 1100 or 1101 or 1103 or 1104 (CS 1100 is recommended except for students minoring in Computer Science).
4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
5. Chemical and Biomolecular Engineering (42 hours): CHBE 2100, 2200, 2250, 2900W, 3200, 3250, 3300, 3350, 3600, 3900W, 4500, 4900W, 4950W, 4951W, 4959.
6. Chemical and Biomolecular Engineering electives: 6 hours selected from CHBE courses numbered 4200 or above and ENVE 4625.
7. Statistics (3 hours): One of DS 2100, BME 2400, CE 3300 or MATH 2810
8. Technical electives (6 hours). To be selected from: a) courses numbered 2000 or above in BME, CHBE, CE, CS, DF, ECE, ENVE, ME, MSE, NANO, and SC, except ME 2220 and any School of Engineering course numbered 2860; b) courses numbered 1500 or above in the College of Arts and Science listed in the mathematics and natural sciences (MNS) AXLE distribution category; c) ENGM 3000, 3010, 3300, 3650, 3700, 4500; and d) DS 3100. At least 3 hours must be selected from BSCI 2201, 2520; CHEM 3300, 3310; ENVE 4600 or CHBE courses numbered 4000 and above.
9. Open electives (6 hours).

Undergraduates in chemical engineering, including double majors with chemical engineering, may apply the pass/fail option only to courses taken as open electives, subject to the school requirements for pass/fail. No more than 6 total hours of courses numbered 2860 and courses numbered 3840 to 3885 inclusive may be applied toward degree requirements.

Double Majors

- I. The double major in chemical engineering and biomedical engineering requires a minimum of 131 semester hours distributed as follows:
 - a. Mathematics (15 hours): MATH 1300, 1301, 2300, 2400.
 - b. Engineering Fundamentals (6 hours): ES 1401, 1403, 1403; CS 1100 or 1101 or 1103 or 1104.
 - c. Basic Science (28 hours): CHEM 1601, 1601L, 1602, 1602L, 2221, 2221L, 2222, 2222L; PHYS 1601, 1601L, 1602, 1602L; BSCI 1510, 1510L.
 - d. Chemical and Biomolecular Engineering (29 hours): CHBE 2100, 2200, 3200, 3250, 3300, 3350, 4900W, 4950W, 4951W, 4959.
 - e. Biomedical Engineering (29 hours): BME 2100, 2301, 2302, 2400, 2900W, 3301, 3302, 3400, 3500, 3900W, 4959.

- f. Electrical Engineering (3 hours): ECE 2112.
 - g. CHBE/BME Elective: 3 hours selected from CHBE 4500 (recommended), 4800, 4805, 4810, 4820, 4825, and BME courses numbered 4000 and above except BME 6110. BME 3890 and CHBE 3890 may be substituted upon approval of the Directors of Undergraduate Studies for BME and CHBE.
 - h. Liberal Arts Core (18 hours): To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
- II. The double major in chemical engineering and chemistry requires a minimum of 130 semester hours. The requirements include those numbered 1, 2, 3, 4, and 6 for the B.E. in chemical engineering and the following:
- a. Chemical and Biomolecular Engineering (39 hours): CHBE 2100, 2200, 2250, 2900W, 3200, 3250, 3300, 3350, 3600, 4500, 4900W, 4950W, 4951W, 4959.
 - b. Science (23 hours): CHEM 2100, 2100L, 3010, 3315; 3 hours selected from CHEM courses numbered 3020 and above except 3320, 3600, 3841, 3842, 3860, 3902; either CHEM 4965 and 4966 or 6 hours selected from CHEM 3980, 4980, and 4999; BSCI 1510, BSCI 2520.
- III. The double major in chemical engineering and environmental engineering requires a minimum of 137 semester hours. The requirements include those numbered 1, 2, 3 and 5 for the B.E. in chemical engineering and the following:
- a. Environmental Engineering Core (24 hours): CE 2120, 3300, 3600, 3705; EES 1510; ENVE 3200, 3200L, 4600, 4625.
 - b. Environmental Engineering Electives (6 hours) comprising:
 - 1. At least 3 hours selected from CE 4150, 4240, 4425, 4430; ENVE 4305, 4610,
 - 2. At most 3 hours selected from CE 4300; EES 3310, 4550, 4650, 4750; ENVE 4615, 4620,
 - c. Chemical and Biomolecular Engineering electives: 3 hours selected from CHBE courses numbered 4000 or above (ChBE 4860 is recommended).
 - d. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering. To include 6 hours of Global Perspective Electives selected from ANTH 2150, 2220W, 2224, 2225, 2400, 3130, 3345, 4154; ECON 2170; EES 3333; PHIL 3611; PSCI 3266; SOC 3311, 3312, 3314, 3315, 3316, 3317, 3318, 3319.

Specimen Curriculum for Chemical Engineering

		Semester hours	
SOPHOMORE YEAR		FALL	SPRING
CHEM 2221, 2222	Organic Chemistry	3	3
CHEM 2221L, 2222L	Organic Chemistry Laboratory	1	1
MATH 2300	Multivariable Calculus	3	-
MATH 2420	Methods of Ordinary Differential Equations	-	3
PHYS 1602, 1602L	General Physics II and Laboratory	4	-
CHBE 2100	Chemical Process Principles	3	-
CHBE 2200	Chemical Engineering Thermodynamics	-	3
CHBE 2250	Modeling and Simulation in Chemical Engineering	-	3
CHBE 2900W	Technical Communications for Chemical Engineers	-	1
	Liberal Arts Core	3	3
		17	17

JUNIOR YEAR

CHBE 3200	Separations Processes	3	-
CHBE 3250	Chemical Reaction Engineering	-	3
CHBE 3300	Transport I	3	-
CHBE 3350	Transport II	-	3
CHBE 3600	Chemical Process Control	3	-
CHBE 3900W	Chemical Engineering Laboratory I	-	3
CHBE 4500	Bioprocess Engineering	-	3
	Statistics Elective: DS 2100, BME 2400, CE 3300, or MATH 2810	3	-
	Liberal Arts Core	3	3
		15	15

SENIOR YEAR

CHBE 4900W	Chemical Engineering Laboratory II	3	-
CHBE 4950W	Chemical Engineering Process and Product Design	4	-
CHBE 4951W	Chemical Engineering Design Projects	-	3
CHBE 4959	Professional Practice of Safety in Chemical Engineering Design	1	-
	Chemical and Biomolecular Engineering Elective	3	3
	Liberal Arts Core	-	3
	Technical Elective*	3	3
	Open Elective	3	3
		17	15

*At least 3 hours must be selected from BSCI 2201, 2520; CHEM 3300, 3310; ENVE 4600 or CHBE courses numbered 4200 and above.

Specimen curricula for the double majors with biomedical engineering, with environmental engineering, and with chemistry can be found on the department's website.

Chemistry

[Program of Concentration in Chemistry](#)

[Minor in Chemistry](#)

[Honors in Chemistry](#)

[Licensure for Teaching](#)

[Introductory Courses](#)

CHAIR Sandra Rosenthal

DIRECTOR OF UNDERGRADUATE STUDIES Katherine Clements

DIRECTOR OF GRADUATE STUDIES David E. Cliffel

Professors, Emeriti: Darryl Bornhop, Robert Dilts, Thomas Harris, B. Hess, Charles Lukehart, Ned Porter, Joel Tellinghusen

Professors: Brian Bachmann, Walter Chazin, David Cliffel, James Crowe, Stephen Fesik, Timothy Hanusa, Frederick Haselton, De-en Jiang, Jeffrey Johnston, John Kuriyan, Craig Lindsley, Lawrence Marnett, Clare McCabe, Hassane Mchaourab, John McLean, Prasad Polavarapu, Carmelo Rizzo, Rena Robinson, Sandra Rosenthal, Kevin Schey, Sean Seymore, Michael Stone, Gary Sulikowski, Steven Townsend, David Wright

Associate Professors: Joshua Caldwell, Janet Macdonald, Lars Plate, Nathan Schley, Jeffrey Spraggins

Assistant Professors: Lauren Buchanan, Daria Kim, Andrea Locke, Alexander Schuppe, Allison Walker, Zhongyue Yang

Principal Senior Lecturers: Alissa Hare, Adam List, Shawn Phillips, Tara Todd, Susan Verberne-Sutton

Senior Lecturers: Katherine Clements, Aaron Daniel, Xiaohua Jiang, Chi-Li Ni, Craig Tainter, Keri Tallman

Adjunct Professors: Cody Covington, Terry Lybrand, Rekha Pattanaye, Rongson Pongdee, Lidia Smentek

Adjunct Associate Professor: Jeremy Norris

Adjunct Assistant Professors: Dain Beezer, Bryan Bernat, Amy-Joan Ham, Ki Bum Hong, Georg Kuenze, Fengjiao Liu, Glenroy Dean Martin, Jeffrey Mendenhall, Clara Schoeder, Hope Shaw, Sarah Stow

COURSES OFFERED: [CHEM](#)

The Department of Chemistry seeks to provide a sound education in the fundamentals of modern chemistry as well as exposure to cutting-edge research and contemporary instrumentation in the field. This is accomplished by providing students with a solid background in the disciplines of organic, analytical, inorganic, biological, and physical chemistry. The core courses in these areas, which are supported by a variety of practical experimental experiences in the laboratory, provide students with the skills needed to think critically about chemistry. After these core courses, students delve deeper into an area of their choice. Recognizing the importance of research, which integrates and makes sense of our collective body of knowledge, we encourage students to participate in undergraduate research. The chemistry major at Vanderbilt University meets the guidelines for the American Chemical Society approved program of study in chemistry.

Program of Concentration in Chemistry

The chemistry program is organized into four parts. The first part is a general chemistry course sequence (CHEM 1601-1602 and 1601L-1602L or AP credit) to serve as an entry point into the major. The second part consists of foundation courses in the five major disciplines of chemistry: analytical (2100), biochemistry (BSCI 2520), inorganic (3010), organic (2221-2222 or 2211-2212), and physical (3300 or 3310). The third part of the chemistry major consists of completing 8 credit hours of laboratory past 1601L-1602L. Four credit hours are from laboratory courses (2221L-2222L, 2100L, and 3315) associated with foundation courses. There are also 6 credit hours of a capstone laboratory (4965-4966) designed to provide advanced laboratory experience. The fourth part of the major consists of completing a minimum of 6 credit hours of in-depth chemistry courses. These in-depth courses build upon the content of foundation courses or integrate concepts from these foundational disciplines.

Required Non-chemistry Courses

One year of calculus (MATH 1300-1301 is preferred)

PHYS: Both 1501-1502 and 1501L-1502L, or both 1601-1602 and 1601L-1602L, or 1901-1902

Required Chemistry Courses	Cr. Hrs. toward major
Chem 1601-1602 & 1601L-1602L or AP credit	0
Chem 2221-2222 (or 2211-2212) & 2221L-2222L	8
Chem 2100 & 2100L	4
Chem 3300 or 3310	3
Chem 3315	1
BSCI 2520	3
Chem 3010	3
*Two in-depth chemistry courses	6
Chem 4965-4966	6
Minimum Credit Hours for Chemistry Major	34

* In-depth chemistry courses include all 2000-level chemistry and higher courses not explicitly required, except for CHEM 3600 and 3980-4980-4999. Other in-depth chemistry courses are Chemical and Biomolecular Engineering 3200 and 3250, and Earth and Environmental Sciences 4600, and any 5000-level chemistry lecture courses. (Qualified seniors interested in graduate-level courses must obtain approval from the course instructor, their adviser, and the director of graduate studies in chemistry. Further details are found in the Academic Policies for the College of Arts and Science.) A maximum of 3 credit hours of chemistry research (3860) may be counted as in-depth chemistry course hours.

Additional math courses, such as Math 2300 and Math 2820, are highly recommended for the chemistry major.

Options for Concentration in Chemistry

In-depth chemistry courses can be chosen so as to define a focus area within chemistry. Students should consult with their major adviser about focus area options, or to formulate an individualized focus area option. Further descriptions of these options and other recommended courses can be found in the chemistry major handbook on the chemistry department homepage.

Chemical Biology Focus. The role of chemical processes in biological systems is fundamental to chemical biology. The journal *Nature Chemical Biology* defines chemical biology as “the use of chemistry to advance a molecular understanding of biology and the harnessing of biology to advance chemistry.” Chemical biology builds upon the disciplines of medicinal chemistry, biochemistry, pharmacology, genetics, bioorganic and organic chemistry. Suggested in-depth chemistry electives: 3020, 3710, 3860, 4210, 4720.

Chemical Sciences Focus. This option provides a broad foundation of chemistry, permitting flexibility in future career pathways and providing an excellent preparation for positions in chemical industry and for graduate programs in chemistry. Suggested in-depth chemistry electives: 3120, 3300, 3310, 3860.

Environmental Chemistry Focus. Environmental chemistry concerns the chemical phenomena that occur in nature. Environmental chemistry spans atmospheric, aquatic, and soil chemistry with a reliance on analytical chemistry for methods of analysis. Environmental chemistry can be applied to the understanding of issues such as ground water pollution, wastewater treatment, ozone depletion, and greenhouse gas emissions. Suggested in-depth chemistry electives: 3120, 3300, 3310, 3860, EES 4600.

Materials Chemistry Focus. Materials chemistry is concerned with designing and synthesizing new materials with specific useful properties and determining the relationships between physical properties and the composition and structure of these new materials. Materials chemistry encompasses all size regimes from bulk to nanoscale. Synthetic chemistry (inorganic and organic), physical chemistry, and analytical chemistry are all important components of this field. Suggested in-depth chemistry electives: 3120, 3630, 2610, 3310, 2610, 3860, 5320, 5610, 5620.

Minor in Chemistry

The minor in chemistry requires 18 credit hours of course work, including 4 credit hours from 1602 and 1602L or AP credit, and 14 credit hours selected from any of the courses acceptable for the major in chemistry.

Honors in Chemistry

Students with an overall GPA of at least 3.3 and a GPA of at least 3.4 in chemistry courses at the start of their junior year wishing to do honors will register for the honors research courses (CHEM 3980, 4980, 4999) beginning spring semester junior year. The CHEM 4965 and 4966 requirements are waived in lieu of the CHEM 3980, 4980, and 4999 registrations. Honors candidates must present a thesis on the research done under CHEM 3980, 4980, and 4999 and pass an oral examination. Additional information may be found in the chapter on Special Programs in the College.

Licensure for Teaching

Candidates for teacher licensure in chemistry at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog. One semester of the CHEM 4965-4966 sequence will be considered fulfilled by completing the Peabody student teaching requirements.

Introductory Courses

Introductory chemistry is offered in two different sequences, each with its own laboratory. Only one set of these courses may be taken for credit.

1. *Chemistry 1010, 1010L.* Intended for liberal arts students who are not planning to take any additional chemistry courses. It treats chemistry in a nonmathematical fashion, with some historical and philosophical features. Not for science and engineering students.
2. *Chemistry 1601-1602.* Designed for engineering, science, and premedical students. This course, which must be taken simultaneously with 1601L-1602L, serves as preparation for students intending to major in chemistry, biology, physics, or earth and environmental sciences. It is a more rigorous, mathematical approach to chemistry and a prerequisite for organic and other chemistry courses. It is not intended for liberal arts students taking a science course only to fulfill AXLE requirements.

Civil Engineering

[B.E./M.Eng. Five Year Program](#)

[Construction Management Five Year Program](#)

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Civil Engineering](#)

[Pre-Architecture Advising](#)

CHAIR Caglar Oskay

ASSOCIATE CHAIR Hiba Baroud

DIRECTORS OF GRADUATE STUDIES Daniel B. Work (Civil Engineering), Florence Sanchez (Environmental Engineering)

DIRECTORS OF GRADUATE RECRUITING Hiba Baroud (Civil Engineering), Shihong Lin (Environmental Engineering)

DIRECTOR OF UNDERGRADUATE STUDIES Lori A. Troxel

PROFESSORS EMERITI Prodyot K. Basu, Peter G. Hoadley, George M. Hornberger, Richard E. Speece, Robert E. Stammer, Jr., Edward L. Thackston

PROFESSORS Mark D. Abkowitz, Douglas E. Adams, John Ayers, David J. Furbish, Jonathan Gilligan, David S. Kosson, Eugene J. Leboeuf, Sankaran Mahadevan, Caglar Oskay, Florence Sanchez, Jonathan Sprinkle, Matthew Weinger, Daniel B. Work

PROFESSORS OF THE PRACTICE Curtis D. Byers, Sanjiv Gokhale, Steven L. Krahn, Lori A. Troxel

RESEARCH PROFESSORS Kevin G. Brown, Andrew G. Garrabrants, Craig E. Philip

ADJUNCT ASSISTANT PROFESSORS Zhiliang Chen, Richard Stringer-Hye, Jesus Gomez Velez, Xinyue Wang, Siyuan Yu

ASSOCIATE PROFESSORS Hiba Baroud, Alan R. Bowers, Ravindra Duddu, Shihong Lin, Ahmad Taha

RESEARCH ASSOCIATE PROFESSORS Pranav Karve

ASSISTANT PROFESSOR OF THE PRACTICE Ghina Absi

RESEARCH ASSISTANT PROFESSORS Ishita Dash, Leah Dundon, Chen Gruber, Paul Johnson

ADJUNCT PROFESSORS Gregory L. Cashion, Allen G. Croff, James P. Dobbins, Andrea George, Boualem Hadjerioua, Ofra Klein-BenDavid, Janette Meyers, Vic L. McConnell L. Hampton Turner IV, Hans A. Van der Sloot, Raymond G. Wymer

ADJUNCT INSTRUCTORS David Livingston, Keith Loiseau, Scott Potter, Minh Nghiem, Heather Smith, Bryan Tharpe, Hannah Walter, Adrian Ward

LECTURER Phillip Collins

COURSES OFFERED: [CE](#)

Vanderbilt's Department of Civil and Environmental Engineering offers a broad-based education in civil and environmental engineering fundamentals, coupled with development of leadership, management, and communications skills to establish a foundation for lifelong learning and flexible career development. This goal requires going beyond technical competence in a balanced education to develop future leaders in the fields of consulting, industry, business, law, government, and research.

B.E. in civil engineering. Civil engineers must be able to face complex problems of modern society involving the development of physical facilities that serve the public while protecting the environment and preserving social values. Challenges facing civil and environmental engineers concern housing, urban transportation, pollution control, water resources development, industrial development, maintaining and advancing our nation's aging

infrastructure, and exploring space. Addressing these challenges with today's limited resources requires innovative and original ideas from highly-skilled engineers.

Undergraduates majoring in civil engineering receive a strong background in mathematics, science, engineering science, and engineering design. The program also includes courses in economics, humanities, social sciences, resources management, and public policy. Students participate in design teams and laboratory studies as well as classroom activities. Use of various computer-based methods is integral to problem solving and design.

Vanderbilt's B.E. in civil engineering prepares students for entry-level positions in many specialty areas of civil engineering, as well as many other types of careers, such as business, construction, and law. Today, however, and even more so in the future, professional practice at a high level will require an advanced degree. We recommend that students seriously consider pursuing the M.S. or M. Eng. soon after obtaining the B.E.

B.E./M.Eng. Five Year Program. Students seeking advanced study in civil and environmental engineering may be interested in the combined B.E./M.Eng., enabling students to complete the B.E. in civil engineering and M.Eng. in civil engineering or environmental engineering in five years.

Construction Management Five Year Program. Students seeking advanced study in construction management may be interested in the combined B.E./M.Eng., enabling students to complete the B.E. in civil engineering and M.Eng. in civil engineering (construction management emphasis) in five years.

Undergraduate Honors Program. Recognized with the diploma designation Honors in Civil Engineering, exceptional students may be invited in their junior year to participate in the civil engineering Honors Program. Designed as a unique individualized educational experience, participants work closely with departmental faculty members to tailor a selection of courses that actively immerses them in a selected field of study. Experiences include enrollment in a 3 semester hour independent study course and participation in a summer research internship. Honors Program participants are especially well-prepared to enter graduate study, and they may count the independent study course towards their civil engineering technical electives.

Facilities. The civil engineering laboratory provides for static and dynamic testing of materials and structural components and assemblies. Testing facilities include capabilities of testing composites, metals, and concrete under static loads, fatigue, base acceleration (to simulate seismic events) and intermediate to high speed impacts (to simulate responses to blast events). Full soils testing facilities are available. Hydraulics facilities include several model flow systems to illustrate principles of fluid mechanics and hydrology. The transportation laboratory is computer-based, with emphasis on transportation systems and design, intelligent transportation systems, and geographic information systems. The environmental laboratories are fully supplied with modern instrumentation for chemical, physical, biological, and radiological analysis of soils, sediments, water, wastewater, air, and solid waste. They include equipment for the study of biological waste treatment, physical-chemical waste treatment, containment mass transfer, and state-of-the-art instrumentation. All are available for student use in courses, demonstrations, and research.

Curriculum Requirements

The B.E. in civil engineering requires a minimum of 125 hours, distributed as follows:

1. Mathematics (14 hours). Required courses: MATH 1300, 1301, 2300, 2420.
2. Basic science (16 hours). Required courses: CHEM 1601, 1601L; PHYS 1601, 1601L, 1602, 1602L; MSE 1500, 1500L.
3. Computing (3 hours). Required course: CS 1100 or 1101 or 1103.
4. Engineering Fundamentals (26 hours). Required courses: ES 1401, 1402, 1403; CE 2101, 2200, 2205, 2989, 3700, 3700L; ENGM 2160; ME 2190; MSE 2205.
5. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
6. Open electives (6 hours).

7. Technical electives (3 hours). To be selected from: (a) courses in BME, CHBE, CE, ENVE, ECE, ME, MSE (except any course numbered 2860); (b) MSE (except MSE 3860, 3889, 3890) (c) ENGM 3000, 3010, 3200, 3650; (d) CHEM 1602 and above; (e) PHYS courses above 2000 (astronomy not accepted); (f) MATH 2410 or 2600, and courses 2811 and above (except 3000); (g) all CS courses 2000 and above (except 2860 4959); and (h) DS 3100, 3262. Students with an interest in Structural Engineering are encouraged to take MATH 2410 or 2600 as their technical elective.
8. Civil Engineering Core (27 hours). Required courses: CE 2120, 3100W, 3200, 3205, 3300, 3501, 3705, 4400, 4950, 4951, and 4959.
9. Civil Engineering Program Electives (6 hours). To be selected from: CE 3250, 4150, 4250; ENVE 4610, 4615, 4625, 4800; ENVE 3600.
10. Civil Engineering Design Electives (6 hours). To be selected from: CE 4150, 4200, 4210, 4240, 4250, 4425, 4430, 4500, 4505, 4510; ENVE 4305, 4610, 4625, 4710.

Students may use CE program electives, CE design electives, technical electives, and open electives to gain additional depth and expertise. Students with interests in structural engineering are recommended to take electives such as CE 3250, 4200, 4210, 4211, 4250, 4300, ENVE 4305, and ME 4259, 4275. Students interested in environmental and infrastructure sustainability engineering are recommended to take electives such as CE 3600, 4100, 4150, 4240, 4300, ENVE 4305, 4600, 4605, 4610, 4615, 4620, 4700, 4705, 4707, 4710, 4715, 4716, and 4720. Specific courses selections should be discussed with their academic adviser. Students desiring advanced topic coverage should also consider 5000- level courses, with approval of their adviser.

Undergraduates in civil engineering may apply the pass/fail option only to courses taken as liberal arts core or open electives, subject to the school requirements for pass/fail.

Specimen Curriculum for Civil Engineering

			Semester hours	
			FALL	SPRING
SOPHOMORE YEAR				
MATH 2300	Multivariable Calculus		3	-
PHYS 1602, 1602L	General Physics II and Laboratory		4	-
CE 2101	Civil and Environmental Engineering Information Systems		3	-
CE 2120	Sustainable Design in Civil Engineering		3	-
CE 2200	Statics		3	-
MATH 2420	Methods of Ordinary Differential Equations		-	3
CE 2205	Mechanics of Materials		-	3
CE 3501	Transportation Systems Engineering		-	3
ME 2190	Dynamics		-	3
CE 2989	Numerical Methods in Civil and Environmental Engineering		-	3
	Liberal Arts Core		-	3
			16	18
JUNIOR YEAR				
CE 3200	Structural Analysis		3	-
CE 3700, 3700L	Fluid Mechanics and Laboratory		4	-
MSE 2205	Strength and Structure of Engineering Materials		1	-
	CE Program Elective		3	-
	Elective*		3	-
	Liberal Arts Core		3	3
CE 3100W	Civil and Environmental Engineering Laboratory		-	2
CE 3205	Structural Design		-	3
CE 3300	Risk, Reliability, and Resilience Engineering		-	3
CE 3705	Water Resources Engineering		-	3
ENGM 2160	Engineering Economy		-	3
			17	17
SENIOR YEAR				
CE 4400	Construction Project Management		3	-
CE 4950	Civil Engineering Design I		1	-
CE 4959	Senior Engineering Design Seminar		1	-
	CE Design Elective		3	3
	Elective*		3	3
	Liberal Arts Core		3	3
CE 4951	Civil Engineering Design II		-	2
	Open Elective		-	3
			14	14

*To be selected toward satisfying the following degree requirements: 6 hours of Program Electives, 3 hours of Technical Electives, and 6 hours of Open Electives.

Pre-Architecture Advising

Civil engineering students interested in pursuing architecture at the graduate level should include courses that emphasize a broad sense of art and architectural history, including courses in studio art. Before applying to graduate programs, students will need to develop a portfolio of creative work that generally includes drawing, prints, sculpture, photographs, and creative writing. Further information is available at: as.vanderbilt.edu/paa/.

Cinema and Media Arts

[Program of Concentration in Cinema and Media Arts](#)

[Honors Program](#)

[Minor in Cinema and Media Arts](#)

CHAIR Claire Cisco King

DIRECTOR OF UNDERGRADUATE STUDIES Mariah Kramer

Professors: Jennifer Fay, Lutz Koepnick, Jay Clayton, Claire King, Lynn Ramey

Associate Professors: Jonathan Rattner, Andrea Mirabile

Assistant Professors: Carmine Grimaldi, Sasha Crawford-Holland, Ole Molvig

Principal Senior Lecturers: Madeleine Casad, Jonathan Waters

Senior Lecturer: Mariah Kramer

Writer in Residence: Krista Knight

COURSES OFFERED: [CMA](#)

Cinema and Media Arts offers an interdisciplinary major and minor that combine the practice of filmmaking with the study of film and media theory and history. Emphasizing cinema as both a modern aesthetic form and a hands-on cultural practice, the program trains students for careers in film and media production, communications, academic media studies, and community and social relations. The program encourages new ways of thinking, looking, and making in keeping with the ever-changing world of modern media. A core curriculum is composed of film and media theory, history, and filmmaking. The major concludes with a capstone senior seminar.

Program of Concentration in Cinema and Media Arts

The CMA major consists of 33 credit hours, balanced between production and studies courses. This structure provides a broad foundation of knowledge and skills as students consider their career options. The requirements are as follows:

FOUNDATIONS (6 credit hours)

1500: Fundamentals of Film and Video Production

1600: Introduction to Film and Media Studies

CORE REQUIREMENTS (12 credit hours): Students must take two courses from among the following: 2240, 2250, 2260, 2270, and 2290; and two courses from among the following: 2300, 2301, 2302, 2370, and 2400.

2240: Narrative Filmmaking

2250: 16mm Filmmaking

2260: Digital Production Workshop

2270: Documentary Filmmaking

2290: Alternate Media Modes

2300: Film and Media Theory

2301: Race in Film and Media

2302: Global Queer Cinema

2370: Film and Media Aesthetics

2400: History of World Cinema

ELECTIVES (12 credit hours): Students must take four additional CMA courses or cross-listed courses, including ones in the Core category (that are not being used to satisfy the Core category requirement) and Special Topics courses.

SENIOR SEMINAR (3 credit hours): All seniors must take either 4961 or 4962.

Honors Program

The Honors Program in Cinema and Media Arts offers excelling students the opportunity to undertake a high-level independent research and/or creative project during their senior year. Projects must be rigorous and demonstrate a student's ability to sustain an argument, an aesthetic principle, or a narrative arc in a substantial form. For admission to the Honors Program, students must have and maintain until graduation a cumulative grade point average of 3.3 and a grade point average of 3.5 in courses counting toward the major. The student must submit an application to the program director outlining the thesis topic. In addition to completing the major requirements listed above, during the senior year the student is required to register for Cinema and Media Arts 4998 (3 credit hours) and 4999 (3 credit hours) in order to complete the thesis. An oral examination on the thesis and its area is to be completed during the final semester of undergraduate study.

Minor in Cinema and Media Arts

The minor consists of 18 credit hours balanced between production and studies courses. The requirements are as follows:

FOUNDATIONS (6 credit hours)

1500: Fundamentals of Film and Video Production

1600: Introduction to Film and Media Studies

CORE REQUIREMENTS (6 credit hours): Students must take one course from among the following 2240, 2250, 2260, 2270, and 2290; and one course from among the following: 2300, 2301, 2302, 2370, and 2400.

2240: Narrative Filmmaking

2250: 16mm Filmmaking
2260: Digital Production Workshop
2270: Documentary Filmmaking
2290: Alternate Media Modes

2300: Film and Media Theory
2301: Race in Film and Media
2302: Global Queer Cinema
2370: Film and Media Aesthetics
2400: History of World Cinema

ELECTIVES (6 credit hours): Students must take two additional CMA courses or cross-listed courses, including ones in the Core category (that are not being used to satisfy the Core category requirement) and Special Topics courses.

Classical and Mediterranean Studies

[Program of Concentration in Classical and Mediterranean Studies](#)

[Honors Program](#)

[Minor in Mediterranean Archaeology](#)

[Minor in Mediterranean Studies](#)

[Approved List of Courses](#)

CHAIR Kevin Murphy

DIRECTOR OF UNDERGRADUATE STUDIES Daniel Solomon

Professors, Emeriti: Robert Drews, Susan Wiltshire

Professors: William P. Caferro, Phillip Ackerman-Lieberman

Associate Professors: Jelena Bogdanovic, Ari Bryen, Kathy Gaca, David Michelson, Joseph Rife

Assistant Professor: James Zainaldin

Principal Senior Lecturer: Daniel Solomon

Senior Lecturers: Jason Harris, Isabella Reinhardt, Chiara Sulprizio

COURSES OFFERED: [ARAM](#), [CLAS](#), [CHEB](#), [GRK](#), [LAT](#)

The Department of Classical and Mediterranean Studies offers students an interdisciplinary perspective on the culture and history of a region at the crossroads of human civilization since antiquity. The study of the Mediterranean world examines the influential achievements and legacy of the Greeks and Romans alongside the emergence and spread of Judaism, Christianity, and Islam to the East. It also explores the premodern to modern development of southern Europe, North Africa, and western Asia, which have variously responded to the ancient and medieval past. The program offers courses in the history, religion, philosophy, art, literature, society, and culture of the Mediterranean world. In teaching and research, the faculty promote the integrated study of past and present through both written and material sources—textual, artifactual, visual, spatial—and they embrace analytical

techniques in the digital humanities. Students thus have the opportunity to learn several ancient and medieval languages of Europe and the Middle East and to pursue experiential learning overseas, from intensive modern language study to archaeological fieldwork to the investigation of evolving cultural and natural landscapes.

Majors in classical and Mediterranean studies are introduced to the distinctive geography and history of the region but choose their courses in one of three tracks. These tracks have shared content but offer different viewpoints and training. Majors who expect to apply for graduate study should work closely with an adviser to devise an appropriate curriculum.

Students who pursue Classical and Near Eastern Languages and Cultures investigate one or more ancient to medieval cultural tradition(s) in the Greco-Roman and Near Eastern spheres through the study of original texts and their historical setting, such as Greek tragedy, Latin oratory, Hebrew scripture, the Qur'an, or early French romance.

Students who pursue Mediterranean Archaeology explore human diversity and experience from Classical Antiquity to the Middle Ages through the study of material and visual culture. They too learn to read textual sources while acquiring the skills of archaeological and art-historical research.

Students who pursue Mediterranean Studies, the most flexible track for a broad range of interests, can choose to engage with a variety of ancient, medieval, or modern topics through focused or comparative study.

The Department of Classical and Mediterranean Studies also offers a minor in Mediterranean Archaeology and a minor in Mediterranean Studies. A student cannot earn more than one minor in the program.

The Honors Program requires the production of a thesis representing advanced, original, and substantial research.

Students are strongly recommended to pursue study abroad in the Mediterranean or an adjacent region. The department has long supported the Intercollegiate Center for Classical Studies, the American Academy in Rome, and the American School of Classical Studies in Athens. Many different international experiences are possible through Vanderbilt-approved semester programs, Maymesters, research projects, and summer study, for example, in Italy, Greece, and Israel. Students are encouraged to participate in local and regional conferences, where they can share the results of collaborative or independent work. Those concentrating on Greek and/or Latin language who qualify academically are invited to join Eta Sigma Phi, the national classics honor society.

Program of Concentration in Classical and Mediterranean Studies

Students majoring in Classical and Mediterranean Studies must take ten courses, including one foundation course (CLAS 1010). The major is arranged into three tracks and an honors track. Students must formally declare a track 1-3 at the time the major is declared. A score of 4 or 5 on the AP Latin exam earns 3 hours of credit for Latin 2202, which may be applied toward any of the major tracks. Any course for which a student has earned credit will count for one and only one of the requirements or sub-requirements for any of the major tracks or minors.

Track 1: Classical and Near Eastern Languages and Cultures

30-34 total credit hours including:

1. One foundation course: CLAS 1010 (3 credit hours);
2. Language/Literature: Five courses from Course List A (15 credit hours, or 19 credit hours if including ARA 1101-1102);
3. Culture: Four courses from Course Lists B-D numbered 2060 or above (12 credit hours).

Latin courses at the 1000 level do not count toward this major track. Students who fulfill their language/literature

requirement (#2 above) by completing courses in one language must, in consultation with the director of undergraduate studies, earn credit for at least one course in a different cultural tradition (e.g., Greek, Roman, Jewish, Christian, Islamic) or period (e.g., ancient, medieval).

Track 2: Mediterranean Archaeology

30-34 total credit hours including:

1. Two foundation courses: CLAS 1010 and 1020 (6 credit hours);
2. Language/Literature: Two courses from Course List A (6 credit hours, or 10 if including ARA 1101–1102);
3. Method and Theory: One course from Course List E (3 credit hours);
4. Three courses in the history and in the art, architecture, and archaeology of the ancient to medieval Mediterranean world, including one from Course List B, one from Course List C, and one from Course List B or C (9 credit hours);
5. Electives: Two courses from Course Lists A-E or from the following (6 credit hours):

ANTHROPOLOGY: 1101, Introduction to Anthropology; 1201, Introduction to Archaeology; 1301, Introduction to Biological Anthropology; 1601, Introduction to Language and Culture; 2211, Archaeology; 2220, Human Landscapes; 2227, Food in the Ancient World; 2370, Death and the Body; 3160, Anthropologies and Archaeologies of Community; 3161, Colonial Encounter in the Americas; 3200, Ancient Cities; 3202, The Collapse of Civilizations.

With the permission of the director of undergraduate studies, students may fulfill the method and theory requirement (#3 above) by completing a program of practical archaeology (e.g., CLAS 3700, 3710, 3720, 3730, ANTH 3866, participation in an excavation or field survey, an internship in conservation or curation). No more than 15 credit hours of courses numbered below 2050 may count toward this major track.

Track 3: Mediterranean Studies

30 total credit hours including:

1. One foundation course: CLAS 1010 (3 credit hours)
2. Historical basis: Four courses from Course Lists A-D (12 credit hours);
3. Comparative perspectives: Five courses from Course Lists A-F (15 credit hours).

Students may apply up to three semesters of one Mediterranean language toward the historical basis requirement of this major track, including either an ancient to medieval language in Course List A or Catalan, French, Italian, Portuguese, or Spanish. French, Italian, Latin, and Spanish courses at the 1000 level do not count toward the major. No more than 12 credit hours of courses numbered below 2050 may count toward this major track.

Honors Program

The Honors Program in Classical and Mediterranean Studies offers students a more intensive concentration in their main field.

Candidates should signal their interest to the director of undergraduate studies by the beginning of the second semester of the junior year.

Admission requirements are:

1. A cumulative GPA of 3.3, and a GPA of 3.5 in courses that count toward the major.
2. Approval by the faculty of a 2-3 page thesis proposal, due by the middle of the second semester of the junior year.

In addition to maintaining the stated GPA throughout the senior year, Honors students must complete CLAS 4998 and 4999 for 3 credit hours each in addition to the 30-34 credit hours required by the major, culminating in a written

thesis that is defended orally. A committee of three faculty members (two of whom must hold sole or joint appointments in the Program in Classical and Mediterranean Studies) will evaluate the thesis and the oral defense.

Minor in Mediterranean Archaeology

Students are required to complete CLAS 1010, 1020, and 12 additional credit hours in courses that count toward Track 2 of the concentration, of which at least 9 credit hours must be from courses numbered 2060 or above.

Minor in Mediterranean Studies

Students are required to complete CLAS 1010 and 15 additional credit hours in courses that count toward Track 3 of the concentration, of which at least 9 credit hours must be from courses numbered 2060 or above.

Approved List of Courses

Ancient to Medieval Mediterranean Languages and Literatures

CLASSICAL HEBREW: 1101, Beginning Classical Hebrew I; 1102, Beginning Classical Hebrew II; 2200, Intermediate Classical Hebrew; 3010, Historical Hebrew Grammar; 3020, Classical Hebrew Poetry; 3030, West Semitic Inscriptions.

GREEK: 1101, Beginning Greek I; 1102, Beginning Greek II; 2201, Intermediate Greek I: Classical and Koiné Greek; 2202, Intermediate Greek II: Homer's *Iliad*; 3010, The Greek Orators; 3020, The Greek Historians; 3040, Readings in Plato and Aristotle; 3100, The Greek Tragedians; 3110, Greek Lyric Poetry; 3200, Early Christian Writers; 3850, Independent Study; 3890, Special Topics in Greek Literature.

LATIN: 1101, Beginning Latin I; 1102, Beginning Latin II; 1103, Intensive Elementary Latin; 2201, Intermediate Latin I; 2202, Intermediate Latin II; 3010, The Writings of Caesar; 3020, Cicero and the Humanistic Tradition; 3030, Latin Letters; 3040, The Roman Historians; 3050, Suetonius; 3060, Tacitus; 3070, Sallust; 3100, Roman Comedy; 3110, Catullus; 3120, Lucretius: *De Rerum Natura*; 3130, Vergil: *The Aeneid*; 3140, The Lyric Poetry of Horace; 3150, Latin Elegy; 3160, Ovid; 3170, Roman Satire; 3180, Neronian Writers; 3200, Early Christian Writers; 3300, Ancient Conspiracy - Theory and Practice; 3850, Independent Study; 3890, Special Topics in Latin Literature.

ARABIC: ARA 1101, Elementary Arabic I; 1102, Elementary Arabic II; 2201, Intermediate Arabic I; 3301, Arabic of the Qur'an and Other Classical Texts; RLST 4593, Advanced Readings in Islamic Tradition.

UGARITIC: CHEB 2300, Ugaritic.

ARAMAIC AND CLASSICAL SYRIAC: ARAM 2400, Introduction to Classical Syriac; 2500, Egyptian Aramaic; CHEB 3030, West Semitic Inscriptions.

AKKADIAN: CLAS 3300, Elementary Akkadian I; 3301, Elementary Akkadian II.

MEDIEVAL TO RENAISSANCE ITALIAN: ITAL 3100, Literature from the Middle Ages to the Renaissance; 3242, Dante in Historical Context; 3340, *Famous Women* by Boccaccio.

OLD SPANISH: SPAN 4400, Origins of Spanish Literature.

Ancient to Medieval Mediterranean History

CLASSICAL AND MEDITERRANEAN STUDIES: 2100, History of the Ancient Near East; 2110, History of Greece to Alexander the Great; 2120, Greece and the Near East from Alexander to Constantine; 2150, History of the Roman Republic; 2160, History of the Roman Empire; 2180, The Mediterranean World from Late Antiquity to the Middle Ages.

HISTORY: 1190, A History of Islam; 1350, Western Civilization to 1700; 1600, European Economic History 1000-1700; 2220, Medieval and

Renaissance Italy, 1000-1700; 2230, Medieval Europe, 1000-1350.

Ancient to Medieval Mediterranean Art, Architecture, and Archaeology

CLASSICAL AND MEDITERRANEAN STUDIES: 1020, Introduction to Mediterranean Archaeology; 2200, Archaic and Classical Greek Art and Architecture, 1000 to 400 B.C.E.; 2210, Late Classical Greek and Hellenistic Art and Architecture; 2250, Roman Art and Architecture; 2260, The Art of Pagans, Christians, and Jews; 2270, Early Christian and Byzantine Art; 3200, The Greek City; 3210, Religions of the Ancient Mediterranean; 3220, The Trojan War in History, Art, and Literature; 3230, Alexander the Great; 3240, Greek Culture in the Roman World; 3881, Internship Readings and Research.

HISTORY OF ART AND ARCHITECTURE: 1100, History of Western Art; 1121, History of Western Architecture; 1285W, Introduction to Medieval Art; 2180, Islamic Art and Architecture; 2200, Cities of the Ancient Mediterranean World; 2210, Art and Architecture of Ancient Egypt; 2220, Greek Art and Architecture; 2270, Early Christian and Byzantine Art; 2275, The Cross and the Crescent: Byzantine-Islamic Confluences in Art; 2285, Medieval Art; 2290, Gothic Paris; 2310, Italian Art to 1500; 2320 or 2320W, Italian Renaissance Workshop; 2325, Great Masters of the Italian Renaissance; 2340W, The Art of Venice; 2342W, Venice: Between Land and Sea; 2360, Northern Renaissance Art; 3224, Greek Sculpture; 3226, Greek Vases and Society; 3228W, Gender and Sexuality in Greek Art; 3240W, Ancient Landscapes; 3252, Cities of the Roman East; 3256W, Roman Architecture and Power; 3272, Portraits in Late Antiquity; 3274, Art and Empire from Constantine to Justinian; 3320 or 3320W, Early Renaissance Florence; 3332, Raphael and the Renaissance; 3334 or 3334W, Michelangelo's Life and Works.

Ancient to Medieval Mediterranean Studies

CLASSICAL AND MEDITERRANEAN STUDIES: 1111, First-Year Writing Seminar; 1120, Greek Civilization; 1130, The Greek Myths; 1150, Roman Civilization; 1200W, Classics and Contemporary Culture; 2300, Ancient Science; 3000, Classical Tradition in America; 3010, The Ancient Origins of Religious Conflict in the Middle East; 3030, Death, Disease, and Health in the Ancient World; 3100, Women, Sexuality, and Family in Ancient Greece and Rome; 3110, Warfare in the Ancient Mediterranean; 3120, Humor, Ancient to Modern; 3150, Roman Law; 3160, Roman Law and Society; 3190 or 3190W, Augustan Rome; 3250 or 3250W, Jews and Greeks; 3260, Plato: Knowledge, Reality, Goodness; 3310, Culture of the Ancient Near East; 3320, The Aramaic Age; 3333, Pandemics and Society in Historical Perspective; 3350, History of Ancient and Medieval Christianity; 3360, Early Christian Poetry; 3370, The History of Syriac Christianity; 3380, Desert Spirituality in Early Christianity; 3700, Uncovering Greek Religion; 3710, Maymester in Greece; 3720, Maymester in Rome; 3730, Maymester in Israel; 3850, Independent Study; 3881, Internship Readings and Research; 3890, Special Topics.

ENGLISH: 2318 or 2318W, World Literature, Classical; 3348 or 3348W, Milton.

HISTORY: 1345, The World of Rome; 2155, Muhammad and Early Islam; 2160, Medicine in Islam; 2170, Islam and the Crusades; 2180, Islamic Narratives, Narratives of Islam; 2190, The Last Empire of Islam; 2237, Democracy and Dictatorship: Ancient Politics; 2238, Crime and Criminal Law in Western Antiquity; 2240, Sex Law; 3210, Muslims, Christians, and Jews in Medieval Spain; 3215, The Other 1492; 3310W, Bible in the Greek World.

ITALIAN: 3240, Dante's Divine Comedy; 3242, Dante in Historical Context; 3340, Famous Women from Antiquity to Renaissance; 3803, Maymester in Sicily.

JEWISH STUDIES: 1200, Classical Judaism: Jews in Antiquity; 1220, Jews in the Medieval World; 2150, Issues in Rabbinic Literature; 2620, Jews in Egypt; 3892, Topics in Ancient and Medieval Jewish History.

PHILOSOPHY: 2100, Ancient Philosophy; 2101, Hellenistic and Late Ancient Philosophy; 2102, Medieval Philosophy; 3005, Jewish Philosophy; 3006, Islamic Philosophy.

POLITICAL SCIENCE: 2202, Ancient Political Thought.

RELIGIOUS STUDIES: 1500, Introduction to Islam; 3225, Sexuality in the Hebrew Bible and the Ancient Near East; 3350, Christian-Jewish Relations in Medieval and Early Modern Europe; 3926, Ancient Goddesses; 4551 or 4551W, Mysticism in Islam; 4938, Marriage in the Ancient Near East and the Hebrew Bible.

Archaeological and Art-Historical Method and Theory

ANTHROPOLOGY: 2603, Comparative Writing Systems; 3261, Geographic Information Systems and Remote Sensing; 3260, Ceramic Analysis in Archaeology; 3262, Ethics in Anthropology, Archaeology, and Development; 3344, Genetic Anthropology Lab Techniques; 3372, Human Osteology; 3866, Archaeological Excavation; 3901, Problems in Anthropological Theory; 4345, Human Evolutionary Genetics.

CLASSICAL AND MEDITERRANEAN STUDIES: 3600, Seminar in Digital Humanities.

EARTH AND ENVIRONMENTAL SCIENCES: 1030, Oceanography; 1510, The Dynamic Earth: Introduction to Geological Sciences; 2510, Earth Systems through Time.

HISTORY OF ART AND ARCHITECTURE: 3810 or 3810W, Exhibiting Historical Art.

The Modern Mediterranean World

HISTORY: 1200, The Arab Spring; 3190, Religion, Culture, and Commerce: The World Perspective.

HISTORY OF ART AND ARCHITECTURE: 2780, History of Western Urbanism; 2782, Storied Places: History of Landscape Design.

JEWISH STUDIES: 2600, Muslims and Jews.

RELIGIOUS STUDIES: 4552, Islam in the Modern World.

Climate and Environmental Studies

[Program of Concentration in Climate Studies](#)

[Honors Program in Climate Studies](#)

[Minor in Environmental and Sustainability Studies](#)

DIRECTOR OF UNDERGRADUATE STUDIES Zdravka Tzankova (Climate and Environmental Studies)

COURSES OFFERED: [ENVS](#)

Human beings and their societies necessarily interact with and alter the Earth's natural environment. Climate and Environmental Studies (CES) is home to two interdisciplinary undergraduate programs. Both the Climate Studies major (CLIM) and the Environmental and Sustainability Studies (ESS) minor allow the student to examine human interaction with the environment by concentrating on methods in the natural sciences, humanities and social sciences with some experience in the other areas of study as well as environmental engineering and social engagement. The major, in particular, is designed to provide students with a strong foundation in the full range of disciplinary perspectives across the humanities, natural sciences and social sciences.

Program of Concentration (I) in Climate Studies

The major requires 30 credit hours. Some of the courses require prerequisites, and students are responsible for meeting those prerequisites if they choose to satisfy the major with those classes.

1. Climate Studies introduction: ENVS 1101
2. Climate science foundation: EES 2110 or EES 3310
3. Core humanities course. One course in the humanities with climate-related focus: ASIA 2308, CSET 3320W, ENGL 3731, HART 3233, HIST 1530, RLST 3472
4. Core social sciences course. One course in the social sciences with climate-related focus: ANTH 1111, 2114, 2225; ECON 4050 Topics in Econometrics, when offered as Environmental Econ and Policy; PSCI 3266; SOC 3311, 3317, 3319
5. Core natural sciences course. One course in the natural sciences with a climate-related focus: EES 1081, 2510, 3333, 4440, 4650, 4680, 4750
6. Methods and practices courses. Two courses from the following: ANTH 2400, 3120, 3125, 3261; BME 2400; CE 3300; CMST 1501, 3800; CSET 2100, 3257; CS 1000; 2204, DHUM 1100, 1200; DS 1000, 1100, 2100, 3100; ECON 1500, 1510, 3035; HART 1740W, 2815; HIST 1515; HODC 3222; MATH 1010, 1100, 1201, 1301, 2810, 2821; PSY 2100, PSY-PC 2120; SOC 2100, 3002
7. Specialization electives: 9 credit hours. See the director of undergraduate studies for recommended concentration clusters. The nine additional credit hours may come from any of the courses listed above for #3, 4, and 5. They may also include the following additional courses: ANTH 2109, 2150, 2220W, 3138, 3202, 3333W, 4154; ASIA 2306, 2309W; BSCI 1511, 2238, 3231, 3233, EES 2150, 2309W, 2580, 3220, 3280, 3330, 4233, 4300, 4480; ECON 2170; ENVE 3610, 4305; ENVS 4101, 4101W; CE 2120, 3300, 4300; CSET 3240W, 3890; ENGL 2330W; 3240; HART 1740W, 2200, 3240W; HODC 3650, HODH 3650; HODI 3270; SOC 1030, 3314, 3312, 3316, 3318, 3319, 3321; PSCI 3253, 3264W, 3265; UNIV 3315/5315

Program II: Honors Program in Climate Studies

The Honors Track offers majors in Climate Studies the opportunity to pursue intensive work through an independent research project. Students interested in pursuing the Honors Track should contact the director of undergraduate studies for more information. To be considered for the Honors Track in Climate Studies, a student must have a minimum cumulative GPA of 3.4 and a minimum GPA of 3.6 for courses that count toward the major. Students should express interest to the director of undergraduate studies before March 1 of their junior year. Students who are recommended for the program by the director of undergraduate studies will typically begin the program by taking ENVS 4101W during the fall term of the senior year.

The Honors Track requires the following:

1. Successful completion of requirements 1-7 in Program I, for a total of 30 credit hours. Requirements 1, 2, and 6 must be completed prior to beginning the honors courses.
2. Successful completion of at least two semesters of honors coursework (6 credit hours) for the Honors Track. Students take ENVS 4101W or ENVS 4981 (Honors Research) during the first semester of their senior year, when they develop the literature review and research plan. The first semester of honors coursework counts as part of requirement 7 of Program I and can be used to fulfill the requirements for Program I should students not go on to finish honors during the second semester of honors coursework. After completing the first semester of honors coursework, students then take a minimum of 3 and maximum of 6 credit hours of 4981 (Honors Research) during the second semester, which is in addition to the 30 credits required to complete the standard major. Thus students must take a minimum of 6 credit hours of honors coursework and may take up to 9 credit hours.
3. In order to earn honors in Climate Studies, students must successfully complete, defend, and perform requested revisions on the honors thesis before deadlines for graduation. Successful defense of the completed thesis is through an oral presentation and examination by the thesis adviser and a designated faculty reader near the end of the student's final semester. Revisions must be completed and the thesis submitted no later than the last day of undergraduate classes.
4. Students meeting these requirements receive honors or highest honors in Climate Studies, depending on the quality of the thesis and performance on the defense. Successful candidates will be recognized in the commencement program and receive a Vanderbilt diploma that records honors or highest honors in Climate Studies.

Comprehensive Exam

In order to graduate with a climate studies major, students must take a comprehensive exam during their senior year. The exam is not graded, and no grade will appear on the student's transcript. The purpose of the exam is to test the extent to which climate studies majors are retaining core aspects of the climate & environmental studies curriculum.

Minor in Environmental and Sustainability Studies

Students who want to minor in environmental and sustainability studies must take a minimum of six courses (18 credit hours total) chosen from the courses listed below; additional relevant courses may be counted with approval of the director of the program. Courses must be distributed as follows: (A) one Natural Science- and Technology-Intensive course; (B) one Humanities course; (C) one Social-Behavioral Sciences and Policy-Intensive course; (D) two additional courses from B and/or C; and (E) a capstone course. No more than two courses may be at the 1000 level. In addition, no more than 3 credit hours may be counted simultaneously toward both the environmental and sustainability studies minor and any other major or minor. Topics courses may count toward the minor with approval of the director.

- A. *Natural Science- and Technology-Intensive Courses:* BSCI 1103, BSCI 2238, BSCI 2238L, BSCI 3233, EES 1030, EES 1070, EES 1080, EES 1081, EES 1111*, EES 1140, EES 1510, EES 1510L, EES 2110, EES 2150, EES 2510, EES 3220, EES 3220W, EES 3310, EES 3333, EES 4300, EES 4650, EES 4680, EES 4750, EES 4760, EES 4820, ENVE 3610, ENVE 4615, ENVE 4700, ES 1115*
- B. *Humanities Courses:* AMER 1111*, AMER 4000*, AMER 4100*, CSET 3320W, ENGL 2316/2316W*, ENGL 2330, ENGL 3720/3720W*, ENGL 3730, ENGL 3731, ENGL 3898/3898W*, GSS (formerly WGS) 2268, GSS (formerly WGS) 2270, HART 2150, HART 2662, HART 3240W, HART 2782, HART 3790, HIST 1520, HIST 1525, HIST

1530, HIST 2108, HIST 2108W, HIST 2139, HIST 2413, HIST 2413W, PHIL 1111*, PHIL 3611, PHIL 3612, RLST 2472, RLST 3472, RLST 3921

- C. *Social-Behavioral Sciences and Policy Intensive Courses:* ANTH 1111*, ANTH 2109, ANTH 2114, ANTH 2150, ANTH 2220, ANTH 2220W, ANTH 2225, ANTH 2227, ANTH 3138, ANTH 3261, ANTH 4154, ECON 2170, GSS (formerly WGS) 1111*, HOD 3270, PSCI 3266, PSY 1111*, SOC 1020/1020W*, SOC 1030, SOC 1111*, SOC 3311, SOC 3312, SOC 3313, SOC 3314, SOC 3315, SOC 3316, SOC 3317, SOC 3318, SOC 3319, SOC 3321
- D. Two additional courses from lists B and/or C above.
- E. *Capstone: ENVS 4101 or ENVS 4101W, for minors only*

*Special topic and First-Year Writing Seminar sections require the approval of the director of the environmental and sustainability studies minor to count in the minor.

Computer Engineering

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Computer Engineering Areas of Concentration](#)

[Specimen Curriculum for Computer Engineering](#)

[Minor in Computer Engineering](#)

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ADJUNCT ASSISTANT PROFESSOR Andrew Sternberg

COURSES OFFERED: [ECE](#)

The program in computer engineering deals with the organization, design, and application of digital processing systems as general-purpose computers or as embedded systems, i.e., components of information processing, control, and communication systems. The program provides a strong engineering background centered on digital technology combined with an understanding of the principles and techniques of computer science. Computer engineering is design-oriented. The basic principles of engineering and computer science are applied to the task at hand, which may be the design of a digital processor, processor peripheral, or a complete digital processor-based

system.

Whatever the undertaking, the comprehensive academic training in this program enables engineers to evaluate the impact of their decisions, whether working with hardware, software, or the interface between the two.

The computer engineering program combines fundamental core requirements with flexibility to allow students to specialize in a variety of emphasis areas within the program. The curriculum includes requirements in the basic sciences, mathematics, and humanities; a primary core of hardware and software courses; and a set of electives that combine breadth and depth requirements as described below. Students who major in computer engineering who wish to apply for graduate study in electrical engineering or computer science are encouraged strongly to select their elective courses to demonstrate depth in that particular area; the structure of the program enables that option. The course of study leads to a bachelor of engineering.

Undergraduate Honors Program. With faculty approval, junior and senior students may be accepted into the Honors Program. To achieve honors status, the student must:

1. achieve and maintain a minimum GPA of 3.5.
2. complete 3 hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861) with final written report
3. complete 6 hours of ECE program elective credit from the following list:
 - a. up to 3 additional hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861), or
 - b. design domain expertise (DE) courses beyond the one course required by the program, or
 - c. CS 3259, CS 3892, CS 4287, or
 - d. 5000-level courses.

The diploma designation is Honors in Computer Engineering.

Facilities. Electrical and computer engineering supports undergraduate laboratories emphasizing the principal areas of the disciplines: analog and digital electronics, microcomputers, microprocessors, microelectronics, and instrumentation. In addition, several specialized facilities are available for graduate research: the advanced carbon nanotechnology and diamond labs, the Institute for Software Integrated Systems, the Institute for Space and Defense Electronics, the Medical Image Processing Laboratory, the Center for Intelligent Systems and Robotics Laboratories, the Embedded Computer Systems Laboratory, and biomedical, biosensing, and photonics laboratories.

The work in electrical and computer engineering is supported by a variety of computers and networks, including the high-performance computing facilities of the Advanced Computing Center for Research and Education. Vanderbilt is one of the founding partners in the Internet II initiative.

Students interested in the major or minor in Computer Engineering are encouraged to consider instead those in Electrical and Computer Engineering.

The major or minor in Computer Engineering may no longer be declared. CmPE students will be supported in completing the relevant program, including the pursuit of honors in the major if relevant.

Curriculum Requirements

The B.E. in computer engineering requires a minimum of 121 hours, distributed as follows:

1. Mathematics (18 hours). Required courses: MATH 1300, 1301, 2300, 2400, 2810
2. Basic Science (16 hours). Required courses: CHEM 1601, 1601L; PHYS 1601, 1601L, 1602, 1602L; MSE 1500, 1500L (or CHEM 1602, 1602L).
3. Engineering Fundamentals (6 hours). Required courses: ES 1401, 1402, 1403, 2100W.
4. Culminating Design Experience (7 hours). Required courses: ECE 4950, 4951, 4959.
5. Computer Engineering Core (at least 23 hours). Required courses: ECE 2112, 2123, 2123L, 2218, 2218L;

either ECE 2213 (and 2213L) or 3214; CS 1101 or 1104; CS 2201, 3251.

6. Computer Engineering Electives (18 hours). To comprise:

- a. at least six hours in each of two of the three Computer Engineering Areas of Concentration listed below. Embedded Systems must include ECE 4376, Computing Systems and Networks must include CS 3281, and Intelligent Systems and Robotics must include ECE 4257 among the six hours.
- b. at least one design domain expertise (DE) course as designated below
- c. other courses listed in the Computer Engineering Areas of Concentration below, or ECE or CS courses numbered above 3000 (including CS 3860, 3861, and ECE 3860, 3861).
- d. courses with associated labs require completion of both the lecture and lab portions to count as Computer Engineering Electives.

7. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.

8. Technical electives (12 hours).

- a. CHBE (except 2150, 2900W); CE; CS (except 1000, 1101, 1103, 1104, 1151); ECE (hours above basic requirement in sections 5 and 6 above); ENGM 3010; ENVE; ES 3300; ME; MSE (except 1500, 1500L); NANO 3000; SC 3250, 3260 (6-12 hours). At least 6 hours must be taken from the following approved engineering technical electives: BME (except 2860)**;
- b. (0-6 hours). Up to 6 hours may be taken from this list of optional technical electives: ENGM 2160, 2210, 3000, 3100, 3300, 3650, 4500; MSE 1500, 1500L (if CHEM 1602, 1602L is used for basic science requirement); ASTR (except 1010, 1111, 2130); BSCI (except 1111); CHEM (except 1010, 1020, 1601, 1602, 1111); EES (except 1080, 1111, 2150); MATH 2410 and above; NSC 2201, 3269, 4961; PHYS above 2000; PSY 2100, 3780

9. Open Elective (3 hours).

Undergraduates in computer engineering may apply the pass/fail option only to courses taken as open electives subject to the school requirements for pass/fail.

**Computer engineering majors may earn credit for only one of BME 3300 and BME 3302.

Computer Engineering Areas of Concentration

Embedded Systems	Computing Systems and Networks	Intelligent Systems and Robotics
ECE 4257	CS 3265	CS 4260
ECE 4275	CS 3274 (DE)	CS 4269 (DE)
ECE 4356 (DE)	CS 3281	ECE 4257
ECE 4358 (DE)	CS 3282 (DE)	ECE 4353 (DE)
ECE 4376 (DE)	CS 4266 (DE)	ECE 4354 (DE)
ECE 4377 (DE)	CS 4278 (DE)	ECE 4358 (DE)
ECE 4385 (DE)	CS 4279 (DE)	ME 4271
CS 3274 (DE)	CS 4383 (DE)	
	CS 4284 (DE)	
	CS 4285	
	CS 4288 (DE)	
	ECE 4371 (DE)	

(DE) designates a Design Domain Expertise course

Specimen Curriculum for Computer Engineering

		Semester hours
SOPHOMORE YEAR		FALL SPRING
MATH 2300	Multivariable Calculus	3 -
MATH 2400	Differential Equations with Linear Algebra	- 4
PHYS 1602, 1602L	General Physics II and Laboratory	4 -
ECE 2112	Circuits I	3 -
ECE 2123, 2123L	Digital Systems and Laboratory	4 -
ECE 2218, 2218L	Microcontrollers and Laboratory	- 4
CS 2201	Program Design and Data Structures	3 -
CS 3251	Intermediate Software Design	- 3
	Liberal Arts Core	- 3
		17 14
JUNIOR YEAR		
MATH 2810	Probability and Statistics for Engineering	- 3
ES 2100W	Technical Communications	3 -
ECE 4376, 4376L	Embedded Systems and Laboratory	4/3 -
or CS 3281	Principles of Operating Systems I	
ECE 2213, 2213L	Circuits II and Laboratory Signals and Systems	4/3 -
or ECE 3214		
	CMPE Program Electives ‡	3 6
	Liberal Arts Core	3 3
	Technical Electives	- 3
		15-17 15
SENIOR YEAR		
ECE 4950	Program and Project Management for EECE	3 -
ECE 4951	Electrical and Computer Engineering Design	- 3
ECE 4959	Senior Engineering Design Seminar	1 -
	CMPE Program Electives ‡	3 3
	Liberal Arts Core	3 3
	Technical Electives	6 3
	Open Electives	- 3
		16 15

‡ As described in “Computer Engineering Degree Requirements” subsection 6. At least one design domain expertise (DE) course required prior to ECE 4951.

The minor in computer engineering is available to all students except those majoring or minoring in electrical engineering or computer science. The computer engineering minor requires a minimum of 17 hours of EECS courses, including the completion of all laboratory corequisites for courses selected for the minor, distributed as follows:

1. Programming: CS 1101 or 1104	3 hours
2. Digital Systems: ECE 2123, 2123L	4 hours
3. Microcontrollers: ECE 2218, 2218L	4 hours
4. ECE 2112 or CS 2201 or CS 2204	3 hours
5. At least 3 hours of ECE or CS courses numbered 2000 or above (excluding ECE 3860, 3861 or CS 3860, 3861)	3 hours
Total:	17-18 hours

Computer Science

[Undergraduate Honors Program](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Computer Science](#)

[Second Major in Computer Science for Non-Engineering Students](#)

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Yin, Maizie Zhou

RESEARCH ASSISTANT PROFESSOR Gayathri Narasimham

ASSISTANT PROFESSORS OF THE PRACTICE Gina Bai, Charreau Bell, Shervin Haiiamini, Md. Kamrul Hasan, Dana Zhang

ADJUNCT ASSISTANT PROFESSORS Yogesh Barve, Csaba Biegl, Tim Darrah, Ronald Hedgecock, Yingxiao Kong, Marcus Quinones-Grueiro, Adrienne Slaughter, Hamilton Turner

LECTURER Sweta Mahaju

COURSES OFFERED: [CS](#)

The program in computer science blends scientific and engineering principles, theoretical analysis, and actual computing experience to provide undergraduate students with a solid foundation in the discipline. Emphasis is on computing activities of both practical and intellectual interest, and on theoretical studies of efficient algorithms and the limits of computation. Computer facilities are available for class assignments, team projects, and individual studies.

Students are challenged to seek original insights throughout their study. Working in teams, participating in summer internships, supporting student professional organizations, and developing interdisciplinary projects are strongly encouraged.

The computer science major provides an excellent back-ground for medical studies, and the flexibility provided by its many open electives allows students to prepare for medical school while earning a degree in computer science with a normal load in four years. Interested students should discuss their plans with their computer science adviser in the fall of their first year.

In addition to the bachelor of science, the master of science and doctor of philosophy are also awarded in computer science. Computer Science majors in the School of Engineering are encouraged to consider a double major or minor to complement their CS studies. Popular double majors include Mathematics, Economics, HOD and Physics. The second major in Computer Science is accessible to students outside of the School of Engineering. Second major requirements can be found following the engineering specimen curriculum below.

Undergraduate Honors. Honors in Computer Science provides recognition for select undergraduates who have experienced advanced study in computer science. Students who have an overall GPA of 3.5 or better, a GPA of 3.5 or better in computer science classes, and six hours of any combination of undergraduate research (CS 3860, 3861, and 3862) and courses at or above the 6000-level will be granted honors in the computer science program. The diploma designation is Honors in Computer Science.

Curriculum Requirements

The B.S. in computer science requires a minimum of 120 hours, distributed as follows:

1. Mathematics (17-19 hours). Required components:
 - a. Calculus/Linear algebra (14-16 hours). A sequence selected from the following:
 - i. MATH 1300, 1301, 2300, and one of 2410 or 2600, or
 - ii. MATH 1300, 1301, 2500, 2501
 - b. Statistics/Probability (3 hours): MATH 2810, 2820, or 3640.
2. Science (12 hours). To be selected from the following list and include at least one laboratory course: BSCI 1100, 1100L, 1510, 1510L, 1511, 1511L, 2218, 2219; CHEM 1601, 1601L, 1602, 1602L; EES 1510, 1510L; MSE 1500, 1500L; PHYS 1601, 1601L, 1602, 1602L. Advanced Science Courses may be substituted by special

- permission. Recommended: CHEM 1601, 1601L; PHYS 1601, 1602.
- 3. Introduction to Engineering (3 hours): ES 1401, 1402, 1403.
 - 4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
 - 5. Computer Science Core (25 hours).
 - Software/Problem Solving: CS 1101 or 1104, and CS 2201, 3251, 3270.
 - Hardware/Systems: CS or ECE 2281, CS or ECE 2281L, CS 3281.
 - Foundations: CS 2212, 3250.
 - 6. Computer Science Depth (15 hours). To be selected from computer science courses numbered 3000 or higher (except CS 3262); ECE 4353, 4354, 4375, and no more than two from MATH 3320, 3620, 4600, 4620. A maximum of 6 hours may come from CS 3860, 3861.
 - 7. Computer Science Project (3 hours). To be selected from CS 3862, 3892, 4239, 4249, 4269, 4279, 4287, 4289, 4359.
 - 8. Computer Science Seminar (1 hour). CS 4959.
 - 9. Technical Electives (6 hours). To be selected from courses numbered 2000 or higher within the School of Engineering (except 2860 in any program, ENGM 2440, ENGM 4800, ES 2700, ES 3884, and CS courses numbered below 3000); or courses numbered 2000 or higher in the College of Arts and Science listed in the mathematics and natural science (MNS) AXLE distribution requirements.
 - 10. Open Electives (18-20 hours).
 - 11. Computers and Ethics (3 hours) CS 1151. May be used to satisfy three hours from the Liberal Arts Core (#4) or Open Electives (#10). May not be taken on a pass/fail grading basis by CS majors or minors.
 - 12. Writing Component (3 hours). At least one "W"-designated course or 1111 course in the English Language must be included from the Liberal Arts Core (#4), Technical Electives (#9), or Open Electives (#10).

Undergraduates in computer science may apply the pass/fail option only to courses taken as open electives, technical electives, or part of the liberal arts core, subject to the school requirements for pass/fail.

Specimen Curriculum for Computer Science

		Semester hours	
		FALL	SPRING
FIRST YEAR			
CHEM 1601, 1601L	General Chemistry and Laboratory	4	-
PHYS 1601, 1601L	General Physics I and Laboratory	-	4
MATH 1300	Accelerated Single-Variable Calculus I	4	-
MATH 1301	Accelerated Single-Variable Calculus II	-	4
ES 1401-1403	Introduction to Engineering	3	-
CS 1101	Programming and Problem Solving	-	3
	Liberal Arts Core	-	3
	Open Electives	3	-
		14	14
SOPHOMORE YEAR			
PHYS 1602, 1602L	General Physics II and Laboratory	4	-
MATH 2300	Multivariable Calculus	-	3
CS 2201	Program Design and Data Structures	3	-
CS 2212	Discrete Structures	3	-
CS 2281, 2281L	Computer Architecture	-	4
CS 3251	Intermediate Software Design	-	3
	Liberal Arts Core	-	3
	Open Electives	6	3
		16	16
JUNIOR YEAR			
MATH 2410	Methods of Linear Algebra	-	3
MATH 2820	Introduction to Probability and Mathematical Statistics	3	-
CS 3250	Algorithms	-	3
CS 3270	Programming Languages	3	-
CS 3281	Principles of Operating Systems I	3	-
	Computer Science Depth	-	3
	Liberal Arts Core	3	3
	Open Electives (ES 2100W recommended)	2	3
		14	15
SENIOR YEAR			
CS 4959	Computer Science Seminar	1	-
	Computer Science Project	-	3
	Computer Science Depth	9	3
	Technical Electives	3	3
	Liberal Arts Core	3	3
	Open Electives	-	3
		16	15

Second Major in Computer Science for Non-Engineering Students

The second major in computer science for students enrolled outside the School of Engineering requires 40 hours comprising items 5 and 7 of the curriculum requirements listed above as well as 12 hours of course work as described in item 6.

Courses taken toward the second major may not be taken pass/fail.

Communication of Science and Technology

[Program of Concentration in Communication of Science and Technology](#)

[Honors Program](#)

[Minor in Communication of Science and Technology](#)

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DIRECTOR OF UNDERGRADUATE STUDIES Michelle (Shellie) Richards

Professor, Emeriti: David Weintraub

Professor: Bonnie Dow

Assistant Professors: Karan Jani, Alexander Morales

Assistant Professor of the Practice: Paul Durst

Senior Lecturers: Dusan Danilovic, Ashleigh Maxcey

Writers in Residence: Amanda Little, Stephen K. Ornes

COURSES OFFERED: [CSET](#)

The Program in Communication of Science and Technology (CSET) sits at the intersection of the sciences and the humanities, and it builds on the vast amount of effort at Vanderbilt devoted to interdisciplinary work that spans the natural sciences, engineering, the social sciences, and the humanities. CSET draws on both the scientific communities (natural sciences, social sciences, engineering, medicine) and the creative communities (public speaking, writing, digital media production) across multiple colleges at Vanderbilt.

CSET is designed for students who have an interest in science and technology and also are interested in communicating science and technology to both peer-professional audiences and to the larger world. CSET is ideal as a second major for students pursuing a first major in one of the natural sciences, any of several of the social sciences, engineering, the Science, Medicine and Technology concentration in History, and the Creative Writing track in English. In the twenty-first century scientists must be able to communicate their work and their ideas to their professional peers, to nonspecialists who review grant proposals, and to lay audiences who ultimately fund, support, and benefit from the discoveries made in laboratories around the world. In return, the scientific community needs support from professional writers, journalists, technical writing specialists, public speakers, film and video writers and producers, and bloggers in communicating modern science, technology, and medicine to lay audiences.

Program of Concentration in Communication of Science and Technology

Track 1: Standard track [at least 42 credit hours]

1. Core [9 credit hours]
 - a. CSET 1500: Communicating Science [3]
 - b. CSET 2100: Science Communication Tools and Techniques [3]
 - c. CSET 2500: Science for Everyone
2. Telling Scientific Stories: [6 credit hours, of which at least credit hours must be from category a.]
 - a. Writing Skills
 - i. blogging (CSET 3215W, ENGL 3215, ENGL 3215W)
 - ii. technical writing (CSET 3090, 3200W, BME 4951, CE 4950, ChBE 4951W, CHEM 3135W, ENGM 2210, ME 4951, ES 2100W, PSCI 2256, 3266)

- iii. investigative journalism (CSET 3320W, ENGL 3896, 3896W)
- iv. science writing (ANTH 3150W, CSET 3240W, 3241W, 3281W, 3320W, ENVS 4101W, ENGL 3440W, 3720, 3720W, 3730, 3730W)
- v. climate studies writing (ENVS 4101W, SOC 3318)
- vi. non-fiction writing (ENGL 3210, 3220)
- vii. fiction writing (ENGL 3210, 3220)
- viii. science fiction writing (ENGL 3728, 3728W, RUSS 2273W)
- ix. script writing (CMA 2500W, 2510W, 2600W, THTR 2311W, 3311)
- x. history of science writing (All three-credit-hour courses approved for Program G. Science, Medicine, and Technology in History)
- xi. science-related philosophy (PHIL 3601, 3604, 3608, 3611, 3612, 3616, 3657)
- xii. science-related religious studies (RLST 2811, 3472, 3921, 3941)
- xiii. HONS 1830W and 1850W courses
- xiv. Other: CMST 3250W, EES 2309W
- xv. CSET 3891 (Special topics in Writing Skills)

b. Science and Narrative

- i. virtual reality (CSET 3257, CS 4249, CMA 1820W, 3257),
- ii. podcasting (CSET 2200),
- iii. telling stories with data (CSET 3410),
- iv. film making (CMA 1500, 2240, 2250, 2260, 2270, 3891),
- v. graphic design & digital animation (ARTS 1505),
- vi. interviewing (CSET 2300),
- vii. CSET 3892 (Special topics in Science and Narrative).

3. Bridging the Sciences and Humanities [9 credit hours]

Any three courses from the approved list, found below, of which at least one course must be from the CSET offerings. These courses bridge the sciences and the humanities and include but are not limited to courses covering the history of science, the history of medicine, climate studies, MHS, the philosophy of science, and ethics and science.

4. Natural Science and/or Engineering Depth [15 credit hours]

A combination of any five three-credit-hour courses that are identified as MNS courses (if in A&S) or School of Engineering courses. Students may count any one statistics course toward this requirement from the following list: BME 2400, 3400, BSCI 3270, CE 3300, ChBE 3900W, ECON 1500, 1501, MATH 1011, 2810, 2820, PSY 2100, PSY-PC 2110, 2120, SOC 2100. Students may count any one three-credit-hour Data Science course toward this requirement. Students may count the three one-credit hour courses ES 1401, 1402, and 1403 as equivalent to a single three-credit hour course if they earn credit for all three courses. Except for the listed statistics courses, MATH and PHIL courses identified as MNS for purposes of AXLE do not count toward this requirement. CSET 2500 counts toward the CSET Core and not this requirement. One-credit laboratory classes, alone or in combination, do not count for this requirement.

5. Electives [3 credit hours] chosen from any or any combination of:

- a. Directed Study (CSET 3840)
- b. Project in Science Writing and Communicating (CSET 3841)
- c. Internships (CSET 3880, 3881)
- d. Research (research hours can include appropriate credit hours from another department or program; these hours must be approved by the student's CSET adviser)
- e. Honors in CSET (CSET 4998)
- f. Qualifying Telling Scientific Stories or Bridging the Sciences and Humanities or Natural Science and/or Engineering Depth courses
- g. One additional 2100-level or higher W course from any department or program in A&S.

Additional notes:

- Students in the College of Arts and Science must count at least 24 credit hours for CSET that are not also used to fulfill any program requirements for any other major or minor in the College of Arts and Science.
- A course can only be used once to fulfill a single CSET requirement, even if it is eligible under more than one CSET requirement (e.g. ENGM 2210 can count for requirement #4 or #7, but not both).
- A student may count no more than 3 total credit hours toward any and all requirements of the CSET major from courses in the following list: BME 4951, ChBE 4951W, CE 4950, CE 4951, ENGM 2210, and ES 2100W.

Track 2. CSET plus an approved STEM major* or minor**

At least 27 credit hours, with verification of 15 additional hours of Natural Sciences or Engineering classes.

Any student with an approved STEM major or registered in the School of Engineering must complete requirements 1, 2, 3, and 5 of the Standard Track.

Requirement 4 of the Standard Track will be waived by the URO upon verification of completion of 15 additional credit hours of courses that fulfill this requirement and also count toward the student's natural science major or degree program in the School of Engineering.

* Approved STEM majors include Anthropology; Biochemistry & Chemical Biology; Biological Sciences; Chemistry; Earth & Environmental Sciences; Ecology, Evolution & Organismal Biology; Environmental Sociology; Molecular & Cellular Biology; Neuroscience; Physics; Psychology; Cognitive Studies (Peabody College); or any major offered by the School of Engineering. Additional natural or social science majors may be added at any time, upon recommendation of the CSET Steering Committee.

** Approved STEM minors include Anthropology; Astronomy; Biological Sciences; Chemistry; Earth & Environmental Sciences; Environmental Sociology; Neuroscience; Physics; Psychology; Cognitive Studies (Peabody College); Engineering Management, Materials Science and Engineering, Computer Science, Computer Engineering, Digital Fabrication, Electrical and Computer Engineering, Environmental Engineering, Energy and Environmental Systems, Nanoscience and Nanotechnology, Scientific Computing.

Track 3: CSET plus Program G History [at least 27 credit hours]

Any student with a verified major in the history of science (Program G History) must complete requirements 1, 4, and 5 of the Standard Track.

Requirements 2 and 3 of the Standard Track will be waived by the URO upon verification of completion of 15 additional credit hours of courses that fulfill these requirements and that also count toward the student's Program G History major.

Track 4: CSET plus MHS [at least 30 credit hours]

Any student with a major in MHS must complete requirements 1, 2, and 4 of the Standard Track.

Requirements 3 and 5 of the Standard Track will be waived by the URO upon verification of completion of 12 additional credit hours of courses that fulfill these requirements and that also count toward the student's MHS major.

Track 5: CSET plus an approved major in the Humanities or Social Sciences[^] [at least 33 credit hours]

Any student with an approved major in the humanities or social sciences must complete requirements 1, 3, and 4 of the Standard Track.

Requirements 2 and 5 of the Standard Track will be waived by the URO upon verification of completion of 9 additional credit hours of courses that fulfill these requirements and that also count toward the student's approved humanities or social science major.

[^]Approved humanities and social science majors include Cinema and Media Arts, Climate Studies, English, History, Philosophy, Political Science, and Religious Studies. Additional humanities and social science majors offered and approved by the faculty in the College of Arts & Science may be added at any time, upon recommendation of the CSET Steering Committee.

Approved Courses:

List of Courses approved for the Bridging the Sciences and Humanities requirement:

These courses bridge the sciences and the humanities and include but are not limited to courses covering the history of science, the history of medicine, climate studies, MHS, the philosophy of science, and ethics and science.

- ANTH 2109, Food Politics in America; 2113W, Food, Identity, and Culture; 2114, Above and Below the Surface: The Caribbean between Climate Change and Tourism; 2160 or 2160W, Creating Community; 2220W, Human Landscapes; 2242 or 2242W, The Archaeology of Ancient Maya Civilization; 3141, Anthropology of Healing; 3143, Medical Anthropology; 3150W, Cognitive Anthropology; 3243 or 3243W, Ancient Maya Gods and Rulers; 3343, Biology and Culture of Race; 3345, Genetics in Society; 3347, Bioethics in Anthropology; 3622W, Classic Maya Language and Hieroglyphs; 4373, Health and Disease in Ancient Populations.
- ASIA 2630, Chinese Medicine.
- ASTR 2130, The Trial of Galileo and Its Background.
- CLAS 3030, Death, Disease, and Health in the Ancient World; 3730: The Roman to Medieval Near East: Caesarea Excavations, Israel.
- CMST 2800, Rhetoric and Civic Life; 2850, Science, Rhetoric, and Public Controversy; 3250W, Ethics in Science and Technology Communication; 3730 or 3730W, Communication, Culture, and Consciousness; 3740, Rhetoric of Medicine and Health; 3750, Rhetoric of the Body.
- CS 1151, Computers and Ethics.
- CSET 2130, Trial of Galileo and its Background; 2850, Science, Rhetoric, and Public Controversy; 3090, Making Science Policy; 3240W, Pop Science: The Art and Impact of Popular Science Writing; 3241W, Ethical Questions in Communication at First Contact; 3250W, Ethics in Science and Technology Communication; 3261, Immigrant Scientists; 3281W, Scientists and the State; 3320W, Environmental Journalism; 3410, Telling Stories with Data; 3983: Special Topics in Bridging the Sciences and Humanities.
- EES 2114: Above and Below the Surface: The Caribbean between Climate Change and Tourism; 2150, Science, Risk, and Policy; 2309W, Mountains to the Sea: Perspectives on Society, Politics, and the Environment, 3333: Climate and Society: Drowning Cities.
- ECON 2170, Environmental Economics; 2350, Health Care Policy.
- ENGL 3720 or 3720W, Science Fiction; 3730 or 3730W, Literature and the Environment; 3896 or 3896W, Special Topics in Investigative Writing in America.
- ENVS: all three-credit-hour courses.
- GSS 2240, Introduction to Women's Health; 2268, Gender, Race, Justice, and the Environment; 2270, Ecofeminism: Theory, Politics, and Action.
- HART 2815, Digital Heritage: Methods and Practice; 3233, Climate and Society: Drowning Cities.
- HUM 1610: AI and Society
- All three-credit-hour courses approved for Program G. Science, Medicine, and Technology in History,
- MATH 3000, History of Mathematics.
- MHS: All 1900-level or higher, three-credit-hour courses.
- PHIL 3601, Metaphysics; 3604, Gender and Sexuality; 3605, Contemporary Ethical Theory; 3606, Moral Problems; 3606W, Moral Problems; 3608, Ethics and Medicine; 3611, Environmental Philosophy; 3612, Ethics and Animals; 3616, Philosophy and the Natural Sciences.
- PSCI 2255, Public Policy Problems; 2256, Politics of Public Policy; 3253, Ethics and Public Policy; 3266, Climate Change Justice; 3268, American Health Policy.
- PSY 3605, Industrial and Organizational Psychology; 3635, Health Psychology; 3705, Human Sexuality.
- RLST 2811, Natural Science and the Religious Life; 3472, Religion and Climate Change; 3921, Ethics and Ecology; 3941, Religion, Science, and Evolution.
- RUSS 2273, Russian Science Fiction; RUSS 2273W, Russian Science Fiction.
- SCED: All three-credit-hour courses.
- PPS: All three-credit-hour courses approved for the Environmental, Resource, and Energy Policy Concentration in Public Policy Studies.

- PPS: All three-credit-hour courses approved for the Science, Technology, and Innovation Policy in Public Policy Studies.
- SOC: All three-credit-hour courses approved for the Environmental Sociology Core in Sociology.

Honors Program

Honors in CSET is a selective program of individual undergraduate work, supervised by a faculty adviser. Honors candidates propose, construct, and complete a project (written, visual, aural, digital, or a combination) that demonstrates the ability to communicate science, in depth, to a nonexpert audience.

Requirements for Admission to Honors in CSET

To be admitted to the Honors Program in CSET, a student must

- be a CSET major;
- have completed at least 21 credit hours of work that counts toward the CSET major;
- have a cumulative GPA of at least 3.0;
- have a GPA of at least 3.40 in all courses that count toward the CSET major.
- secure a faculty adviser and submit a proposal of the planned Honors project to the Director.

Requirements for Completion of Honors in CSET

To earn Honors or Highest Honors in CSET, a student must

- complete the requirements of the CSET major;
- complete at least 6 credit hours of work in any combination of CSET 3840, 3841, and 4998, of which at least 3 credit hours must be in CSET 4998;
- present a written and oral defense of the CSET 4998 project before a faculty examination committee;
- have a cumulative GPA of at least 3.0;
- have a GPA of at least 3.40 in all courses that count toward the CSET major.

Course of Study for Honors in CSET

Interested students may apply in the fall or spring of their junior year or the fall of the senior year. The application includes a one- to two-page proposal of the planned Honors project and the signature of the faculty member who will be the project adviser. The faculty adviser does not need to be a member of the CSET faculty.

An Honors candidate must pass an oral examination of the Honors project no later than the final week of classes in the students final semester. The examination committee is composed of the Honors project supervisor and two additional faculty members; at least one member of the examination committee must be a faculty member affiliated with the CSET program. The oral examination is public and should take approximately one hour, including time for questions from members of the committee. The faculty examination committee will determine by majority vote whether the student has earned Honors and whether said student should receive Honors or, for exceptional achievement, Highest Honors. Highest Honors is reserved for students whose projects are of dissemination quality and whose oral examinations are completed at the highest level.

Minor in Communication of Science and Technology

The minor in Communication of Science and Technology consists of six courses, totaling a minimum of 18 credit hours, distributed as follows:

1. CSET Core (requirement #1 of the Standard Track);
2. One Telling Scientific Stories course (as defined in requirement #2 of the Standard Track);
3. One Bridging the Sciences and Humanities course (as defined in requirement #3 of the Standard Track);
4. One three-credit-hour natural science course (as defined in requirement #4 of the Standard Track).

Additional notes for the minor in CSET:

- Students in the College of Arts and Science must count at least 15 credit hours for the minor in CSET that are not also used to fulfill any program requirements for any other major or minor in the College of Arts and Science.
- A course can be used only once to fulfill a single CSET requirement, even if it is eligible under more than one CSET requirement.

- Requirement #4 cannot be fulfilled with an engineering course.

Communication Studies

Program of Concentration in Communication Studies

Minor in Communication Studies

CHAIR Jeffrey A. Bennett

ACTING CHAIR John Sloop

DIRECTOR OF UNDERGRADUATE STUDIES Isaac West

Professor, Emeriti: Kassian Kovalcheck

Professors: Jeffrey Bennett, Bonnie Dow, John Sloop, Paul Stob

Associate Professors: Claire King, Isaac West

Assistant Professor: Bohyeong Kim

Principal Senior Lecturers: Mary Sandoz, Courtney Travers

Senior Lecturers: Neil Butt, John Koch, Dustin Wood

COURSES OFFERED: [CMST](#)

The Department of Communication Studies offers a major and a minor that include courses in the following areas: historical and theoretical foundations of communication study, argumentation and oral advocacy, the historical and critical study of public discourse and deliberation, and the analysis of media and culture.

The Vanderbilt University Debate Team participates in international, national, and regional competitions.

Program of Concentration in Communication Studies

Communication studies explores purposive human communication. The Department of Communication Studies is particularly devoted to an understanding of public discourse in the broadest sense, with an emphasis on the role of persuasion in civil society. To that end the subjects of study range from political discourse to commercial advertisement, from the history of rhetoric to the impact of mass media, from criticism of public oratory to issues of freedom of speech. The department offers courses involving practice, criticism, and theoretical analysis.

Education in these areas has traditionally produced citizen advocates who enter public life in business, law, journalism, and communication.

A major in communication studies requires 30 credit hours of course work. The requirements and options for the major are as follows:

1. Two courses (6 credit hours) in Foundations: 1002 and 1500.
2. One course (3 credit hours) in Argumentation and Advocacy: 2100, 2110, 2120.
3. Three courses (9 credit hours) in Public Discourse and Deliberation: 2750, 2800, 2850, 3000, 3100, 3110, 3120, 3140, 3150, 3200, 3600, 3700; one of which must be 2800, 3000, or 3600.
4. Three courses (9 credit hours) in Culture, Theory, and Critique: 2432, 2950, 3620, 3620W, 3710, 3720, 3730, 3730W, 3740, 3750, 3760, 3800; one of which must be 2950, 3620/3620W, or 3730/3730W.
5. One elective course (3 credit hours), selected from the courses listed in requirements 2 through 4, which has not been counted toward those requirements.

1111, 3840, 3850, 3890, 4940, and 4941 may be counted toward the major in the category corresponding to the

topic of the course, with the permission of the director of undergraduate studies.

Minor in Communication Studies

A minor in communication studies requires completion of 18 credit hours from the following requirements and options:

1. Two courses (6 credit hours) in Foundations: 1002 and 1500.
2. One course (3 credit hours) in Argumentation and Advocacy: 2100, 2110, 2120.
3. Three courses (9 credit hours) from requirements 3 and 4 in the major.

1111, 3840, 3850, 3890, 4940, and 4941 may not be counted toward the minor.

Culture, Advocacy, & Leadership

[Program of Concentration in Culture, Advocacy, & Leadership](#)

[Minor in Culture, Advocacy, & Leadership](#)

[Minor in Sports & Society](#)

[Honors Program](#)

[Approved List of Courses](#)

DIRECTOR Paul Stob

ASSOCIATE DIRECTOR Gabriel A. Torres Colón

PROFESSOR Dana Nelson

ASSOCIATE PROFESSOR Shaul Kelner

ASSISTANT PROFESSOR Victoria Hensley

SENIOR LECTURERS Alexander Jacobs, Mario Rewers

COURSES OFFERED: [CAL](#)

The Program in Culture, Advocacy, and Leadership prepares students for careers in civic engagement and public leadership, giving them the knowledge, values, and skills they need to shape people, communities, and society for the better.

- Culture signals our existing emphasis on American histories and cultures in the broadest and hemispheric senses of the terms-not just relative to the U.S. but to the Caribbean, the borderlands between nations, the Americas writ large, and more.
- Advocacy signals our existing emphasis on public-facing, community-engaged scholarship and on helping students find their voice and values for changing the world.
- Leadership signals our interest in giving students the ideas, experiences, and skills they can draw upon to bring people together in their engagement efforts.

Program of Concentration in Culture, Advocacy, & Leadership (30 credit hours)

CORE Part I (4 courses)

- CAL 1002: Fundamentals of Culture, Advocacy, & Leadership
- CAL 1800: Speaking, Leading, Engaging

- CAL 2300: Responsible Advocacy in a Complicated World
- CAL 2800: Global Perspectives on American Cultures

Area Focus (4 courses)

- Four courses inside or outside of CAL relevant to the student's interests, passions, career goals, etc. The courses will be chosen in conjunction with the student's advisor and in anticipation of CORE Part II.

CORE Part II (2 courses)

- CAL 4000: Experience & Engagement (Practicum/Internship)
This course requires students to undertake an experiential project in conjunction with a group or community around a particular issue, problem, or idea. (Examples include interning with Thistle Farms, creating a documentary of life after prison, producing a podcast about the effects of climate change in Middle Tennessee, volunteering with a veterans organization, volunteering with an arts organization, assisting community groups in North Nashville around issues of justice and social change, and more.)
- CAL 4500: American Futures
This course will bring students together after their experiential project to discuss their findings and lessons, to revise their project for a general audience, and to present their work in a public-facing symposium at the end of the semester.

Minor in Culture, Advocacy, & Leadership (15 credit hours)

CORE Part I (4 courses)

- CAL 1002: Fundamentals of Culture, Advocacy, & Leadership
- CAL 1800: Speaking, Leading, Creating
- CAL 2300: Responsible Advocacy in a Complicated World
- CAL 2800: Global Perspectives on American Cultures

Area Focus (1 course)

- One course inside or outside of CAL relevant to the student's interests, passions, career goals, etc.

Minor in Sports and Society (15 credit hours)

The minor in Sports and Society is an interdisciplinary minor consisting of five courses, totaling a minimum of 15 credit hours, distributed as follows:

1. Culture, Advocacy and Leadership 2100 Sports, Culture and Society (3 hours)
2. Four other approved courses from the following list:
 - ECON 2180 (Sports Economics)
 - MUSL 1340 (Music, Sports, and Society)
 - PSY 3560 (Sports Psychology)
 - CMST2432 or GER2432 (Soccer: Media, Art, and Society)
 - HIST1469 (Fútbol-Soccer: Latinx, Gender, and Belonging)
 - SOC3224 (Sociology Through Baseball)
 - PHIL2661 (Philosophy of Sport)
 - CMST2750 (Communication, Sports, and Society).

Some of the courses require prerequisites, and students are responsible for meeting those prerequisites if they choose to satisfy the major with those classes. Other courses, as appropriate, may be eligible.

A student who is doing a 3 credit-hour internship with a sports organization or an immersion project dealing with Sports and Society broadly or an Independent Study dealing with Sports and Society broadly can petition to count 3 hours toward the minor in place of one of the courses above. A student may utilize one 3-hour internship readings/research course or 3 hours of independent study toward the minor: there may only be one replacement for a course from category two above. The replacement should be approved in advance by the Director of the Sports and Society. Students are encouraged to pursue internships and projects that will bolster involvement with public-facing work and research (e.g., podcasts, work with local sports franchises).

Honors Program

The Honors Program in Culture, Advocacy, and Leadership offers superior students a more intensive concentration within their major field. The program requires:

1. Completion of the requirements of the major.
2. A 3.3 cumulative grade point average.
3. A 3.5 cumulative grade point average in American Studies.
4. 6 credit hours in the fall and spring semesters of the senior year in CAL 4998/4999 devoted to a major research project leading to an honors thesis. 4999 counts as the Senior Project (4960), and 4998 counts as elective credit for the requirements of the major.
5. An Honors thesis to be completed by the spring of the senior year.
6. Successful completion of an oral examination on the topic of the thesis.

Exceptional achievement on the thesis will earn highest honors. Applications are accepted in March of the junior year. Additional information is available from the director of the Culture, Advocacy, and Leadership program.

Approved List of Courses

INTERDISCIPLINARY PROGRAMS

AFRICAN AMERICAN AND DIASPORA STUDIES: 1010, Introduction to African American and Diaspora Studies; 1016, Race Matters; 3104W, Soul Food as Text in Text: An Examination of African American Foodways; 3206, Mystery, Murder, and Mayhem in Black Detective Fiction; 3214, Black Masculinity: Social Imagery and Public Policy; 3258, Black Issues in Education.

AMERICAN STUDIES: 1111, First-Year Writing Seminar; 2100, Sport, Culture, and Society; 2500, American Cultures; 2700, Religion, Politics, and American Culture; 3851, Independent Readings and Research; 3852, Independent Readings and Research; 3881, Internship Readings and Research; 3890, Topics in American Studies; 4100, Undergraduate Seminar in American Studies; 4998, Senior Honors Research; 4999, Senior Honors Thesis.

CINEMA AND MEDIA ARTS: 1600, Introduction to Film and Media Studies.

GENDER AND SEXUALITY STUDIES: 2243, Sociologies of Men and Masculinity; 2248, Humor and Cultural Critique in Fannie Flagg's Novels; 2249, Women and Humor in the Age of Television; 2259/2259W, Reading and Writing Lives; 2268, Gender, Race, Justice, and the Environment; 3246W, Women's Rights, Women's Wrongs; 3250/3250W, Contemporary Women's Movements; 3271, Feminist Legal Theory; 3891, Special Topics: Topics in Gender, Culture, and Representation; 3893, Selected Topics (when an American topic is offered).

JEWISH STUDIES: 2280/2280W, Jewish Humor; 2400, American Jewish Life; 2420W, American Jewish Music; 2560, Social Movements in Modern Jewish Life; 3830, Contemporary Jewish Issues.

LATIN AMERICAN STUDIES: 2601, Latin America, Latinos, and the United States.

MEDICINE, HEALTH, AND SOCIETY: 1930, Fundamental Issues in Medicine, Health, and Society; 3020, U.S. Public Health Ethics and Policy; 3150, Death and Dying in America; 3890, Special Topics.

ELECTIVES

ANTHROPOLOGY: 2105, Race in the Americas.

ART: 1099, Maymester Contemporary Art Blitz (when U.S. city/art).

CLASSICAL STUDIES: 3000, Classical Tradition in America.

COMMUNICATION STUDIES: 2800, Rhetoric and Civic Life; 2950, Rhetoric of Mass Media; 3000, Rhetoric of the American Experience, 1640–1865; 3001, Rhetoric of the American Experience, 1865–1945; 3002, Rhetoric of the American Experience, 1945–Present; 3100, Rhetoric of Social Movements; 3110, Women, Rhetoric, and Social Change; 3700, Politics and Mass Media; 3720, Communicating Gender; 3890, Selected Topics in Communication Studies; 4940–4941, Seminars in Selected Topics.

ECONOMICS: 2100, Labor Economics; 2150, Economic History of the United States; 2890, Special Topics; 3100, Wages, Employment, and Labor Markets; 3150, Topics in the Economic History of the U.S.

ENGLISH: 2316, 2316W, Representative American Writers; 2320, Southern Literature; 3620, Nineteenth-Century American Literature; 3622, Nineteenth-Century American Women Writers; 3624W, Literature of the American Civil War; 3640, Modern British and American Poetry: Yeats to Auden; 3642, Film and Modernism; 3644, Jewish American Literature; 3644–3645, Twentieth-Century American Novel; 3646, Poetry since World War II; 3650, 3650W, Ethnic American Literature; 3654, 3654W, African American Literature; 3658, Latino-American Literature; 3662, 3662W, Asian American Literature; 3674, Caribbean Literature; 3680–3681, Twentieth-Century Drama; 3692, Desire in America: Literature, Cinema, and History; 3694, America on Film: Art and Ideology; 3695, America on Film: Performance and Culture; 3710–3711, Literature and Intellectual History (when an American topic is offered); 3746, Workshop in English and History; 3890, 3890W, Movements in Literature (when an American topic is offered); 3892, 3892W, Problems in Literature (when an American topic is offered); 3894, 3894W, Major Figures in Literature; 3896, Special Topics in Investigative Writing in America; 3898, 3898W, Special Topics in English and American Literature (when an American topic is offered); 3899, Special Topics in Film.

HISTORY: 1390, America to 1776: Discovery to Revolution; 1400, U.S. 1776–1877: Revolution to Civil War and Reconstruction; 1410, U.S. 1877–1945: Reconstruction through World War II; 1420, U.S. Post-1945: Cold War to the Present; 1427W, America in the Seventies; 1430W, American Indians and the Environment; 1440, African American History since 1877; 1660, American Enterprise; 1690, Sea Power in History; 1730, The U.S. and the Cold War; 1740, The U.S. and the Vietnam War; 2535, Latin America and the United States; 2580, American Indian History before 1850; 2590, American Indian History since 1850; 2610, The Founding Generation; 2620, The Old South; 2630, The New South; 2640, Appalachia; 2662, American Slavery; 2690, The Civil Rights Movement; 2691, Barack Obama: Man and President; 2700, The U.S. and the World; 2710, The U.S. as a World Power; 2721, Globalizing American History, 1877–1929; 2730, American Masculinities; 2749, American Intellectual History to 1865; 2750, American Intellectual History since 1865; 2800, Modern Medicine; 2810, Women, Health, and Sexuality; 2840, Sexuality and Gender in the Western Tradition since 1700; 3010, Pornography and Prostitution in History; 3040, Health and the African American Experience; 3140, History of New Orleans; 3170, The Federalist Papers; 3746, Workshop in English and History; 3890, Selected Topics in History (when an American topic is offered); 4960, Majors Seminar (when an American topic is offered).

HISTORY OF ART AND ARCHITECTURE: 2660, American Art to 1865; 2720, Modern Architecture; 2760, Early American Modernism, 1865–1945; 2765, Art since 1945; 3735, History of Photography; 4960, Advanced Seminar (when an American topic is offered).

MUSIC LITERATURE AND HISTORY: 1600, American Popular Music; 1610, Musical Theatre in America: A Cultural History; 1620, Survey of Jazz; 1630, The Blues; 1640, Country Music; 1650, History of Rock Music; 2150, Music, Identity, and Diversity; 2320, Exploring the Film Soundtrack; 2600, American Music; 2610, Music of the South.

OTHER MUSIC COURSES: 1300, Music and the Fall of Segregation.

PHILOSOPHY: 2104, Nineteenth-Century Philosophy; 2110, Contemporary Philosophy; 3008, American Philosophy; 3603, Philosophy of Education; 3623, Modern Philosophies of Law.

POLITICAL SCIENCE: 1100, Introduction to American Government and Politics; 1150, U.S. Elections; 2222, American Foreign Policy; 2240, Political Parties; 2243, Political Campaigns and the Electoral Process; 2245, The American Presidency; 2255, Public Policy Problems; 2262, The Judicial Process; 2263, Religion and Politics; 2265, Constitutional Law: Powers and Structures of Government; 2266, Constitutional Law: Civil Liberties and Rights; 3241, American Public Opinion and Voting Behavior; 3244, The Legislative Process; 3247, American Political Culture; 3249, American Political Thought; 3250, Group Conflict and Cooperation in U.S. Politics; 3260, Introduction to American Law; 3272W, The War in Iraq, 2003-2011; 3891, Topics in Contemporary Politics; 3893, Selected Topics of American Government; 3897, Selected Topics (when an American topic is offered).

RELIGIOUS STUDIES: 1100, Introduction to African American Religious Traditions; 1190W, Introduction to Southern Religion and Culture; 3119, Martin Luther King, Jr., and the Social Roles of Religion; 3142, Slave Thought and Culture in the American South; 3304W, Evangelical Protestantism and the Culture Wars.

SOCIOLOGY: 3201, Cultural Consumption and Audiences; 3204, Tourism, Culture, and Place; 3207, Popular Culture Dynamics; 3221, The Family; 3222, Sociology of Religion; 3223, Schools and Society: The Sociology of Education; 3233, Contemporary American Society; 3301, Society and Medicine; 3322, Immigration in America; 3601, Self, Society, and Social Change; 3602, Change and Social Movements in the Sixties; 3603, Women and Social Activism; 3604, American Social Movements; 3611, Women and the Law; 3616, Women and Public Policy in America; 3621, Criminology; 3622, Delinquency and Juvenile Justice; 3624, Prison Life; 3702, Racial and Ethnic Minorities in the United States; 3722, Gender in Society; 3724, Gender Identities, Interactions, and Relationships; 4961, Seminars in Selected Topics (when an American topic is offered).

SPANISH AND PORTUGUESE: 3375, Film and Culture in Latin America; 3835, Latino Immigration Experience; 4750, Afro-Hispanic Literature.

THEATRE: 1811, Marshals, Mobsters, Monsters, Magnums, and Musicals: American Movie Genres; 2204, Histories of Theatre and Drama III: The

U.S. Stage.

Earth and Environmental Sciences

[Program of Concentration in Earth and Environmental Sciences](#)

[Honors in Earth and Environmental Sciences](#)

[Minor in Earth and Environmental Sciences](#)

[Licensure for Teaching](#)

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Senior Lecturer: Ann Klyce

COURSES OFFERED: [EES](#)

The Earth and environmental sciences are aimed at understanding Earth's governing processes—how they operate and interact—as well as interpreting Earth's dynamic history—its age and origin as recorded in rocks and the landscape—and finally, at understanding how geological processes affect modern environmental and ecological systems, including humans. Among the natural sciences, ours is the quintessential interdisciplinary science, providing vital perspective on how Earth's physical and geochemical template simultaneously sustains and threatens life, and influences human interactions with Earth.

The Department of Earth and Environmental Sciences (EES) offers an integrated Earth and Environmental Sciences undergraduate major leading to the B.A. degree. Students majoring in EES take a core set of science courses with lab, computational, and field components, design an academic plan that allows them to develop expertise in an area of interest within EES. The comparatively small size of the faculty and student body allows many opportunities for faculty-student interaction. Students use the major as preparation for graduate study, for careers in environmental and climate science, geology, and natural resource and energy management, and for related fields such as land use planning, teaching, conservation, business, law, or engineering.

Research programs in the department, which in many cases involve students, employ field, analytical, and experimental methods. A wide variety of Earth processes are investigated, ranging from the migration of fluids and generation of magmas in the Earth's crust, to the movement of mass and energy across land, ocean, and atmosphere, to the evolution of life and ecosystems, to the impacts of humans on the environment. Study areas, in addition to Tennessee, include the southwestern United States, the Pacific northwest, Florida, Colorado, Antarctica, South Asia, Brazil, Italy, Greenland, Peru, Namibia, the Bahamas, Australia, and New Zealand.

Program of Concentration in Earth and Environmental Sciences

The Department of Earth and Environmental Sciences offers two tracks to an EES major, to support the preparation of future scientists and students aimed at science-related pursuits. Both tracks provide a solid grounding in the integrated Earth and environmental sciences while allowing flexibility in the particular focus and support communication, quantitative, and computational skills.

Track 1

This track is designed for students who aim to build a strong, integrated earth and environmental science foundation to inform discussions and work in policy, education, law, advocacy, community engagement, conservation, finance, etc. but do not aim to work as practicing scientists. This pathway pairs well with programs in Climate and Environmental Studies, Environmental Sociology, Communication of Science and Technology, Secondary Education, and other non-STEM majors that, together, will prepare students for the interdisciplinary nature of addressing the Earth and environmental challenges of our future.

Track 1 of the EES major is organized into six parts, beginning with two of three introductory courses that serve as entry points. The second part involves a core course that provides all EES majors with a common background in ways of thinking in Earth and environmental sciences. This core course must be completed before students may enroll in more advanced EES courses. As Earth and Environmental sciences employ techniques and foundational knowledge from all other STEM fields, part 3 of the major builds skills in supporting STEM fields through three classes: one in scientific computing, one in statistics, and one additional supporting science elective.

The fourth part of the major defines a focus for the student through both experiential and seminar-style EES courses. The fifth component addresses science communication skills with one course. The sixth component of the major is a 1 credit hour seminar that serves as a capstone for senior students. In addition to the major, qualified Track 1 students may elect to participate in the Honors Program designed for highly motivated students who want to pursue research as undergraduates. Opportunities for research may be available to other students outside of the Honors Program.

At least 36 credit hours toward the major are required as follows:

1. EES Foundations (3+1 credit hours each): Two introductory courses, one with lab, from 1510/1510L, 1030/1030L, and/or 1081/1081L	7
2. EES Core (4 credit hours): 2510, Required as prerequisite for nearly all upper level EES courses	4
3. STEM Foundation (3 credit hours each): One course in scientific computing: CS 1101 or DS 1101 One course in statistics: MATH 1011, DS 2100, BSCI 3270, ECON 1500 or 1510, MATH 218, 2820, or 2821, SOC 2100 One additional supporting science: any additional course from ASTR, BSCI, CHEM, MATH, PHYS, CS, DS excluding courses numbered 1111 and excluding BSCI 1400. Other courses from the School of Engineering may be considered with permission of the DUS	9
4. EES Focus (1-4 credit hours each): At least five classes and at least 15 hours, chosen from any EES course numbered 2050 or above 3000. Must include at least two courses at the 4000 level. At least eight hours in this category must be experiential, from the following: lab courses (EES 3220, 3260, 3280, 3310, 3330, 3340), field-based courses (EES 3865 [3-4 credit hours or 1 credit hour attached to another regular EES course with permission]), EES 3875, or an include up to three credit hours of research or internships (EES 3841, 3842, 3881, 4998, 4999)	15-17
5. Earth Science Communication (0-3 credit hours): Any CSET course, any writing-intensive (W) course from EES, BSCI, CHEM, PHYS, or one course from the following: EES 3875, 4233, 4680, 4996+4997, SCED 2330	0-3
6. Senior Seminar: 4961	1
Total hours:	36-41

Track 2

This track is designed to prepare students for careers as earth and environmental scientists, including entering the science workforce after graduation and/or pursuing postgraduate academic work.

Given the broad and interdisciplinary nature of EES, it is important that students design an academic plan in consultation with their adviser and referencing the EES Disciplinary Pathway documents, to ensure appropriate preparation for their area of interest. Preparing to be competitive for graduate programs may include additional coursework beyond the major requirements, particularly advanced math, computing, chemistry, biosciences, or physics, depending on disciplinary interest. Students on this pathway are encouraged to pursue research particularly if aimed at post-graduate academic work.

Note that prerequisite STEM courses (CHEM 1601, PHYS 1501/1601, MATH 1100/1201/1301) may be taken on an ungraded basis for students above the freshman level, but working knowledge of the course content will be required

in upper-level EES and other STEM courses.

Students who are interested in pursuing minor and/or double majors in other STEM fields should discuss options with the DUS as some coursework in other departments may replace EES coursework if part of an intentionally designed plan made in consultation with the adviser and DUS.

Track 2 is organized into six parts, beginning with one of three introductory courses that serve as an entry point. The second part involves three core courses that provide all Track 2 majors with a common background in methods and ways of thinking in Earth and environmental sciences. At least one EES core course must be completed before students may enroll in more advanced focus courses of part four. Specific core courses may be prerequisite for related upper-level electives, and so students are encouraged to take these early in their academic career. As Earth and Environmental sciences employ techniques and foundational knowledge from all other STEM fields, courses in part 2 and part 4 of the major have outside STEM courses as prerequisites and part 3 of the major requires students to build additional skills in supporting STEM fields through two more STEM electives: one of which must be quantitative or computational.

The fourth part of the major defines a focus for the student through both experiential and seminar-style EES courses. The fifth component addresses science communication skills with one course. The sixth component of the major is a 1 credit hour seminar that serves as a capstone for senior students. Track 2 students are strongly encouraged to pursue research. Highly motivated and successful students may elect to participate in the EES Honors Program.

At least 37 credit hours toward the major are required as follows:

1. EES Foundations (3+1 credit hours each): One introductory course with lab, from 1510/1510L, 1030/1030L, and/or 1081/1081L	4
2. EES Core (4 credit hours): 2510, 2550, and one course in physical dynamics from the following list: EES 2580, 4420, 4550, 4650. Note that all EES physical-dynamic focused courses have MATH 110/1201/1301 and PHYS 1501/1601/1911 as prerequisite and that CHEM 1601 is corequisite for EES 2550.	11
Required as prerequisite for nearly all upper level EES courses	
3. STEM Electives (3 credit hours each): Two courses from the following: CHEM 1602 or higher; PHYS 1502/1602, 1912 or higher, MATH 2300 or higher, BSCI 1510 or higher, ASTR 2110 or higher, CS 1101 or higher, DS 1101 or higher. One of these must be quantitative or computational, e.g. from MATH, CS, DS, or intro statistics (BSCI 3270). Other courses from the School of Engineering may be considered with permission of the DUS	6
4. EES Focus (1-4 credit hours each): At least five classes and at least 15 hours, chosen from any EES course numbered 2050 or above 3000. Must include at least two courses at the 4000 level. At least eight hours in this category must be experiential, from the following: lab courses (EES 3220, 3260, 3280, 3310, 3330, 3340), field-based courses (EES 3865 [3-4 credit hours or 1 credit hour attached to another regular EES course with permission]), EES 3875, or an include up to three credit hours of research or internships (EES 3841, 3842, 3881, 4998, 4999)	15-17
5. Earth Science Communication (0-3 credit hours): Any CSET course, any writing-intensive (W) course from EES, BSCI, CHEM, PHYS, or one course from the following: EES 3875, 4233, 4680, 4996+4997, SCED 2330	0-3
6. Senior Seminar: 4961	1
Total hours:	37-42

Designing Area of Focus

In-depth Earth and Environmental Sciences courses can be chosen to define a focus area within EES. Students should consult with their major adviser and follow guidance documents posted on the departmental website to choose a focus area and associated course options. All parts of the Earth and its environments are interconnected, and the integrated Earth and Environmental Science major allows students to create a comprehensive understanding of the cycling of energy and materials through Earth's four spheres (lithosphere, hydrosphere, atmosphere, and biosphere) while also developing some more specific expertise through a focus.

Honors in Earth and Environmental Sciences

The EES Honors Program provides research experience and mentoring in preparation for a career or graduate studies in Earth and environmental sciences. Interested students should apply to the undergraduate adviser for entry into the Honors Program fall semester, junior year. A grade point average of 3.3 or higher both cumulatively and in courses that count toward the EES major is required for admission to the Honors Program.

Working closely with a faculty adviser, students in the Honors Program complete a research project of interest to both the student and faculty member during the junior and senior years. In order to graduate with honors in EES, a student must: (1) maintain a 3.3 grade point average both in the EES major and cumulatively; (2) complete the required courses for the EES major; (3) complete Senior Honors Seminar (4996, 4997) and Senior Honors Research (4998, 4999); (4) satisfactorily present the results of his/her research in written form as a senior thesis to two members of the faculty and orally to students and faculty of the department.

Minor in Earth and Environmental Sciences

The minor in EES provides students with a broad background in Earth processes, systems, and history, and an introduction to environmental issues. This background is highly relevant to many different fields of endeavor. The minor does not fully prepare students for graduate studies or employment as Earth or environmental scientists, though it could do so paired with another relevant STEM major. Students should consult with the director of undergraduate studies about how the minor in EES fits with their career or graduate school interests.

The minor consists of at least five courses (at least 17 credit hours; EES 1510/1510L, 1030/1030L, and EES 1081/1081L each count as one course). Students are encouraged to choose courses based on their interests and career plans and to discuss course selection with the director of undergraduate studies. No more than two 1000-level courses count toward the minor. Two courses with labs are required; one must be numbered above 2000. No credit toward the minor is given for EES 3841-3842 or 3851-3852.

Licensure for Teaching

EES majors may choose a second major in science education which includes teaching licensure, a prudent choice if interested in teaching. Peabody offers a fifth-year master's program for science majors interested in teaching. Upon graduating with a B.A. in EES, EES majors in the fifth-year program would spend the next summer and academic year earning their M.Ed. and teaching licensure.

Students seeking teacher certification in science disciplines at the secondary level should refer to the chapter on Certification for Teaching in the Peabody College section of the Undergraduate Catalog. Please contact Professor Heather Johnson, coordinator of science secondary education, at heather.j.johnson@vanderbilt.edu for more information.

Economics

[Program of Concentration in Economics](#)

[Minor in Economics](#)

[Honors Program](#)

[Program of Concentration in Economics and History](#)

[Licensure for Teaching](#)

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COURSES OFFERED: [ECON](#)

The Department of Economics offers an undergraduate major and minor in economics. Qualified economics majors may also elect to take graduate courses or participate in honors work.

The department participates with the Department of History in a concentration in economics and history. Other economics-related minors are discussed under the Undergraduate Business Minor.

Economics 1010 and 1020 are prerequisites to all courses numbered above 2000, except Economics 2220 which only requires Economics 1010.

Program of Concentration in Economics

The requirements for the major include completion of at least 33 credit hours in economics courses, including 1010, 1020, 1500 or 1510 (or Math 2820L with Math 2810 or Math 2820), 3012, 3022, and 3032 or 3035. At least 9 credit hours must be in courses numbered above 3035. At least 15 credit hours that count toward the economics major must be taken at Vanderbilt. Undergraduate Business Minor (BUSA) elective courses do not count toward the economics major.

Economics 1111 may be counted as an elective. No more than 3 credit hours of independent study may be included

in the minimum 33 credit hours required for the major.

Mathematics Prerequisite

MATH 1201 (or MATH 1301) is a prerequisite for Economics courses numbered 3000 and above.

Minor in Economics

The minor in economics requires 21 credit hours, including 1010, 1020, 1500 or 1510 (or Math 2820L with Math 2810 or Math 2820), 3012, and 9 credit hours of electives. At least one elective must be numbered above 3015.

Students who complete either Economics 3032 or 3035 with Math 2820L and Math 2810 or Math 2820 as a prerequisite need not take Economics 1500 or 1510. Undergraduate Business Minor (BUSA) elective courses do not count toward the economics minor.

Honors Program

An honors program is available in economics. This program is designed for highly motivated students interested in doing independent research. Students who meet the College of Arts and Science's requirements for honors candidacy as set forth elsewhere in this catalog should consult the director of undergraduate studies no later than the fall term of their junior year. Honors candidates must complete 36 credit hours in economics, including the 18 credit hours of courses required of all economics majors. Honors candidates should complete 3032 or 3035 before senior year. In addition, the Honors Program requires completion of (1) Economics 3698 Junior Honors Research (1 credit hour), (2) Economics 3851-3852 Senior Thesis (6 credit hours), culminating in a written thesis, (3) Economics 4981-4982 Honors Seminar (2 credit hours), (4) 9 credit hours of electives including at least 6 credit hours in Economics courses above 3035. Honors candidates are required to write a senior thesis and to defend it in an oral examination. On satisfactory completion of this program, a student will graduate with honors or with highest honors in economics.

Program of Concentration in Economics and History

This is an interdisciplinary program split between Economics and History that provides a more focused program of study while requiring fewer credit hours than a double major in the two fields. The program consists of 45 credit hours of course work of which 9 credit hours are from a common economic history core and the remaining 36 credit hours are evenly divided between Economics and History. Students are expected to observe course-specific requirements in each department. The details are spelled out below under Economics and History.

Licensure for Teaching

Candidates for teacher licensure in economics at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Economics and History

The joint major in economics and history makes an important contribution to liberal education at Vanderbilt by helping students understand the origins and organization of modern society. It also provides a unique preparation for careers in business, the professions, and other fields by combining all the analytical tools of the regular economics major with history's emphasis on clear and effective writing and on developing skills in gathering, assessing, and synthesizing information. The program consists of 45 credit hours of course work: 9 credit hours in an economic history core, and an additional 18 credit hours in economics and 18 in history. Students declare their major through the Department of History office.

Note: One semester of calculus is a prerequisite for ECON 1500 and 1510. MATH 1201 (or MATH 1301) is a prerequisite for Economics courses numbered 3000 and above.

The description of the Concentration in Economics and History below will apply to students who matriculate at Vanderbilt in August 2018 and thereafter.

Course work for the major is distributed as follows:

Economic History Core (9 credit hours)

Three of the following courses, one of which must be an economics course above 3000:

HIST 1039, 1352, 1600, 1640, 1660, 1665, 2106, 2107, 2138, 2150, 2255, 2660, 2700, 2710, 3190, 3200, ECON 2150, 3150, 3160, RUSS 2810.

Note: ECON 3012 is a prerequisite for ECON 3150, and 3160.

Economics (18 credit hours)

ECON 1010, 1020, 1500 or 1510, 3012, 3022; one ECON course above 3022 not included in the economic history core.

Note: The following course sequences may be substituted for ECON 1500 or 1510: Option 1: MATH 2810, 2820L, and either ECON 3032 or 3035.

Option 2: MATH 2820, 2820L, and either ECON 3032 or 3035. In these cases, ECON 3032 or 3035 will also count as an elective.

History (18 credit hours)

No more than 3 credit hours of AP or IB credit in history courses may count toward this total.

1. History 3000W or 3980; must be taken by the end of the junior year. 3980 is limited to second-semester juniors who have been admitted to the Honors Program. Students entering the Honors Program who have already earned credit for 3000W will receive elective credit for that course.
2. History 4960 (prerequisite: History 3000W), or History 4980–4981 (available only to students in the Honors Program). *Note:* At the discretion of the director of honors and the director of undergraduate studies in history, a student who has earned credit for 4980 but does not take 4981 may be considered to have fulfilled the capstone requirement for the major.
3. Four other history courses. Electives may include any courses, not used to satisfy any of the above requirements, offered by the Department of History, including any courses listed for the history major.

Honors Program (9 more credit hours)

Students apply to the Honors Program in History in the first semester of the junior year.

54 credit hours: students will take the four-course honors sequence, HIST 3980, 4980–4981, 4999. Because HIST 4980–4981 satisfies the capstone requirement, honors students will not be required to take HIST 4960, though they may enroll for 4960 as an elective. Students will write an interdisciplinary thesis under the direction of an adviser from each department.

Electrical and Computer Engineering

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Electrical and Computer Engineering Areas of Concentration](#)

Specimen Curriculum for Electrical and Computer Engineering

Minor in Electrical and Computer Engineering

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PROFESSOR OF THE PRACTICE Walter Collett

RESEARCH PROFESSORS Michael L. Alles, Theodore A. Bapty, Zhaohua Ding, James McBride, Arthur F. Witulski

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ASSISTANT PROFESSORS Catie Chang, Xiaoguang Dong, Yun Du, Mona Ebrish, Yuankai Huo, Justus Ndukaife, Jack H. Noble, Eric Robert Tkaczyk, Jie Ying Wu, Brian Ward

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ADJOINT ASSOCIATE PROFESSOR Pierre-Francois D'Haese

ADJOINT ASSISTANT PROFESSORS Shuren Hu, Arto Javanainen, Ho Hin Lee, Francois Rheault, Stephanie Weeden-Wright, Enxia Zhang

ADJUNCT PROFESSORS Ashok Choudhury, Orest Glembocki, Roberg Magruder

ADJUNCT ASSOCIATE PROFESSOR John Hutson

ADJUNCT ASSISTANT PROFESSORS Matthew Bunting, Amy Kauppila, Andrew L. Sternberg

ADJUNCT INSTRUCTOR John Beck

INSTRUCTOR Ashwaq Amat

VISITING SCHOLAR Benjamin Gold

POSTDOCTORAL RESEARCH SCHOLARS Effat Farhana, Andrew McNeil

COURSES OFFERED: [ECE](#)

The field of electrical and computer engineering has been pivotal in driving the information technology revolution currently transforming society. The creation of large-scale integrated circuits has paved way for increasingly powerful computers and advanced networks. These technological advancements have significantly impacted the methods engineers use for design and problem-solving.

The curriculum of the electrical and computer engineering major is multifaceted. It provides a broad foundation in mathematics, physics, and computer science and a traditional background in circuit analysis, digital systems, and electronics.

Several exciting areas of concentration are available, including photonics and nanomaterials, microelectronics, embedded systems, cyber-physical systems, signal processing and medical imaging. Students receive an education that prepares them for diverse careers in industry, government, law, medicine, and postgraduate education.

Undergraduate Honors Program. With faculty approval, junior and senior students may be accepted into the Honors Program. To achieve honors status, the student must:

1. achieve and maintain a minimum GPA of 3.5.
2. complete 3 hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861) with final written report.
3. complete 6 hours of ECE program elective credit from the following list:
 - a. up to 3 additional hours of undergraduate research (ECE 3860, 3861 or CS 3860, 3861), or
 - b. Design Domain Expertise courses beyond the one course required by the program, or
 - c. 5000-level ECE or CS courses.

The diploma designation is Honors in Electrical and Computer Engineering.

Facilities. Electrical and computer engineering supports undergraduate laboratories emphasizing the principal areas of the disciplines: analog and digital electronics, microcomputers, microprocessors, microelectronics, and instrumentation. In addition, several specialized facilities are available for graduate research: The Vanderbilt Institute of Nanoscale Science and Engineering (VINSE), the Institute for Software Integrated Systems (ISIS), the Institute for Space and Defense Electronics (ISDE), the Vanderbilt Lab for Immersive AI Translation (VALIANT), and the Vanderbilt Institute for Surgery and Engineering (VISE).

The work in electrical and computer engineering is supported by a variety of computers and networks, including the high-performance computing facilities of the Advanced Computing Center for Research and Education. Vanderbilt is one of the founding partners of the Internet II initiative.

Curriculum Requirements

The B.E. in electrical and computer engineering requires a minimum of 122 hours, distributed as follows:

1. Mathematics (18 hours). Required courses: MATH 1300, 1301, 2300, 2400, 2810.
2. Basic Science (16 hours). Required courses: CHEM 1601, 1601L; PHYS 1601, 1601L, 1602, 1602L; MSE 1500, 1500L or CHEM 1602, 1602L.
3. Engineering Fundamentals (6 hours). Required courses: ES 1401, 1402, 1403, ES 2100W.
4. Culminating Design Experience (7 hours). Required courses: ECE 4950, 4951, 4959.
5. Electrical and Computer Engineering Core (21 hours). Required courses: CS 1100 or 1101 or 1104; CS 2201 or 2204; ECE 2112, 2112L, 2123, 2123L (or CS 2123, 2123L), ECE 2214, 3235, 3235L.
6. Electrical and Computer Engineering Electives (21 hours). To comprise:
 - a. At least 15 hours selected from the Gateway courses and ECE and CS Depth courses listed below.
 - b. other courses listed in the Electrical and Computer Engineering Areas of Concentration below, or ECE or CS courses numbered above 3000 (including ECE 3860, 3861 and CS 3860, 3861).

Additional requirements for (a) and (b) include:

- at least 9 hours completed in one of the four Areas of Concentration listed below.
- at least 6 additional hours completed in a second distinct Area of Concentration listed below.
- at least one Design Domain Expertise course as designated below taken before ECE 4951.
- courses with associated labs require completion of both the lecture and lab portions to count as Electrical and Computer Engineering Electives.
- courses count in only one Area of Concentration; they cannot be double counted

7. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.

8. Technical electives (12 hours).

- a. (6-12 hours). At least 6 hours must be taken from this list of approved engineering technical electives: (excluding all School of Engineering courses numbered 2860); BME; CHBE (except 2150, 2900W); CE; CS (except 1000, 1101, 1103, 1104, 1151); ECE (above basic requirement in sections 5 and 6 above); DS 3100, ENGM 3010; ENVE; ES 3300; ME; MSE (except 1500, 1500L); NANO 3000; SC 3250, 3260
- b. (0-6 hours). Up to 6 hours may be taken from this list of optional technical electives: ENGM 2160, 2210, 3000, 3100, 3300, 3650, 4500; MSE 1500, 1500L (if CHEM 1602, 1602L is used for basic science requirement); Astronomy (except 1010, 1111, 2130); Biological Sciences (except 1111); Chemistry (except 1010, 1020, 1601, 1602, 1111); Earth and Environmental Sciences (except 1080, 1111, 2150); Mathematics 2410 and above; Neuroscience 2201, 3269, 4961; Physics above 2000; Psychology 2100, 3780

9. Open Elective (3 hours).

Electrical and Computer Engineering Areas of Concentration

	Photonics & Nanomaterials	Microelectronics	Embedded Computing & Cyber-Physical Systems	Signal, Image, Data, and Medical Systems
Gateway Courses†	ECE 3233	ECE 3233	CS 3251 ECE 2218/2218L‡ ECE 2281/2281L‡	ECE 4356* ECE 4363
ECE and CS Depth Courses	ECE 4283 ECE 4284 ECE 4288* ECE 4334* ECE 4335 ECE 4287 ECE 4289 ECE 4334* ECE 4335 ECE 4380* ECE 4385*	ECE 4267 ECE 4268 ECE 4275 ECE 4283 ECE 4284 ECE 4287 ECE 4289 ECE 4334* ECE 4335 ECE 4257 ECE 4275 ECE 4356* ECE 4358* ECE 4371* ECE 4375/4375L‡* ECE 4377* ECE 4383‡ ECE 4385*	CS 3265 CS 3274* CS 4277 CS 4278* CS 4279* CS 4284* CS 4285 CS 4288* ECE 4239‡ ECE 4257 ECE 4275 ECE 4356* ECE 4358* ECE 4371* ECE 4375/4375L‡* ECE 4377* ECE 4383‡ ECE 4385*	CS 3251 CS 4260 CS 4262 CS 4266* CS 4269* ECE 4252 ECE 4286 ECE 4353* ECE 4354* ECE 4370
Non-ECE and Non-CS Depth Courses	BME 4100 ME 4265 NANO 3000 PHYS 2210 PHYS 2660 PHYS 3640		ME 4271	BME 3302 BME 4400 BME 4420 ME 3204

†Gateway courses provide recommended background and/or prerequisites for the Area of Concentration Depth courses.

*Designates a Design Domain Expertise course.

‡Indicates a crosslisted course also offered by the Department of Computer Science.

Double majors have special curricula that require more than 122 hours and a different distribution of electives. See the ECE webpage or the ECE double major adviser for these curricula.

A double major in Electrical and Computer engineering and Biomedical Engineering is offered as a unitary BME-ECE curriculum, which is described in the Biomedical Engineering section of the catalog under its curriculum requirements. It requires a minimum of 130 semester hours.

Undergraduates in electrical and computer engineering, including double majors in electrical and computer engineering, may apply the pass/fail option only to courses taken as open electives subject to the school requirements for pass/fail.

Specimen Curriculum for Electrical and Computer Engineering

			Semester hours
		FALL	SPRING
SOPHOMORE YEAR			
MATH 2300	Multivariable Calculus	3	-
MATH 2400	Differential Equations with Linear Algebra	-	4
PHYS 1602, 1602L	General Physics II and Laboratory	4	-
CS 2201 or 2204	Program Design and Data Structures	3	-
ECE 2112, 2112L	Circuits and Laboratory	4	-
ECE 2123, 2123L	Digital Systems and Laboratory	-	4
ECE 2214	Analog Circuits and Systems	-	3
	Liberal Arts Core	3	3
	ECE Program Elective or Technical Elective‡	-	3
		17	17
JUNIOR YEAR			
MATH 2810	Probability and Statistics for Engineering	3	-
ES 2100W	Technical Communications	-	3
ECE 3235, 3235L	Electronics I and Laboratory	4	-
	ECE Program Electives##	3	6
	Technical Elective	-	3
	Technical Elective or ECE Program Elective‡	3	-
	Liberal Arts Core	3	3
		16	15
SENIOR YEAR			
ECE 4950	Program and Project Management for ECE	3	-
ECE 4951	Electrical and Computer Engineering Design	-	3
ECE 4959	Senior Engineering Design Seminar	1	-
	ECE Program Electives##	6	3
	Liberal Arts Core	3	-
	Technical Electives	3	3
	Open Elective	-	3
		16	12

‡CS 3251 (Intermediate Software Design) is recommended in spring of the sophomore year as preparation for

advanced computer science courses, with a technical elective taken in fall of the junior year. Otherwise, students may choose a technical elective in spring of the sophomore year and an ECE program elective in fall of the junior year.

##As described in Electrical and Computer Engineering Degree Requirements section 6. At least one Design Domain Expertise (DE) course required prior to ECE 4951.

Engineering Science and Management

[Engineering Science Major \(Bachelor of Science\)](#)

[Engineering Management](#)

[Communication of Science and Technology](#)

[Minors](#)

[Curriculum Requirements](#)

DIRECTOR Yiorgos Kostoulas

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ASSOCIATE PROFESSORS OF THE PRACTICE Courtney L. Johnson, Grayson McClain

ASSISTANT PROFESSORS OF THE PRACTICE Lynne Cooper, Lina Deng

ADJOINT PROFESSORS OF THE PRACTICE: John A. Bers, J. Caleb Clanton

The Division of Engineering Science and Management administers the engineering science major, the engineering management minor, and the first-year introduction to engineering course. The division oversees non-traditional engineering study and advises students on course selection to meet specific career goals that traditional engineering majors may not provide.

COURSES OFFERED: [ENGM](#), [ES](#)

Engineering Science Major (Bachelor of Science)

The engineering science major is flexible and interdisciplinary—offering students the opportunity to select a program of study to meet special interests or objectives. Many students choose a program of study in engineering management, communication of science and technology, various engineering concentrations, environmental science or materials science; however, students may develop unique plans of study to specialize in areas for which facilities and faculty competence exist but which are not covered within a single existing degree program at Vanderbilt. Engineering science graduates may establish careers in engineering or science, interface with engineers (e.g., in marketing and sales), or use their analytical and problem-solving skills to build future professional careers. Defined areas of concentration exist in engineering management, communication of science and technology, secondary education, and materials science and engineering. Individual programs have been developed for students interested in careers in engineering mathematics, environmental engineering, transportation engineering, teaching, technical communications, and other areas requiring nontraditional combinations of engineering courses. Because of the flexible nature of the engineering science programs of study, accreditation has not been sought for these programs of study, and engineering science majors will not qualify for engineering licensure in most states.

Engineering Management. Engineering management is an interdisciplinary program of study designed to give students the tools to manage technology development and innovation, to enhance manufacturing quality and productivity in a competitive international environment, and to implement these objectives successfully in an

organization. Engineering management links engineering, science, and the management disciplines. In addition to the core science and math courses required of all engineering students, topics of study include entrepreneurship, human resources management, finance in technology-based organizations, technology strategy, communications, and operations.

Communication of Science and Technology. Many careers that are attractive to graduates of the engineering science program require the communication of engineering and science to people who are not technically trained. The Communication of Science and Technology interdisciplinary program prepares engineering students for careers in areas such as technical consulting, high-technology marketing and sales, environmental law, and journalism. The program combines traditional engineering and science courses with communications and humanities courses in a flexible curriculum. Engineering science majors may select from a set of program electives identified by the faculty committee of the School of Engineering and the College of Arts and Science that supervises the program.

Minors. Students may also pursue a minor consisting of at least five courses of at least three credit hours within a recognized area of knowledge. Minors are offered in engineering management, materials science and engineering, computer engineering, electrical engineering, computer science, scientific computing, environmental engineering, energy and environmental systems, nanoscience and nanotechnology, and most disciplines within the College of Arts and Science. Students must declare their intention to pursue minors by completing forms available in the Office of Academic Services of the School of Engineering.

Curriculum Requirements

The B.S. in engineering science requires a minimum of 122 hours, distributed as follows:

1. Basic Science (16 hours). CHEM 1601, 1601L plus 12 hours from BSCI 1510, 1510L, 1511, 1511L; CHEM 1602, 1602L; PHYS 1601, 1601L, 1602, 1602L; or MSE 1500, 1500L with two courses in a single discipline.
2. Mathematics (14 hours). MATH 1300, 1301, 2300 and 3 hours from MATH courses numbered 2400 and above.
3. Engineering (44 hours).
 - a. Engineering Fundamentals (12 hours): CS 1100 or 1101 or 1103 or 1104 or DS 1100; ES 1401, 1402, 1403, 2100W; ENGM 3700.
 - b. Engineering Core (12 hours): To be selected from courses in any of the following disciplines: BME, CHBE, CE, CS, DF, ECE, ENVE, MSE, ME, NANO, and SC (except BME 1105; CS 1000, 1151; DS 1000, 2100; and any School of Engineering courses numbered 2860).
 - c. Engineering Electives (15 hours): To be selected from any School of Engineering courses (including ES and ENGM), except BME 1015; CS 1000, 1151; DS 1000, 2100; ES 1115, 2700, 3884; ENGM 2440, 4800; and any School of Engineering courses numbered 2860.
 - d. Senior Capstone (5 hours): ES 4950, 4951, 4959.
4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
5. Open Electives (6 hours).
6. Program Concentration (24 hours). In consultation with the academic adviser, each student must identify a meaningful sequence of courses, not counting certain introductory-level courses, that directly contributes to meeting stated career goals. Program concentrations are approved by the academic adviser and the program director in advance and become part of the student's degree audit.

The preparation provided by the program concentration, together with a solid foundation in basic engineering courses, provides the engineering science student a strong and useful career base.

No more than 24 credit hours of business-related course work (BUS, BUSA, ENGM, FNEC, MGRL) may be applied to the ES degree program. Only one business-related minor (BUS, ENGM, FNEC, MGRL, HOD) may count to a student's academic program. No more than 6 credit hours of courses numbered 3840 to 3879 in any program may be applied to the ES degree program.

Undergraduates in engineering science may apply the pass/fail option only to courses taken as liberal arts core or open electives, subject to the school requirements for pass/fail. UNIV courses are eligible for open elective credit only. Credit for the senior capstone sequence (4 hours) satisfies the Immersion Vanderbilt requirement.

English

[Program of Concentration in English and American Literature](#)

[Minor in English: Literature](#)

[Minor in English: Creative Writing](#)

[General Requirements and Advice for Majors and Minors in All Programs](#)

[Honors Program](#)

[Licensure for Teaching](#)

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Senior Lecturers: Brittany Ackerman, Pavneet Aulakh, Stephanie Graves, Jordan Ivie, Jeong Oh Kim, Judith Klass, Mark Wisniewski

Writer in Residence: Amanda Little

COURSES OFFERED: [ENGL](#)

The Department of English offers three distinct programs that allow students to individualize their studies while acquiring the breadth of knowledge and skills of the traditional English major. The curriculum provides courses in the history of British and American literature, film, digital media, Anglophone literatures of other countries, literary theory, and expository as well as creative writing. These diverse courses reflect the interests of students and faculty and the expanding area of English literary study. Students use the concentration in English as a foundation for careers ranging from education, law, business, and government to public relations and the media industry-anywhere that analytic, reading, and writing skills are valued-and as preparation for postgraduate work in literature. The department also regards helps students become lifelong readers of literature and culture.

Programs in England, Scotland, Australia, and around the world offer opportunities for study and travel that enrich a student's education. The Gertrude Vanderbilt and Harold S. Vanderbilt Visiting Writers series annually sponsors public lectures, readings, and other occasions where English majors hear and meet celebrated poets, novelists, and critics. Many majors write for and serve on the editorial boards of campus publications including the *Hustler*, the *Vanderbilt Review*, a distinguished collection of creative writing, and *Vanderbilt Lives*, an annual publication of creative non-fiction by Vanderbilt Undergraduates. An English major listserv alerts students to employment opportunities, internships, and study abroad programs in addition to those offered through Vanderbilt University.

Program of Concentration in English and American Literature

Program I: Literary Studies (30 credit hours)

Students pursue a broad range of interests through a flexible approach to the study of literature. 30 total credit hours including:

1. 6 credit hours in History (literature before 1800)
2. 6 credit hours of Diverse Perspectives (ethnic American or Anglophone literature)
3. 18 additional credit hours of electives in English, chosen from the courses that count toward the major

A course cannot be used to satisfy more than one requirement in the major.

Courses that fulfill the requirement in numbers 1, 2, and 3 above are described below under General Requirements and Advice for Majors and Minors in All Programs.

Program II: Creative Writing (30 credit hours)

Students develop their creative writing while acquiring an overview of English literature. 30 total credit hours including:

1. 12 credit hours of 3000-level creative writing workshops in at least two different genres (from among: Nonfiction 3210, 3220; Fiction 3230, 3240; Poetry 3250, 3260). Admission to these courses is by consent of instructor.
2. 3 credit hours in History (literature before 1800)
3. 3 credit hours in Diverse Perspectives (ethnic American or Anglophone literature)
4. 12 credit hours from courses that count toward the English major (see below), which may include one additional creative writing workshop (beyond the four required in number 1, above) or one course in another discipline (with approval of the director of undergraduate studies)

A course cannot be used to satisfy more than one requirement in the major.

Courses that fulfill the requirement in numbers 2, 3, and 4 above are described below under General Requirements and Advice for Majors and Minors in All Programs.

Program III: Specialized Critical Studies (30 credit hours)

Students design their own specialized course of study with a descriptive name and develop a contract of courses for it.

30 total credit hours including:

1. 12 credit hours of course work concentrated in a particular period (e.g., nineteenth-century American), genre, or movement (e.g., the novel), an aspect of intellectual history (e.g., law and literature, literary theory), or other area of special interest. Up to 9 credit hours may be taken in courses from other departments relevant to the concentration. In consultation with a major adviser, each student selects specific courses, which are listed in a contract that is filed after the student has formally declared the major.
2. 6 credit hours in History (literature before 1800)
3. 6 credit hours in Diverse Perspectives (ethnic American or Anglophone literature)
4. 6 credit hours from any of the courses that count toward the English major.

A course cannot be used to satisfy more than one requirement in the major.

Courses that fulfill the requirement in numbers 2, 3, and 4 above are described below under General Requirements and Advice for Majors and Minors in All Programs.

Minor in English: Literature

At least 18 credit hours of course work in English are required. These courses must include 3 credit hours from History (literature before 1800) and 3 credit hours of Diverse Perspectives (ethnic American or Anglophone literature). A course cannot be used to satisfy more than one requirement in the minor.

Minor in English: Creative Writing

At least 18 credit hours of course work in English are required. These courses must include three upper-level workshops (9 credit hours) in any genre (3210, 3220, 3230, 3240, 3250, or 3260).

General Requirements and Advice for Majors and Minors in All Programs

All courses numbered 2050 and above (except 4999) count toward the major. Additionally, students may elect to count one of the following 1000-level courses toward their major: 1111, 1210W, 1220W, 1230W, 1240, 1250W, 1260W, 1270W, 1280, 1290. English 3890, 3890W, 3892, 3892W, 3894, 3894W, and 3898 may be repeated for credit when the topics are different. The survey courses, 2310, 2311, 2316, 2316W, 2318, 2318W, 2319, and 2319W are recommended for sophomores to provide a background for advanced courses.

Note: A course cannot be used to satisfy more than one requirement in the major.

Courses that fulfill the ***History requirement*** (literature before 1800) include 2310, 2318, 2318W, 3310, 3314, 3316, 3318, 3330, 3332, 3335, 3335W, 3336, 3337, 3340, 3340W, 3346, 3348, 3360, 3361, 3364, 3370.

Courses that fulfill the ***Diverse Perspectives requirement*** (ethnic American or Anglophone literature) include 3650, 3650W, 3654, 3654W, 3658, 3662, 3662W, 3664, 3670, 3670W, 3674, 3678, and appropriate courses from other departments as approved by the director of undergraduate studies.

Courses that fulfill the ***Program II creative writing workshop requirement*** include 3210, 3220, 3230, 3240, 3250, 3260.

In addition, suitable sections of 3890, 3890W, 3892, 3892W, 3894, 3894W, 3746, 3898, 3898W, 4998, 4999, (as appropriate) and other courses may fulfill the categories listed. Detailed course descriptions appear on the Department of English website for the upcoming semester and are available in the department. Majors are required to consult with their advisers during registration to identify what specific requirements the courses offered in that semester might fulfill.

One course from another department, appropriate to the student's course of study, may be counted toward the requirements of any program with permission of the director of undergraduate studies; for Program III, this course may be in addition to the 9 credit hours already allowed from other departments.

Honors Program

To graduate with honors in English, students must (a) complete all the requirements of the English major, with at

least 6 credit hours in honors sections (an appropriate graduate seminar or seminar in a study abroad program may be substituted for one honors seminar); (b) 3 credit hours of 4998; (c) maintain at least a 3.4 grade point average overall and 3.6 in the major; (d) be admitted to the Honors Program in the spring of the junior year; (e) write a thesis (4999) and pass an oral examination about its subject in the spring of the senior year. For secondary education double-majors, EDUC 9700 can be substituted for 4999 with the consent of the director of undergraduate studies.

To comply with all requirements, every honors student will complete 33 credit hours. Exceptional achievement on the thesis will earn high honors. Majors who wish to apply to the Honors Program must be within 6 credit hours of completing all AXLE requirements, must have made reasonable progress toward the major, and must have at least a 3.4 grade point average overall and 3.6 in the major. Applications are accepted in April of the junior year. Additional information is available from the director of undergraduate studies. Students need not be enrolled in the Honors Program to take honors sections. Honors sections are seminars open to any student beyond the freshman year who has completed the sophomore writing requirement of AXLE and has earned at least a 3.4 grade point average. Students are encouraged to enroll in honors sections prior to applying to the program.

Licensure for Teaching

Candidates for teacher licensure in English at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Environmental Engineering

[Curriculum Requirements](#)

[Specimen Curriculum for Environmental Engineering](#)

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ADJUNCT INSTRUCTORS David Livingston, Keith Loiseau, Heather Smith, Bryan Tharpe, Hannah Walter, Adrian Ward, Scott Potter, Minh Nghiem,

LECTURER Phillip Collins

B.E. in environmental engineering. The curriculum includes analysis and design courses in environmental engineering. Vanderbilt's B.E. in environmental engineering prepares students for entry-level positions in many specialty areas of environmental engineering, as well as a variety of other careers, such as business, government, and law. The major will provide students with the tools necessary to develop effective solutions to solve emerging and existing issues such as water resources, quality, and treatment; aging infrastructures; climate change and carbon neutral innovations; energy and material resources; wastes and pollution; and other environmental challenges. Recognizing that environmental solutions cannot be realized without consideration of social, cultural, economic, and political factors, students will be required to extend the breadth of their studies with courses in data science and global perspectives courses in social sciences, economics, political sciences, and the humanities. These will be in addition to foundational courses in the basic and applied sciences, mathematics, engineering, and advanced courses in fate, transport, and treatment of contaminants in the environment. The curriculum culminates with a senior design project in which students will have the opportunity to draw on and integrate the broad knowledge they have gained from the data science and global perspectives courses with the science and engineering knowledge they gained in the major. Due to the complex interdisciplinary nature of the field, many undergraduate students continue their environmental engineering education and earn either a professional (MEng) degree or a graduate (MS or PhD) degree.

Undergraduate Honors Program. The Honors Program in environmental engineering provides an opportunity for selected students to develop individually through independent study and research. The environmental engineering honors program requires a minimum overall GPA of 3.5. Acceptance to the program is made by petition to the faculty during the junior year. Transfer students may be considered for admission after completing one semester at Vanderbilt. Candidates for honors choose their technical courses with the consent of a faculty honors adviser. A three-credit hour independent study course and a summer research internship with a final report and presentation given in the spring semester of the senior year to the ENVE faculty and students are required. The independent study course may also be counted towards the environmental engineering technical electives. The diploma designation is Honors in Environmental Engineering.

Facilities: The environmental laboratories are fully supplied with modern instrumentation for chemical, physical, biological, and radiological analysis of soils, sediments, water, wastewater, air, and solid waste. They include equipment for the study of biological waste treatment, physical-chemical waste treatment, contaminant mass transfer, and state-of-the-art instrumentation. All are available for student use in courses, demonstrations, and research.

Undergraduates in environmental engineering may apply the pass/fail option only to courses taken as open or liberal arts core electives, subject to the school requirements for pass/fail.

A double major in Environmental Engineering and Chemical Engineering is offered as a unitary ChE-ENVE curriculum, which is described in the Chemical Engineering section of the catalog under its curriculum requirements. It requires a minimum of 137 semester hours. Undergraduates in the double major may apply the pass/fail option only to courses taken as open electives, subject to the school requirements for pass/fail.

Curriculum requirements

The B.E. in environmental engineering will require a minimum of 121 hours, distributed as follows:

1. Mathematics (14 hours). Required courses: MATH 1300, 1301, 2300, 2420.
2. Basic science (18 hours). Required courses: CHEM 1601, 1601L, 1602, 1602L; PHYS 1601, 1601L; BSCI 1510; EES 1510.
3. Computing (3 hours). To be selected from: CS 1100 (recommended), 1101 or 1103.
4. Engineering Fundamentals (16 hours). Required courses: ES 1401, 1402, 1403; CE 2200, 3700, 3700L; CHBE 2200 (preferred) or ME 2220, ME 2190.

5. Environmental Engineering Core (25 hours). Required courses: CE 2120, 3300, 3705; ENGM 3700; ENVE 3200, 3200L, 3600, 4605, 4950, 4951, and 4959.
6. Environmental Engineering Program Electives (6 hours). To be selected from: CE 4150, 4240, 4300, 4425, 4430; EES 3310, 4550, 4650, 4750; ENVE 3610, 4305, 4600, 4610, 4615, 4620, 4625, 4700, 4710, 4800.
7. Environmental Engineering Design Electives (6 hours). To be selected from: CE 4150, 4240, 4425, 4430; ENVE 4305, 4610, 4625, 4710.
8. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed under Degree Programs in Engineering.
9. Global Perspective electives (6 hours). At least 6 hours of courses designated as Global Perspectives must be included in the Liberal Arts Core (#8) or Open Electives (#12). To be selected from ANTH 2150, 2220W, 2224, 2225, 2400, 3130, 3345, 4154; ECON 2170; EES 3333; PHIL 3611; PSCI 3266; SOC 3311, 3312, 3314, 3315, 3316, 3317, 3318, 3319.
10. Data science electives (6 hours). To be selected from: CE 4100, 4320, 4340; CS 2204, 3262, 4262, 4266; DS 3100, 3262; EES 4760; MATH 3620, 3670; ME 4263; SC 3250.
11. Technical electives (3 hours). To be selected from: a) MSE 1500; courses numbered 2000 or above in BME, CHBE, CE, CS, DF, ECE, ENVE, ME, MSE, and, ENGM 3000, 3010, 3200, and 3650, except any School of Engineering course numbered 2860; b) courses numbered 1500 or above in the College of Arts and Science listed in the mathematics and natural sciences (MNS) AXLE distribution category; and c) MATH 2410, 2600, and courses 2811 and above (except 3000).
12. Open electives (6 hours).

Specimen Curriculum for Environmental Engineering

Semester hours			
SOPHOMORE YEAR		FALL	SPRING
MATH 2300	Multivariable Calculus	3	-
CE 2200	Statics	3	-
BSCI 1510	Introduction to Biological Sciences	3	-
CE 2120	Sustainable Design in Civil and Environmental Engineering	3	-
	Liberal Arts Core	3	3
EES 1510	The Dynamic Earth: Introduction to Geological Science	-	3
MATH 2420	Methods of Ordinary Differential Equations	-	3
ME 2190	Dynamics	-	3
CHBE 2200*	Thermodynamics (or ME 2220)	-	3
		15	15
*preferred			
JUNIOR YEAR			
CE 3700	Fluid Mechanics	3	-
CE 3700L	Fluid Mechanics Laboratory	1	-
ENVE 3600	Fundamentals of Environmental Engineering	3	-
	Technical Elective	3	-
	Open Elective	3	-
	Global Perspectives Elective (Liberal Arts Core)	3	3
ENVE 3200	Environmental Engineering Analysis	1	-
ENVE 3200L	Environmental Engineering Analysis Laboratory	-	2
CE 3705	Water Resources Engineering	-	3
CE 3300	Risk, Reliability and Resilience Engineering	-	3
ENGM 3700*	Program and Project Management	-	3
	Liberal Arts Core	-	3
		17	17
*CE 4400 Construction Project Management may be substituted for ENGM 3700			
SENIOR YEAR			
ENVE 4950	Environmental Engineering Design I	1	-
ENVE 4959	Senior Engineering Design Seminar	1	-
ENVE 4605	Thermodynamics Kinetics and Mass Transfer	3	-
	ENVE Program Elective	3	3
	Data Science Elective	3	3
	ENVE Design Elective	3	3
ENVE 4951	Environmental Engineering Design II	-	2
	Open Elective	-	3
		14	14

European Studies

[Program of Concentration in European Studies](#)

[Honors Program](#)

[The Minor in European Studies](#)

[Joint Major Option](#)

DIRECTOR Christoph Zeller and Meike G. Werner

PROFESSORS Robert Barsky, Michael Bess, Emily Greble, Christoph Zeller

ASSOCIATE PROFESSORS Ari Joskowicz, Letizia Modena, Michelle Murray, Meike Werner

VISITING ASSOCIATE PROFESSOR Alexander Schmidt

COURSES OFFERED: [EUS](#)

Designed for students with an interest in European culture, politics, and society, the Program in European Studies (EUS) offers a range of survey and in-depth courses that shed a light on the European project, its global impact, and its challenges. A combination of core courses enables students to analyze Europe's past as well as its many contemporary facets. EUS elective courses broaden the understanding of Europe's diverse cultural tradition and political developments and lay the foundation for careers in international law, geo-politics, cultural administration, and other professions that deal with international affairs.

The Program in European Studies sponsors events and workshops, including a visiting lecture series, international symposia, and informal faculty-student luncheon seminars, in conjunction with the Max Kade Center for European and German Studies.

EUS offers an immersive encounter with different cultures. Students majoring in EUS fulfill specific language requirements and many choose to study one or two semesters in a European country at pre-approved programs.

Program of Concentration in European Studies (27-30 credit hours)

Students with an interest in European culture, politics, and societies choose from a set of overview courses to deepen their understanding of historical and contemporary European topics, select *up to* five additional electives in EUS, and fulfill language requirements to ascertain their training in intercultural literacy. The major prepares for careers in international law, politics, and diplomacy as well as in cultural administration with the visit of advanced studies or Ph.D. programs. Most EUS majors participate in approved study abroad programs in Europe. Active participation is expected in events and activities, such as guest lectures, symposia, and luncheons, organized by EUS in conjunction with the Max Kade Center for European and German Studies.

Required Core Courses (9 credit hours)

- EUS 2201, European Society and Culture or EUS 2203, The Idea of Europe (3 credit hours)
- EUS 2202, European Politics
- EUS 2204, European Cultural History

Foreign Language Requirement (6 credit hours)

The foreign language requirement is to be satisfied in one of the following ways:

- 6 credit hours of course work at the intermediate level in one European language;
- course work through the beginner level in two European languages;

- demonstration of proficiency equivalent to either of the preceding options; or
- participation in one of the Vanderbilt intensive-language programs in Europe (students participating in Vanderbilt's predominantly English-language program in Europe must complete course work through the intermediate level in one European language, or demonstrate equivalent proficiency).

European languages recognized for the major include Albanian, Bulgarian, Czech, Croatian/Bosnian/Serbian, Danish, Finnish, French, German, Greek, Hungarian, Ladino (Judeo-Spanish), Italian, Norwegian, Polish, Portuguese, Romani, Romanian, Russian, Slovak, Spanish, Swedish, Turkish, Ukrainian and Yiddish. Other languages may be approved by the major adviser.

Independent Study (3 credit hours)

Students will complete EUS 3850, Independent Readings and Research supervised by a professor in EUS or outside the program with expertise in the field; normally completed in the junior or senior year.

Electives (12-18 credit hours)

Students choose four courses in EUS (usually above EUS 2204; an additional core course may count as one elective). No more than two courses may be substituted by courses taken outside of EUS either from individually approved courses or courses taken abroad with the approval of the DUS. Students majoring in EUS are advised to select courses from the social sciences and humanities that complement their areas of special interest and thematic focus.

Other Issues Relating to the Major

Normally, no more than 6 credit hours of work in 1000-level courses may be counted toward the major. However, students who have fulfilled their language requirements by demonstrating equivalent proficiency or through participation in a Vanderbilt approved study program in Europe may count up to two 1000- and/or 2000-level language courses in a European language toward their major.

Students seeking a second major may count a maximum of 6 credit hours of course work to meet requirements in both majors.

Honors Program

The Program in European Studies offers qualified majors the option of completing a portion of their major requirements in an Honors Program. Students engage in interdisciplinary reading, consultations with faculty, and research on the overarching theme of their program of concentration. To be admitted to the program students must have attained a minimum cumulative grade point average of 3.300 and a minimum grade point average of 3.300 in all courses that count toward the EUS major; identify an adviser for the honors thesis; submit a detailed description of their proposed program of study for approval by the director of EUS; complete 3 credit hours of independent research (normally EUS 4998); complete 3 credit hours of credit in EUS 4960, Senior Tutorial, that involves researching and writing a senior honors thesis of approximately fifty pages; successfully defend the honors thesis before a committee normally consisting of the adviser, the director of EUS, and another faculty member. Information concerning the Honors Program is available from the director of EUS. College regulations governing honors programs may be found in this catalog under Honors Programs, Special Programs for Arts and Science.

The Minor in European Studies

The EUS minor is a good complement to a major in anthropology, economics, history, literary studies, philosophy, and political science. It consists of a minimum of 18 credit hours of course work and requires students to take three of the EUS core courses and three electives from the EUS catalog. One of the major electives may be replaced by a course from another department or program with the prior approval of the director of EUS. A background in a modern foreign language is highly recommended.

Core courses (9 credit hours)

- EUS 2201, European Society and Culture, or EUS 2203, The Idea of Europe

- EUS 2202, European Politics
- EUS 2204, European Cultural History

Electives (9 credit hours)

Three courses from the EUS catalog (usually above EUS 2204; an additional core course may count as one elective). One course can be replaced by a course from another department or program with the prior approval of the director of EUS.

Joint Major Option

The Program in European Studies collaborates with several departments to create joint majors in French and European Studies, German and European Studies, Italian and European Studies, Russian, East European and European Studies, and Spanish, and European Studies. These options are offered as collaborations between the Program in European Studies and the Departments of French and Italian, German, Russian, and East European Studies, and Spanish and Portuguese, and consist of 30 credit hours of course work each. Please see the detailed information on the joint major options under the departmental headings in this catalog. Students selecting one of these options will be advised by their major adviser in the language-and-culture department as well as their adviser in the Program in European Studies.

French and Italian

[Program of Concentration in French](#)

[Honors Program in French](#)

[Program of Concentration in French and European Studies](#)

[Minor in French](#)

[Minor in Italian Studies](#)

[Program of Concentration in Italian and European Studies](#)

[Licensure for Teaching](#)

CHAIR Lynn Ramey

DIRECTOR OF UNDERGRADUATE STUDIES IN FRENCH Raisa Rexer

DIRECTOR OF UNDERGRADUATE STUDIES IN ITALIAN Elsa Filosa

DIRECTOR OF GRADUATE STUDIES Paul Miller

Professors, Emeriti: Virginia Scott, Patricia Ward

Professors: Robert Barsky, William Franke, Lynn Ramey, Tracy Sharpley-Whiting, Holly Tucker

Associate Professors: Nathalie Debrauwere-Miller, Paul Miller, Andrea Mirabile, Letizia Modena, Anthere Nzabatsinda

Assistant Professor: Raisa Rexer

Assistant Professors of the Practice: Elsa Filosa, Alexis Finet

Principal Senior Lecturers: Nathalie Dieu-Porter, Susan Kevra

Senior Lecturer, Emeriti: Tracy Barrett

Senior Lecturers: Lisa Blomquist, Anna Marra, Honorine Rouiller

COURSES OFFERED: [CREO](#), [FREN](#), [ITAL](#)

The Department of French and Italian offers a wide range of courses in the language, culture, and literatures of Italy, France, and other Francophone communities. Most language, literature, and culture courses are taught in French or Italian. Students may use courses in both French and Italian to satisfy some requirements of AXLE.

The department offers a program of concentration in French as well as two interdisciplinary programs: a concentration in French and European studies and a concentration in Italian and European studies. Qualified French majors may also participate in the Honors Program in French. Minors in French and Italian are offered. On the graduate level, the department offers a doctoral program in French.

Many students participate in French or Italian study abroad programs. The department offers Maymester programs in France and Italy. On-campus activities include films, symposia, concerts, and lectures by visiting professors. The department has chapters of national honor societies for both French and Italian students.

Program of Concentration in French

Students who choose to major in French are expected to achieve advanced proficiency in oral and written French and to demonstrate a general understanding of the history of French and Francophone literatures and cultures. No more than 6 credit hours of AP or IB credit may count toward the 30 credit hours required for the major (3 credit hours for 2501W and 3 credit hours of "no equivalent" credit). All majors are strongly urged to spend a semester or a year studying abroad. Majors should consult their advisers about their choice of major courses each semester.

Course work for the major is distributed as follows:

Required courses (9 credit hours): 2501W, 3101, 3102

Two courses from Communications (6 credit hours): 2611, 2614, 2891, 3111, 3112, 3113, 3892

Five courses from Literatures and Cultures (15 credit hours): 3185W, 3222, 3224, 3230, 3232, 3233, 3234, 3332, 3620, 3621, 3622, 3634, 3730, 3881, 3891, 4023, 4025, 4027, 4029, 4222, 4232, 4234, 4320, 4430, 4432.

Honors Program in French

In addition to requirements set by the College of Arts and Science, the following requirements must be met:

1. All the requirements for the 30-credit-hour major in French.
2. One graduate-level French course during the senior year for at least 3 credit hours; this course may substitute for one 3000- or 4000-level course required for the major.
3. Earn a 3.5 grade point average in courses that count toward the French major.
4. Six credit hours of thesis credit under French 4998 and 4999 (Senior Honors Thesis), culminating in a written thesis.
5. An oral examination on the thesis and its area in the last semester of the senior year.

A three-member Honors Committee will administer the program. Students must submit the name of the faculty adviser and the proposed thesis topic to this committee for approval during the second semester of the junior year. The committee will set guidelines for the thesis topic proposal, publish deadlines each year, and administer the oral examination.

Program of Concentration in French and European Studies

Students may elect this interdisciplinary major, which requires a minimum of 30 credit hours of course work. A semester of study at a French study abroad program is strongly encouraged. Course work for the joint major is distributed as follows:

French (24 credit hours)

French Language, Literature, and Culture (9 credit hours): 2501W, 3101, 3102 Communications (3 credit hours): 2611, 2614, 2891, 3111, 3112, 3113, or 3892

Literatures and Cultures (6 credit hours): 3185W, 3224, 3230, 3232, 3234, 3620, 3621, 3622, 3634, 3730, 3881, 3891, 4023, 4027, 4029, 4222, 4232, 4234, 4320, 4430, 4432.

European Studies (12 credit hours)

European Studies core courses (3 credit hours): EUS 2201, 2203

Courses in EUS or alternative topical courses as approved by major adviser (6 credit hours)

Minor in French

The minor in French requires 18 credit hours of 2000- or higher-level course work, including 2501W, 3101, and 3102. All minors are expected to consult their advisers about their choice of courses. No course taught in English may count toward the minor. Students are encouraged to participate in a French study abroad program.

Minor in Italian Studies

Students who minor in Italian studies are expected to achieve intermediate proficiency in oral and written Italian, to demonstrate a general understanding of the history of Italian literatures and cultures, and to develop an awareness of the ways Italian studies intersects with other disciplines. The minor in Italian studies requires 15 credit hours of course work, including:

Required courses (6 credit hours):

ITALIAN: 2203, Intermediate Italian (prerequisite ITA 1102; ITA 1103, or equivalent); either 2501W, Grammar and Composition (prerequisite ITA 2203 or equivalent), or 2614, Conversation (prerequisite ITA 2203 or equivalent). ITA 1101, 1102, 1103 do not count toward the minor.

Elective courses (9 credit hours). Only 3 of these elective credit hours may be selected from courses in subject areas other than Italian, such as Classical Studies, History, History of Art and Architecture, Music Literature, and History:

ITALIAN: 2501W, Grammar and Composition (if not used as a required course); 2614, Conversation (if not used as a required course); 3000, Introduction to Italian Literature; 3041, Italian Civilization; 3100, Literature from the Middle Ages to the Renaissance; 3240, Dante's *Divine Comedy*; 3340, *Famous Women* by Boccaccio; 3500, Baroque, Illuminismo, and Romanticism in Italy; 3600, Twentieth-Century Literature: Beauty and Chaos; 3640, Classic Italian Cinema; 3641, Contemporary Italian Cinema; 3701, City Fictions; 3702, Topics in Contemporary Italian Civilization; 3703, The Cultural and Linguistic Worlds of Italy; 3740, Gangsters, Lovers, Madonnas, and Mistresses; 3802, Contemporary Italian Society and Culture; 3890, Special Topics in Italian Literature.

CLASSICAL STUDIES: LAT 3100, Roman Comedy; LAT 3110, Catullus; LAT 3120, Lucretius: *De Rerum Natura*; LAT 3130, Vergil: *The Aeneid*;

LAT 3160, Ovid.

HISTORY: 2220, Medieval and Renaissance Italy, 1000-1700.

HISTORY OF ART AND ARCHITECTURE: 2310, Italian Art to 1500; 2330, Italian Renaissance Art after 1500; 3320,

3320W, Early Renaissance Florence; 3332, Raphael and the Renaissance; 3334, 3334W, Michelangelo's Life and Works.

MUSIC LITERATURE: 3220, Opera in the 17th and 18th Centuries; 3221, Opera in the 19th Century.

Other Italy-related courses not listed here—such as those in study abroad programs—may be approved towards the minor upon approval by the director of undergraduate studies in Italian. Students are encouraged to participate in study abroad programs in Italy.

Program of Concentration in Italian and European Studies

The joint major in Italian and European Studies acknowledges the cultural, political, and strategic importance of Italy within the community of European nations. It requires 30 credit hours of course work; a semester of study in Italy is recommended. Prospective majors should consult with the director of undergraduate studies in Italian and with the director of the European Studies program. Course work for the joint major is distributed as follows:

Italian (18 credit hours)

Italian language and literature — 12 credit hours from the following courses: ITA 2501W, 3000, 3041, 3240, or appropriate substitute in consultation with the adviser in Italian

Electives in Italian Studies (6 credit hours): ITA 2614, 3100, 3600, 3702, or 3640 or any other course approved by the major adviser in Italian

European Studies (12 credit hours)

European Studies core courses (3 credit hours): EUS 2201, 2203, and 4960

EUS thesis seminar (EUS 4960 Senior Tutorial) or equivalent course in Italian (3 credit hours)

Courses in EUS or alternative topical courses as approved by major adviser (6 credit hours)

Licensure for Teaching

Candidates for teacher licensure in French at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

French

Students who have not studied French in high school should begin their studies at Vanderbilt in French 1101. Students with high school French on their records must present a College Board achievement test score in French to be placed correctly. Students should consult their advisers or the Department of French and Italian for advice on placement.

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

Italian

Students with high school Italian on their records should consult the director of undergraduate studies in Italian for advice on placement. Students who have not studied Italian in high school should begin their studies at Vanderbilt in

Italian 1101.

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

Gender and Sexuality Studies

[Program of Concentration in Gender and Sexuality Studies](#)

[Honors Program](#)

[Minor in Gender and Sexuality Studies](#)

CHAIR, ACTING Christin Essin

DIRECTOR OF UNDERGRADUATE STUDIES Elizabeth R. Covington

DIRECTOR OF GRADUATE STUDIES Katherine Crawford

Professors: Brooke Ackerly, Ellen Armour, Katherine Crawford, Dana Nelson, Kathryn Schwarz

Associate Professors: Laura Carpenter, Shatema Threadcraft

Assistant Professors: Rebecca J. Epstein-Levi, Julie Gamble

Principal Senior Lecturer: Stacy Simplican

Senior Lecturers: Kristen Navarro, Kristin Rose, Danyelle Valentine

COURSES OFFERED: [GSS](#)

The Department of Gender and Sexuality Studies offers an interdisciplinary curriculum that examines the formation of gender and its intersections with other relations of power, such as sexuality, race, ability, class, nationality, religion, locality and age. The department encourages students to develop new theoretical approaches and to transform the analytical tools of many fields of study. Our courses and instructors pay particular attention to how lives are impacted by systemic inequalities. The goal of our scholarship, teaching, and activism is to make gender and sexuality central rather than peripheral terms of analysis. Our curriculum compels us to recognize the problems and possibilities of our current world and also empowers us to affect change. The Department of Gender and Sexuality Studies offers a major and a minor, and a graduate certificate, which provide a foundation for students who plan to enter professional schools in law, medicine, business, the humanities, and the social sciences.

Program of Concentration in Gender and Sexuality Studies

The interdisciplinary major in gender and sexuality studies consists of 30-36 credit hours of course work, distributed at the Introductory, Intermediate, and Advanced levels, as follows:

Introductory-Level Courses (3 credit hours)

Students must take either GSS 1150/1150W (Sex and Gender in Everyday Life) for 3 credit hours or GSS 1160/1160W (Sex and Society), also for 3 credit hours.

Intermediate-Level Courses (24 credit hours)

With the exception of GSS 4960, GSS 1272 and above are intermediate-level courses. GSS 1111 (First-Year Writing Seminar) also counts as an intermediate-level course. Of the required 24 intermediate-level credit hours, students must earn credit for at least one course in each of the following areas: international/global feminism; history/social movements; and sex/sexuality and society. Courses that meet these requirements are listed below. Students may earn up to 6 credit hours for internship training, independent research, and readings: GSS 3881, GSS 3882, or GSS 3883.

Advanced-Level Course (3 credit hours)

Students must earn credit for GSS 4960 (Senior Seminar), generally taken in the second semester of the student's final year.

Honors Program

The Honors Program in Gender and Sexuality Studies requires 36 credit hours of course work and is designed to afford exceptional students the opportunity to undertake independent research on a topic in feminist and/or gender scholarship in consultation with faculty members. The program is open to all gender and sexuality studies majors with junior standing who have completed at least 24 credit hours of the major and who have earned a 3.3 cumulative grade point average and a 3.3 grade point average in courses counting toward the gender and sexuality studies major. Students must be approved for acceptance into the Honors Program by the department chair. To graduate with honors in gender and sexuality studies, students must:

- Complete 36 credit hours of course work;
- Complete the required courses for the major (described above);
- Submit for approval a short description of the Honors project/thesis to the Chair of Gender and Sexuality Studies no later than second semester of the junior year;
- Complete 6 credit hours of independent research, 4998 and 4999 (Honors Research and Project), typically during the senior year under supervision of the project adviser. These 6 credit hours count as electives in the 36 credit hours of course work for Honors majors;
- Complete an honors project by the second semester of the senior year; and
- Pass an oral examination on the topic of the Honors project/thesis.

Information concerning the Honors Program is available from the Chair of the Gender and Sexuality Studies program. College regulations governing honors may be found in this catalog under Honors Programs.

Minor in Gender and Sexuality Studies

The minor in gender and sexuality studies consists of 18 credit hours of course work, distributed as follows:

Introductory-Level Courses (3 credit hours)

Students must take either 1150/1150W (Sex and Gender in Everyday Life) for 3 credit hours or 1160/1160W (Sex and Society), also 3 credit hours.

Intermediate-Level Courses (12 credit hours)

Of the required 12 intermediate-level credit hours, students must earn credit for at least one course in each of the following areas: international/global feminism; history/social movements; and sex/sexuality and society. Courses that meet these requirements are listed below.

Advanced-Level Course (3 credit hours)

Students must earn credit for GSS 4960 (Senior Seminar), generally taken in the second semester of the student's final year.

Courses approved to fulfill the international/global feminism(s) requirement:

ASIA 2609W (Writing and Gender in Traditional China)

ENGL 3658 (Latino-American Literature)

ENGL 3670W (Colonial and Postcolonial Literature)

ENGL 3742 (Feminist Theory)

FREN 3223 (The *Querelles des femmes*) [in French]

FREN 4320 (French Feminist Thought) [in French]

GSS 3201 (Women and Gender in Transnational Context)

GSS 3281 (Globalization and Policy Making)

GSS 3610 (Womanism in Global Context)

ITA 3340 (*Famous Women* by Boccaccio)

PHIL 3007 (French Feminism)

PSCI 3264W (Global Feminisms)

SOC 3711 (Women, Gender, and Globalization)

SPAN 2990 (Images of the Feminine in Spanish Cinema)

Courses approved to fulfill the history/social movements requirement:

AADS 2214 (History and Myth: Black Women in the U.S.)

CMST 3110 (Women, Rhetoric, and Social Change)

ENGL 3622 (Nineteenth-Century Women Writers)

GSS 3246/W (Women's Rights, Women's Wrongs)

GSS 3250/W (Contemporary Women's Movements)

HIST 2835 (Sexuality and Gender to 1700)

HIST 2840 (Sexuality and Gender since 1700)

HIST 2855 (Women and Gender in the U.S. to 1865)

HIST 2860 (Women and Gender in the U.S. since 1865)

ITA 3740 (Gangsters, Lovers, Madonnas, and Mistresses)

RLST 3930 (Women and Religion)

RLST 3926 (Ancient Goddesses)

SOC 3722 (Gender and Society)

Courses approved to fulfill the sex, sexuality, and society requirement:

AADS 2104 (Popular Culture and Black Sexual Politics)

ANTH 3145 (Sexuality, Gender, and Culture)

CLAS 3100 (Women, Sexuality, and the Family in Ancient Greece and Rome)

CMST 3720 (Communicating Gender)

FREN 4322 (Adultery and Transgressions in Literature) [in French]

GSS 2252 (Sex and Scandals in Literature)

GSS 2256 (Literary Lesbians)

GSS 2612 (LGBT Studies)

GSS 2613 (Compulsory Couplehood)

GSS 2614 (Cowboys, Gangsters, and Drag Kings: Introduction to Critical Masculinity)

GSS 2615 (Transgender Lives in Literature and Film)

HART 3228W (Gender and Sexuality in Greek Art)

HIST 2240 (Sex Law)

HIST 2810 (Women, Health, and Sexuality)

LAS 4550 (Gender, Sexuality and Family in Latin America)

PHIL 3604 (Gender and Sexuality)

RLST 1820 (Religion, Sexuality, Power)

RLST 3225 (Sexuality in the Hebrew Bible and Ancient Near East)

SOC 3723 (Gender, Sexuality, and the Body)

Additional courses approved for intermediate-level GSS credit from other departments:

AADS 1111*, AADS 1204, AADS 2214, AADS 4262, CLAS 1111*, CMST 1111*, CMST 2950, CMST 3100, CMST 3890, ENGL 1111*, ENGL 1111.19, ENGL 1230W*, ENGL1260W*, ENGL 3670/W*, ENGL 3674, ENGL 3890/W*, ENGL 3890.01, ENGL 3894/W*, ENGL 3898/W*, FREN 3230, GER 2444, GER 3344, GER 4535, GER 4537, HIST 1111*, HIST 3010, HIST 4960*, HART 2765, HART 3840*, HART 4960*, JS 1111*, MHS 1111*, MHS 3890*, PSCI 2209, PSCI 2236, PSCI 3271, PSCI 3893*, PSY 3705, RLST 1111*, RLST 2220, RLST 4554, RLST 4834, RLST 4938, SOC 3221, SOC 3304, SOC 3603, SOC 3604, SOC 3611, SOC 3616, SOC 3704, SOC 3724, SPAN 3893*, SPAN 4755, THTR 2781, THTR 3741

*With topic approval by the director of undergraduate studies

German, Russian and East European Studies

[Program of Concentration in German Studies](#)

[Honors Program in German Studies](#)

[Minor in German Studies](#)

[Study Abroad](#)

[Program of Concentration in German and European Studies](#)

[Program of Concentration in Russian Studies](#)

[Study Abroad](#)

[Honors Program](#)

[Minor in Russian Studies](#)

[Program of Concentration in European Studies: Russia and Eastern Europe](#)

[Licensure for Teaching](#)

CHAIR Christoph Zeller

DIRECTOR OF UNDERGRADUATE STUDIES IN GERMAN Silke Schade

DIRECTOR OF UNDERGRADUATE STUDIES IN RUSSIAN Denis Zhernokleyev

DIRECTOR OF GRADUATE STUDIES Meike G. Werner

Professors, Emeriti: Barbara Hahn, Francis Wcislo

Professors: Celia Applegate, Jennifer Fay, Emily Greble, Joel Harrington, A. Ari Joskowicz, Lutz Koepnick, Helmut Smith, Meike Werner, Christoph Zeller

Associate Professors: Shaul Kelner, Philip McFarland, Karen Ng

Assistant Professors: Abigail Holekamp, Simone Stirner

Assistant Professors of the Practice: Albina Khabibulina, Silke Schade

Senior Lecturers: David Johnson, Juntao Li, Claire Scott, Denis Zhernokleyev

COURSES OFFERED: [GER](#), [RUSS](#)

German, Russian and East European Studies takes students beyond the headlines to gain in-depth understanding of some of the world's most influential nations and cultures. The department's interdisciplinary curriculum provides a wide range of intellectual experiences, whether your primary interest is in literature, film, visual culture, music, history, thought, or politics. For students who want to engage with German, Russian, or East European culture in a more substantive way, the department offers programs of concentration in German Studies and in Russian Studies.

The department sponsors lectures on topics related to German, Russian and East European society and culture, films, symposia, and other German- and Russian-themed activities. Students are encouraged to apply for living space in McTyeire International House in the German and Russian sections. German Studies majors with sufficient academic qualifications are invited to join Delta Phi Alpha, the national German honor society. Russian Studies majors with sufficient qualifications are invited to join Dobro Slovo, the national Slavic honor society.

Many students majoring in German Studies enroll in study abroad programs in Bremen or Freiburg, Germany. Less formal activities, such as a weekly Kaffeestunde or the Stammtisch at a local pizza parlor, are also open to undergraduates. For further information, please see [as.vanderbilt.edu/grees](#).

The Russian and East European Studies program has a special commitment to undergraduate training in all aspects of Russian language and the cultures and histories of the larger region. Students have several possibilities for studying abroad in Russia, including summer-, semester- and year-long programs in Moscow and St. Petersburg, where they have the option of studying history, politics, economics and/or culture alongside the Russian language. For further information, please see [as.vanderbilt.edu/grees](#).

Program of Concentration in German Studies

A major in German Studies offers deep engagement with the language, history, and culture of Germany and other German-speaking cultures. Students majoring in German Studies gain advanced proficiency in speaking and writing German, a detailed understanding of the complex and often haunting history of modern Germany, and rich insights into the unique work of German writers, filmmakers, artists, musicians, and thinkers. Students are required to complete a total of 30 credit hours of course work beyond GER 1102, including the following:

<i>Core courses:</i> <i>6 credit hours in 2440, 2441, or 2443</i>	6
<i>Beginning and intermediate German language in context:</i> <i>up to 9 credit hours of 1102, 2201, 2202, 3201, 3202W</i>	up to 9
<i>Advanced German language in context:</i> <i>at least 6 credit hours in 3201, 3202W, 3211</i>	at least 6
<i>Electives in German culture and history taught in German:</i> <i>at least 6 credit hours of any course in German between 4551-4557</i>	6
<i>Electives in German culture and history taught in English:</i> <i>up to 12 credit hours of courses taught in English above 2443</i>	12
Total credit hours:	30

Students are permitted to count a maximum of 6 credit hours of instruction in courses outside the GER subject area toward the major, with the approval of the director of undergraduate studies in German; such course work will count toward the 6 credit hour total for elective courses in German culture and history taught in English. Up to 6 credit hours earned through AP exams or transferred from other institutions may count toward the major. Up to 6 credit hours transferred per semester of study abroad may count toward the major.

German Language Proficiency

In addition, students majoring in German will be tested for language proficiency during their senior year and will be required to submit a paper written for one of their courses due the semester prior to graduation. The director of undergraduate studies in German should be consulted for details on these special learning outcome assessments.

Honors Program in German Studies

Candidates for honors in German who meet College of Arts and Science and departmental requirements must complete all requirements for the concentration in German. In addition, students

- must study a minimum of one semester at a German-speaking university (or gain the equivalent experience);
- complete 3 credit hours beyond the basic course requirements, in the form of a course taught in German above GER 4550;
- maintain at least a 3.0 cumulative GPA in courses that count toward the German major and a 3.30 cumulative GPA;
- complete 3 credit hours of 4999. Write an honors thesis and pass an oral examination during their final semester.

Minor in German Studies

A minor in German documents a student's basic competence in the German language as well as familiarity with German-speaking culture. Students can fulfill the requirements of a minor concentration in German by taking GER 2440, 2441, or 2443 and 15 credit hours in the GER subject area, of which 6 credit hours must be earned in courses taught in the German language, for a total of 18 credit hours.

Study Abroad

Students majoring in German Studies are strongly encouraged to complete an immersive German-language experience in a German-speaking country. Further information is available through the director of undergraduate studies and the Global Education Office.

Program of Concentration in German and European Studies

Students pursuing the interdisciplinary major in German and European studies combine their focus on German language and literature with a study of modern Europe in its political, economic, and cultural diversity. The German and European studies joint major consists of a minimum of 30 credit hours of course work. A semester of study abroad in a German-speaking country is recommended.

Course work for the major is distributed as follows:

German (15 credit hours)

- Language courses (6 credit hours): GER 3201 and 3202W
- Great German Works, History of German Thought, or History of German Cinema (3 credit hours): GER 2440, 2441, or 2443
- German culture in English (3 credit hours); any course between GER 2551-2557, or appropriate substitute approved by the director of undergraduate studies in German
- German culture (3 credit hours): any course between GER 4551-4558

European Studies (15 credit hours)

- European Studies core courses (3 credit hours): EUS 2201 or 2203
- European Studies courses or alternative topical courses as approved by major adviser (9 credit hours)
- Senior Tutorial (3 credit hours): EUS 4960 or equivalent course in German

Program of Concentration in Russian Studies

A major in Russian Studies entails deep and sustained engagement with the language, history, and culture of Russia and Russian speaking communities around the world. As one of the most dynamic actors on the world stage, Russian culture has been at the forefront of the history of literature, film, and visual arts, has produced some of the world's deepest aesthetic engagements with the human condition, and has been at the vanguard of politics both repressive and progressive. Students are required to complete a minimum of 30 credit hours of course work. AP and IB exam credit will not count toward credit hours required for the concentration, but placement exams will be offered for RUSS 1101 and/or 1102. A maximum of 6 credit hours toward the language or elective requirements may be earned from Vanderbilt-approved courses taken from other U.S. institutions or through study abroad programs.

Core course

- RUSS 1500 (3 credit hours)

Language courses in Russian

- RUSS 1102 [prerequisite 1101] (4 credit hours)
- RUSS 2201-2202 (8 credit hours)
- Two courses in Russian above RUSS 3000 (6 credit hours)

Elective courses 9 credit hours minimum

The 9 credit hours of elective credit may be earned from RUSS courses in Russian above 3000, or in English-language courses with the RUSS subject code (see the list of qualifying courses below). Students concentrating in Russian will be expected to take an assessment exam prior to graduation.

Study Abroad

Students majoring in Russian studies are strongly encouraged to complete an immersive Russian-language experience in the Russian Federation or another Russian-speaking country. Further information is available through the director of undergraduate studies and the Global Education Office.

Honors Program

Majors with a cumulative GPA of 3.30 or higher may apply to the Honors Program prior to registration of second semester junior year. They will submit a 6 credit hour program of study that couples a RUSS-designated course above 2202 in the first semester senior year with RUSS 4999, Senior Honors Thesis, in the second semester of the senior year. This program must have the approval of the departmental faculty member who will serve as the senior thesis adviser. The senior thesis is defended in the second semester of the senior year before a faculty committee, which may award Honors or High Honors in Russian to the baccalaureate degree.

Minor in Russian Studies

Requirements for a minor in Russian studies include a minimum of 17 credit hours of course work. Required courses are RUSS 1101-1102 and one English-language course with the RUSS subject code (3 credit hours; see the list of qualifying courses below). The remaining 6 credit hours may be earned either from Russian- and English-language courses with the RUSS subject code (see the list of qualifying courses below) or from other relevant courses with approval of the director of undergraduate studies. A maximum of 6 credit hours toward the Russian minor may be earned from Vanderbilt-approved courses taken from other U.S. institutions or through study abroad programs. AP and IB exam credit will not count toward credit hours required for the minor, but placement exams will be offered for RUSS 1101 and/or 1102.

Russian- and English-language courses with the RUSS subject code that qualify for the elective credit hours required for the concentration and minor in Russian:

1874, 1910W, 1911W, 2201-2202 [minor only], 2210, 2230, 2273, 2434, 2435, 2438, 2485, 2537, 2639, 2745, 2800, 2810, 2910, all 3000-level courses, and 4999.

Program of Concentration in European Studies: Russia and Eastern Europe

Students pursuing the interdisciplinary European Studies major in Russia and Eastern Europe combine their focus on Russian and East European societies with a study of modern Europe in its political, economic, and cultural diversity. Students may elect this interdisciplinary major consisting of 29 credit hours of course work. A semester of study abroad in Russia or Eastern and Central Europe is recommended. Course work for the major is distributed as follows

Russian and East European Studies (17 credit hours)

- 8 credit hours in Russian language: either RUSS 1101-1102 (8 credit hours), or equivalent in another East European language, or RUSS 2201-2202 (8 credit hours), or equivalent in another East European language. Other East European languages include Albanian, Bulgarian, Czech, Croatian/Bosnian/Serbian, Hungarian, Romani, Romanian, Polish, Slovak, or Yiddish.
- 9 credit hours of topical courses on Russia or Eastern Europe in RUSS or as approved by the major adviser

European Studies (12 credit hours)

- EUS 2201, European Society and Culture (3 credit hours) or EUS 2203, The Idea of Europe (3 credit hours)
- 6 credit hours of courses in EUS or alternative topical courses as approved by the major adviser
- EUS 4960, Senior Tutorial (3 credit hours) or equivalent 3 credit hour course in RUSS

Licensure for Teaching

Candidates for teacher licensure in German at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

German

Students with some experience in German should consult the department for placement.

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

Russian

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

Hebrew

DIRECTOR OF UNDERGRADUATE STUDIES Rebecca Epstein-Levi

ASSISTANT PROFESSOR Mazalit Haim

COURSES OFFERED: [HEBR](#)

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

History

[Program of Concentration in History](#)

[Program of Concentration in Law, History, and Society](#)

[Honors Program](#)

[Program of Concentration in Economics and History](#)

[Licensure for Teaching](#)

[Minor in History](#)

CHAIR Emily Greble

DIRECTOR OF UNDERGRADUATE STUDIES Ruth Rogaski

DIRECTOR OF GRADUATE STUDIES Nicole Hemmer

Professors, Emeriti: David Blackbourn, Richard Blackett, David Carlton, Dennis Dickerson, James Epstein, Jimmie Franklin, Arleen Tuchman, V. Jacque Voegeli, David Wasserstein, Francis Wcislo, Donald Winters

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Associate Professors: Ari Bryen, Brandon Byrd, Celso Castilho, Lauren Clay, Julia Cohen, Nicole Hemmer, A. Ari Joskowicz, Paul Kramer, Peter Lorge, Christopher Loss, Catherine Molineux, Tiffany Patterson, Samira Sheikh, Laura Stark, Kimberly Welch

Assistant Professors: Samuel Dolbee, Samuel Finkelman, Ole Molvig, Tasha Rijke-Epstein, William Robinson, Mark Sanchez

COURSES OFFERED: [HIST](#)

More than one hundred courses in the Department of History are available to Vanderbilt undergraduates. Some focus on a particular historical period, others on a particular region of the world, and still others on topics that may cross traditional chronological and geographical boundaries. The department is committed to the principle that in a changing world, the way we learn about the past must also change. It will continue to develop new courses for the twenty-first century, with an emphasis on those that recognize the interconnections among the various civilizations and regions of the globe.

Unless indicated otherwise in the course description, history courses have no prerequisite. Except for History 3980, 4960, 4980-4981, and 4999, courses numbered below 5000 are open to all majors and nonmajors. History 4960 is limited to seniors and juniors who have previously taken History 3000W. History 3980, 4980-4981, and 4999 are limited to students who have been admitted to the History Honors Program.

Students will find that the study of history offers not only a strong foundation for a liberal education but also a means of understanding the contemporary world. The skills developed in gathering, assessing, and synthesizing information have wide application in many careers, including business and the professions.

The Department of History offers a major and minor in history; a major in law, history, and society; and, in cooperation with the Department of Economics, a joint major in economics and history, which is described in this catalog under Economics and History.

Program of Concentration in History

The major program requires a minimum of 30 credit hours in history; no more than 3 credit hours of AP or IB credit may count toward this total. Note: AP and IB credit will not count toward the 15 credit hours for the concentration.

Course work is distributed as follows:

1. 3000W or 3980 (3 credit hours)

Note: 3000W or 3980 is a prerequisite for the 4960 capstone course. 3980 is limited to second-semester juniors who have been admitted to the Honors Program. Students entering the Honors Program who have already taken 3000W will receive elective credit for that course.

2. Five courses in one of the following concentrations (15 credit hours):

- A. Asia
- B. Latin America
- C. Europe
- D. Early America and the United States
- E. Middle East and Africa
- F. Global and Transnational
- G. Science, Medicine, and Technology
- H. Comparative History/Special Topics

See below for a list of courses that count for Concentrations A, B, C, D, E, F, and G. Students choosing concentration H must have the approval of their adviser and the director of undergraduate studies for a specific program of study. First-Year Writing Seminars (1111) in history may be used to satisfy the relevant program concentration with approval of the director of undergraduate studies.

Program A. Asia

1038, 1039, 1050, 1060, 1061W, 1070, 1090, 1160, 1161, 1162, 1200, 1881, 1882W, 2100, 2105, 2107, 2108, 2108W, 2110, 2111, 2114, 2115, 2119, 2120, 2140, 2150, 2160, 2180, 2658, 3090, 3110, 3111, 3112W, 3190, 3220, 3220W, 3230, and, as appropriate, 3746, 3850, 3882, 3883, 3890, 3980, 4960, 4980-4981, 4999; ASIA 2411, 2413, 2511, 2630; MHS 2310.

Program B. Latin America

1038, 1039, 1368, 1370, 1375, 1378, 1379W, 1380, 1383, 1384, 1385W, 1469, 2102, 2450, 2457, 2470, 2480, 2490, 2510, 2530, 2535, 2540, 2542, 2544, 2570, 2845, 3100, 3112, 3220, 3230, 3280, and, as appropriate, 3746, 3850, 3882, 3883, 3890, 3980, 4960, 4980-4981, and 4999; AADS 4256.

Program C. Europe

1038, 1039, 1040W, 1200, 1320, 1345, 1350, 1352, 1355W, 1360, 1470, 1480, 1500, 1510, 1510L, 1520, 1580, 1582W, 1584W, 1586W, 1600, 1695W, 1700, 1725W, 1760, 2130, 2135, 2140, 2160, 2170, 2190, 2220, 2230, 2237, 2238, 2240, 2250, 2255, 2260, 2270, 2280, 2290, 2293, 2294, 2300, 2310, 2340, 2380, 2382, 2383, 2385, 2410, 2450, 2595W, 2658, 2660, 2720, 2760, 2760W, 2800, 2835, 2840, 3010, 3050, 3070W, 3100, 3110, 3120, 3150, 3180, 3190, 3210, 3230, 3240, 3240W, 3260, 3270, 3275, 3290, 3310W, 3333 and, as appropriate, 3746, 3850, 3882, 3883, 3890, 3980, 4960, 4980-4981, and 4999; CLAS 2100, 2110, 2120, 2150, 2160, 2180, 3110; ECON 3160; EUS 2201, 2208, 2220; GER 2442, 2554, 2563; JS 1111.09, 1220, 1240, 2450, 2540, 3100, 3210; PHIL 2100; RLST 2250W, 3316, 3350, 4371; RUSS 2800, 2810, 2820, 2910, 2915.

Program D. Early America and the United States

1038, 1039, 1200, 1320, 1353, 1375, 1383, 1385W, 1390, 1395, 1400, 1405, 1410, 1420, 1422W, 1425W, 1427, 1427W, 1430W, 1431, 1438, 1440, 1469, 1480, 1500, 1520, 1605, 1610, 1640, 1650, 1660, 1665, 1667, 1669, 1690, 1691, 1693, 1699, 1710W, 1725W, 1730, 1735W, 1740, 1770, 1780W, 2111, 2119, 2239, 2240, 2530, 2535, 2542, 2550W, 2580, 2590, 2595W, 2600, 2610, 2620, 2630, 2640, 2650, 2655, 2660, 2662, 2684, 2685, 2686, 2689, 2690, 2691, 2692W, 2700, 2710, 2720, 2721, 2722, 2725, 2730, 2735, 2740, 2749, 2750, 2752, 2760, 2780, 2800, 2810, 2840, 2845, 2855, 2860, 3010, 3112, 3030, 3040, 3045W, 3050, 3070W, 3100, 3110, 3140, 3170, 3190, 3230, 3240W, 3285, 3333 and, as appropriate, 3746, 3850, 3882, 3883, 3890, 3980, 4960, 4980-4981, and 4999; AADS 2214; AMER 1700W; ECON 2150, 3150; HOD 1115; JS 1240, 2540, 2560; MHS 2110.

Program E. Middle East and Africa

1038, 1039, 1161, 1190, 1200, 1269, 1270, 1270W, 1271W, 1280, 1281W, 1725W, 2137, 2138, 2139, 2140, 2154, 2155, 2160, 2170, 2180, 2190, 2413, 2413W, 2510, 2660, 3150, 3190, 3200, 3209, 3210, 3230, and, as appropriate, 3746, 3850, 3882, 3883, 3890, 4960, 4980-4981, and 4999; AADS 2106; CLAS 2180, 3010; JS 1111.09, 1200, 1220, 1240, 2540, 2600, 2620, 3210; RLST 4371.

Program F. Global and Transnational

1038, 1039, 1040W, 1162, 1190, 1200, 1270, 1270W, 1271W, 1280, 1345, 1353, 1368, 1370, 1378, 1379W, 1380, 1383, 1385W, 1469, 1470, 1515, 1525, 1530, 1600, 1605, 1610, 1665, 1691, 1695W, 1700, 1725W, 1740, 1881, 2106, 2110, 2130, 2135, 2137, 2138, 2139, 2140, 2150, 2160, 2170, 2180, 2190, 2238, 2294, 2413, 2413W, 2450, 2457, 2480, 2490, 2530, 2535, 2540, 2542, 2570, 2595W, 2658, 2660, 2700, 2710, 2721, 2722, 2725, 2735, 2740, 2760, 2760W, 2790, 2835, 2840, 2845, 3010, 3100, 3110, 3112W, 3120, 3150, 3190, 3209, 3215, 3220, 3230, 3333, and, as appropriate, 3746, 3850, 3882, 3883, 3890, 3980, 4960, 4980-4981, and 4999; ASIA 2413, 2630; CLAS 2120, 2180, 3010, 3110; JS 1200, 1220, 1240, 2450, 2540, 2845, 3000, 3100; EUS 2220; MHS 2110; RLST 3306, 4371; RUSS 2810, 2820, 2910, 2915.

Program G. Science, Medicine, and Technology

Students may meet the requirement by taking five courses from the SMT list, among which not more than two may be courses outside the Department of History.

1385W, 1470, 1480, 1500, 1510, 1510L, 1515, 1520, 1525, 1530, 1780W, 2108, 2108W, 2139, 2160, 2413W, 2780, 2790, 2800, 2810, 3040, 3045W, 3050, 3070W, 3110, 3230, 3333 and, as appropriate, 3746, 3850, 3882, 3883, 3890, 3980, 4960, 4980-4981, and 4999; ANTH 4373; ASIA 2630; ASTR 2130; ENGL 3720 or 3720W; MATH 3000; MHS 2110, 2310, 2320, 2430; and other courses, as appropriate, with approval of the director of undergraduate studies.

3. Capstone course (3-6 credit hours)

One of the following, to be taken in the junior or senior year; all of the options will require the student to write a major paper. Any capstone course within the student's area of concentration will count toward the five-course requirement for that concentration.

Option 1: 3883, Internship Research (3 credit hours). Must be taken in conjunction with 3880 (internship training). Prerequisite: 3000W. Note: a student may take 3883 as an elective before completing 3000W but in this case 3883 will not count as a capstone course.

Option 2: 4960, Majors Seminar (3 credit hours). Prerequisite: 3000W.

Option 3: 4980-4981, Senior Honors Seminar (6 credit hours). Limited to seniors in the History Honors Program. Note: At the discretion of the director of honors and the director of undergraduate studies, a student who has taken

4980 but does not take 4981 may be considered to have fulfilled the capstone requirement for the major.

4. Electives (6-12 credit hours, depending on the nature of the capstone course)

Program of Concentration in Law, History, and Society

As a human institution self-consciously aware of its past, “The Law” raises a complex set of issues that can be addressed historically. Legislation and jurisprudence, for example, allow historians a privileged perspective into how societies sought to define themselves, their values, and their membership. Constitutions provide maps of political power, and serve as sites of struggle over goods both real and symbolic. Records of legal practice are often well preserved, allowing access to the voices and actions of people who are usually left out of systems of political organization.

This major approaches law from both a historical and an interdisciplinary perspective. Emphasis will be placed on close reading of legal documents, research in legal archives, and analytical writing. Students will be encouraged to develop reading programs and research topics that stretch across national and chronological boundaries, and to think comparatively. Students may not major both in history and in law, history, and society. Students majoring in law, history, and society may apply to receive honors through the History Honors Program.

The major program requires a minimum of 30 credit hours in history; no more than 3 credit hours of AP or IB credit may count toward this total. *Note:* AP and IB credit will not count toward the 15 credit hours for the concentration. No more than 6 credit hours may be from courses outside the Department of History.

Course work is distributed as follows:

1. History Workshop. 3000W or 3980 (3 credit hours)

Note: 3000W is a prerequisite for the 4960 capstone course. 3980 is limited to second-semester juniors who have been admitted to the Honors Program. Students entering the Honors Program who have already taken 3000W will receive elective credit for that course.

2. Law, History, and Society: Five courses from the following:

1040W, 1061W, 1271W, 1345, 1352, 1379W, 1383, 1384, 1385W, 1430W, 1580, 1584W, 1667, 2130, 2135, 2155, 2190, 2237, 2238, 2239, 2240, 2290, 2293, 2294, 2450, 2580, 2590, 2610, 2658, 2662, 2690, 2691, 2692W, 2750, 2760, 2760W, 2855, 2860, 3170, 3209, 3290, and as appropriate, 3850, 3882, 3883, 3890, 3980, 4960, 4980-4981, and 4999; CLAS 3150, 3160; CMST 3150; ECON 4210; ENGL 3734; FREN 4232; GSS (formerly WGS) 3271, 3281; JS 2150; MHS 2320; PSCI 1103, 2208, 2226, 2251, 2262, 2265, 2266, 3260; RUSS 2485, 2810, 2820, 2910, 2915; SOC 3605, 3611, 3613, 3621, 3624; and other courses, as appropriate, with approval of the director of undergraduate studies of Law, History, and Society.

Note: First-Year Writing Seminars (1111) in history may be used to satisfy the relevant program concentration with approval of the director of undergraduate studies of Law, History, and Society.

3. Capstone course (3-6 credit hours)

One of the following, to be taken in the junior or senior year; all of the options will require the student to write a major paper, the topic of which must be approved by the director of undergraduate studies of law, history, and society. Any capstone course on a topic concerning law, history, and society will count toward the five-course requirement for the program concentration.

Option 1: 3883, Internship Research (3 credit hours).

Must be taken in conjunction with 3880 (internship training). Prerequisite: 3000W. Note: a student may take 3883 as an elective before completing 3000W but in this case 3883 will not count as a capstone course.

Option 2: 4960, Majors Seminar (3 credit hours).

Prerequisite: 3000W.

Option 3: 4980–4981, Senior Honors Seminar (6 credit

hours). Limited to seniors enrolled in the History Honors Program. *Note:* At the discretion of the director of honors and the director of undergraduate studies in law, history, and society, a student who has taken 4980 but does not take 4981 may be considered to have fulfilled the capstone requirement for the major.

4. Electives (6-12 credit hours in history, depending on the nature of the capstone course)

Electives may include any courses, not used to satisfy any of the above requirements, offered by the Department of History or listed above in major requirement #2.

Honors Program

The Honors Program in History is a three-semester program of study. It offers superior undergraduate history majors a program of advanced reading, research, and writing. The Honors Program combines seminar work and independent study under the supervision of a thesis adviser. This structure provides participants an introduction to historical research and writing, as well as the opportunity to study defined areas of history and significant historical problems that accord with their own interests. The final objectives of the Honors Program are successful authorship of the honors thesis and graduation with honors or highest honors in the major.

Students apply to the Honors Program in the first semester of the junior year. Students meeting college and departmental requirements will enroll for a total of 12 credit hours: History 3980, Junior Honors Seminar in History (3 credit hours); History 4980–4981 Senior Honors Research Seminar (6 credit hours); and 4999, Senior Honors Thesis (3 credit hours). In addition, the Honors Program requires an oral defense of the honors thesis before a faculty committee at the end of the third semester.

Program of Concentration in Economics and History

This is an interdisciplinary program split between economics and history that provides a more focused program of study while requiring fewer credit hours than a double major in the two fields. See the Economics and History section of this catalog for details.

Licensure for Teaching

Candidates for teacher licensure in history at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Minor in History

The minor in history requires a minimum of 18 credit hours in courses that are offered by the Department of History

or that are listed above in programs A-G of the history major, among which no more than two courses may be outside the Department of History. At least 9 credit hours must be taken at the 2000 level or higher. Students must complete 3000W. No more than 3 credit hours of AP or IB credit may count toward this total.

History of Art and Architecture

[Program of Concentration in History of Art](#)

[Program of Concentration in Architecture and the Built Environment](#)

[Honors Program](#)

[Minor in History of Art](#)

[Minor in Architecture and the Built Environment](#)

CHAIR Kevin D. Murphy

DIRECTOR OF UNDERGRADUATE STUDIES Sheri Shaneyfelt

DIRECTOR OF GRADUATE STUDIES Sheri Shaneyfelt

PROFESSORS EMERITI Leonard Folgarait, Vivien Fryd, Robert Mode, Ljubica Popovich

PROFESSORS Kevin Murphy, David Price

ASSOCIATE PROFESSORS Jelena Bogdanovic, Tracy Miller, Elizabeth Moodey, Betsey Robinson, Rebecca VanDiver

ASSISTANT PROFESSOR OF THE PRACTICE Sheri Shaneyfelt

SENIOR LECTURERS Jack Crawford, Susan Dine

COURSES OFFERED: [HART](#)

The Department of History of Art and Architecture treats critically the major fields in world art, from ancient to contemporary, and connects the arts to the other humanities. Many students will use the program in history of art and architecture as a foundation for careers in which analytical reading and writing skills gained in the major are especially valued: as the basis for advanced training in professional schools (such as architecture, law, medicine, journalism, and business), for postgraduate work in history of art or architecture, and for employment in galleries, museums, or design-related fields. The department helps students become readers of visual images and material culture throughout their lives, and encourages visual approaches to learning. In addition, the department provides practical experience in research, writing, and exhibition organization that are key to pursuing museum and gallery careers, as well as courses in museum studies.

Majors in history of art and architecture participate in the activities of the Vanderbilt History of Art Society, the student architecture group, and work closely with departmental advisers. The History of Art Society and the department sponsor events such as panels, lectures, debates, and other programs where majors meet and engage in discussions with historians of art and museum curators.

The department curriculum complements those of related departments and programs, including African American and Diaspora Studies, American Studies, Anthropology, Asian Studies, Cinema and Media Arts, Classical and Mediterranean Studies, European Studies, Gender and Sexuality Studies, Latin American, Caribbean, and Latinx Studies, and Religious Studies.

The Department of History of Art and Architecture offers a major and minor in history of art, and a major and minor in architecture and the built environment.

Program of Concentration in History of Art

The history of art major requires 30 credit hours and gives students the opportunity to study art and visual culture across a wide range of historical periods, from ancient to contemporary. The program is designed to allow for concentration in particular periods and areas of interest. By requiring courses in both the lecture and seminar format, the program aims to provide a basis of comprehensive knowledge and challenging opportunities for more specialized instruction.

Students should consider related offerings in cognate disciplines in the humanities and social sciences. Those planning graduate work in history of art should pursue advanced studies—which may include honors—and take advanced courses in other departments offering complementary course work. Advanced language studies are strongly recommended, as graduate programs expect reading facility in one language for the M.A. and two for the Ph.D., with French and German the most commonly required. Non-European languages should be considered for those primarily interested in global traditions.

Course work is distributed as follows:

- A 1000-level course (3 credit hours): Students must complete one 1000-level survey course in history of art or architecture selected from HART 1100, 1105, 1120, 1121, 1122, 1200, 1205, 1220, 1300, or 1400. This course is not a prerequisite for further history of art course work but must be taken at Vanderbilt; AP credit will not be accepted.
- Area requirements (15 credit hours)—five history of art courses at the 2000 level or above, one each from the following areas:
 - a. Ancient: HART 2200, 2210, 2220, 2230, 2250, 2260, 3224, 3226, 3228W, 3240W, 3252, 3256W; CLAS 2250, 3200, 3700, 3710, 3720, 3730
 - b. Medieval: HART 2270, 2275, 2285, 2288, 2290, 3364W
 - c. Renaissance/Baroque: HART 2310, 2320W, 2325, 2330, 2362, 2390, 3320, 3320W, 3332, 3334, 3334W
 - d. Modern: HART 2600, 2620, 2622, 2625, 2650, 2660, 2662, 2665, 2710, 2720, 2722, 2740, 2750, 2755, 2760, 2765, 2772, 3605W, 3712W, 3718W, 3725W, 3735, 3740, 3757W, 3765W, 3766W, 3767W
 - e. Global: HART 2100, 2110, 2120, 2130, 2150, 2151, 2160, 2165, 2170, 2175, 2180, 2192, 3112, 3140, 3164W, 3173W, 3174
- Electives (6 credit hours)—two upper-level courses in history of art (HART 2100 to 3850 and 3890; CLAS 2250, 3200, 3700, 3710, 3720, 3730) in addition to the area requirements.
- Advanced Seminars (6 credit hours)—any HART 3000-level writing class, 4960

Program of Concentration in Architecture and the Built Environment

The track in architecture and the built environment requires 30 credit hours and promotes interdisciplinary and trans-institutional study. It enables students to develop breadth and expertise in the history and theory of architecture, landscape architecture, and constructed environments; design studies; and theoretical and historical approaches to analyzing urban scale and city planning. Students can build a foundation for graduate work in these fields as well as for spatially related specializations in cognate disciplines such as anthropology, political science, public policy, sociology, demography, public health, environmental studies, civil engineering, computer science, and geography and geographic information systems.

Course work is distributed as follows:

1. A 1000-level course (3 credit hours): Students must complete one 1000-level survey course in history of art or architecture selected from HART 1100, 1105, 1120, 1121, 1122, 1200, 1205, 1210W, 1220, 1300, 1330W, 1400, 1740W, or CLAS 1020. This course is not a prerequisite for further history of art course work but must be taken at Vanderbilt; AP credit will not be accepted.
2. Three courses (9 credit hours) in architectural, design, landscape, or urban history selected from HART 2100, 2110, 2120, 2130, 2150, 2151, 2160, 2175, 2180, 2200, 2210, 2220, 2225, 2230, 2250, 2270, 2275, 2285, 2290, 2325, 2330, 2650, 2662, 2665, 2720, 2722, 2740, 2780, 2782, 2815, 2820, 3112, 3140, 3174, 3252, 3790; and CLAS 2250, 3200.
3. One advanced seminar in architectural history (3 credit hours) selected from HART 3164W, 3240W, 3256W,

3725W, 3757W, 3765W, 3766W, 3825W or 3810W (when the course topic concerns architecture and the built environment, landscape architecture, design studies, or urban planning).

4. Five electives (15 credit hours): Electives may include any HART courses listed above in major requirements 1-3 not used to satisfy any of those requirements, or courses chosen from the list below. A maximum of two electives may be taken from any one department (with the exception of History of Art and Architecture), and a maximum of two electives may be taken at the 1000 level.

Students will work with the Director of Undergraduate Studies and departmental advisers to design a program of study that addresses their academic interests and career goals. Students interested in graduate programs in architecture and design should review elective selections with the pre-architecture adviser.

AFRICAN AMERICAN AND DIASPORA STUDIES: 1016, Race Matters; 1716, The African City: Urban Landscapes on the Page, Screen, and Canvas; 2294, Black Paris-Paris Noir: The African Diaspora and the City of Light; 4506, Slavery and Public Memory

AMERICAN STUDIES: 3200, Global Perspectives on the U.S.

ANTHROPOLOGY: 2101, Theories of Culture; 2110, Gender and Cultural Politics; 2130, Global Infrastructure and Everyday Life; 2150, Urban Ecology; 2214, Art and Architecture in the Ancient Americas; 2220W, Human Landscapes; 2225, Climate Change, Collapse, and Sustainability in History; 2229W, Contested Ground: Sacred Sites; 2231 Ancient Andean Civilizations; 3161, Colonial Encounters in the Americas; 3200, Ancient Cities; 3202, The Collapse of Civilizations; 3261, Introduction to Geographic Information Systems and Remote Sensing; 3867 Digital Archaeology; 4154, Environmental Anthropology

ART STUDIO: 1101, Introduction to Studio Art; 1102, Drawing and Composition I; 1200, Photography I; 1201, Alternative Photography; 1202, Digital Imaging I; 1300, Painting; 1400, Ceramics; 1401, Sculptural Ceramics; 1500, Sculpture; 1501, Assemblage; 1502, Installation Art; 1503, Text and Image; 1505, Graphic Design; 1600, Printmaking: Etching and Relief; 1601, Printmaking: Screen and Lithography; 1700, Video Art; 1702, Portable Media I; 1900, Social Collective Art Practice; 2100, Drawing and Composition II; 2102, Drawing: Color Media I; 2200, Photography II; 2202, Digital Imaging II; 2300, Painting II; 2400, Ceramics II; 2401, Concept and Clay: Composite Forms; 2500, Sculpture II; 2600, Printmaking II; 2700, Video Art II; 2702, Portable Media II; 3100, Drawing and Composition III; 3102, Drawing: Color Media II; 3200, Photography III; 3300, Painting III; 3600, Printmaking III

ASIAN STUDIES: 2100W, Fashioning the Self: Coming of Age and Asian Modernities

BIOLOGICAL SCIENCES: 1103/1103L, Green Earth: The Biodiversity and Evolution of Plants; 2238/2238L, Ecology; 3233, Conservation Biology

CHEMICAL AND BIOMOLECULAR ENGINEERING: Digital Fabrication 2100; Rapid Prototyping

CINEMA AND MEDIA ARTS: 1600, Introduction to Film and Media Studies; 2400, History of World Cinema; 3257 Virtual Reality Design

CIVIL ENGINEERING: 2101, Civil and Environmental Engineering Information Systems; 2120, Sustainable Design Civil Engineering; 2200, Statics; 2205, Mechanics of Materials; 3200, Structural Analysis; 3205, Structural Design; 3501, Transportation Systems Engineering; 3600, Environmental Engineering; 4100, Geographic Information Systems (GIS); 4205, Intelligent Transportation Systems; 4320, Data Analytics for Engineers; 4415, Construction Materials and Methods; 4425, Building Information Modeling; 4430, High Performance and Green Buildings; 4505, Urban Transportation Planning; 4950, Civil Engineering Design I; 4951, Civil Engineering Design II

CLASSICAL AND MEDITERRANEAN STUDIES: 1020, Introduction to Mediterranean Archaeology; 3190/3190W, Augustan Rome; 3200, The Greek City; 3700, Cults, Festivals, and Sanctuaries; 3710, Archaeology, History, and Culture in Greece: Kenchreai Field School; 3720, History and Art of Ancient Rome; 3730, The Roman to Medieval Near East: Caesarea Excavations, Israel

COMMUNICATION STUDIES: 2800, Rhetoric and Civil Life; 2950, Rhetoric of Mass Media; 3100, Rhetoric of Social Movements; 3700, Politics and Mass Media

COMPUTER SCIENCE: 1000, The Beauty and Joy of Computing; 1101, Programming and Problem Solving; CS 1103 Introductory Programming for Engineers and Scientists; CS 1104 Programming and Problem Solving in Python; 1151, Computers and Ethics

EARTH AND ENVIRONMENTAL SCIENCES: 1510/1510L, The Dynamic Earth: Introduction to Geological Sciences; 2110, Global Climate Change; 2150, Science, Risk, and Policy; 4750, Sustainability: An Environmental Science Perspective; 4760, Agent- and Individual-Based Computational Modeling

ECONOMICS: 1010, Principles of Macroeconomics; 1020, Principles of Microeconomics; 2170, Environmental Economics; 2340, Plunder and Pillage: The Economics of Warfare and Conflict; 3230, Urban Economics

ENGINEERING SCIENCE: 2700, Engineering Career Development; 2900, Engineering and Public Policy

ENGLISH: 3692, Desire in America: Literature, Cinema, and History; 3694, America on Film: Art and Ideology; 3695, America on Film: Performance and Culture; 3730, Literature and the Environment

ENVIRONMENTAL ENGINEERING: 3610, Sustainable Development; 4615, Environmental Assessments; 4700, Energy and Water Resources

EUROPEAN STUDIES: 2201, European Society and Culture; 2203, The Idea of Europe; 2800, Pursuing Utopia: Social Justice and Romanticism in the Alps; 2260, European Cities

FRENCH: 3634, Parisian Geographies: Paris in 19th and 20th Century Art and Literature

GENDER AND SEXUALITY STUDIES: 1160, Sex and Society; 1273, Gender and the City; 2268, Gender, Race, Justice, and the Environment; 3308, Gender, Race, and Urban Mobilities

HISTORY: 1039, Global History 1453 to Present; 1281/1281W, The Making of African Cities: Histories of Globalization and Migration; 1355W, Innovation and Renovation in Renaissance Europe; 1368, Rio de Janeiro: Culture and Citizenship in the Marvelous City; 1430W, North American Indians and the Environment; 1510/1510L, The Scientific Revolution/Digital History Lab; 1586W, Nazi Germany, the Holocaust, and Digital Humanities; 2220, Medieval and Renaissance Italy, 1000-1700; 2413/2413W, Global History of Waste; 2655, Historic Black Nashville; 2686, Race, Rights, and the American Dream; 2780, Superhuman Civilization; 3050, Innovation; 3140, History of New Orleans; 3150, Cities of Europe and the Middle East; 3180, Making of Modern Paris

HISTORY OF ART AND ARCHITECTURE: 1111.09, Seven Wonders of the Ancient World; 1111.11, Sacred Geographies of China; 1111.12, Pompeii: Life and Death of a Roman City; 1111.17, New York City Architecture, 1111.19, Art and the Environment 1400-1800; 1111.20, Art, Race and Urban Space

HUMAN AND ORGANIZATIONAL DEVELOPMENT : 3200, Global Dimensions of Community Development; 3202, Community Development Theory; 3212, Community Development Organizations and Policies; 3242, Environmental Politics and Justice; 3270, Global Sustainable Development; 342, Introduction to Community Psychology

ITALIAN: 3642, Italian Visual Culture; 3701, City Fictions

JEWISH STUDIES: 2450, The Jewish Diaspora; 2520, Zionism: Politics, Religion, and Ethnicity; 3730, The Roman to Medieval Near East: Caesarea Excavations, Israel

MATERIALS SCIENCE AND ENGINEERING: 1500, 1500L, Materials Science I and Laboratory

MATHEMATICS: 1100, Survey of Calculus; 1200, Single-Variable Calculus I; 1201, Single-Variable Calculus II; 1300, Accelerated Single-Variable Calculus I; 1301, Accelerated Single-Variable Calculus II; 2300, Multivariable Calculus; 2310, Multivariable Calculus with Matrix Algebra; 2400, Differential Equations with Linear Algebra

MECHANICAL ENGINEERING: 2160, Introduction to Mechanical Engineering Design; 3248, Heat Transfer; 4258, Engineering Acoustics; 4259, Engineering Vibrations; 4262, Environmental Control

MEDICINE, HEALTH, AND SOCIETY: 1950, Theories of the Body; 2240, Bionic Bodies, Disability Cultures; 3040, Designing Healthy Publics; 3120, Medicine, Technology, and Society

MUSIC LITERATURE: 1660, Music and Tourism: Music City Museum and Memorabilia; 2350, The Music and Culture of Venice; 3230, Music and the Construction of National Identity

NEUROSCIENCE: 2201, Neuroscience

PHILOSOPHY: 1005, Introduction to Ethics; 1111.05, Green Cities; 3013, History of Aesthetics; 3014, Modernistic Aesthetics; 3611, Environmental Philosophy; 3615, Philosophy of Film; 3661, Topics in Aesthetics

PHYSICS: 1010/1010L, Introductory Physics; 1501/1501L, Introductory Physics I; 1601/1601L, General Physics I; 1602/1602L, General Physics II; 2255/2255L, Modern Physics and the Quantum World; 2275, Classical Mechanics

POLITICAL SCIENCE: 2256, Politics of Public Policy; 3253, Ethics and Public Policy; 3272W, The War in Iraq, 2003-2011; 4257, The Politics of Capitalism

PSYCHOLOGY: 3110, Social Psychology

PUBLIC POLICY STUDIES: 3100, Cities in the 21st Century

RELIGIOUS STUDIES: 2472, Religion, Ecology, and Power in Africa; 3669, Sacred Space in the Tibetan World

RUSSIAN: 2745, Radical Art: The Avant-Garde Revolution; 2800, Viewing Communism in Eastern Europe; 2810, Revolutions and Post-Communisms in Eastern Europe and Eurasia, 1981-2010

SOCIOLOGY: 1030, Environment and Society; 3001, Sociological Perspectives; 3204, Tourism, Culture, and Place; 3206, Creativity and Innovation in Society; 3221, The Family; 3311, Climate Change and Society; 3312, Environment and Development; 3314, Environmental Inequality and Justice; 3315, Human Ecology and Society; 3316, Business, Civil Society, and the Environment; 3317, Energy Transitions and Society; 3321, Population and Society; 3601, Self, Society, and Social Change; 3612, Class, Status, and Power; 3615, Human Behavior in Organizations; 3723, Gender, Sexuality, and the Body

SPANISH: 4810, Images of the City

THEATRE: 1010, 1010W, Fundamentals of Theatre; 1751, Fundamentals of Theatre Design

UNIVERSITY COURSES: 3200, Race, Place, and Power; 3350, Design Thinking, Design Doing; 3360, Data Science Methods for Smart City Applications

Honors Program

The honors program in history of art and architecture allows exceptional undergraduate students to undertake independent research on a topic in art or architectural history in consultation with faculty members. The program is open to all history of art and architecture majors with junior standing who have earned a 3.30 grade point average in all university courses and a 3.30 grade point average in history of art courses. They must also be approved for acceptance into the honors program by the department faculty. Completion of the program requires 9 credit hours of study: HART 3850, Independent Research (the second semester of the junior year, unless studying abroad, in which case one is expected to enroll in this class the first semester of the junior year); HART 4998, Honors Research (first semester of the senior year); and HART 4999, Honors Thesis (second semester of the senior year); submission of an honors thesis; and successful completion of an oral defense of the thesis. These independent research credit hours are in addition to the 30 credit hours required for the major in history of art or architecture and the built environment. Students meeting these requirements receive honors or highest honors in history of art or architecture and the built environment, depending on the quality of the thesis, grades in history of art and architecture courses, and defense results. Successful departmental honors students will receive a Vanderbilt diploma that records honors or highest honors in history of art or architecture and the built environment.

Minor in History of Art

The minor in history of art requires 18 credit hours of course work, including the following:

Two 1000-level courses from 1100, 1105, 1120, 1121, 1122, 1200, 1205, 1220, 1300, 1400 or CLAS 1020, plus any four upper-level

history of art courses (HART 2100 to 3850 and 3890, 4960), and classes designated CLAS 2250, 3200, 3700, 3710, 3720, 3730.

Minor in Architecture and the Built Environment

The minor in architecture and the built environment requires 18 credit hours of course work, distributed as follows:

1. A 1000-level course (3 credit hours): Students must complete one 1000-level survey course in history of art or architecture selected from HART 1100, 1105, 1120, 1121, 1122, 1200, 1205, 1210W, 1220, 1300, 1330W, 1400, 1740W, or CLAS 1020.
2. Three courses (9 credit hours) in architectural, design, landscape, or urban history selected from HART 2100, 2110, 2120, 2130, 2150, 2151, 2160, 2175, 2180, 2200, 2210, 2220, 2225, 2230, 2250, 2270, 2275, 2285, 2290, 2325, 2330, 2650, 2662, 2665, 2720, 2722, 2740, 2780, 2782, 2815, 2820, 3112, 3140, 3174, 3252, 3790; and CLAS 2250, 3200.
3. Two electives (6 credit hours): Electives may include any HART courses listed above in minor requirements 1-2 not used to satisfy either of those requirements or courses chosen from the Electives list for the architecture and the built environment major. No more than one elective course may be taken at the 1000 level.

Honors

COURSES OFFERED: [HONS](#)

Courses designated "Honors" are parts of a special honors program in liberal education called the College Scholars program. They may be taken only by students who have been appointed College Scholars by the dean of the College of Arts and Science. Some College Scholars are appointed before they arrive for their first semester in residence; others may be appointed on the basis of their records in that first semester. All first-year students in the College of Arts and Science may apply to the associate dean for honors programs for admission to the College Scholars program; only first-year students are considered for admission.

Honors seminars offered in the College Scholars program provide an especially interesting and challenging way for College Scholars to complete certain parts of the program for Achieving Excellence in Liberal Education (AXLE).

They are designed to cover topics through the intensive analysis afforded by the seminar setting and format. An honors seminar will satisfy the requirement for a first-year writing seminar. Honors 1810W, 1820W, 1830W, 1840W, 1850W, and 1860W count toward the AXLE requirements identified by the seminars' titles. Honors 1810W are Humanities and the Creative Arts (HCA) courses; Honors 1820W are Perspectives (P) courses; Honors 1830W are Social and Behavioral Sciences (SBS) courses; Honors 1840W are History and Culture of the United States (US) courses; Honors 1850W are Mathematics and Natural Sciences (MNS) courses; Honors 1860W are International Cultures (INT) courses.

In addition to regular credit hours and grade points, honors seminars carry honors points toward graduation with the designation "Honors in the College of Arts and Science." College Scholars must earn fifteen honors points to receive that designation (they are not required to earn this designation but may take as many honors seminars as they wish).

They may earn up to thirteen of the required fifteen points in honors seminars: three points each for the first time they take Honors 1810W, 1820W, 1830W, 1840W, 1850W, or 1860W; one point if they take a second seminar in the same area. Single honors points may be earned (a) in departmental honors sections of regular courses, (b) in independent project approved by the associate dean for honors programs, and (c) in a regular course in which an enriched curriculum approved by the Committee on the Honors Program is pursued. Honors points are only earned for courses in which the student earns the grade *B* or better.

Interdisciplinary Studies

Any student who is at least a sophomore and in good academic standing may earn one credit hour per semester or summer for an internship completed under the designation INDS 3880/3884 (summer) exclusively on a Pass/Fail basis. This course may be repeated twice for a maximum of three credit hours. Students are responsible for obtaining their own internship and faculty adviser. The student and faculty adviser work together to plan the academic project associated with the internship. Their agreement must be approved by Associate Dean Daniel Morgan.

COURSES OFFERED: [INDS](#)

Jewish Studies

[Program of Concentration in Jewish Studies](#)

[Honors Program](#)

[Minor in Jewish Studies](#)

CHAIR Ari Joskowicz

DIRECTOR OF UNDERGRADUATE STUDIES: Adam Meyer

Profesors, Emeriti: Amy-Jill Levine, David Wasserstein

Professors: Phillip Ackerman-Lieberman, Robert Barsky, Emily Greble, Ari Joskowicz, David Price, Allison Schachter

Associate Professors: Julia Cohen, Nathalie Debrauwere Miller, Shaul Kelner, Adam Meyer, Paul Miller

Assistant Professors: Emanuele Costa, Rebecca J. Epstein-Levi, Samuel Finkelstein, Simone Stirner

Senior Lecturer: Judith Klass

COURSES OFFERED: [HEBR](#), [JS](#)

Jewish Studies at Vanderbilt offers an interdisciplinary academic program that facilitates the critical study of Jewish history, religion, language, philosophy, politics, culture, society, music, art, and literature across continents and over three millennia. Integral to understanding crucial moments in the formation of Christianity and Islam as well as distinct episodes in the cultures of the modern Middle East, Europe, and America, the program accesses the resources of the entire university to explore Judaism, its evolution and expression from biblical times to the present. This interdisciplinary program reflects Vanderbilt's commitment to advancing the understanding of diverse cultures and traditions. Students of all backgrounds will find in Jewish Studies at Vanderbilt a wide array of material and methodologies, presented by scholars from history, anthropology, sociology, religious studies, philosophy, literature, and history of art. Students may focus on several areas of concentration and tailor the major to their academic and career interests. They also have access to courses offered by the schools of divinity, education, and music; they have access to the Zimmerman Judaica collection as well as the opportunity to study abroad, pursue internships locally or nationally, and do research in archives overseas. The interdisciplinary nature of Jewish Studies offers excellent preparation for graduate studies and provides an outstanding academic foundation for a variety of rewarding career paths. Visit as.vanderbilt.edu/jewishstudies for more details.

Program of Concentration in Jewish Studies

The major in Jewish studies requires a minimum of 30 credit hours.

1. *Introductory course, 3 credit hours.* JS 1002 or 1002W, Introduction to Jewish Studies, JS 1010: Introduction to

- Judaism, or JS 1040: Introduction to Modern Jewish History.
2. *Language, 6 credit hours.* A year of modern Hebrew (Hebrew 2201-2202, Intermediate Hebrew) or biblical Hebrew (REL 5120, Intermediate Hebrew).* Proficiency at the level of intermediate Hebrew can be demonstrated through testing. If this option is exercised, students will take an additional 6 credit hours of electives toward the major. *In place of biblical or modern Hebrew, interested students may substitute one of the following languages of the Jewish people: Rabbinic Hebrew, Aramaic, Yiddish, Ladino, or Judaeo-Arabic. For languages not presently taught at Vanderbilt, proficiency at the intermediate level may be demonstrated through an exam administered by a designated member of the Jewish Studies faculty. If this option is exercised, students will take an additional 6 credit hours of electives toward the major.
 3. *Electives (minimum of 21 credit hours)*—Any of the courses listed below that are not used to fulfill another requirement towards the major may be counted as an elective with the exception of JS 3880, which cannot count toward the major because it must be taken Pass/Fail. In addition to courses drawn from Arts and Science departments and the professional schools, nontraditional course work may also be selected, including archaeology at Tel Megiddo (Israel), service learning, and internships. Study abroad is encouraged and can be fulfilled with CET Jewish Studies in Prague and at the Hebrew University of Jerusalem.

Honors Program

The Honors Program in Jewish Studies offers superior students a more intensive concentration within their major field. Admission to the program requires:

1. A 3.3 cumulative grade point average.
2. A 3.3 cumulative grade point average in Jewish Studies.
3. Completion of the junior year.

Requirements for graduation with honors in Jewish Studies are:

1. 6 credit hours in Honors sections (JS 4980-4981), including completion of thesis—these credit hours may count as elective credit toward the major. Honors thesis is to be completed by mid-spring of the senior year.
2. Successful completion of an honors oral examination on the topic of the thesis.

Minor in Jewish Studies

The minor in Jewish studies provides a basic understanding of Jewish history and culture across continents and the past three millennia. The minor requires a minimum of 18 credit hours.

1. *Introductory course, 3 credit hours.* JS 1002 or 1002W, Introduction to Jewish Studies, JS 1010: Introduction to Judaism, or JS 1040: Introduction to Modern Jewish History.
2. *Electives (minimum of 15 credit hours).* Any of the courses listed below that are not used to fulfill another requirement toward the minor may be counted as an elective. Special Topics courses or First-Year Writing Seminar courses dealing with topics related to Jewish studies may be counted with the approval of the program director.

LANGUAGE:

Jewish Studies: 4301, Jewish Language and Paleography.

Hebrew (Modern Hebrew): 1101-1102, Elementary Hebrew; 2201-2202, Intermediate Hebrew; 2301, Advanced Hebrew Grammar; 2302W, Advanced Hebrew Composition; 3851-3852; Independent Study in Modern Hebrew.

ELECTIVES:

Jewish Studies: 1002 or 1002W, Introduction to Jewish Studies; 1010, Introduction to Judaism, or 1040, Introduction to Modern Jewish History; 1111.01, In a Pluralistic Age: Jews, Christians, and Muslims in Spain; 1111.02, Music and Identity in Jewish Traditions; 1111.03, Radical Jews from Karl Marx to Noam Chomsky; 1111.04, Civil Rights and Civil Wrongs: Black-Jewish Relations in the 1950s and 1960s; 1111.05, Gender, Sexuality, and Desire in Jewish Literature; 1111.06, Reading across the Boundaries: Arab and Israeli Literature and Culture; 1111.07, From Einstein to Chomsky: Revolutionary Sciences in Jewish America; 1111.09, Jews and Muslims: A Modern History; 1111.10, Jewish Response to Catastrophe; 1111.12, Jews and Hollywood; 1200, Classical Judaism: Jews in Antiquity; 1111.13, The Cold-War Struggle to Free Soviet Jews; 1210W, The Bible as Literature/The Bible and Literature; 1220, Jews in the Medieval World; 2100, The New Testament in Its Jewish Contexts; 2150, Issues in Rabbinic Literature;

2210W, Hebrew Literature in Translation; 2220, Israeli Culture Through Film; 2230W, American Southern Jews in Life and Literature; 2240W, Black-Jewish Relations in Post-War American Literature and Culture; 2250W, Witnesses Who Were Not There: Literature of the Children of Holocaust Survivors; 2260, Coming of Age in Jewish Literature and Film; 2260W, Coming of Age in Jewish Literature and Film; 2270, Jewish Storytelling; 2270W, Jewish Storytelling; 2280, Jewish Humor; 2280W, Jewish Humor; 2290W, Imagining the Alien: Jewish Science Fiction; 2300, Modern Jewish Thought; 2320, Freud and Jewish Identity; 2330, Is G-d Guilty? The Problem of Evil in Judaism; 2340, Jewish Philosophy after Auschwitz; 2400, American Jewish Life; 2420W, American Jewish Music; 2450, The Jewish Diaspora; 2500, Modern Israel; 2520, Zionism: Politics, Religion, and Ethnicity; 2540, Power and Diplomacy in the Modern Middle East; 2560, Social Movements in Modern Jewish Life; 2600, Islam and the Jews; 2620, Jews in Egypt; 2640, Jews and Greeks; 2700W, Judaism and Medicine; 3000, Major Themes in Jewish Studies; 3100, The Holocaust; 3210, Reading across Boundaries: Jewish and Non-Jewish Texts; 3400W, Jerusalem; 3830, Contemporary Jewish Issues; 3883, Internship Research; 3890, Special Topics; 3892, Topics in Ancient and Medieval Jewish History; 3894, Topics in Modern Jewish History; 4301, Jewish Language and Paleography; 4960, Senior Seminar; 4970, Senior Project in Jewish Studies.

Anthropology: 3140, Myth, Ritual, Belief: The Anthropology of Religion.

Classics: 2100, History of the Ancient Near East; 2120, Greece and the Near East from Alexander to Theodosius; 2160, History of Roman Empire; 3010, The Ancient Origins of Religious Conflict in the Middle East.

English: 3370, The Bible in Literature; 3664, Jewish American Literature.

European Studies: 2208, Conspiracy Theories and Rumors in European and U.S. History.

French: 4430, Jews and Arab Muslims in France.

German: 1111, Representing the Holocaust; 2443, German Cinema: Vampires, Victims, and Vamps; 2445, Nazi Cinema: The Manipulation of Mass Culture; 3344, Women at the Margins: German Jewish Women Writers; 4574, Who Am I? German Autobiographies.

History: 1111.18, The Life, Science, and Times of Albert Einstein; 1190, A History of Islam; 1200, The Arab Spring; 2155, Muhammad and Early Islam; 2160, Medicine in Islam; 2170, Islam and the Crusades; 2190, Last Empire of Islam; 2280, Europe, 1900–1945; 2290, Europe since 1945; 2300, Twentieth-Century Germany; 2720, World War II; 3150, Cities of Europe and the Middle East; 3190, Religion, Culture, and Commerce: The World Economy in Historical Perspective; 3210, Muslims, Christians, and Jews in Medieval Spain.

History of Art and Architecture: 2260, The Art of Pagans, Christians, and Jews; 2765, Art since 1945.

Music Literature: 2150, Music, Identity, and Diversity; 2310, The Bible and Music.

Philosophy: 2101, Hellenistic and Late Ancient Philosophy; 2102, Medieval Philosophy; 2103, Modern Philosophy; 2109, Twentieth-Century Continental Philosophy; 3005, Jewish Philosophy; 3006, Islamic Philosophy; 3011, Critical Theory; 3607, Philosophy of Religion; 3657, Humanity, Evolution, and God.

Political Science: 2230, Middle East Politics; 2263, Religion and Politics; 3235, Political Islam.

Religion: 6511, Book of Genesis.

Religious Studies: 1111, First-Year Writing Seminar; 1200, Introduction to Judaism; 1208, Themes in the Hebrew Bible; 1500, Introduction to Islam; HUM1610, The Golden Age of Islam; 2210W, Constructions of Jewish Identity in the Modern World; 2220, Jewish Ethics; 2940, Great Books of Literature and Religion; 3225, Sexuality in the Hebrew Bible and the Ancient Near East; 3229, The Holocaust: Its Meanings and Implications; 3270, Jewish Theories of Religion; 3926, Ancient Goddesses; 3930, Women and Religion; 3940, The Nature of Evil; 3941, Religion, Science, and Evolution; 4552, Islam in the Modern World; 4834, Post-Freudian Theories and Religion; 4837, Psychology of Religious Myth and Ritual; 4938, Marriage in the Ancient Near East and the Hebrew Bible; 4939, Religious Autobiography.

Russian: 2434, The Russian Cinema.

Sociology: 3204, Tourism, Culture, and Place; 3222, Sociology of Religion; 3702, Racial and Ethnic Minorities in the United States.

Latin American Studies

[Program of Concentration in Latin American Studies](#)

[Honors Program](#)

[Minor in Latin American Studies](#)

[Minor in Brazilian Studies](#)

EXECUTIVE DIRECTOR Avery Dickins de Girón

ASSISTANT DIRECTOR Gretchen Selcke

Assistant Professor: Lomeli, Hilario

Assistant Professor of the Practice: Ruiz, Jesus

Principal Senior Lecturer: Selcke, Gretchen

COURSES OFFERED: [LAS](#)

Designated by the U.S. Department of Education as a National Resource Center for Latin America, Vanderbilt's Center for Latin American Studies draws on departmental strengths and faculty expertise from across campus. Integrating teaching, research, and service, the center maintains substantive collaborations with all of Vanderbilt's colleges and schools. The center has special strengths in Maya studies, Brazilian studies, Andean studies, and the Black Atlantic, as well as unique library collections of Colombiana. Programs of instruction provided by the center promote greater understanding of the region's history, culture, political economy, and social organization and cultivate the ability to think strategically about global issues.

Faculty and courses come from the Departments of Anthropology, Economics, History, History of Art and Architecture, Political Science, Sociology, and Spanish and Portuguese as well as from Vanderbilt's education, engineering, law, management, medical, music, and nursing schools. The center fosters a lively research community on campus by sponsoring colloquia, conferences, films, and a speaker series that brings distinguished scholars, government and business leaders, artists, and social activists to campus.

For undergraduates, the Program in Latin American Studies offers an interdisciplinary undergraduate major and a minor in Latin American studies, as well as a minor in Brazilian studies. The program also offers summer opportunities in Brazil and Guatemala, and facilitates study abroad and service learning opportunities in Latin American countries. An honors program is available.

Program of Concentration in Latin American Studies

The major in Latin American studies consists of 36 credit hours plus a language requirement.

I. Language requirement	<i>demonstrated proficiency</i>
II. Core courses	<i>6 credit hours</i>
III. Distribution requirements	<i>12 credit hours</i>
IV. Area of concentration	<i>12 credit hours</i>
V. Electives	<i>6 credit hours</i>

Note: No course may be counted twice in calculating the 36 credit hours. Upon approval of the Committee on Individual Programs and the student's adviser, (a) as many as 6 credit hours may be counted as part of both the interdisciplinary major and a second major, or (b) normally, no more than three introductory-level courses will be counted toward the interdisciplinary major.

I. Language Requirement. A student must acquire advanced knowledge of one Latin American language (Spanish, Portuguese, Haitian Creole, or an indigenous language) and an intermediate knowledge in another Latin American language. The requirement to acquire advanced knowledge of a Latin American language may be satisfied by completing Spanish 3303, or any course with a higher number taught in Spanish, or any course with a higher number taught in Portuguese. The requirement to acquire intermediate knowledge of another Latin American language may be satisfied by successfully completing Spanish 2203, Portuguese 2203, Haitian Creole 2202, or K'iche' 2202. Individual standardized testing may also be used to demonstrate knowledge.

II. Core Courses (6 credit hours)

LAS 2101

LAS 4901

III. Distribution Requirements (12 credit hours). Two relevant classes in two of the following three areas not chosen as the major area of concentration.

- A. History
- B. Language, Literature, and Art History (Departments of Spanish & Portuguese and History of Art and Architecture)
- C. Social Sciences (Departments of Anthropology, Economics, Political Science, Sociology)

IV. Area of Concentration (12 credit hours from one of the following areas; special topics and independent study courses must be approved for sufficient LAS content by major adviser):

A. History.

HISTORY: 1353, Atlantic History in the Digital Age; 1370, Colonial Latin America; 1378, Social Movements in Latin America, 1780-1912; 1379W, The Inquisition in the New World; 1380, Modern Latin America; 1383, Slave Resistance in the Americas; 1384, Law, Gender, and Slave Emancipation in Latin America; 2450, Reform, Crisis, and

Independence in Latin America, 1700–1820; 2457, Drug Trafficking and Society in Latin America; 2470, Modern Mexico; 2480, Central America; 2490, Brazilian Civilization; 2510, Reform and Revolution in Latin America; 2530, African Religions in the Americas; 2535, Latin America and the United States; 2540, Race and Nation in Latin America; 2570, Caribbean History, 1492–1983; 3100, Pirates of the Caribbean; 3280, Popular Cultures in Modern Latin America; 3850, Independent Study; 3890, Selected Topics in History.

LATIN AMERICAN STUDIES: 2102, Brazil: Past, Present, and Future.

B. Language, Literature, History of Art.

AFRICAN AMERICAN AND DIASPORA STUDIES: 1706, Capoeira: Afro-Brazilian Race, Culture, and Expression; 2148, Blacks in Latin America and the Caribbean; 2356, African Spirits in Exile: Diaspora Religions in the Americas; 3248, Atlantic African Slave Trade.

CREOLE: 1101, Elementary Creole I; 1102, Elementary Creole II; 2201, Intermediate Creole I; 2202, Intermediate Creole II.

HISTORY OF ART AND ARCHITECTURE: 3718W, Twentieth-Century Mexican Art: Painting, Cinema, Literature; 3850, Independent Research; 4960, Advanced Seminar.

K'ICHE': 1101, Elementary K'iche' I; 1102, Elementary K'iche' II; 2201, Intermediate K'iche' I; 2202, Intermediate K'iche' II.

LATIN AMERICAN STUDIES: 2102, Brazil: Past, Present, and Future; 2301, Music of Protest and Social Change in Latin America; 4550, Gender, Sexuality, and Family in Latin America.

PORtUGUESE: 1103, Intensive Elementary Portuguese; 2203, Intermediate Portuguese; 3301, Portuguese Composition and Conversation; 3302, Brazilian Pop Culture; 3303, Introduction to Luso-Brazilian Literature; 3850, Independent Study; 3892, Special Topics in Portuguese Language, Literature, or Civilization; 4350, Brazilian Culture through Native Material; 4420, Brazilian Literature through the Nineteenth Century; 4425, Modern Brazilian Literature.

SPANISH: 2201, Intermediate Spanish; 2203, Intermediate Spanish; 2204, Intensive Intermediate Spanish; 2995, Contemporary Latin American Prose Fiction in English Translation; 3301W, Intermediate Spanish Writing; 3302, Spanish For Oral Communication Through Cultural Topics; 3303, Introduction to Spanish and Spanish American Literature; 3320, Introduction to Hispanic Cultural Studies; 3330, Cultural Studies in the Andes; 3340, Advanced Conversation; 3345, Spanish for Business and Economics; 3350, Spanish for the Legal Profession; 3355, Advanced Conversation through Cultural Issues in Film; 3360, Spanish Civilization; 3375, Film and Culture in Latin America; 3830, Spanish for the Medical Profession; 3835, Latino Immigration Experience; 3850, Independent Study; 3891, Special Topics in Hispanic Culture; 3892, Special Topics in Spanish Language and Linguistics; 3893, Special Topics in Hispanic Literature; 4310, Translation and Interpretation; 4325, Dialectology; 4340, History of the Spanish Language; 4400, The Origins of Spanish Literature; 4405, Literature of the Spanish Golden Age; 4415, Spanish Literature from 1900 to the Present; 4420, Spanish American Literature from the Conquest to 1900; 4425, Spanish American Literature from 1900 to the Present; 4440, Development of the Short Story; 4445, Development of the Novel; 4450, The Contemporary Novel; 4455, Development of Drama; 4465, The Theory and Practice of Drama; 4470, Development of Lyric Poetry; 4550, The Theory and Practice of Literary Translation; 4620, Love and Honor in Medieval and Golden Age Literature; 4640, *Don Quixote*; 4720, Literary Genres and National Identities in Latin America; 4725, Jungle Narratives in Latin America; 4730, Modern Latin American Poetry; 4741, Spanish-American Literature of the Post-Boom Era; 4750, Afro-Hispanic Literature; 4755, Latina and Latin American Women Writers; 4760, Literature and Medicine; 4810, Images of the City.

C. Social and Natural

ANTHROPOLOGY: 2105, Race in the Americas; 2106, Culture and Power in Latin America; 2108, Indigenous Peoples of Lowland South America; 2110, Gender and Cultural Politics; 2113, Food, Identity, and Culture; 2227, Food in the Ancient World; 2230, South America Archaeology; 2231, Ancient Andean Civilizations; 2242, The Archaeology of Ancient Maya Civilization; 2603, Comparative Writing Systems; 3121, Global Wealth and Poverty; 3122, The Anthropology of Globalization; 3130, Andean Culture and Society; 3133, Political Anthropology; 3134, Human Rights of Indigenous Peoples; 3140, Myth, Ritual, Belief: The Anthropology of Religion; 3141, Anthropology of Healing; 3143, Medical Anthropology; 3161, Colonial Encounters in the Americas; 3200, Ancient Cities; 3202, The Collapse of Civilizations; 3240, Ancient Mesoamerican Civilizations; 3241, The Aztecs; 3242, The Archaeology of the Ancient Maya Civilization; 3243, Classic Maya Religion and Politics; 3250, The Inca Empire; 3850- 3851, Independent Research; 3622W, Classic Maya Language and Hieroglyphs; 3867, Digital Archaeology: Analysis and Curation of Material Culture; 3890, Special Topics; 4156, Racial Experience and Politics; 4373, Health and Disease in Ancient Populations.

ECONOMICS: 2220, Latin American Development; 3600, International Trade; 3650, Development Economics; 3851-3852, Independent Study in Economics; 4520W, Seminar on Globalization.

Note: Students who successfully complete an Economics course on this list numbered 4520W or higher may also receive Area of Concentration credit for successfully completing either Economics 3010 or 3020.

MEDICINE, HEALTH, AND SOCIETY: 2410, HIV/AIDS in the Global Community; 2420, Economic Demography and Global Health; 2610, Global Health Crises; 3210, Health, Development, and Culture in Guatemala; 3212, Health, Development, and Culture in Guatemala; 3890, Social Medicine in Latin America.

POLITICAL SCIENCE: 2213, Democratization and Political Development; 2219, Politics of Mexico; 2225, International Political Economy; 2236, The Politics of Global Inequality; 2251, The Politics of U.S. and Global Immigration; 3217, Latin American Politics; 3218, Public Opinion and Democracy in Latin America; 3219, La política de América Latina; 3228, International Politics of Latin America; 3897, Selected Topics; 3851-3852, Independent Research.

SOCIOLOGY: 3232, Contemporary Mexican Society; 3321, Population and Society; 3322, Immigration in America; 3851, Independent Research and Writing.

V. *Electives* (6 credit hours). Any two classes listed above (or others approved by the major adviser).

Honors Program

An honors program is available, acceptance into which must be approved by the director of undergraduate studies. Students must have a minimum 3.3 cumulative GPA and a 3.3 GPA in courses that count toward the Latin American studies major to be accepted into the program. The Honors Program requires: completion of 6 credit hours in LAS 3851 and 3852; the writing of an honors thesis; and passing an oral honors examination. Interested students should consult their academic adviser during their junior year.

Minor in Latin American Studies

Students must complete 15 credit hours of approved courses with Latin American content, including Latin American Studies 2101. In addition, students must demonstrate intermediate knowledge of one Latin American language by successfully completing Spanish 2203, Portuguese 2203, Haitian Creole 2202 or K'iche' 2202. Courses taken to satisfy the language requirement may not be counted toward the 15 credit hours of core courses. Individual standardized testing may also be used to demonstrate knowledge.

Course selection must be approved by the undergraduate adviser of the Program in Latin American Studies.

Minor in Brazilian Studies

The Program in Latin American Studies also offers a minor in Brazilian studies. Students must complete 15 credit hours of approved courses with Brazilian content including LAS 2102 and Portuguese 2203. In addition, students must complete three additional courses from the Areas of Study listed below: one course in Area I, one course in Area II, and one course in Area III. Proficiency at the level of intermediate Portuguese can be demonstrated through testing. If this option is exercised, students must take 3 credit hours of course work approved by the director of undergraduate studies in lieu of the 3 credit hours of PORT 2203.

Course selection must be approved by the director of undergraduate studies for Latin American Studies. Other elective courses, including special topics courses, may be counted toward the minor with the approval of the director of undergraduate studies.

Requirements for completion of the minor include at least 15 credit hours as follows:

1. 3 credit hours of LAS 2102: Brazil: Past, Present, and Future
2. 3 credit hours of PORT 2203: Intermediate Portuguese (PORT 1103 is a prerequisite)
3. 3 credit hours from Area I: Portuguese Language and Literature
4. 3 credit hours from Area II: Brazilian Society, History, and Cultures
5. 3 credit hours from Area III: Brazil in Regional and Global Context

Areas of Study

Area of Study I: Portuguese Language and Literature

PORTRUGUESE: 3301, Portuguese Composition and Conversation; 3303, Introduction to Luso-Brazilian Literature; 4420, Brazilian Literature through the Nineteenth Century; 4425, Modern Brazilian Literature.

Area of Study II: Brazilian Society, History, and Cultures

ANTHROPOLOGY: 2108, Indigenous Peoples of Lowland South America.

HISTORY: 2490, Brazilian Civilization.

PORTRUGUESE: 3302, Brazilian Pop Culture; 4350, Brazilian Culture through Native Material; 3891, Special Topics in Portuguese and Brazilian Literature or Civilization in English Translation.

Area of Study III: Brazil in Regional and Global Context

AFRICAN AMERICAN AND DIASPORA STUDIES: 2148, Blacks in Latin America and the Caribbean; 3248, Atlantic African Slave Trade; 1706, Capoeira: Afro-Brazilian Race, Culture, and Expression.

ANTHROPOLOGY: 2106, Culture and Power in Latin America.

ECONOMICS: 2220, Latin American Development.

HISTORY: 1370, Colonial Latin America; 1380, Modern Latin America; 1383, Slave Resistance in the Americas; 2450, Reform, Crisis, and Independence in Latin America, 1700–1820; 2510, Reform and Revolution in Latin America; 2540, Race and Nation in Latin America.

POLITICAL SCIENCE: 3217, Latin American Politics; 3228, International Politics of Latin America.

SOCIOLOGY: 3231, Contemporary Latin America.

Latino and Latina Studies

[Program of Concentration in Latino and Latina Studies](#)

[Minor in Latino and Latina Studies](#)

EXECUTIVE DIRECTOR Avery Dickins de Girón

INTERIM DIRECTOR Edward Wright-Rios

ASSISTANT DIRECTOR Gretchen Selcke

Assistant Professor: Lomeli, Hilario

Assistant Professor of the Practice: Ruiz, Jesus

Principal Senior Lecturer: Selcke, Gretchen

COURSES OFFERED: [LATS](#)

Latino and Latina Studies focuses on cultural production and political and socioeconomic experiences of people inculcated with the US experience, self-identifying as Latinx and communicating primarily in English and sometimes in Spanish. The LATS major and minor will examine this enduring and dynamic population that crosses and re-crosses borders constructed by geography, linguistics, class, race, and gender. This program of study is designed to accommodate a range of voices and multiple manifestations of Latinx identity and cultural expression in historical and contemporary contexts to fill in this vital but often overlooked component of our national identity and discourse.

Students pursuing a LATS major or minor are expected to obtain language competence in Spanish before completing the program, though they do not need to meet this requirement when declaring the major or minor. Students may satisfy this requirement by completing SPAN 3303, or any other course with a higher number taught in Spanish.

Program of Concentration in Latino and Latina Studies

The interdisciplinary major in Latino and Latina studies consists of thirty-six (36) credit hours. The specific requirements are as follows:

1. LATS 2201, Introduction to Latino and Latina Studies (3 credit hours)
2. SPAN 3303, Introduction to Spanish and Spanish American Literature (3 credit hours)

SPAN 3303 requires up to 19 prerequisite credit hours of Spanish language instruction through SPAN 3302, depending on departmental placement.

3. ENGL 3658, Latino-American Literature (3 credit hours)
4. LATS 4961, Latino and Latina Studies Capstone, which is usually taken in the senior year (3 credit hours)
5. Eight elective courses (24 credit hours) with at least two courses from Group A (Latino and Latina Culture) and two courses from Group B (Historical Context), that have not already been applied to satisfy above requirements.

Minor in Latino and Latina Studies

Students pursuing the interdisciplinary minor must complete eighteen (18) credit hours. The specific requirements areas follows:

1. LATS 2201, Introduction to Latino and Latina Studies (3 credit hours)

2. SPAN 3303 or ENGL 3658 (3 credit hours)

If both courses are taken, only one may be applied as elective credit.

3. LATS 4961, Latino and Latina Studies Capstone (3 credit hours)

4. Three other courses (9 credit hours), with at least one course from Group A (Latino and Latina Culture) and one course from Group B (Historical Context), that have not already been applied to satisfy above requirements.

Approved List of Courses

Category A: Latino and Latina Culture

AFRICAN AMERICAN AND DIASPORA STUDIES: 1706, Capoeira: Afro-Brazilian Race, Culture, and Expression; 2148, Blacks in Latin America and the Caribbean.

ENGLISH: 1111-19 FYWS, Growing Up Latino and Latina; 1210-08 Prose Fiction, "Estamos Aquí:" Belonging in Contemporary Latinx Fiction; 1220-01 Drama, Forms and Techniques: Latinx Plays and Performance; 3658, Latino-American Literature.

HISTORY: 2725, Race, Power, and Modernity; 2540, Race and Nation in Latin America; 3280, Popular Cultures in Modern Latin America.

HUMAN AND ORGANIZATIONAL DEVELOPMENT: 3221, Health Service Delivery to Diverse Populations.

LATINO AND LATINA STUDIES: 3831, Latino and Latina Business and Entrepreneurship; 3880 and 3881, Latino and Latina Studies Internship Training and Internship Readings and Research; 3850, Independent Study.

LATIN AMERICAN STUDIES: 2601, Latin America, Latinos, and the United States.

SOCIOLOGY: 3702, Racial and Ethnic Minorities in the United States; 3322, Immigration in America.

SPANISH: 2995, Contemporary Latin American Prose Fiction in English Translation; 3302, Spanish for Oral Communication Through Cultural Topics; 3303, Introduction to Spanish and Spanish American Literature; 3345, Spanish for Business and Economics; 3375, Film and Culture in Latin America; 3830, Spanish for the Medical Profession; 3835, Latino Immigration Experience; 3893-01, Special Topics in Hispanic Literature—Latinx US Literature; 3893-02, Special Topics in Hispanic Literature—Contemporary Mexican Literature and Culture; 4350, Communicating Across Cultures; 4450, The Contemporary Novel; 4720, Literary Genres and National Identities in Latin America; 4725, Jungle Narratives in Latin America; 4730, Modern Latin American Poetry; 4750, Afro-Hispanic Literature; 4755, Latina and Latin American Women Writers; 4765, Latina American Fiestas: Mexico, The Andes, and the Caribbean; 4810, Images of the City.

Category B: Historical Context

AFRICAN AMERICAN AND DIASPORA STUDIES: 2356, African Spirits in Exile: Diaspora Religions in the Americas; 3248, Atlantic African Slave Trade; 3178, Colonialism and After.

ANTHROPOLOGY: 1111 FYWS, Conquest of Mexico; 2106, Culture and Power in Latin America; 2108, Indigenous Peoples of Lowland South America; 2214, Art and Architecture in the Ancient Americas; 2220/2220W, Human Landscapes; 2230, South American Archaeology; 2231, Ancient Andean Civilizations; 2242/2242W The Archaeology of the Ancient Maya Civilization; 2160/2160, Creating Community; 2371, Reading the Bones: Bioarchaeology and Forensic Studies in the Peruvian Andes; 3130, Andean Culture and Society; 3161, Colonial Encounters in the Americas; 3162, Material Culture of New World Slavery; 3202, The Collapse of Civilizations; 3240, Ancient Mesoamerican Civilizations; 3241, The Aztecs; 3243/3243W, Ancient Maya Gods and Rulers; 3250, The Inca Empire; 3622/3622W, Classic Maya Language and Hieroglyphs.

ENGLISH: 3654, African American Literature; 3674, Caribbean Literature.

HISTORY: 1111 FYWS, Destruction of the Indies; 1370, Colonial Latin America; 1378, Social Movements in Latin America; 1379W, The Inquisition in the New World: Law, Deviance, and Heresy in Colonial Mexico; 1380, Modern Latin America; 1383, Slave Resistance in the Americas; 1385W, Disease and Disorder in the Atlantic World; 2450, Reform, Crisis, and Independence in Latin America, 1700–1820; 2457, Drug Trafficking and Society in Latin America; 2470, Revolutionary Mexico; 2480, Central America; 2490, Brazilian Civilization; 2510, Reform and Revolution in Latin America; 2530, African Religions in the Americas; 2535, Latin America and the United States; 2542, Cuba and the United States; 2544, Panama: Global Crossroads; 2570, Caribbean History, 1492–1983; 2570, Immigration, the United States, and the World; 2580, American Indian History before 1850; 2590, American Indian History since 1850; 2845, Race, Gender, and Slave Emancipation.

LATIN AMERICAN STUDIES: 2101, Introduction to Latin America; 2301, Music of Protest and Social Change in Latin America; 3891, Special Topics in Latin American Studies; 4550, Gender, Sexuality, and Family in Latin America.

MUSIC LITERATURE: 2110, Music in Latin America and the Caribbean.

PORUGUESE: 2900, Brazilian Civilization through English Language Material.

SOCIOLOGY: 3231, Contemporary Latin America; 3602, Change and Social Movements in the Sixties.

SPANISH: 3320, Introduction to Hispanic Cultural Studies; 3330, Cultural Studies in the Andes; 3365, Film and Recent Cultural Trends in Spain; 3892, Special Topics in Spanish Language and Linguistics; 4450, The Contemporary Novel; 4465, The Theory and Practice of Drama; 4740, Spanish-American Literature of the Boom Era; 4741, Spanish-American Literature of the Post-Boom Era; 4760, Literature and Medicine.

Category C: Critical Perspectives

AFRICAN AMERICAN AND DIASPORA STUDIES: 1010, Introduction to African American and Diaspora Studies.

ANTHROPOLOGY: 2105, Race in the Americas; 3134, Human Rights of Indigenous Peoples.

ECONOMICS: 2100, Labor Economics; 2220 Latin American Development.

ENGLISH: 3742, Feminist Theory.

PHILOSOPHY: 3617, Philosophy of Language.

POLITICAL SCIENCE: 2208, Law, Politics, and Justice; 2219, Politics of Mexico; 2251, The Politics of U.S. and Global Immigration; 3217, Latin American Politics; 3228, International Politics of Latin America; 3264W, Global Feminisms.

SOCIOLOGY: 3312, Environment and Development; 3232, Contemporary Mexican Society; 3314, Environmental Inequality and Justice; 3612, Class, Status, and Power; 3701, Racial Domination, Racial Progress; 3704, Race, Gender, and Sport.

WOMEN'S AND GENDER STUDIES: 1150/1150W, Sex and Gender in Everyday Life; 3201, Women and Gender in Transnational Context.

Mathematics

[Program of Concentration in Mathematics](#)

[Honors Program](#)

[Minor in Mathematics](#)

[Licensure for Teaching](#)

[Calculus](#)

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DIRECTOR OF UNDERGRADUATE STUDIES Henry Chan

DIRECTOR OF GRADUATE STUDIES Anna Marie Bohmann

Professors, Emeriti: John Ahner, Philip Crooke, Paul Edelman, Richard Goldberg, Matthew Gould, Robert Hemminger, C. Hughes, Ettore Infante, Gennadi Kasparov, Richard Larsen, Ralph McKenzie, Michael Mihalik, Alexander Olshanskiy, Michael Plummer, John Ratcliffe, Eric Schechter, Constantine Tsinakis, Daoxing Xia

Professors: Akram Aldroubi, Dietmar Bisch, Mark Ellingham, Douglas Hardin, Dan Margalit, Marian Neamtu, Denis Osin, Jesse Peterson, Edward Saff, Larry Schumaker, Gieri Simonett, Jared Speck, Glenn Webb, Dechao Zheng

Associate Professor, Emeriti: Steven Tschantz

Associate Professors: Anna Marie Bohmann, Marcelo Disconzi, Spencer Dowdall, Ioana Suvaina

Assistant Professors: Madeline Brandt, Alexandru Lupsasca, Jean-Francois Paquet, Larry Rolen

Principal Senior Lecturer, Retired: Pamela Pigg

Principal Senior Lecturers: John Rafter, Lori Rafter

Senior Lecturer, Emerita: Jo Ann Staples

Senior Lecturers: Henry Yi-Wei Chan, Dylan Domel White, William Goode, Michael Griffin, Jacob Haley, Blane Hollingsworth, Shitu Fawaz Jimoh, Alice Mark, Sean McAfee, Taylor Rhoads, Sam Sehayek, Li Ying, Yuegiao Zhang

COURSES OFFERED: [MATH](#)

The Department of Mathematics offers an undergraduate major with a high degree of flexibility. A solid background in mathematics provides an excellent foundation for any quantitative discipline as well as many professions—many students go on to professional studies in law, medicine, or business.

Program of Concentration in Mathematics

Three tracks are available.

Program I (Standard Track) is intended for most mathematics majors in the College of Arts and Science, Blair School of Music, and Peabody College.

Program II (Applied Track) is intended for students in the School of Engineering who elect a second major in mathematics but is also available for other students.

Program III (Honors Track) is intended for highly qualified students who either are preparing for graduate studies in mathematics or plan to graduate with departmental honors. Students who complete this program and, in addition, complete a senior thesis will graduate with departmental honors.

Requirements for the three tracks are summarized below.

Program I (Standard Track)

At least 32 credit hours in mathematics including at least 15 credit hours taken at Vanderbilt, as follows.

1. A calculus sequence: 1300–1301–2300, 1300–1301–2310, or 1300–1301–2500–2501.
2. Linear algebra and differential equations: 2600 or 2500–2501, and 2610.
3. At least 15 additional credit hours from 2800 or above.
4. The remainder of the credit hours must be chosen from 2800 or above.

Program II (Applied Track)

At least 29 credit hours in mathematics including at least 15 credit hours taken at Vanderbilt and 6 credit hours outside the department, as follows.

1. A calculus sequence as in Program I.
2. Linear algebra and differential equations—one of the following:
 - a. one of 2410, 2600, or 2500–2501, and one of 2420 or 2610; or
 - b. 2400 and either 2600 or 2500–2501.
3. At least 12 additional credit hours from 2800 or above, excluding 3000.
4. The remainder of the credit hours in mathematics must be chosen from 2800 or above.
5. At least 6 credit hours of advanced, mathematically based science or engineering courses approved by the director of undergraduate studies. This requirement is automatically fulfilled by students who complete a physics major or a major in the School of Engineering.

Program III (Honors Track)

At least 38 credit hours in mathematics including at least 15 credit hours taken at Vanderbilt, as follows.

1. A calculus sequence as in Program I.

2. Linear algebra and differential equations as in Program I.
3. At least 21 additional credit hours of advanced course work,
 - a. including four courses taken from the following three categories, at least one from each category:
 1. Algebra: 3300, 4300, 4301.
 2. Analysis: 3100, 3110, 6100, 6101.
 3. Topology and Geometry: 3200, 3230, 4200, 4201, 4220, 6210.
 4. The remainder of the 21 credit hours must be chosen from 2800 or above, excluding 4999.
4. The remainder of the credit hours must be chosen from 2800 or above.

Students who complete Program III and, in addition, fulfill the Honors requirements listed below, will graduate with departmental honors.

Students planning to teach in secondary school should contact the director of secondary education programs in the Department of Teaching and Learning at Peabody College for course recommendations.

Honors Program

The Honors Program in Mathematics is designed to afford superior students the opportunity to pursue more intensive work within their major field. The program requires:

1. Completion of all the requirements of Program III (Honors Track).
2. Graduate with a minimum grade point average of 3.6 in courses that count toward the mathematics
3. Completion of a senior thesis, typically in the second semester of the senior year. With approval of the director of undergraduate studies, the thesis may be based on research initiated or completed at another academic institution, such as during a summer REU
4. Oral examination on the senior thesis. A committee of at least three faculty members—at least two from the Department of Mathematics, one being the thesis adviser—shall evaluate the thesis and the oral examination. Exceptional achievement on the thesis will earn highest

Interested students may apply to the director of undergraduate studies for admission to the Honors Program in their junior year or the first semester of their senior year. Applicants must meet college requirements for entry to the Honors Program and must maintain a minimum grade point average of 3.6 in courses that count toward the mathematics major.

The application includes a one- to two-page proposal of the planned thesis and the signature of the faculty member who will be the thesis adviser.

The thesis must be submitted no later than two weeks before the end of classes in the semester of graduation. The oral examination will take place by the last day of classes in the semester of graduation. Highest honors will be awarded for a thesis that contains original high-quality research results in combination with an oral defense at the highest quality level.

Students may sign up for Math 4999 during one semester of their senior year. Math 4999 will not count toward the 21 credit hours requirement in Program III.

Please consult the director of undergraduate studies for details.

Minor in Mathematics

The minor in mathematics requires at least 15 credit hours in mathematics, including:

1. Completion of a calculus sequence: 2300, 2310, or 2500-2501.
2. Linear algebra and differential equations: as in the Program II major.

3. At least 6 credit hours not used to satisfy item 2 from 2800 or above.

Completion of a single-variable calculus sequence (1300–1301) is a prerequisite for the minor, but does not count toward the credit hours of the minor.

Licensure for Teaching

Candidates for teacher licensure at the secondary level in mathematics should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Calculus

Several calculus sequences are available: 1100; 1200–1201; 1300–1301–2300; 1300–1301–2310.

The courses in these sequences cover similar material, but at different rates, and therefore overlap in content and credit. Students should not switch from one to another without approval of the department. Such switching may result in loss of credit. Students intending to take mathematics classes beyond one year of calculus are advised to enroll in the 1300–1301–2300 sequence or in the 1300–1301–2310 sequence.

First-year students with test scores of 5 on the Calculus BC advanced placement examination, thereby earning AP credit for 1300–1301, may choose to enroll in the 2500–2501 sequence. The combination of 2500–2501 is a blend of multivariable calculus and linear algebra, with an emphasis on rigorous proofs.

Mechanical Engineering

[Degree Programs](#)

[Undergraduate Honors Program](#)

[Facilities](#)

[Curriculum Requirements](#)

[Specimen Curriculum for Mechanical Engineering](#)

INTERIM CHAIR Haoxiang Luo

DIRECTOR OF UNDERGRADUATE STUDIES Kenneth D. Frampton

DIRECTOR OF GRADUATE STUDIES Jason G. Valentine

DIRECTOR OF GRADUATE RECRUITING Leon M. Bellan

PROFESSORS EMERITI Thomas A. Cruse, Donald L. Kinser, Robert L. Lott Jr., Carol A. Rubin, Taylor G. Wang, John W. Williamson

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PROFESSORS OF THE PRACTICE Amrutar V. Anilkumar, Kenneth D. Frampton, Thomas J. Withrow

ADJOINT PROFESSOR Dong Cha, Simone De Liberato, Pietro Vadastri, Peiyong Wang

ASSOCIATE PROFESSORS Leon M. Bellan, Ravindra Duddu, Greg Walker, Karl E. Zelik

RESEARCH ASSOCIATE PROFESSORS Kevin Galloway

ASSISTANT PROFESSORS Xiaogung Dong, Piran Kidambi, Justus C. Ndukaife, Jie Ying Wu

ASSISTANT PROFESSORS OF THE PRACTICE Jason Mitchell, Ranjana Sahai

RESEARCH ASSISTANT PROFESSOR Richard J. Hendrick

ADJOINT ASSISTANT PROFESSOR Thomas Folland, Carl A. Hall, Stephanie Law, Derek Wolf

COURSES OFFERED: [ME](#)

The vitality of our nation depends upon innovation in the design of new machines, devices to satisfy society's needs, engines to produce power efficiently, equipment to condition the environment of our buildings, and the systems to use and control these engineered products. Mechanical engineers are involved in solving problems by originating design concepts, developing products and processes of manufacture, and designing hardware and the systems needed to satisfy society's demands. Mechanical engineers work in virtually all industries.

The study of mechanical engineering requires a basic understanding of mathematics, chemistry, physics, and the engineering sciences. Mechanical engineering education emphasizes solid mechanics; dynamics of machines; aerodynamics; propulsion devices; material behavior; power producing and environmental conditioning processes; control of dynamics of machines; energy conversion; and the synthesis, development, evaluation, and optimization of designs of devices and systems.

Degree Programs. The Department of Mechanical Engineering offers the B.E., M.Eng., M.S., and Ph.D. in mechanical engineering.

The curriculum in mechanical engineering leading to a bachelor of engineering provides a broad-based engineering education with opportunities for the student to elect courses in areas of study related to any industry and, with careful planning of the elective courses, to achieve some specialization. The mechanical engineering program prepares an individual to become a practicing engineer who can participate fully in the engineering activities of design, building, operation, production, maintenance, safety, marketing, sales, research, and administration.

Undergraduate Honors Program. See the Special Programs chapter for general requirements of the professional Honors Program in mechanical engineering. Honors candidates choose their technical elective courses with the advice and consent of an honors adviser. Each candidate is expected to take 3 hours of ME 3860 in a single semester and at least 6 hours of graduate courses numbered 5000 or higher, including one course numbered 8000 or higher. A formal written honors thesis on the candidate's research must be approved by the honors adviser and the department chair. Honors candidates shall meet all Engineering School requirements in the nontechnical areas. The diploma designation is Honors in Mechanical Engineering.

Facilities. Undergraduate instructional laboratories are equipped for studies in heat and power, refrigeration and air-conditioning, fluid flow, heat transfer, design, controls, robotics, instrumentation, and biomechanics. Specialized facilities for robotic surgery, rehabilitation robotics, energy storage, medical microfluidics, thermal transport, combustion characterization, and photonics are used for both faculty-led research and instruction. The department also maintains various maker spaces including machine shops and design studios for fabrication of experimental equipment and for instruction.

Curriculum Requirements

The B.E. in mechanical engineering requires a minimum of 126 hours, distributed as follows:

1. Mathematics (17 hours). Required courses: MATH 1300, 1301, 2300, 2420. Required elective: MATH courses numbered 2410 and above, except MATH 3000.
2. Basic Science (16 hours). Required courses: CHEM 1601, 1601L; MSE 1500, 1500L (or CHEM 1602, 1602L); PHYS 1601, 1601L, 1602, 1602L.
3. Engineering Science (25 hours). Required courses: ES 1401, 1402, 1403; CE 2200, 2205; CS 1100 or 1101 or 1103 or 1104 or DS 1100; ECE 2112; ME 2190, 2220, 3224; MSE 2205.
4. Liberal Arts Core (18 hours). To be selected to fulfill the Liberal Arts Core requirements listed in the Degree Programs in Engineering.
5. Open electives (6 hours).
6. ME core (26 hours). ME 2160, 2171, 3202, 3204, 3234, 3248, 4213, 4950, 4951, and 4959
7. Technical electives (9 hours). To be selected from the following approved courses. Courses selected from the College of Arts and Science must be designated a Mathematics and Natural Sciences (MNS) course in the AXLE curriculum.
 - a. School of Engineering courses except CS 1000, 1151; DS 1000, 3850, 3851, 3891; ENGM 2440, 3350, 4800; ES 2700, 2900, 3884; and any course numbered 2860
 - b. Mathematics courses numbered 2420 or higher except MATH 3000
 - c. Chemistry courses numbered 2000 or higher
 - d. Physics courses numbered 2000 or higher
 - e. Astronomy courses
 - f. Biological Science courses
 - g. Earth and Environmental Science courses
 - h. Neuroscience courses

At least 3 hours of technical electives must be numbered 2000 or above.

8. Professional (ME) depth (a minimum of 9 hours). Each student must choose at least 9 hours of ME elective courses. No more than 6 hours of 3850 and 3860 combined can be credited toward ME depth electives.

No one-credit-hour ME course except 3841 can be used as a mechanical engineering elective. A maximum of three one-credit-hour ME courses may be used as technical electives. Additional ME one-credit-hour courses can be open electives. At least one "W"-designated course (3 hours) in the English language must be included on a graded basis.

Undergraduates in mechanical engineering may apply the pass/fail option only to non-departmental courses taken as open electives, technical electives, or part of the liberal arts core, subject to the school requirements for pass/fail.

Specimen Curriculum for Mechanical Engineering

		Semester hours
SOPHOMORE YEAR		
		FALL SPRING
ME 2160	Introduction to Mechanical Engineering Design	3 -
MATH 2300	Multivariable Calculus	3 -
MATH 2420	Methods of Ordinary Differential Equations	- 3
PHYS 1602, 1602L	General Physics II and Laboratory	4 -
CE 2200	Statics	3 -
ME 2171	Instrumentation Laboratory	- 2
ME 2190	Dynamics	- 3
ME 2220	Thermodynamics	- 3
ECE 2112	Circuits I	- 3

	Liberal Arts Core	3	3
		16	17
JUNIOR YEAR		FALL	SPRING
ME 3202	Machine Analysis and Design	3	-
ME 3204	Mechatronics	-	3
ME 3224	Fluid Mechanics	3	-
ME 3234	System Dynamics	4	-
ME 3248	Heat Transfer	-	3
CE 2205	Mechanics of Materials	3	-
MSE 2205	Strength and Structure of Engineering Materials	1	-
	Mechanical Engineering Elective	-	3
	Open Elective	-	3
	Liberal Arts Core	3	-
	Mathematics Elective	-	3
		17	15
SENIOR YEAR			
ME 4213	Energetics Laboratory	2	-
ME 4950	Design Synthesis	2	-
ME 4951	Engineering Design Projects	-	3
ME 4959	Senior Engineering Design Seminar	1	-
	Mechanical Engineering Elective	3	3
	Liberal Arts Core	3	3
	Technical Elective	6	3
	Open Elective	-	3
		17	15

Medicine, Health, and Society

[Program of Concentration in Medicine, Health, and Society](#)

[Honors Program](#)

[Minor in Medicine, Health, and Society](#)

[Approved Courses](#)

DIRECTOR Jonathan M. Metzl

ASSISTANT DIRECTOR JuLeigh Petty

DIRECTOR OF UNDERGRADUATE STUDIES Dominique Behague

DIRECTOR OF GRADUATE STUDIES JuLeigh Petty

DIRECTOR OF ADVISING Courtney S. Peterson

Professor, Emeriti: Hector Myers

Professor: Jonathan Metzl

Associate Professors: Dominique Behague, Jennifer Gaddy, Gilbert Gonzales, Mozhdeh Hamraie, Martha Jones, Kenneth MacLeish, Tara McKay, Laura Stark

Assistant Professors: Panka Bencsik, Kirsty Clark, Marcus Dillender, Lucie Kalousova, Julie Ward, Katherine Wen

Principal Senior Lecturers: Courtney Peterson, JuLeigh Petty

Senior Lecturers: Heidi Bludau, Jaime Bruce, Celina Callahan-Kapoor, Lauren Mitchell

Writers in Residence: Fatima Kola, Odie Lindsey, Samuel Quinones, Caroline Williams

COURSES OFFERED: [MHS](#)

The Program in Medicine, Health, and Society offers an interdisciplinary major (36 credit hours) and minor (18 credit hours) for students interested in studying health-related beliefs and practices in their social and cultural contexts. As part of the requirements of the major, students must declare and complete 12 credit hours in one of the six concentrations in Medicine, Health, and Society: global health; health behaviors and health sciences; health economics and policy; inequality, intersectionality, and health justice; medicine, humanities, and arts; or critical health studies. An honors program is available. MHS draws on a variety of fields in the social sciences and humanities—anthropology, economics, history, literature, philosophy/ethics, psychology, sociology, and religious studies. The major will be of particular interest to students preparing for careers in health-related professions as well as to students interested in examining an important part of human experience from multiple perspectives and developing a critical understanding of contemporary society. Students are encouraged to take advantage of the opportunities offered by the Center for Medicine, Health, and Society. Visit vanderbilt.edu/mhs for more details.

The program is directed by Jonathan M. Metzl, Frederick B. Rentschler II Professor of Sociology and Medicine, Health, and Society.

Program of Concentration in Medicine, Health, and Society

The major requires a minimum of 36 credit hours of course work, distributed as follows:

Note: No more than 21 credit hours may be in courses designated MHS. Other than MHS, no more than 12 credit hours may be in the same subject area; A&S Psychology and Peabody Psychology are considered the same subject area for purposes of the major/minor.

1. Core Courses — Students must complete one of the following (3 credit hours):

MHS 1920, Politics of Health

MHS 1930, Social Dimensions of Health and Illness

MHS 1940, Racial and Ethnic Health Disparities

MHS 1950, Theories of the Body

MHS 1960, Health Humanities

MHS 2110, American Medicine in the World

MHS 2800, Foundations of Population Health Theory and Practice

2. Concentration — Students must complete four courses not used to satisfy the core course requirement or the elective requirements in one of the following six concentrations (12 credit hours). Students must declare one of the following concentrations when they declare the major.

Note: Courses must be from at least two subject areas.

- A. Global health
- B. Health policies and economies
- C. Health behaviors and health sciences
- D. Inequality, intersectionality, and health justice
- E. Medicine, humanities, and arts
- F. Critical health studies

See below for a list of courses that count for Concentrations A, B, C, D, and E. Students choosing concentration F must propose a set of four courses (12 credit hours) that form a coherent program of study related to critical health studies and receive approval from the director of undergraduate studies.

3. Electives — Seven courses not used to satisfy the core course or concentration requirements chosen from the list of approved courses (21 credit hours).

4. Disciplinary Requirement — At least 3 credit hours from the following courses must be used to satisfy the concentration requirement or electives requirement.

ANTH 2213W, Food, Identity, and Culture

ANTH 3143, Medical Anthropology

ANTH 3141, Anthropology of Healing

ANTH 3345, Genetics in Society

CSET 2500, Science for Everyone

CSET 2550, Genetic Breakthroughs: The Promise

ECON 2350, Health Care Policy

ECON 3350, Economics of Health

GSS 3305, Gender and Sexuality in Times of Pandemic

HIST 2780, Superhuman Civilization

HIST 2800, Modern Medicine

MHS 2140, Health Care in the United States: Policy and Politics

MHS 3050W, Medicine and Literature

MHS 3120, Medicine, Science, and Technology

MUSL 3235, Music, Pandemics, and History

PHIL 1008, 1008W, Introduction to Medical Ethics

PHIL 3608, Ethics and Medicine

PSY 3635, Health Psychology

RLST 4834, Post-Freudian Theories and Religion

SOC 3301, Society and Medicine

SOC 3304, Race, Gender, and Health

SOC 3306, Gender and Medical Work

In order to graduate with a major in MHS, students must take a written exam in the second semester of their senior year. (Students who are away during the second semester of their senior year because they are studying abroad or graduating early should schedule the exam during the first semester.) The exam is not graded and no grade will appear on the student's transcript. The purpose of the exam is to ascertain the extent to which MHS majors demonstrate knowledge of the MHS curriculum.

Honors Program

The Honors Program in Medicine, Health, and Society offers superior students a more intensive concentration within their major field. Admission to the program requires:

1. A 3.3 cumulative grade point average.
2. A 3.3 cumulative grade point average in courses that count toward the Medicine, Health, and Society major.
3. An application that (a) describes the proposed topic; (b) identifies the faculty member who will serve as the thesis adviser; and (c) includes a letter of recommendation from the proposed thesis adviser.

Completion of the program requires:

1. Two semesters, 3 credit hours each semester of the senior year in MHS 4998/4999.
2. An honors thesis of approximately fifty pages that reveals an interdisciplinary perspective, submitted no later than two weeks before the first day of final exams in the second semester of the senior year, and approved by a committee of at least two faculty members (one of whom must have their primary appointment in Medicine, Health, and Society).
3. Successful completion of an oral examination focusing on the topic of the thesis.

Minor in Medicine, Health, and Society

The minor consists of a minimum of 18 credit hours of course work, distributed as follows:

Note: No more than 9 credit hours may be in the same subject area; A&S Psychology and Peabody Psychology are considered the same subject area for purposes of the major/minor.

1. Core Courses — Students must complete one of the core courses of the major (3 credit hours).
2. Concentration — Students must complete three courses in one of the following five concentrations (9 credit hours). Students must declare one of the following concentrations when they declare the minor.
 - A. Global health
 - B. Health policies and economies
 - C. Health behaviors and health sciences
 - D. Inequality, intersectionality, and health justice
 - E. Medicine, humanities, and arts
3. Electives — Two additional courses, excluding those with an asterisk, chosen from the list of approved courses. (6 credit hours)
4. Disciplinary Requirement — At least 3 credit hours from the following courses must be used to satisfy the concentration requirement or electives requirement.

ANTH 2213W, Food, Identity, and Culture

ANTH 3143, Medical Anthropology

ANTH 3141, Anthropology of Healing

ANTH 3345, Genetics in Society

ECON 2350, Health Care Policy

CSET 2500, Science for Everyone
CSET 2550, Genetic Breakthroughs: The Promise
ECON 2350, Health Care Policy
ECON 3350, Economics of Health
GSS 3305, Gender and Sexuality in Times of Pandemic
HIST 2780, Superhuman Civilization
HIST 2800, Modern Medicine
MHS 2140, Health Care in the United States: Policy and Politics
MHS 3050W, Medicine and Literature
MHS 3120, Medicine, Science, and Technology
MUSL 3235, Music, Pandemics, and History
PHIL 1008, 1008W, Introduction to Medical Ethics
PHIL 3608, Ethics and Medicine
PPS 3200, Research Methods for Public Policy Analysis
PSY 3635, Health Psychology
RSLT 4834, Post-Freudian Theories and Religion
SOC 3301, Society and Medicine
SOC 3304, Race, Gender, and Health
SOC 3306, Gender and Medical Work

Approved Courses

(Please consult the director of undergraduate studies for approval of "as appropriate" courses in concentration areas.)

CONCENTRATION A: Global Health

AMERICAN STUDIES: 3200, Global Perspectives on the U.S.

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2113W, Food, Identity, and Culture; 3122, The Anthropology of Globalization; 3138 Global Food Politics; 3143, Medical Anthropology.

ASIAN STUDIES: 2630, Chinese Medicine; 3630, Traditional Chinese Medicine: Encounters with Science.

BIOLOGICAL SCIENCES: 1111, First-Year Writing Seminar (as appropriate); 3965, Undergraduate Seminar (as appropriate). FRENCH: 3112, Medical French in Intercultural Contexts.

CLASSICAL STUDIES: 3333: Pandemics and Society in Historical Perspective.

COMMUNICATION OF SCIENCE AND TECHNOLOGY: 2550, Genetic Breakthroughs: The Promise.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2267, Seminar on Gender and Violence; 3201, Women and Gender in Transnational Context; 3305, Gender and Sexuality in Times of Pandemic.

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 2160, Medicine in Islam; 2413, Global History of Waste.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3200, Global Dimensions of Community Development; 3231, Introduction to Health Services.

INTERDISCIPLINARY STUDIES: 3831, Global Citizenship and Service; 3832, Global Community Service; 3833, Seminar in Global Citizenship and Service (as appropriate).

LATIN AMERICAN STUDIES: 2102, Brazil: Past, Present, and Future.

MEDICINE, HEALTH, AND SOCIETY: 2100, Intro to Data Visualization; 2110, American Medicine and the World; 2140, Health Care in the United States: Policy and Politics; 2310, Chinese Society and Medicine; 2410, HIV/AIDS in the Global Community; 2420, Economic Demography and Global Health; 2610, Global Health Crises; 2800, Foundations in Population Health; 2940, Race, Citizenship, and Health; 3000, Undergraduate Seminar (as appropriate); 3010, Perspectives on Global Public Health; 3045, Epidemics & Society; 3110, Global Health and Social Justice; 3310, Healthcare Systems Comparisons; 3890, Special Topics (as appropriate); 4010, Psychiatry, Culture, and Globalization.

POLITICAL SCIENCE: 1111, First-Year Writing Seminar (as appropriate); 2215, Change in Developing Countries; 2236, The Politics of Global Inequality; 3893, Selected Topics in American Government (as appropriate); 3894, Selected Topics in Comparative Politics (as appropriate).

PUBLIC POLICY STUDIES: 3200, Research Methods for Public Policy Analysis.

RELIGIOUS STUDIES: 3890, Special Topics - Mindfulness, Religion, and Healing.

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3313 Sociology of Health and Environmental Science; 3314, Environmental Inequality and Justice; 3321, Population and Society; 3711, Women, Gender, and Globalization

CONCENTRATION B: Health Policies and Economies

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2109, Food Politics in America; 3144, Politics of Reproductive Health; 3890, Special Topics (as appropriate).

ECONOMICS: 1010, Principles of Macroeconomics; 1020, Principles of Microeconomics; 1111, First-Year Writing Seminar (as appropriate); 1500, Economic Statistics; 1510, Intensive Economic Statistics; 2350, Health Care Policy; 3050, Introduction to Econometrics; 3350, Economics of Health.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate).

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 2780, Superhuman Civilization; 2800, Modern Medicine.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3231, Introduction to Health Services; 3241, Introduction to Health Policy; 3331, Managing Health Care Organizations; 3205, Policy Analysis Methods.

LATIN AMERICAN STUDIES: 2102, Brazil: Past, Present, and Future.

MEDICINE, HEALTH, AND SOCIETY: 1920, Politics of Health; 2100, Intro to Data Visualization; 2120, Health Social Movements; 2140, Health Care in the United States: Policy and Politics; 2220, Vaccines/Public Health Policy; 2260, LGBTQ Health Disparities; 2320, Medicine, Law, and Society; 2420, Economic Demography and Global Health; 2520, Autism in Context; 2530, Guns in America; 2920, Medicine on Trial; 3000, Undergraduate Seminar (as appropriate); 3060, Mental Health in Adolescence; 3075, Mental Health Policy; 3120, Medicine, Science, and Technology; 3320, Introduction to U.S. Health Care Policy; 3890, Special Topics (as appropriate).

PHILOSOPHY: 1008, 1008W, Introduction to Medical Ethics; 1111, First-Year Writing Seminar (as appropriate); 3608, Ethics and Medicine.

POLITICAL SCIENCE: 1111, First-Year Writing Seminar (as appropriate); 2236, The Politics of Global Inequality; 2270, Conducting Political Research; 3893, Selected Topics in American Government (as appropriate); 3894, Selected Topics in Comparative Politics (as appropriate).

PUBLIC POLICY STUDIES: 3200, Research Methods for Public Policy Analysis.

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3302, Poverty, Health, and Politics; 3306, Gender and Medical Work; 3314, Environmental Inequality and Justice; 4961, Seminars in Selected Topics (as appropriate).

UNIVERSITY: 3325, Health Policy Analysis and Advocacy.

CONCENTRATION C: Health Behavior and Health Sciences

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2227, Food in the Ancient World; 3344, Genetic Anthropology Lab Techniques; 3345, Genetics in Society; 3346, Human Adaptation and Disease; 3890, Special Topics (as appropriate); 4345, Human Evolutionary Genetics.

BIOLOGICAL SCIENCES: 1105, Human Biology; 1111, First-Year Writing Seminar (as appropriate); 3243 Genetics of Disease; 3245, Biology of Cancer; 3254, Neurobiology of Behavior; 3270, Statistical Methods in Biology; 3965, Undergraduate Seminar (as appropriate).

BIOMEDICAL ENGINEERING: 3200, Analysis of Biomedical Data.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2240, Introduction to Women's Health.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3221, Health Service Delivery to Diverse Populations; 3311, Introduction to Health Promotion.

MEDICINE, HEALTH, AND SOCIETY: 1930, Social Dimensions of Health and Illness; 1940, Racial and Ethnic Health Disparities; 2100, Intro to Data Visualization; 2800, Foundations in Population Health; 2120, Health Social Movements; 2220, Vaccines/Public Health Policy; 2260, LGBTQ Health Disparities; 2330, Men's Health Research and Policy; 2430, Social Capital and Health; 2700, Trauma, Violence, and Health; 2950, Healing Animals; 2375, Families in Turbulent Times; 3000, Undergraduate Seminar (as appropriate); 3030, Community Health Research; 3450, Mental Illness Narratives; 3890, Special Topics (as appropriate).

NEUROSCIENCE: 2201, Neuroscience; 3235, Biological Basis of Mental Disorders.

PSYCHOLOGY: 1111, First-Year Writing Seminar (as appropriate); 1200, General Psychology; 2100, Quantitative Methods; 2150, Principles of Experimental Design; 3100, Abnormal Psychology; 3620, Schizophrenia; 3625, Depression; 3635, Health Psychology; 3705, Human Sexuality; 3750, Perception; 3760, Mind and Brain; 3785, Brain Damage and Cognition; PSY-PC-1250, Developmental Psychology; PSY-PC 2102, Statistical Analysis; PSY-PC 2110, Introduction to Statistical Analysis; PSY-PC 2250, Cognitive Aspects of Human Development; PSY-PC 2300, PSY-PC-Social and Emotional Context of Cognition; PSY-PC-2550, Adolescent Development; PSY-PC 3650, Advanced Topical Seminar (approval dependent upon topic).

SOCIOLOGY: 1010, 1010W, Introduction to Sociology; 1020, 1020W, Contemporary Social Issues; 1111, First-Year Writing Seminar (as appropriate); 2100, Statistics for Social Scientists; 3002, Introduction to Social Research; 3003, Research Practicum; 3301, Society and Medicine; 3303, Social Dynamics of Mental Health; 4961, Seminars in Selected Topics (as appropriate). **Only one of SOC 1010 or 1020 may be counted towards the major or minor.*

CONCENTRATION D: Inequality, Intersectionality, and Health Justice

AFRICAN AMERICAN AND DIASPORA STUDIES: 1016, Race Matters; 1111, First-Year Writing Seminar (as appropriate); 3214, Black Masculinity: Social Imagery and Public Policy.

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2213W, Food, Identity, and Culture; 2342, Biology of Inequality; 3120, Sociocultural Field Methods (as appropriate); 3144, Politics of Reproductive Health; 3343, Biology and Culture of Race; 3345, Genetics in Society; 3890, Special Topics (as appropriate); 4345, Human Evolutionary Genetics.

COMMUNICATION OF SCIENCE AND TECHNOLOGY: 2550, Genetic Breakthroughs: The Promise.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2268, Gender, Race, Justice, and the Environment; 3305, Gender and Sexuality in Times of Pandemic.

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 1525, Global History of Pests; 2413, Global History of Waste; 2780, Superhuman Civilization; 3040, Health and the African American Experience.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3221, Health Service Delivery to Diverse Populations.

MEDICINE, HEALTH, AND SOCIETY: 1940, Racial and Ethnic Health Disparities; 2530, Guns in America; 2800, Foundations in Public Health; 2230, Masculinity and Men's Health; 2240, Bionic Bodies, Disability Cultures; 2260, LGBTQ Health Disparities; 2330, Men's Health Research and Policy; 2700, Trauma, Violence, and Health; 2940, Race, Citizenship, and Health; 2960, Lit, Bioethics, Anthropocene; 3000, Undergraduate Seminar (as appropriate); 3030, Community Health Research; 3040, Designing Healthy Publics; 3080, Clinical Ethics in Practice; 3890, Special Topics (as appropriate).

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3301, Society and Medicine; 3304, Race, Gender, and Health; 3306, Gender and Medical Work; 3321, Population and Society; 3723, Gender, Sexuality, and the Body; 4961, Seminars in Selected Topics (as appropriate).

CONCENTRATION E: Medicine, Humanities, and Arts

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2370, Death and the Body; 3141, Anthropology of Healing; 3142, Medicine, Culture, and the Body; 3143, Medical Anthropology; 3345, Genetics in Society.

ASIAN STUDIES: 2630, Chinese Medicine.

COMMUNICATION STUDIES: 3750, Rhetoric of the Body.

ENGLISH: 1111, First-Year Writing Seminar (as appropriate); 3720, 3720W, Literature, Science, and Technology (as appropriate); 3730, Literature and the Environment: Contemporary Climate Fiction; 3891, Special Topics in Creative Writing (as appropriate).

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2267, Seminar on Gender and Violence; 2612, Lesbian, Gay, Bisexual, and Transgender Studies.

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 1525, Global History of Pests; 2160, Medicine in Islam; 2413, Global History of Waste; 2800, Modern Medicine; 2810, Women, Health, and Sexuality; 2835, Sexuality and Gender in the Western Tradition to 1700; 2840, Sexuality and Gender in the Western Tradition since 1700; 3040, Health and the African American Experience.

HISTORY OF ART AND ARCHITECTURE: 3140, Healing and Art in East Asia.

JEWISH STUDIES: 2710W, Jewish Sexual Ethics.

MUSICOLOGY/ETHNOMUSICOLOGY: 3235, Music, Pandemics, and History.

MEDICINE, HEALTH, AND SOCIETY: 1111, First-Year Writing Seminar: Medicine, Health, and the Body; 1960, Health Humanities; 2230, Masculinity and Men's Health; 2250, War and the Body; 2530, Guns in America; 2960, Lit, Bioethics, Anthropocene; 2950, Healing Animals; 3000, Undergraduate Seminar (as appropriate); 3050W, Medicine and Literature; 3080, Clinical Ethics in Practice; 3120, Medicine, Science, and Technology; 3150, Death and Dying in America; 3250, Perspectives on Trauma; 3450, Medical Illness Narratives; 3890, Special Topics (as appropriate); 4010, Psychiatry, Culture, and Globalization; 4050, Narrative and Medicine: Stories of Illness and the Doctor-Patient Relationship.

PHILOSOPHY: 1008, 1008W, Introduction to Medical Ethics; 1111, First-Year Writing Seminar (as appropriate); 3606, 3606W, Moral Problems; 3608, Ethics and Medicine; 3630, Philosophy of Mind.

RELIGIOUS STUDIES: 3941, Religion, Science, and Evolution: Psychology of Religious Myth and Ritual.

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate).

SPANISH: 4760, Literature and Medicine.

OTHER ELECTIVES

In addition to the electives listed below, any course from the above concentration areas may serve as an elective if it is not already being used to satisfy a concentration requirement. No more than 12 hours of courses with an asterisk in the list below may be used to satisfy the major. Courses with an asterisk may not be used to satisfy the minor. (Please consult the director of undergraduate studies for approval of "as appropriate" courses for electives.)

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 1301, Introduction to Biological Anthropology; 3372, Human Osteology; 4373, Health and Disease in Ancient Populations.

BIOLOGICAL SCIENCES: *1510–1511, Introduction to Biological Sciences; *2520, Biochemistry.

CHEMISTRY: *2221–2222, Organic Chemistry; *2211–2212, Organic Chemistry for Advanced Placement Students.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3342, Introduction to Community Psychology (same as PSY-PC); 3890, Health Promotion Delivery.

MATHEMATICS: 1011, Probability and Statistical Inference; 2810, Probability and Statistics for Engineering; 2820, Introduction to Probability and Mathematical Statistics.

MEDICINE, HEALTH, AND SOCIETY: 1001, Commons Seminar; *1500, Introduction to Microbiology; *1600, Introduction to Nutrition and Health for a Changing World; *BSCI 2101, Anatomy and Physiology; 3831, Service Learning Research and Readings (Note: 3831, Service Learning Research and Readings, must be taken concurrently with 3830); 3850, Independent Study; 3881, Internship Readings and Research (Note: 3881, Internship Readings and Research, must be taken concurrently with 3880).

PHILOSOPHY: 1111, First-Year Writing Seminar (as appropriate); 3606, 3606W, Moral Problems; 3630, Philosophy of Mind.

PSYCHOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3600, Personality; 3610, Introduction to Clinical Psychology OR PSY-PC- 3200, Introduction to Clinical Psychology; 3615, Emotion; PSY-PC-1205, PSY-PC-1207, Minds, Brains, Cultures, and Contexts; PSY-PC-2400, Social and Personality Development; PSY-PC-2500, Infancy; PSY-PC-2550, PSY-PC-3650, Advanced Topical Seminar (as appropriate).

SOCIOLOGY: 4961, Seminars in Selected Topics (as appropriate).

Nanoscience and Nanotechnology

[Nanoscience and Nanotechnology Minor](#)

DIRECTORS Paul E. Laibinis, Sandra J. Rosenthal

Affiliated Faculty

PROFESSORS Joshua D. Caldwell (Mechanical Engineering), David E. Cliffel (Chemistry), Craig L. Duvall (Biomedical Engineering), Philippe M. Fauchet (Electrical and Computer Engineering), Daniel M. Fleetwood (Electrical and Computer Engineering), Todd D. Giorgio (Biomedical Engineering), Scott A. Guelcher (Chemical and Biomolecular Engineering), Richard F. Haglund, Jr. (Physics), Timothy P. Hanusa (Chemistry), Frederick R. Haselton (Biomedical Engineering), De-en Jiang (Chemical and Biomolecular Engineering), G. Kane Jennings (Chemical and Biomolecular Engineering), Michael R. King (Biomedical Engineering), Paul E. Laibinis (Chemical and Biomolecular Engineering), Deyu Li (Mechanical Engineering), Sokrates T. Pantelides (Physics), Peter N. Pintauro (Chemical and Biomolecular Engineering), Cynthia A. Reinhart-King (Biomedical Engineering), Sandra J. Rosenthal (Chemistry), Florence Sanchez (Civil and Environmental Engineering), Ronald D. Schrimpf (Electrical and Computer Engineering), Norman H. Tolk (Physics), Kalman Varga (Physics), Sharon M. Weiss (Electrical and Computer Engineering), John P. Wikswo, Jr. (Physics), David W. Wright (Chemistry)

ASSOCIATE PROFESSORS Leon Bellan (Mechanical Engineering), Shihong Lin (Civil and Environmental Engineering), Ethan S. Lippman (Chemical and Biomolecular Engineering), Janet E. Macdonald (Chemistry), Bridget R. Rogers (Chemical and Biomolecular Engineering), Jason G. Valentine (Mechanical Engineering), Greg Walker (Mechanical Engineering), John T. Wilson (Chemical and Biomolecular Engineering)

ASSISTANT PROFESSORS Lauren Buchanan (Chemistry), Mona Ebrish (Electrical and Computer Engineering), Piran Kidambi (Chemical and Biomolecular Engineering), Justus C. Ndukaife (Electrical and Computer Engineering), Carlos A. Silvera Batista (Chemical and Biomolecular Engineering)

RESEARCH PROFESSORS Peter T. Cummings (Chemical and Biomolecular Engineering), Clare M. McCabe (Chemical and Biomolecular Engineering), Peter Pintauro (Chemical and Biomolecular Engineering)

RESEARCH ASSOCIATE PROFESSOR James R. McBride (Chemistry)

RESEARCH ASSISTANT PROFESSORS Dmitry Koktysh (Chemistry), Alice Leach (Materials Science)

COURSES OFFERED: [NANO](#)

Faculty in the School of Engineering and the College of Arts and Science offer an interdisciplinary minor in nanoscience and nanotechnology. The minor is administered by the School of Engineering.

Nanoscience and nanotechnology are based on the ability to synthesize, organize, characterize, and manipulate matter systematically at dimensions of ~1 to 100 nm, creating uniquely functional materials that differ in properties from those prepared by traditional approaches. At these length scales, materials can take on new properties that can be exploited in a wide range of applications such as for solar energy conversion, ultra-sensitive sensing, and new types of vaccines. These activities require the integration of expertise from various areas of science and engineering, often relying on methods of synthesis, fabrication, and characterization that are beyond those

encountered in an individual course of study.

Students who minor in nanoscience and nanotechnology learn the principles and methods used in this rapidly growing field. Its core originates in the physical sciences by providing key approaches for describing the behavior of matter on the nanoscale. Synthetic approaches are used to manipulate matter systematically, for creating uniquely functional nanomaterials that can be inorganic, organic, biological, or a hybrid of these. With a third component of characterization, a process for designing systems to have particular properties as a result of their composition and nanoscale arrangement emerges. Students are introduced to these areas through foundational and elective courses for the minor that are specified below, the latter of which can be selected to fulfill the degree requirements for their major.

The minor in nanoscience and nanotechnology is supported by the Vanderbilt Institute of Nanoscale Science and Engineering (VINSE) that brings together faculty from the College of Arts and Science, the School of Engineering, and the Medical Center. A specialized laboratory facility maintained by VINSE provides students in the minor with capstone experiences that allow them to prepare and characterize a variety of nanostructured systems using in-house state-of-the-art instrumentation. This hands-on laboratory component enhances the attractiveness of students to both employers and graduate schools.

Nanoscience and Nanotechnology Minor

The minor in nanoscience and nanotechnology requires a total of 15 credit hours, distributed as follows:

1. Nano Core (6 hours). NANO 3000 and one of CHEM 2610 or CHBE 4840 or PHYS 2660.
2. Elective courses. 9 hours selected from the following list of approved subjects:

BME 4200	Principles and Applications of BioMicro ElectroMechanical Systems (BioMEMS)
BME 4500	Nanobiotechnology
CHBE 4830	Molecular Simulation
CHBE 4840	Synthesis and Applications of 2D Nanomaterials
CHBE 4850	Semiconductor Materials Processing
CHBE 4860	Molecular Aspects of Chemical Engineering
CHBE 4870	Polymer Science and Engineering
CHBE 4880	Corrosion Science and Engineering
CHEM 2610	Introduction to Nanochemistry
CHEM 3300	Physical Chemistry: Quantum Mechanics, Spectroscopy, and Kinetics
CHEM 3630	Macromolecular Chemistry: Polymers, Dendrimers, and Surface Modification
CHEM 5610	Chemistry of Inorganic Materials
ECE 4283	Principles and Models of Semiconductor Devices
ECE 4284	Integrated Circuit Technology and Fabrication
ECE 4288	Optoelectronics
ECE 4385	VLSI Design
ECE 6306	Solid-State Effects and Devices I
IMS 5320	Nanoscale Science and Engineering
IMS 6310	Atomic Arrangements in Solids
ME 8320	Statistical Thermodynamics
ME 8323	Micro/Nanoelectromechanical Systems
ME 8365	Micro/Nanoscale Energy Transport
PHYS 2255	Modern Physics and the Quantum World
PHYS 2660	Experimental Nanoscale Fabrication and Characterization
PHYS 3640	Physics of Condensed Matter

Courses taken to satisfy relevant degree requirements for majors in the College of Arts and Science and the School of Engineering may also be counted toward fulfilling the minor.

Neuroscience

[Program of Concentration](#)

[Honors Program](#)

[Minor in Neuroscience](#)

DIRECTOR Douglas McMahon

DIRECTOR OF UNDERGRADUATE STUDIES Meredyth Wegener

Professor: Christos Constantinidis

Associate Professor of the Practice: Elizabeth Catania

Senior Lecturers: Amanda Avona, Meredyth Wegener

COURSES OFFERED: [NSC](#)

The study of the nervous system is an interdisciplinary enterprise that draws upon a variety of scientific disciplines ranging from molecular biology and biophysics to computational science and engineering to the study of behavior and cognition. To meet the challenge of providing training for entry into this exciting and growing field, Vanderbilt offers an interdisciplinary program of concentration in neuroscience that utilizes expertise from several departments within the university. The program consists of three components. The first provides for a broad foundation in the basic sciences and mathematics. Second, the program provides for exposure to each of the general areas of neuroscience including courses in cellular/molecular, systems, and integrative/cognitive neuroscience. This course work is supplemented with exposure to the laboratory techniques utilized in neuroscience research. Finally, the program allows students to pursue more work in the specific sub-disciplines of neuroscience and in areas of inquiry related to neuroscience through elective courses. Students are especially encouraged to participate in research in the laboratories of neuroscience faculty under the auspices of the undergraduate research courses. More extensive research experience is available through the Honors Program in Neuroscience. For additional information, see as.vanderbilt.edu/neuroscience.

Program of Concentration

The neuroscience major consists of 38 credit hours of course work that includes 8 credit hours of organic chemistry and 30 credit hours of neuroscience and related courses distributed among specific disciplines associated with the study of neuroscience. Students majoring in neuroscience are additionally required to complete a core of introductory courses in mathematics, statistics or computer science, biology and physics that provide the broad scientific background necessary to the study of neuroscience. The areas and associated course options are listed below. Excluding research credit (3861, 3862, 3863, 3864, and 4999), the neuroscience and related courses must be drawn from at least two departments or programs.

Students seeking a second major within the College of Arts and Science may count a maximum of 6 credit hours of 2000-or-higher-level course work to meet the requirements of both majors.

Required Math and Science Courses

Biological Sciences (8 credit hours)

BSCI 1510, 1511, 1510L, and either 1511L or 1512L.

Chemistry (8 credit hours)

CHEM 2211 or 2221; CHEM 2212 or 2222; and CHEM 2221L and 2222L.

Mathematics, Statistics, Computer Science (6-8 credit hours)

MATH 1100, 1200, or 1300; and one of MATH 1201, 1301, BSCI 3270, PSY 2100, PSY-PC 2110, CS 1101, 1103, or 1104.

Physics (8 credit hours)

PHYS 1501, 1601 or 2051; PHYS 1502, 1602 or 2053; PHYS 1501L, 1601L or 2052; and PHYS 1502L, 1602L, or 2054.

Neuroscience Courses

Introduction to Neuroscience (3 credit hours)

NSC 2201.

Cellular and Molecular Neuroscience (6 credit hours)

BSCI 3252, 3256; NSC 3235, 3240, 3245, 3260, 3269, 3891; PSY 3630.

Systems, Integrative, and Cognitive Neuroscience (6 credit hours)

BSCI 3230, 3254; NSC 3270, 3274, 3892, 4961, 4969; PSY 3120, 3620, 3700, 3730, 3750, 3760, 3765, 3775, 3780, 3785, 3892; PSY-PC 3190.

Neuroscience Laboratory (6 credit hours)

NSC 3861, 3862.

Neuroscience Electives (6 credit hours)

Two additional courses from the Cellular and Molecular Neuroscience and/or Systems, Integrative, and Cognitive Neuroscience courses listed above. NSC 3863 or NSC 4999 may be used to count for one elective course.

Related Course Electives

(3 credit hours; one course not used to satisfy the Required Math and Science course requirement above.)

BSCI 2201, 2201L, 2210, 2210L, 2520, 3270, 4265; BME 3100, 3101; CHEM 2100, 3310, 3710, 4720; CS 1101 or 1103 or 1104; MATH 2300, 2400 or 2420; PHIL 3616, 3630; PSY 2100, 3100, 3600, 3625, 3705, 3715, 3810.

Honors Program

Superior students with a strong interest in research are encouraged to consider the Honors Program in Neuroscience. Normally a student will apply to enter the Honors Program in the second semester of the junior year and assemble an Honors Committee that will consist of the research mentor and at least two other appropriate members of the faculty. Entrance into and satisfactory completion of the Honors Program requires that students maintain a cumulative grade point average of 3.3 and a grade point average of 3.3 in courses counting toward the neuroscience major. Honors candidates must meet all the normal requirements for the neuroscience major, but are

expected to complete at least 6 hours of advanced research course work (from NSC 3863, 3864 and 4999). Three of these research-credit hours may count toward neuroscience elective course work. As part of this research course work, the candidate will be expected to write an honors thesis, present the thesis during the final semester in residence, and satisfactorily pass an oral examination by the student's Honors Committee. Students interested in becoming honors candidates should consult with the director of honors. For more information on the Honors Program, please see as.vanderbilt.edu/neuroscience/the-honors-program.

Minor in Neuroscience

This program provides a foundation of knowledge in neuroscience that is appropriate for students majoring in a related discipline or who have a general interest in the nervous system. As prerequisites, students are required to complete CHEM 1601 and 1601L, BSCI 1510 -1511, 1510L, and either 1511L or 1512L. The minor program consists of 18 credit hours of course work distributed as follows:

NSC 2201.

3 credit hours in Statistics/Computer Science: BSCI 3270, PSY 2100, PSY-PC 2110, CS 1101, 1103, or 1104.

6 credit hours chosen from the courses listed as "Cellular and Molecular Neuroscience."

6 credit hours chosen from the courses listed as "Systems, Integrative and Cognitive Neuroscience."

The chosen courses counting towards the 18 credit hours must come from at least 3 different departments or programs (e.g. NSC, PSY, and BSCI).

Research courses (NSC 3860, 3861, 3862, 3863, 3864, and 4999) do not count towards the minor.

Philosophy

[Program of Concentration in Philosophy](#)

[Honors Program](#)

[Minor in Philosophy](#)

CHAIR Julian Wuerth

DIRECTOR OF UNDERGRADUATE STUDIES Matthew Congdon

DIRECTOR OF GRADUATE STUDIES Karen Ng

Professors, Emeriti: Idit Dobbs-Weinstein, Robert Ehman, Marilyn Friedman, Larry May, Kelly Oliver, Lucius Outlaw, Charles Scott, Henry Teloh, Jeffrey Tlumak

Professors: Lenn Goodman, Michael Hodges, Robert Talisse

Associate Professors: Scott Aikin, Karen Ng, Julian Wuerth

Assistant Professors: Jacob Barrett, Matthew Congdon, Emanuele Costa, Diana Heney, Sarah Raskoff, David Throstad

Associate Professor of the Practice: Kristin Boyce

Senior Lecturer, Emeriti: Russell McIntire

Senior Lecturers: Andrew Sucre, Brandon Underwood

COURSES OFFERED: [PHIL](#)

The Department of Philosophy at Vanderbilt offers a wide range of courses relating philosophy to various dimensions of human concern.

The department emphasizes three broad areas of scholarly and teaching excellence: ethics, social and political philosophy, and the history of philosophy.

Program of Concentration in Philosophy

The program of concentration should be tailored to the needs and interests of the student. The following distribution of courses is required as part of the major. Logic: 1003 or 3003 (at least 3 credit hours); Ethics: 1005, 3605, 3606, or 3606W (at least 3 credit hours); History of Philosophy: 2100, 2101, 2102, 2103, or 2104 (at least 6 credit hours). Any alterations must be approved by the director of undergraduate studies. We encourage all majors to work closely with their advisers to select courses that form a coherent whole. The student must take at least 30 credit hours in the major field of which at least 21 credit hours must be in courses beyond the 1000 level.

Honors Program

The Honors Program offers opportunities for advanced study in philosophy, including independent research projects and/or enrollment in certain graduate seminars (with permission of the instructor). To be admitted to the program, the student must: (a) be a major in philosophy; (b) have a grade point average of 3.3 in all courses; (c) have a 3.5 grade point average in philosophy courses; and (d) develop a written proposal for advanced study in consultation with a philosophy faculty sponsor. Students who satisfy these requirements should meet with the director of undergraduate studies to review their programs, whereupon the director may nominate the students for honors work. Honors work typically begins in the junior year or in the first semester of the senior year; students in the program must complete at least 3 credit hours of Philosophy 3999. Students who successfully complete the program while maintaining the grade point averages of 3.3 generally, and 3.5 in the major, will receive honors in philosophy; students who do especially distinguished work will receive highest honors.

Minor in Philosophy

The minor in philosophy consists of 18 credit hours, including at least 12 credit hours in courses beyond the 1000 level. The minor program will be constructed so as to provide a broad grounding in philosophy and to complement the student's other studies. Each program must be approved by the director of undergraduate studies.

Note: 1002 or 1002W or 1005 or 1111 are ordinarily taken prior to all other philosophy courses, except 1003 and 3003 (logic courses), 3616 (philosophy of science), and 3013 (aesthetics).

Physics and Astronomy

[Program of Concentration in Physics](#)

[Licensure for Teaching](#)

[Honors Program](#)

[Departmental Minors](#)

[Minor in Physics](#)

[Minor in Astronomy](#)

[Introductory Courses - Physics](#)

[Intermediate Courses - Physics](#)

[Advanced Courses - Physics](#)

[Medical and Health Physics Courses](#)

[Physics Education Courses](#)

[Introductory Courses - Astronomy](#)

[Intermediate Courses - Astronomy](#)

[Advanced Courses - Astronomy](#)

CHAIR Julia Velkovska

VICE CHAIR Kalman Varga

DIRECTOR OF UNDERGRADUATE STUDIES Robert Scherrer

DIRECTOR OF GRADUATE STUDIES (Physics) Alfredo Gurrola

DIRECTOR OF GRADUATE STUDIES (Astrophysics) Jonathan Bird

Professors, Emeriti: John Barach, Charles Brau, David Ernst, Leonard Feldman, Joseph Hamilton, Arnold Heiser, Charles Maguire, Volker Oberacker, Akunuri Ramayya, Paul Sheldon, Norman Tolk, David Weintraub, Robert A. Weller

Professors: David Cliffel, John Gore, Senta Greene, Richard Haglund, J. Holley-Bockelmann, M. Hutson, Will Johns, Thomas Kephart, Sokrates Pantelides, Todd Peterson, Robert Scherrer, Keivan Stassun, Sait Umar, Kalman Varga, Julia Velkovska, Sharon Weiss, John Wikswo

Associate Professors: Steven Csorna, Alfredo Gurrola, Jason Valentine, Junzhong Xu

Assistant Professors: Yi Chen, John Eley, Karan Jani, Raghav Kunnavalkam Elayavalli, Alexandru Lupsasca, Mallory Molina, Jean-Francois Paquet, Jessie Runnoe, Stephen Taylor, Adam Yock

Principal Senior Lecturers: Sourish Dutta, Erika Grundstrom, Momchil Velkovsky

Senior Lecturers: Amal al-Wahish, Dusan Danilovic, Brenda Fabela Enriquez, Katherine Shepard

Adjunct Professors: Sakir Ayik, Arnold Burger, William Hofmeister

Adjunct Assistant Professors: Emmanuel Rowe, Susan Stewart

COURSES OFFERED: [ASTR](#), [PHYS](#)

As fundamental sciences, physics and astronomy continue to be driving intellectual forces in expanding our understanding of the universe, in discovering the scientific basis for new technologies, and in applying these technologies to research. In keeping with this crucial role, the Department of Physics and Astronomy offers courses dealing with both the cultural and intellectual aspects of the disciplines, a broadly based major program flexible enough to serve as preparation for graduate study in physics, applied physics, medical physics, astronomy or astrophysics, professional study in another area, or technical employment, and minor programs for students desiring to combine physics or astronomy with other majors. An honors program is available for qualified departmental majors.

A distinguishing feature of the Vanderbilt undergraduate curriculum is the close coupling between teaching and research. At Vanderbilt, active research groups are studying the physics of elementary particles; nuclear structure and heavy-ion reactions; nonlinear interactions of lasers with materials at ultrafast time scales; the behavior of electrons, atoms, molecules, and photons near surfaces; the electric and magnetic properties of living systems; the structure and dynamics of biopolymers; young stars; and cosmology. All professors are engaged in research, and undergraduate students can participate in this research informally or through independent study or summer work.

The Society of Physics Students arranges informal discussions.

Program of Concentration in Physics

The departmental major provides a thorough grounding in the core areas of physics. It is suitable either as preparation for careers in science and engineering or as a springboard for applying technical knowledge in such fields as business, medicine, law, public policy, and education. The major in the Department of Physics and Astronomy consists of 31-32 credit hours of course work, distributed as below. Students considering majoring in physics are strongly encouraged to consult with the director of undergraduate studies before registering for classes.

1. *Core courses covering the major subdisciplines of physics* — Students must complete four of the following (12 credit hours): Modern Physics and the Quantum World (2255); Classical Mechanics (2275); Electricity, Magnetism, and Electrodynamics I (2290); Statistical Physics (3200); Quantum Mechanics I (3651).
2. *Laboratory work* — Students may not use AP credit to satisfy any portion of the laboratory sequence requirement (3-4 credit hours):
 - a. Laboratory Principles I (1912L), Laboratory Principles II (2255L), and Introduction to Experimental Research (2953L); or
 - b. 1501L or 1601L, 1502L or 1602L, 2255L, and 2953L if the student has entered the major by taking the introductory physics course sequence 1501 or 1601, 1501L or 1601L, 1502 or 1602, and 1502L or 1602L. Students considering majoring in physics who begin in 1501 or 1601 and 1501L or 1601L in the fall semester are encouraged to take the combination 1502 + 1912L or 1602 + 1912L in the spring semester.
3. *Electives* (9 credit hours) — Pedagogical course work in physics and/or astronomy; research hours (3850, 3851, 4998) do not count toward this requirement. The course electives may be taken from any 2000-level or higher PHYS or ASTR courses not used to satisfy any other requirement of the major. Other courses may count as electives, such as courses offered by the engineering school (or other departments and schools) that are particularly relevant, such as a course in environmental studies, health physics, optics, or materials science. Such exceptions must be approved by the director of undergraduate studies.
4. *Capstone* (7 credit hours) — Computational Physics (3790), 3 credit hours of research (3850, 3851, or 4998) taken across one or more semesters, and the Seminar in Presenting Physics Research (3600). Physics-related research done in other departments and programs, supervised by Vanderbilt faculty and pre-approved by the director of undergraduate studies, is also permitted in satisfaction of the research requirement.

Immersion Experience: A student majoring in physics may choose to complete their Immersion Experience through an enhanced research program within the disciplines of either physics or astronomy. To complete the Immersion Experience in physics or in astronomy, physics majors must complete at least 5 credit hours of research and earn 1 credit hour from PHYS 3600 (Seminar in Presenting Physics Research) and 3 credit hours from PHYS 3790 (Computational Physics). At least 2 of these credit hours in research must be earned in either 3851 (Undergraduate Immersion Research) or 4998 (Honors Research). The other three (3) credit hours may be from any combination of 3850, 3851, and 4998. Credit hours in research may be from PHYS, from ASTR, or from a combination of PHYS and ASTR courses.

Computer Science course work: All 2000-level and higher PHYS courses assume students have working skills in programming. These skills may be learned outside of a regular course, but should be equivalent to that taught in CS 1104 Programming and Problem Solving. Students who do not already have these skills are strongly advised to take this class in the first semester, prior to beginning the three-semester laboratory sequence in the second semester. In addition, the following Computer Science and/or Scientific Computing courses are strongly recommended for all physics majors: Program Design and Data Structures (CS 2201) or Program Design and Data Structures for Scientific Computing (CS 2204); Algorithms (CS 3250) or Scientific Computing Toolbox (SC 3250); and High Performance Computing (SC 3260). Physics majors pursuing a second major or minor in computer science should take CS 2201; physics majors pursuing a minor in scientific computing should take CS 2204.

Mathematics course work: All physics majors are expected to have high-level skills in mathematics in order to be successful in PHYS classes and to prepare for graduate work. MATH courses are not formally required for the major in physics; however, most physics courses identify MATH prerequisite or co-requisite courses in order to indicate the mathematical skill-level assumed for that class. Multivariable calculus is a co-requisite for 2255 and a prerequisite for all other 2000-level or higher PHYS courses. Physics majors are expected to develop a working knowledge of single-variable calculus, multivariable calculus, and ordinary differential equations. The following courses are those strongly recommended for physics majors:

1. Accelerated Calculus I (1300) and Accelerated Calculus II (1301);
2. Multivariable Calculus (2300) or Multivariable Calculus and Linear Algebra (2500 and 2501); and
3. Methods of Ordinary Differential Equations (2420) or Ordinary Differential Equations (2610).

In addition, for physics majors considering post-graduate work in physics or in a related field, the following PHYS and MATH courses are strongly recommended as electives:

1. Electricity, Magnetism, and Electrodynamics II (PHYS 2291), Quantum Mechanics II (PHYS 3652), Mathematical Methods of Physics (PHYS 4005); and
2. Methods of Linear Algebra (MATH 2410) or Linear Algebra (MATH 2600); Introduction to Probability and Mathematical Statistics (MATH 2820); Statistics Laboratory (MATH 2820L); Complex Variables (MATH 3110); Introduction to Partial Differential Equations (MATH 3120); Fourier Analysis (MATH 3130); and Advanced Engineering Mathematics (MATH 3600).

Licensure for Teaching

Candidates for teacher licensure in physics at the secondary level may qualify by taking the basic physics major together with the requisite education courses described in the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Honors Program

The Honors Program in the Department of Physics and Astronomy is designed to allow a student to engage in advanced research under the guidance of a faculty member, usually in an area related to an ongoing research program in the department. A student majoring in physics interested in Honors (Honors in Physics or Honors in Astronomy) will work with a faculty mentor to develop an appropriate research project that will be conducted under the guidance of that faculty member. The Honors project must have a substantial grounding in physics or astronomy, but may be conducted under the direct supervision of any faculty member in any department at Vanderbilt. To be admitted to the Honors Program, a student must submit a two-page research proposal describing the plans for their Honors project, which must be approved by the director of the departmental Honors Program. In addition, a student must have completed 2953L, either 2255 or 3651, and meet the minimum GPA requirements for honors programs of the College of Arts and Science.

To graduate with honors, a student must

- Have at least a 300 cumulative GPA and a 3.300 GPA in courses that count toward the major.
- Earn a minimum of 6 credit hours in research classes (3850, 3851, 4998), leading to an honors thesis, with at least 2 of these credit hours earned in A student who earns credit for 3852 may satisfy this portion of the requirement with 3 credit hours of research earned at Vanderbilt, including at least 2 of these credit hours in 4998.
- Write a senior thesis of high merit, as evaluated by the student's Honors Examination Committee; the thesis may be submitted either in the fall or spring semester of the senior year.
- Demonstrate high attainment on an oral honors examination in which they present and defend their work to the student's Honors Examination Committee; the oral examination may take place either in the fall or spring semester of the senior year.

Departmental Minors

The physics and astronomy minors are suitable for students who wish to supplement a related discipline or simply have a general interest in the field. Research is not a requirement for either minor.

Minor in Physics

The minor requires a minimum of 19 credit hours of course work, distributed as follows:

Any first-semester physics class (1501, 1601, 1911, 2051)	3-4
Any first-semester physics laboratory (1501L, 1601L, 1912L, 2052)	1
Any second-semester physics class (1502, 1602, 1912, 2053)	3-4
Any second-semester physics laboratory (1502L, 1602L, 2255L, 2054)	1
PHYS 2255 or 3651	3
6 credit hours of electives. These may be selected from any 2000-level or higher-level PHYS courses not used to satisfy the above requirements or from 3 credit hour non-PHYS courses, the latter if approved by the director of undergraduate studies, and may include up to 3 credit hours of research (3850, 3851, 4998).	6
Total credit hours:	17-19

Minor in Astronomy

The minor requires a minimum of 16 credit hours of course work, distributed as follows:

ASTR 1010 and either 1010L or 1020L; or 1210	4
ASTR 2110	3
ASTR 3000	3
Two other astronomy courses, one of which may be a 3 credit hour one-semester research project (3850, 3851, 4998). Note that only physics majors pursuing honors in astronomy are eligible to enroll in 4998.	6
Total credit hours:	16

Introductory Courses - Physics

1001, 1010, 1020, 1010L, 1111, 1501, 1501L, 1502, 1502L, 1601, 1601L, 1602, 1602L, 1911, 1912, 1912L, 2255L

Introductory, calculus-based physics is offered at several different levels, each with the appropriate laboratory. Only one of 1501/1601/1911 and one of 1502/1602/1912 may be taken for credit. Physics 1501-1502/1601L-1602L is intended for students in the health sciences. Physics 1601-1602/1601L-1602L is intended for students in engineering. Physics 1911-1912 and the labs 1912L-2255L are intended for students planning to major in physics or pursue research-oriented careers in science, engineering, or mathematics; however, students may major in physics after starting in any of these three introductory physics sequences. Prospective majors are strongly advised to begin their study of physics in the fall semester of their freshman year whenever possible, although with careful planning it is possible to complete the physics major with a later start. Physics 1010 /1020 is intended for students without strong backgrounds in mathematics or science who have a general interest in the subject. 1010/1020 is not recommended as preparation for further study in a natural science, is not appropriate for engineering, premedical, or pre-dental students, and does not count toward the physics major or minor.

Intermediate Courses - Physics

2210, 2255, 2275, 2290, 2660, 2953L, 3122, 3200, 3600

The intermediate-level courses cover the major subdisciplines of classical and modern physics.

Advanced Courses - Physics

2291, 3640, 3651, 3652, 3660, 3790, 3850, 3851, 3890, 4998

These courses are intended for physics majors in their junior and senior year and provide material supporting independent study or honors projects in physics.

Medical and Health Physics Courses

3125, 3645

Physics Education Courses

3820

Introductory Courses - Astronomy

1001, 1010, 1010L, 1020L, 1111, 1210

Intermediate Courses - Astronomy

2110, 2130, 2150, 3000

Advanced Courses - Astronomy

3600, 3700, 3800, 3850, 3851, 3900, 4998

Political Economy

THE Political Economy (PECN) minor is a program that is jointly situated between the Departments of Economics and Political Science that provides students with the opportunity to engage with the economic analysis of political institutions and behavior, as well as the analysis of the political consequences of economic decisions, policies, and outcomes. Students who minor in Political Economy will acquire a common foundation in tools of microeconomic theory and game theory, and they will take substantive and methodological coursework to build on these common analytical foundations to develop expertise in a broad range of topics in political science, economics, and public policy.

Minor in Political Economy

This interdisciplinary minor requires 18 credit hours divided into two parts: 6 credit hours of required core courses and 12 credit hours of elective courses, where at least three credit hours of elective courses have to be completed in Political Science and Economics.

Prerequisites

Students declaring a minor in Political Economy are required to complete either Economics 3012 or Political Science 2259.

1. *Core Courses (6 credit hours)*
2. Economics 4230/Political Science 3400, Political Economy of Elections
3. Economics 4240, Political Science 3401, Political Economy of Institutions and Development
4. *Electives (12 credit hours)*

Students are required to complete at least four electives from the following list of courses, where at least one course must be taken in each of the Departments of Economics and Political Science: ECON 2890, ECON 3032, ECON 3035, ECON 3110, ECON 3200, ECON 4220, ECON 4260, ECON 4540, PSCI 2211, PSCI 2221, PSCI 2225, PSCI 2226, PSCI 2228W, PSCI 2259, PSCI 2274, PSCI 2300, PSCI 3252, PSCI 3259.

Student Advising

Students who declare a minor in Political Economy will be advised by one of the affiliated faculty, where the assignment of advisor will depend on whether the student took the required prerequisite for the minor in the Economics department or the Political Science department. If a student completes her prerequisite by completing Economics 3012, she will be advised by an affiliated faculty member in the Economics Department, and if she completes her prerequisite by taking Political Science 2259, she will be advised by an affiliated faculty member in the Political Science Department.

Political Science

[Program of Concentration in Political Science](#)

[Honors Program](#)

[Minors in Political Science](#)

[Licensure for Teaching](#)

CHAIR John Sides

DIRECTOR OF UNDERGRADUATE STUDIES Jonathan Hiskey

DIRECTOR OF GRADUATE STUDIES Sharece Thrower

Professors, Emeriti: William Booth, Bruce Oppenheimer, Richard Pride, James Ray, Nicholas Zeppos

Professors: Brooke Ackerly, Larry Bartels, Joshua Clinton, Daniel Diermeier, John Geer, Carolyn Heinrich, Jonathan Hiskey, Cindy Kam, David Lewis, Noam Lupu, Edward Rubin, Thomas Schwartz, John Sides, Robert Talisse, Wendy Tam Cho, Jessica Trounstine Alan Wiseman, Elizabeth Zechmeister

Associate Professors: Allison Anoll, Brett Benson, Katherine Carroll, Andrew Coe, Cassy Dorff, Brenton Kenkel, Jennifer Larson, Emily Ritter, Sharece Thrower

Assistant Professors: Jacob Barrett, Abhit Bhandari, Peter Bils, James Bisbee, John Dearborn, Juan Gannon, Federica Izzo, Jorge Guillermo Mangonnet, Nina McMurry, Leah Rosenstiel, Peter Schram, Bradley Smith, Georgiy Syunyaev, Erin York

Principal Senior Lecturer: Carrie Russell

COURSES OFFERED: [PSCI](#)

The Department of Political Science is oriented toward both teaching and research and has multiple missions. First, it offers a balanced curriculum for undergraduates and graduate students to study the art and science of politics. Second, it offers training for students preparing to become professionals in political science and other fields. Third, it exists as a research faculty seeking new knowledge about government and politics.

Many members of the faculty have national and international reputations in their fields of scholarship. These research and teaching interests vary widely, from political leadership to the comparison of new and old democratic governments, issues of political economy, and ethical questions about politics.

Political science majors may participate in independent study, directed study, selected topics seminars, first-year seminars, the Honors Program, and internships. Average class size is close to thirty—small classes make personal contact with the faculty relatively easy. Students participate in the governance of the department through the Undergraduate Political Science Association, and may qualify for membership in Pi Sigma Alpha, the national political science honorary society.

Program of Concentration in Political Science

Students majoring in political science are required to complete a minimum of 30 credit hours of work, distributed as follows:

Major Concentration	Hours
<i>Political Science Core</i> 1100, 1101, 1102, 1103, or 1150	6
<i>Political Science Subfields</i>	12 (3 hours from 4 different subfields)
* <i>American Government and Politics subfield</i> (2204W, 2222, 2235, 2240, 2240W, 2241, 2242W, 2243, 2244, 2245, 2251, 2253, 2255, 2256, 2259, 2262, 2265, 2266, 2267, 2270, 3241, 3242, 3244, 3246, 3247, 3249, 3250, 3252, 3253, 3254, 3260, 3268, 3700W, 3893, 4444)	
* <i>Comparative Politics subfields</i> (2210, 2212W, 2213, 2214, 2215, 2216, 2217, 2219, 2223, 2224W, 2228W, 2230, 2231, 2236, 2237, 2238, 2239, 2246W, 2249, 2251, 2252, 2554W, 2270, 2278, 2400W, 2405W, 3211, 3217, 3218, 3219, 3228, 3235, 3272W, 3273, 3273W, 3274, 3400, 3894, 4238)	
* <i>International Relations subfield</i> (2170, 2171, 2211, 2220, 2221, 2222, 2223, 2225, 2226, 2236, 2263, 2270, 2273, 2274, 2275, 2405W, 3211, 3228, 3229, 3272W, 3273, 3273W, 3275, 3895, 4277)	
* <i>Political Theory subfield</i> (2201, 2202, 2203, 2204W, 2205, 2207, 2207W, 2208, 2209, 2263, 3206, 3253, 3258, 3264W, 3265, 3266, 3270, 3271, 3333, 3896, 4257)	
* <i>Research Methods subfield</i> (2170, 2171, 2259, 2270, 2279, 2300, 2310, 3273, 3273W)	
<i>Electives</i> (Any 2000, 3000, or 4000-level course listed above; 2270, 2279, 2300, 2130, 3891, 3897; one additional 1100-level course, including 1111; up to 6 credit hours of 3841, 3842, 3851, 3852, 3880, 3882, 3882, 3883, 4998, 4999 combined)	12
Minimum 30 credit hours total	

In order to graduate with a political science major, students must take a brief exam within the major concentration in which they are most interested during their senior year. Students are to take this exam online in the fall or spring of their senior year. The exam is not graded, and no grade will appear on the student's transcript. The purpose of the exam is to ascertain the extent to which political science majors are retaining core aspects of the political science curriculum.

Students desiring an emphasis on African American politics within their program of concentration should consider courses in the following group: 2240, 2255, 2265, 2266. They may also choose to elect the following courses at Fisk University: Political Science 245 (Afro-American Political Thought), 254 (Politics in the Black Community), and 406 (African Political Systems).

Graduate Courses. Qualified undergraduates may enroll in graduate courses with the consent of their adviser, the course instructor, and the Graduate School. To enroll in graduate courses, undergraduate applicants need to comply with rules provided under the heading Undergraduate Enrollment in Graduate Courses in this catalog.

Honors Program

To enter the Honors Program, students should have completed all but 6 credit hours of the AXLE requirements, and have a minimum overall GPA of 3.6. They should also have a minimum GPA of 3.6 in all the political science courses they have taken up to the point at which they enter the Honors Program. They must have exhibited to the department additional evidence of an ability to do independent work. Finally, they must be nominated by the director of the undergraduate studies program.

In addition to requirements set by the College of Arts and Science, the following requirements must be met in order for honors in political science to be awarded:

1. 30 credit hours in political science, as well as all of the requirements for political science majors.
2. 3.6 grade point average in all political science courses, and a 3.6 average in courses that count toward honors in political science.
3. Completion of an honors thesis under the direction of a faculty adviser. Students will enroll in Senior Honors Research (4998 and 4999) during the semesters when they work on the honors thesis (at least 3 credit hours each).
4. An oral defense of the honors thesis in the last semester of the senior year.

Students in the Honors Program are encouraged to take PSCI 2270 before they enter or during their first semester in the Honors Program.

Students will complete the thesis under the direction of a faculty adviser. Instructions for applying to the Honors Program can be found on the Political Science webpage. The student will complete the oral defense in the department, after which it will also be determined whether the student will receive honors or highest honors. *Successful candidates are awarded honors or highest honors in their field and this designation appears in the Commencement program and on their diplomas.*

Minors in Political Science

The Department of Political Science offers three minor concentrations, which are detailed below. Each consists of 18 credit hours (one introductory-level course and five upper-level courses). One of these options may be chosen:

Minor Concentration	Hours
<i>American Politics</i> 1100 or 1150	3
Any five of the following: 2204W, 2222, 2240, 2240W, 2241, 2242W, 2243, 2244, 2245, 2251, 2253, 2255, 2256, 2259, 2262, 2265, 2266, 2267, 2270, 3241, 3244, 3246, 3247, 3249, 3250, 3252, 3253, 3254, 3260, 3268, 3700W, 3893, 4444	15
<i>Political Theory</i> 1103	3
Any five of the following: 2201, 2202, 2203, 2204W, 2205, 2207, 2207W, 2208, 2209, 2263, 3206, 3253, 3258, 3264W, 3265, 3266, 3270, 3271, 3333, 3896, 4257	15
<i>World Politics</i> A student may stress comparative politics or international relations or may mix the two in this minor. 1101 or 1102	3
Any five of the following: 2170, 2171, 2210, 2211, 2212W, 2213, 2214, 2215, 2216, 2217, 2219, 2220, 2221, 2222, 2223, 2224W, 2225, 2226, 2228W, 2230, 2231, 2236, 2237, 2238, 2239, 2246W, 2249, 2251, 2252, 2254W, 2263, 2270, 2273, 2274, 2275, 2278, 2400W, 2405W, 3211, 3217, 3218, 3219, 3228, 3229, 3235, 3272W, 3273, 3273W, 3274, 3475, 3400, 3894, 3895, 4238, 4277	15

Licensure for Teaching

Candidates for teacher licensure in political science at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Psychology

[Programs of Concentration in Psychology](#)

[Honors Program](#)

[Comprehensive Exam](#)

[Minor in Psychology](#)

CHAIR Thomas Palmeri

VICE CHAIR Isabel Gauthier

DIRECTOR OF UNDERGRADUATE STUDIES Adriane E. Seiffert

DIRECTOR OF GRADUATE STUDIES René Marois

DIRECTOR OF CLINICAL TRAINING Bunmi O. Olatunji

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Professors: Robert Bodenheimer, David Calkins, Li Min Chen, Bruce Compas, Christos Constantinidis, Blythe Corbett, Laurie Cutting, Isabel Gauthier, Troy Hackett, Stephan Heckers, Steven Hollon, Angela Jefferson, Jon Kaas, Gordon Logan, ReneMarois, Timothy McNamara, Lisa Monteggia, Bunmi Olatunji, Thomas Palmeri, Sohee Park, C. Cybele Raver, Sandra Simmons, Frank Tong, Mark Wallace, Duane Watson, Thilo Womelsdorf, Geoffrey Woodman

Associate Professors: Jo-Anne Bachorowski, Carissa Cascio, Reyna Gordon, Suzana Herculano, Kari Hoffman, Alexander Maier, Sean Polyn, Ramnarayan Ramachandran, David Schlundt

Assistant Professors: André Bastos, Antonia Kaczkurkin, Miriam Lense, Mikail Rubinov, Jonathan Schaefer, Ashley Watts

Principal Senior Lecturer, Retired: Leslie Smith

Principal Senior Lecturer: Adriane Seiffert

Senior Lecturers: Ashleigh Maxcey, Elisabeth Sandberg, Meredyth Wegener

Adjunct Professors: Jeffrey Schall, Jennifer Trueblood, David Zald

Adjunct Assistant Professor: Jacob Westerberg

COURSES OFFERED: [PSY](#)

Psychology is the scientific study of brain, behavior, and cognitive processes. At Vanderbilt, the undergraduate program introduces students to the major areas of contemporary psychology: clinical science, human cognition and cognitive neuroscience, developmental psychology, neuroscience, and social psychology. Clinical science studies human personality, emotion, abnormal behavior, and therapeutic treatments. Human cognition and cognitive neuroscience are the study of processes such as learning, remembering, perceiving objects and events, and neural mechanisms underlying these processes. Developmental psychology examines human development from conception through adulthood, including cognitive, emotional, physical, and social aspects. Neuroscience studies the structure and function of the brain and how nerve cells process sensory information, mediate decisions, and control motor actions. Social psychology examines interpersonal and intergroup relations and the influence of social conditions on cognitive, emotional, and behavioral processes.

The Department of Psychology offers a general program of study for students who desire a broad background in contemporary psychology, as well as an honors program. The department offers a wide variety of opportunities for undergraduates to gain research experience through active participation in faculty research projects. Such research experience is considered a fundamental aspect of education in psychological science.

Programs of Concentration in Psychology

General Program

PSY 1200

PSY 2100 or PSY-PC 2110 (Peabody)

PSY 2150

4 Distribution Courses*

5 Psychology Electives**

Total credit hours: 36

Honors Program

PSY 1200

PSY 2100 or PSY-PC 2110 (Peabody)

PSY 2150

4 Distribution Courses*

2 or all 3 of PSY 3980, 3981, and 4998

PSY 4999

3 Psychology Electives

Students who only take two semesters of PSY 3980, 3981, and 4998 will need to take an additional elective course to fulfill their 42 credit hours.

Total credit hours: 42

Honors Program

The Honors Program offers qualified majors the opportunity to conduct research projects in collaboration with faculty members. This research culminates in the writing and public presentation of a senior thesis.

The Honors Program offers unusual opportunities for interested and qualified students, including special seminars and individual research projects. The program should substantially aid those intending to do graduate work.

The program requires three or four semesters of honors research and participation in the Honors Seminars, which are PSY 3980, 3981, 4998, and 4999. (Students must have at least 9 credit hours total, with mandatory enrollment in PSY 4999). Students may enroll in the three-semester options of the Honors Program—provided they can complete the research project by extra work during three regular semesters and/or a summer, and provided this arrangement is acceptable to the faculty mentor and to the director of the Honors Program. Students who take the three-semester option will need to take an additional PSY elective course to fulfill their 42 credit hours.

Students who are majoring in psychology should apply to the Honors Program at the end of their sophomore year.

Applicants are required to have a cumulative grade point average of at least 3.3, both overall and in all courses that count toward the psychology major. Students must also find a faculty mentor who is willing to sponsor them in the program. Students who intend to apply the three-semester option should identify a faculty mentor and obtain permission for the option at the end of their sophomore year, but are not required to apply to the program until the end of the first term of their junior year. Students who complete the program successfully and have a final cumulative and major grade point average of 3.3 or higher will receive honors or highest honors in psychology.

***Distribution Courses**

(at least 4 of the following 6 courses are required)

The following courses provide grounding in core content areas of psychological science.

PSY 3100, 3110, 3120, 3750; NSC 2201; PSY-PC 1250 (Peabody)

**** Electives**

Any course in the Department of Psychology (A&S) or the Department of Psychology and Human Development (Peabody) that is not being used to meet another psychology requirement can be used as an elective, unless otherwise stated in the course catalog.

Comprehensive Exam

In order to graduate with a psychology major, students must take a comprehensive exam during their senior year. Students are expected to take the comprehensive exam at the beginning of their last semester, typically spring semester of their senior year. The exam is not graded, and no grade will appear on the student's transcript. The purpose of the exam is to assess the extent to which psychology majors are retaining core aspects of the psychology curriculum.

Minor in Psychology

The minor in psychology is intended for those students who want to gain an overview of the science of psychology and its methodological foundations, and to sample more advanced work in the areas of specialization within psychology at Vanderbilt.

Students are required to complete 18 credit hours of course work inside the department, distributed as follows:

PSY 1200

PSY 2100 or PSY-PC 2110 (Peabody)

PSY 2150

2 courses from the list of Distribution Courses specified for the major

1 Psychology Elective as defined in the psychology major

Total credit hours: 18

Independent/Directed Study courses (3850 and 3840/3860) may not be counted as the elective course for minors.

1200 (or 1111, sections 1, 2, and 3) is prerequisite for all other psychology courses except 1111. PSY 1111 - 01, 02, 03 - General Psychology, First-Year Writing Seminar - covers the same material as PSY 1200 and also serves as the introductory prerequisite for all 2000-level courses in psychology. Credit cannot be earned for both PSY 1200 and PSY 1111 - 01, 02, or 03. PSY 1111- sections 4 and higher - are First-Year Writing Seminars on special topics in psychology. PSY1111 - sections 4 and higher - do not replace PSY 1200 as a prerequisite for all 2000-level courses in psychology and may be taken in conjunction with PSY 1200.

Note: NSC courses 2201 (Neuroscience), 3235 (Biological Basis of Mental Disorders), 3269 (Developmental Neuroscience), 3270 (Computational Neuroscience), 3272 (Structure and Function of the Cerebral Cortex), and 3274 (Neuroanatomy) count as courses in the Department of Psychology (A&S). See the Neuroscience course listings for descriptions of these classes.

Public Policy Studies

[Program of Concentration in Public Policy Studies](#)

Honors Track

DIRECTOR Gilbert Gonzales (Medicine, Health, and Society)

ASSOCIATE DIRECTOR Katherine Carroll (Political Science)

Associate Professor: Analisa Packham

Assistant Professors: Kirsty Clark, Katherine Wen

Senior Lecturer: Mario Rewers

COURSES OFFERED: [PPS](#)

Program of Concentration in Public Policy Studies

The public policy studies major has two components: the core curriculum and areas of concentration, and an optional honors program for those who qualify. Students are also required to complete several prerequisites to prepare them for the major. Students may not double count any single course for both a required part of the core and for an elective.

The proposed core is interdisciplinary and includes rigorous course work drawn from political science, economics, sociology, anthropology, and history. The core provides all PPS students training in the politics, economics, methods, social contexts, history, and ethics of public policy.

In addition to developing skills in the core curriculum, PPS students seek more intensive training within areas of concentration. The boundaries of these areas are not mutually exclusive, and together they span a wide range of policy concerns and disciplinary perspectives. Among the five elective courses, students must take three courses in a single area of concentration. It is also recommended that students choose electives from at least two disciplines.

Students pursuing the “economic policy” concentration must take at least two upper-level electives in economics from the list (numbered above 3000).

Prerequisites

PPS majors must have earned credit for MATH 1201 or 1301, or higher; basic statistics (ECON 1500 or 1510 or both MATH 2820L and either 2810 or 2820); and introductory courses in political science and economics (PSCI 1100, ECON 1010, and ECON 1020).

Core Curriculum (5 courses, 15 credit hours)

PSCI 2256 or PPS 2100	3 credit hours
ECON 3010, 3012, 3020, or 3022	3 credit hours
ECON 3032, 3035, 3050; SOC 3002; or HOD 2500	3 credit hours
PPS 2200 and 2250	6 credit hours

If a student cannot take both 2200 and 2250, they may, with prior approval from the director or associate director of Public Policy Studies, substitute one course from ANTH 3122, 3133, 4152; HIST 2722; PSCI 3253; SOC 3315, 3604, 3605, 3613, 3614.

Electives and Areas of Concentration (5 courses, 15 credit hours)

The track is intended to allow students to go more deeply into one area of public policy (for example: health policy, STEM policy, education policy, criminal justice policy). Each student is free to choose and design his or her own

track with the advice and approval of the program director. Classes should generally be upper-level and should represent at least two disciplines.

General Electives

The following courses may count as PPS general electives, but they do not count toward the three electives (9 credit hours) that must be taken within a single area of concentration: PSCI 2240, 2245, 2253, 3241, 3244.

Areas of Concentration

Advanced Quantitative Methods for Public Policy

PPS 3200 or 3250; ANTH 3261; ECON 4050; HOD 3200; PSCI 2300

Economic Policy

ECON 2150, 3150, 3200, 3230, 3250, 3700, 4110, 4210, 4510/4510W, 4530/4530W; HIST 1640, 1660; HODE 3225; PSCI 2223, 3252

Social Policy

ECON 3100, 3110, 3350; HIST 1440, 1665, 2690, 2740, 2810, 3040, 3045W; MHS 2110, 3020, 3220, 3030, 3320; SOC 3223, 3304, 3611, 3616, 3621, 3622, 3701, 3711; UNIV 3320, 3325

Environmental, Resource, and Energy Policy

ANTH 2109, 2150, 3134; ECON 2170; SOC 3311, 3312, 3314, 3315, 3316, 3317, 3318

International and Foreign Policy

AMER 3200; ASIA 2560; ECON 2220, 3600, 3610, 3650, 4520; GSS (formerly WGS) 3201, 3281; HIST 1690, 1691, 1730, 1740, 2457, 2535, 2700, 2710, 2721, 2722, 2735, 2740; JS 2540; MHS 2410, 2420, 3110; PSCI 2220, 2222, 2225, 2236, 2251, 3229, 3272W, 3275

Science, Technology, and Innovation Policy

CMST 2850, 2950; CSET 3090, 3100; ECON 3270; HIST 2780, 3050, 3070W; MHS 3120; PHIL 1008, 3608; SOC 3206

Honors Track (2 additional courses, 6 additional hours)

Students who have a GPA of 3.30 or higher for all previous courses taken for credit and a GPA of 3.50 for all courses counting toward the PPS major may apply for the honors track in PPS. Students normally apply for the honors track during the second semester of their junior year. By the end of the junior year, students interested in pursuing honors should have completed all of the required core courses in the PPS major. The PPS program director may make exceptions.

Those accepted into the honors track enroll in PPS 4980 and 4999 (3 credit hours each) during the fall or spring semesters of their senior year. In addition to the honors seminar, each honors student has a faculty adviser to provide guidance on the research project and to chair the thesis committee. Successful completion of the honors program entails both the production of an original written thesis and an oral exam on the thesis project. The thesis committee evaluates both the written thesis and oral exam.

Quantum Information Science and Engineering

DIRECTORS Kalman Varga and Daniel Fleetwood

Affiliated Faculty

PROFESSORS Daniel M. Fleetwood (Electrical and Computer Engineering), Richard F. Haglund, Jr. (Physics), Timothy P. Hanusa (Chemistry), Sokrates T. Pantelides (Physics), Kalman Varga (Physics), Sharon M. Weiss (Electrical and Computer Engineering), Shane Hutson (Physics), Dietmar Bisch (Mathematics), Xenofon Koutsoukos (Computer Science), Michael Stone (Chemistry), Philippe M. Fauchet (Electrical and Computer Engineering), Deyu Li (Mechanical Engineering)

ASSOCIATE PROFESSORS Alfredo Gurolla (Physics) Jason G. Valentine (Mechanical Engineering), Joshua Caldwell (Mechanical Engineering)

ASSISTANT PROFESSORS Raghav Kunnawalkam Elayavalli (Physics), Lauran Buchanan

(Chemistry), Justus C. Ndukaife (Electrical and Computer Engineering), Piran Kidambi (Chemical and Biomolecular Engineering), David Hyde (Computer Science)

Faculty in the School of Engineering and the College of Arts and Science offer an interdisciplinary minor in Quantum Information Science and Engineering. The minor is administered by the College of Arts and Science.

Quantum technology is an emerging field that has the potential to revolutionize many areas of science and technology, from computing to sensing to communication. Quantum mechanics has played an important role in many areas of engineering for decades now, fueling an increasing number of fundamental breakthroughs, as available devices become smaller and individual particles can be precisely controlled in the lab. Newly observed phenomena are often best explained using quantum theory, facilitating new technologies, computational platforms and applications. A broad view of the diverse aspects of the field is provided: quantum physics, communication, quantum computation, simulation of physical systems, physics of qubit platforms, hardware technologies.

This interdisciplinary program will give undergraduates from chemistry, computer science, electrical engineering, mathematics, materials science and physics an introduction to the core concepts underlying quantum computing, communication and sensing. Students will gain experience with quantum hardware and theory that prepares them for careers in the rapidly evolving quantum engineering industries.

Quantum Information Science and Engineering Minor

The minor in quantum information science and engineering requires a total of 15 credit hours, distributed as follows:

QISE core (three courses / 9 credit hours to be selected from the following four options):

- *CS 3891, when the topic is Quantum computing,*
- *ECE 4335 Fundamentals of Quantum Engineering*
- *PHYS 2255 Modern Physics and the Quantum World OR PHYS 3651 Quantum Mechanics I*
- *PHYS 2300 Quantum Computation*

Elective courses (6 credit hours) selected from the following:

- CHEM 3300 Physical Chemistry: Quantum Mechanics, Spectroscopy, and Kinetics
- CS 3250 Algorithms
- ECE 4283 Principles and Models of Semiconductor Devices
- ECE 4288 Optoelectronics
- Math 3320 Error-correcting codes and Cryptography
- PHYS 2210 Modern Optics
- PHYS 3640 Physics of Condensed Matter
- PHYS 3652 Quantum Mechanics 2

With director's permission, and under the policies governing undergraduate registration in graduate courses, CHEM 5320 Quantum Chemistry may serve as an elective.

Courses taken to satisfy relevant degree requirements for majors in the College of Arts and Science and the School of Engineering may also be counted toward fulfilling the minor.

Religious Studies

[Program of Concentration in Religious Studies](#)

[Honors in Religious Studies](#)

[Minor in Religious Studies](#)

[Minor in Islamic Studies](#)

[Minor in Arabic Language](#)

CHAIR Richard McGregor

DIRECTOR OF UNDERGRADUATE STUDIES IN RELIGIOUS STUDIES Issam Eido

DIRECTOR OF UNDERGRADUATE STUDIES IN ISLAMIC STUDIES Issam Eido

DIRECTOR OF UNDERGRADUATE STUDIES IN ARABIC Issam Eido

DIRECTOR OF GRADUATE STUDIES James Byrd (Divinity)

CHAIR, GRADUATE DEPARTMENT OF RELIGION James Hudnut-Beumler (Divinity)

Professors, Emeriti: Lewis Baldwin, Volney Gay, Charles Hambrick, Daniel Patte, Tony Stewart

Professors: Clifford Anderson, Richard McGregor, David Price

Assistant Professors: Calynn Dowler, Adeana McNicholl

Assistant Professor of the Practice: Issam Eido

Senior Lecturer: Bushra Hamad

COURSES OFFERED: [ARA](#), [RLST](#)

Religious Studies is the critical, academic investigation of diverse spiritual traditions. Religion has always been active in human affairs for good and for ill, encompassing histories, literatures, politics, cosmologies, and medicines. Understanding the diversity of religious traditions on their own terms is vital for accuracy in approaching the world's many challenges. The faculty of Vanderbilt's Religious Studies Department and our many affiliated faculty across the university provide expertise and research in a variety of religious traditions. In addition to our expertise in specific religious cultures, texts, practices, rituals, and histories, we also share research interests and teaching focus on the religious dimensions of race and caste, colonialism, gender and sexuality, health and healing, and the climate crisis.

Students majoring in religious studies gain a deep knowledge of a single tradition, region, or theme and a broad understanding of religions around the world. Successful students develop a highly portable analytical skill set that equips them to pursue graduate degrees in religion or cognate disciplines, as well as professional degrees and careers in fields such as law, diplomacy, medicine, and business. It also provides an excellent second major for a variety of disciplines that address the human condition including neuroscience; sociology; history; medicine, health,

and society; and others. Majors will gain the ability to reason intelligently about one of the most difficult and sensitive topics in any society. By virtue of the variety of religious cultures studied, the training will deepen students' mutual understanding and sensitivity to prepare them to become truly responsible global citizens.

The department offers a major (31 credit hours), an Honors Program, a minor (18 credit hours) in religious studies, a minor (20 credit hours) in Islamic studies, and a minor in Arabic language (18 credit hours). A student may pursue both the minor in Islamic studies and the minor in Arabic language.

Program of Concentration in Religious Studies

31 credit hours. The program of concentration in religious studies seeks to introduce students to the rich diversity of religious traditions in the world (*Breadth component*) and to build depth of study in areas of specific interest to the student (*Depth component*). In addition, the curriculum includes instruction in the range of theories and methods used to approach religious traditions academically (*Tools of the Discipline component*). The student will then be able to pursue individual interests (*electives*).

A maximum of two courses (6 credit hours) outside of the department may count toward the major. Of these, one course (3 credit hours) outside of the department may count toward the Depth Component. A foreign language course approved as an elective is *not* subject to the two-course (6 credit hours) limit. No course may be used to satisfy more than one of the four components of the major.

1. Breadth Component (9 credit hours)

Ensures a familiarity with the rich diversity of religious traditions in the world.

- a. **Encountering religious diversity.** *3 credit hours.* RLST 1010. An introduction to the field of religious studies and select traditions.
- b. **Introductory course in African or Western traditions.**

3 credit hours. Introductory course in a religious tradition originating in the Mediterranean, Middle East, Africa, or the Americas (including but not limited to Judaism, Christianity, Islam, Egyptian religions, traditions of Sub-Saharan Africa, Native American traditions). RLST 1100, 1200, 1208, 1309, 1500. An appropriate First-Year Writing Seminar RLST 1111 may count with the approval of the director of undergraduate studies in Religious Studies.

- c. **Introductory course in Asian or non-Western traditions.**

3 credit hours. Introductory course in a religious tradition originating in Asia or the Pacific (including but not limited to Hindu and Buddhist traditions and those religious traditions originating in East and South Asia). RLST 1637, 1700, 1710, 2644, 2664. An appropriate First-Year Writing Seminar RLST 1111 may count with the approval of the director of undergraduate studies in Religious Studies.

2. Depth Component (9 credit hours)

The Depth Component is organized according to three tracks: *traditions, geographies, and theories and themes*. The introductory course taken to satisfy the breadth requirement cannot be double-counted in this category. The student must choose 9 credit hours from *one* of the following tracks. An appropriate First-Year Writing Seminar RLST 1111 may count toward any track with the approval of the director of undergraduate studies in Religious Studies.

- a. **Traditions.** Allows students to focus on a particular religious tradition or related cluster of traditions that may transcend geographic limitations.

Buddhist Traditions: RLST 1700, 1710, 1637, 2644, 3669, 3670W, 3749, 3753; ASIA 3633

Christian Traditions: RLST 1309, 1330W, 1820, 2250W, 2310, 3119, 3304W, 3306, 3312, 3313, 3316, 3350; CLAS 3350, 3360, 3370, 3380; HIST 1760, 2250

Hindu Traditions: RLST 2664, 4665, 4666

Indigenous Traditions: RLST 1637, 3178, 3890, 4774

Islamic Traditions: RLST 1500, 2461, 3561, 4551, 4552, 4554, 4562; ARA 3301; HIST 1190, 2140, 2190

Jewish Traditions: RLST 1208, 2210, 2210W, 3270, 3350; JS 1002*, 1002W, 1200, 2300, 2330, 2620; PHIL 2102

(*Formerly RLST 1200. Can be taken in lieu of RLST 1200 credit.)

- b. **Geographies.** Gives students the option of focusing on regional cultures, histories, and religions, as well as relationships between religious traditions within a specific region.

Africa, West Asia, and the Mediterranean: RLST 1208, 1330W, 1500, 2461, 2471, 2472, 3312, 3890, 4562; ARA 3301; HIST 1190, 2190

The Americas: RLST 1100, 1190W, 3119, 3142, 3178, 3304; HIST 2530

East Asia: RLST 1700, 1710, 3747, 3749, 3753, 3670W, 3775, 4774; ASIA 3633

South/Southeast Asia: RLST 1500, 1637, 2644, 2664, 3561, 3669, 3670W, 4665, 4666

c.

Theories and Themes. Enables students to focus on theoretical, scientific, or thematic questions that may cross both traditional and geographic lines.

Religion in the literary and visual arts: RLST 2881, 2940, 3669, 3775, 4665, 4774, 4939

Theories of religion, science, and/or psychology: RLST 1820, 2472, 3079, 3940, 3941, 4834, 4835, 4836, 4837; JS 2330; ANTH 3141; ASTR 2130

3. Tools of the Disciple Component (4-6 credit hours)

Key issues in the study of religion and a formal introduction to the theories and methods in the academic study of religion.

- a. **Theory and Method.** 3 credit hours. RLST 4960W "Approaches to the Academic Study of Religion." Recommended for juniors, but may be taken earlier with permission of director of undergraduate studies in Religious Studies.
- b. **Majors Colloquium.** 1 credit hour (may be taken a total of three times). RLST 4970 "Majors Colloquium." Initiation into the range of professional activities in the study of religion from the craft of research to the production of papers, articles, and theses, coupled with targeted theoretical concerns relevant to the research of the students enrolled in that particular class.

4. Electives (9 credit hours)

- a. Electives may be drawn from any of the courses listed under the three components of the major (*Breadth, Depth, and Tools of the Discipline*). Students may elect to deepen an area of study or they may build additional breadth in other traditions, regions, or themes.
- b. One relevant language course (at least 3 credit hours) may count, with the approval of the director of undergraduate studies in Religious Studies. This course is not subject to the two-course (6 credit hours) limit on courses taken outside the department.

Honors in Religious Studies

The honors thesis provides an opportunity for highly motivated and exceptionally capable students to engage in independent work on a topic in religious studies. Honors theses require original research with primary sources and extensive use of relevant secondary scholarship, both with regard to the narrowly defined topic of the thesis and on the larger theoretical and methodological issues in the academic study of religion. 3.3 GPA in courses toward the major and cumulative 3.3 GPA are required for entry and must be maintained for completion of honors. Students work closely with faculty members in designing, researching, and writing a thesis beginning in the second semester of their junior year in order to present the thesis at the end of the second semester of their senior year, culminating in a final oral examination on the thesis.

- a. **Research and Writing.** 6 credit hours. RLST 4998-RLST 4999 "Seniors Honors Thesis." RLST 4998 and RLST 4999 count as 6 of the 9 credit hours of the elective component of the
- b. **Majors Colloquium - Co-requisite with RLST 4999.**

RLST 4970 "Majors Colloquium" in the second semester of senior year, in which candidate must present results of research. Honor program candidates shall take 4970 co-requisite with 4999. Initiation into the range of professional activities in the study of religion from the craft of research to the production of papers, articles, and theses, coupled with targeted theoretical concerns relevant to the research of the students enrolled in that particular class.

Minor in Religious Studies

18 credit hours. The minor will introduce the rich diversity of religious traditions (*Breadth* component), initiate depth in at least one tradition (*Depth* component), and encourage further exploration of different perspectives or traditions through electives. A maximum of one course (3 credit hours) from outside the department may count if it is included in any of the three components of the major (*Breadth*, *Depth*, and *Tools of the Discipline*). No course may be used to satisfy more than one of the three components of the minor.

1. Breadth Component (9 credit hours)

Ensures a familiarity with the rich diversity of religious traditions in the world.

- a. **Encountering religious diversity.** *3 credit hours.* RLST 1010. An introduction to the field of religious studies and select traditions.

- b. **Introductory course in African or Western traditions.**

3 credit hours. Introductory course in a religious tradition originating in the Mediterranean, Middle East, Africa, or the Americas (including but not limited to Judaism, Christianity, Islam, Egyptian religions, traditions of Sub-Saharan Africa, Native American traditions). RLST 1100, 1200, 1208, 1309, 1500. An appropriate First-Year Writing Seminar RLST 1111 may count with the approval of the director of undergraduate studies in Religious Studies.

- c. **Introductory course in Asian or non-Western traditions.**

3 credit hours. Introductory course in a religious tradition originating in Asia or the Pacific (including but not limited to Hindu and Buddhist traditions and those religious traditions originating in East and South Asia). RLST 1637, 1700, 1710, 2644, 2664. An appropriate First-Year Writing Seminar RLST 1111 may count with the approval of the director of undergraduate studies in Religious Studies.

2. Depth Component (3 credit hours)

Deepening the study of one *3 credit hours.*

The student must choose one of the two religious traditions used to meet the introductory course Breadth Component to delve further into that religion.

3. Electives (6 credit hours)

- a. Electives may be drawn from any of the courses listed under the three components of the major (Breadth, Depth, and Tools of the Discipline). Students may elect to deepen an area of study or they may build additional breadth in other traditions, regions, or themes.
- b. With the permission of the director of undergraduate studies in Religious Studies and a minimum 3 GPA in the minor, the student may take the Majors Colloquium RLST 4970.

Minor in Islamic Studies

20 credit hours. Students complete a required minimum of 20 credit hours from the list below, which must include:

- ARA 1102 Elementary Arabic, and
- RLST 1500 Introduction to Islam or HIST 1190 A History of Islam, and
- RLST 4554 The Qur'an and Its Interpreters.

Both RLST 1500 and HIST 1190 may count toward the minor. Up to 8 hours of Arabic language courses may count toward the minor; however, ARA 1101 does not count toward the minor.

ARABIC: 1102, Elementary Arabic; 2201-2202, Intermediate Arabic; 3101-3102, Advanced Arabic; 3201, Media Arabic; 3301, Arabic of the Qur'an and Other Classical Texts.

CINEMA AND MEDIA ARTS: 3892, Cinema and Islam.

CLASSICAL AND MEDITERRANEAN STUDIES: 2180, Mediterranean World from Late Antiquity to the Middle Ages; 3010, The Ancient Origins of Religious Conflict in the Middle East.

HISTORY: 1111, First-Year Writing Seminar (when related to Islamic history or culture as determined by the director of undergraduate studies); 1160, Modern South Asia; 1190, A History of Islam; 1200, The Arab Spring; 1270, Sub-Saharan Africa: 1400-1800; 1280, Africa since 1800: The Revolutionary Years; 2140, The Mughal World; 2150, India and the Indian Ocean; 2155, Muhammad and Early Islam; 2160 Medicine in Islam; 2170, Islam and the Crusades; 2180, Islamic Narratives: Narratives of Islam; 2190, Last Empire of Islam; 2293, Muslims in Modern Europe; 2530, African Religions in the Americas; 3150, Cities of Europe and the Middle East; 3209, Sex, Marriage, and the Body in Islamic Law; 3210, Muslims, Christians, and Jews in Medieval Spain; 3220W Images of India.

HINDI/URDU: 1101-1102 Elementary Hindi-Urdu; 2201-2202 Intermediate Hindi-Urdu.

HISTORY OF ART AND ARCHITECTURE: 1220, History of Asian Art and Architecture, 2180, Art and Architecture of the Islamic World.

JEWISH STUDIES: 2540, Power and Diplomacy in Modern Middle East; 2600, Islam and the Jews.

PERSIAN: 1101-1102, Elementary Persian

PHILOSOPHY: 2102, Medieval Philosophy; 3006, Islamic Philosophy.

POLITICAL SCIENCE: 1111, First-Year Writing Seminar (when related to Islamic history or culture as determined by the director of undergraduate studies); 2203, Middle East Politics; 3235, Political Islam; 3272W, The War in Iraq 2002-2011; 3896, Selected Topics (when related to Islamic politics or culture as determined by the director of undergraduate studies).

RELIGIOUS STUDIES: 1111, First-Year Writing Seminar (when related to Islamic religion or culture as determined by the director of undergraduate studies); 1500, Introduction to Islam; 2461, Islam in Africa; 2471, Religion in Africa; 4551, Islamic Mysticism; 4552, Islam in the Modern World; 4554, The Qur'an and Its Interpreters; 4562, Culture, Religion, and Politics of the Arab World; 4666, Devotional Traditions of South Asia: Hindu, Muslim, Sikh; 4592, Advanced Seminar in Arabic; 4593, Advanced Seminar in Islamic Tradition.

TURKISH: 1101-1102, Elementary Turkish; 2201-2202, Intermediate Turkish

Minor in Arabic Language

18 credit hours. Students complete a required minimum of 18 credit hours from the list below, following one of two tracks.

Track A "Foundations and Literature": 9 credit hours from category I, Grammar and Constructions and 9 credit hours from category II, Literature and Culture.

Track B "Full Proficiency": 12 credit hours from category I, Grammar and Constructions, and 6 credit hours from category II, Literature and Culture. No credit hours will be counted for Arabic 1101 or Arabic 1102.

CATEGORY I, Grammar and Constructions: ARA 2201, Intermediate Arabic I; 2202, Intermediate Arabic II; ARA 3101, Advanced Arabic I; 3102, Advanced Arabic II.

CATEGORY II, Literature and Culture: ARA 3201, Media Arabic; ARA 3301, Arabic of the Qur'an and Other Classical Texts; RLST 4592, Reading Seminar in Arabic Literature; RLST 4593, Reading Seminar in Islamic Tradition.

Arabic

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

If a student is pursuing the minor in Islamic Studies and the minor in Arabic language, ARA 1102 may be the only Arabic course that counts toward the minor in Islamic studies.

Scientific Computing

DIRECTORS Robert E. Bodenheimer (Computer Science), Thomas J. Palmeri (Psychology), David A. Weintraub (Physics and Astronomy)

Affiliated Faculty

PROFESSORS Ralf Bennartz (Earth and Environmental Sciences), Gautam Biswas (Electrical Engineering and Computer Science), Mario Crucini (Economics), Peter T. Cummings (Chemical and Biomolecular Engineering), Mark N. Ellingham (Mathematics), David Furbish (Earth and Environmental Sciences), Guilherme Gualda (Earth and Environmental Sciences), Kelly Holley-Bockelmann (Astronomy), Shane Hutson (Physics), Gordon D. Logan (Psychology), Terry P. Lybrand (Chemistry and Pharmacology), Bradley Malin (Biomedical Informatics), Clare M. McCabe (Chemical and Biomolecular Engineering), Jens Meiler (Chemistry), Michael I. Miga (Biomedical Engineering), Mark Neamtu (Mathematics), Caglar Oskay (Civil and Environmental Engineering), Thomas J. Palmeri (Psychology and Neuroscience), Antonis Rokas (Biological Sciences and Biomedical Informatics), Jeffrey D. Schall (Psychology and Neuroscience), Larry Schumaker (Mathematics), Paul Sheldon (Physics), Frank Tong (Psychology), Kalman Varga (Physics), David A. Weintraub (Astronomy), Robert Weller (Electrical Engineering)

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ASSOCIATE PROFESSOR OF THE PRACTICE Gerald H. Roth (Computer Science)

ASSISTANT PROFESSORS Hiba Baroud (Civil and Environmental Engineering), Matthew Berger (Computer Science), Nicole Creanza (Biological Sciences), William Holmes (Physics and Astronomy), Carlos Lopez (Cancer Biology), Ipek Oguz (Computer Science and Biomedical Engineering), Mikail Rubinov (Biomedical Engineering)

COURSES OFFERED: SC

The College of Arts and Science and the School of Engineering offer an interdisciplinary minor in scientific computing to help students in the physical, biological, and social sciences as well as engineering acquire the ever-increasing computational skills that such careers demand. Students who complete this minor will have a toolkit that includes programming skills useful for simulating physical, biological, and social dynamics as well as an understanding of how to take advantage of modern software tools to extract meaningful information from small and large data sets.

Computation is now an integral part of modern science. Computer simulation allows the study of natural phenomena impossible or intractable through experimental means. Astronomers studying the formation of massive black holes, neuroscientists studying brain networks for human memory, economists studying effects of regulation on market dynamics, and biochemists studying the three-dimensional structure of proteins are united in many of the computational challenges they face and the tools and techniques they use to solve these challenges.

Students pursuing the scientific computing minor are taught techniques for understanding such complex physical, biological, and social systems. Students are introduced to computational methods for simulating and analyzing models of complex systems, to scientific visualization and data mining techniques needed to detect structure in massively large multidimensional data sets, to high-performance computing techniques for simulating models on computing clusters with hundreds or thousands of parallel, independent processors and for analyzing terabytes or more of data that may be distributed across a massive cloud or grid storage environment.

The scientific computing minor at Vanderbilt is supported by faculty and includes students from a wide range of scientific and engineering disciplines. While the content domain varies, these disciplines often require similar computational approaches, high-performance computing resources, and skills to simulate interactions, model real-life systems, and test competing hypotheses. Scientific computing embodies the computational tools and techniques for solving many of the grand challenges facing science and engineering today.

The minor in scientific computing prepares students for advanced course work that combines computational approaches with a substantive area of science or engineering. It prepares students for directed or independent study with a faculty member on a research project. It prepares students for advanced study in graduate school. It provides skills that will be attractive to many employers after graduation.

The minor in scientific computing is distinct from the minor in computer science. Scientific computing uses computation as a tool to solve scientific and engineering problems in research and application. It is more focused on simulation, numerical techniques, high performance computing, and higher-level methods than the minor in computer science, which is focused on the algorithms, systems, and technologies that enable such methods to be developed and employed.

Details of the minor requirements are provided in the School of Engineering section of the catalog, and are also available at vanderbilt.edu/scientific_computing.

Sociology

[Program of Concentration in Sociology](#)

[Comprehensive Exam](#)

[Program of Concentration in Environmental Sociology](#)

[Comprehensive Exam](#)

[Minor in Sociology](#)

[Licensure for Teaching](#)

CHAIR Holly McCommon

DIRECTOR OF UNDERGRADUATE STUDIES Laurie Woods

DIRECTOR OF GRADUATE STUDIES Jennifer Davis

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Professors: Andre Christie-Mizell, Daniel Cornfield, Jennifer Davis, David Hess, Larry Isaac, Holly McCommon, Jonathan Metzl, Velma Murry

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Associate Professor of the Practice: Zdravka Tzankova

Senior Lecturer: Laurie Woods

COURSES OFFERED: [SOC](#)

Sociology, the study of social consensus, conflict, and change, offers students a rich and systematic understanding of society and the meaning of social interaction. The department's courses cover a wide range of sociological themes including arts, culture, and religion; cities, states, and political economy; deviant behavior and crime; environment and population; gender and sexuality; health and the life course; race, ethnicity, and immigration; social movements, politics, and power; and work, labor, and occupations. Undergraduate courses in sociology prepare students for graduate work or provide further preparation for a career in law, medicine, business, research, education, the clergy, nursing, social work, or civil service. Two major programs are available, sociology and environmental sociology. Students may declare only one of the majors offered by the Department of Sociology; double majors within the department are not permitted.

Program of Concentration in Sociology

Students majoring in sociology are required to complete 33 credit hours of work in sociology (36 credit hours for students in the Honors Research Track). The major consists of five types of courses as listed below: introduction, theory, research skills, core areas, and electives.

Course work for the major is distributed as follows:

Program I (Standard Track)

A total of 33 credit hours as follows:

1. <i>Introduction:</i> Sociology 1010, 1010W, 1020, or 1020W	3
2. <i>Theory:</i> Sociology 3001	3
3. <i>Research Skills:</i> Sociology 3002 (or HOD 2500 for students who double major in sociology and HOD)	3
4. <i>Core Areas:</i> Students must take at least one course in three of the four core areas listed below. A course cannot be used to satisfy more than one requirement in the major.	9
<i>Arts and Culture, Institutions and Organizations:</i> Sociology 3201, 3202, 3203, 3204, 3205, 3213, 3221, 3222, 3223, 3224, 3224W, 3231, 3232, 3233, 3615	
<i>Health, Environment, Population, and Migration:</i> Sociology 3301, 3302, 3303, 3304, 3306, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3321, 3322; Environmental and Sustainability Studies 4101, 4101W; Medicine, Health, and Society 2310, 2430	
<i>Politics, Law, and Conflict:</i> Sociology 3233, 3601, 3602, 3603, 3604, 3605, 3611, 3612, 3613, 3614, 3615, 3616, 3621, 3622, 3623, 3624;	
Jewish Studies 2560	
<i>Race, Ethnicity, and Gender:</i> Sociology 3236, 3601, 3616, 3701, 3702, 3703, 3704, 3711, 3722, 3723, 3724; Jewish Studies 2400, 2450	
5. <i>Electives</i>	15
Any 5 sociology courses not used to satisfy the above requirements. SOC 2100 or its equivalent may be counted toward the electives. (Equivalent courses are ECON 1500 or 1510 or MATH 1011 or 2820. Students who double major in sociology and psychology or in sociology and the Peabody majors of human and organizational development, child development, cognitive studies, or child studies may also choose from PSY 2100 or PSY-PC 2110.) Electives may also include only one of the following 1000-level sociology courses: Sociology 1030, 1041, 1041W, or 1111. No other 1000-level sociology course may be counted toward the electives requirement of the major except by permission of the director of undergraduate studies. The Department of Sociology advises students to group their elective sociology courses in a cluster of advanced concentration electives to be selected with the student's adviser.	

A total of 36 credit hours as follows:

The Honors Research Track offers superior majors in sociology the opportunity to pursue intensive work through an independent research project. Students interested in pursuing the Honors Research Track in Sociology should contact the director of undergraduate studies for more information. To be considered for the Honors Research Track in Sociology, a student must have a minimum cumulative GPA of 3.3 and a minimum GPA of 3.3 for courses that count toward the sociology major. Students who are recommended for the program by the director of undergraduate studies will typically begin the program in the first semester of their junior or senior year.

The Honors Research Track in Sociology requires:

- Successful completion of requirements 1–4 in Program I, for a total of 18 credit
- Successful completion of the statistics requirement: SOC 2100 or its equivalent (defined in requirement 5 of Program I).
- Completion of 12 credit hours of elective courses. The statistics requirement is counted toward the Electives may include only one of the following 1000-level sociology courses: Sociology 1041, 1041W, or 1111. No other 1000-level sociology course may be counted toward the electives requirement of the major except by permission of the director of undergraduate studies. If students take more than 6 credit hours of SOC 4981, the additional credit hours (7–12) are counted toward the elective courses.
- Successful completion of at least two semesters of SOC 4981 (Honors Research). The first semester of 4981 (Honors Research) is a 3 credit hour seminar in which students develop the literature review and research plan for the honors thesis. In the second semester of 4981 (Honors Research), also for 3 credit hours, students must complete the research and data collection, data analysis, and initial write-up of results of the thesis. Students may elect to take a third or fourth semester of 4981 during their senior year, when they may, for example, work on revisions of the project and/or on publication. Students who begin the Honors Track in their senior year may also take more than 6 credit hours of 4981, up to a maximum of 12 credit hours.
- Successful defense of the completed thesis through an oral defense attended by the chair and reader of the thesis; this oral defense typically takes place during the second semester of the student's senior year. In order to earn honors in sociology, students must successfully complete and defend an honors thesis before graduation.

Comprehensive Exam

In order to graduate with a sociology major, students must take a comprehensive exam during their senior year. The exam is not graded, and no grade will appear on the student's transcript. The purpose of the exam is to test the extent to which sociology majors are retaining core aspects of the sociology curriculum.

Program of Concentration in Environmental Sociology

Environmental sociology is the study of the relationship between modern societies and the environment at a variety of scales, from households to global relations. It includes issues such as public understanding of environmental issues, the environment and inequality, environmental social movements and social change, and analysis of environmental reform and adaptation. Environmental sociology is different from environmental science, which is based in the natural sciences, and environmental studies, which includes courses from a wide range of disciplines, including engineering and the humanities. The department's program in environmental sociology includes a solid introduction to sociology and sociological methods as well as foundation requirements in environmental science. The program prepares students for careers in government, the law, management, research and teaching, and the nonprofit sector.

Students majoring in environmental sociology are required to complete 33 credit hours of course work. The major consists of four types of courses: foundation social science courses, foundation environmental science courses, research skills, and environmental sociology courses.

A total of at least 33 credit hours as follows:

1. Foundation Courses in Sociology SOC 1020 or 1020W or 1030, SOC 3001	6 credit hours
2. Foundation Courses in Environmental Sciences Two courses from EES 1510, 1030, 1070, 1080, 1140, 1111**, 2150, 2510,* 3310,* 3220,* 3310,* 4680,* 4750,* 4820;* at least one of which must address climate-related issues (EES 1080, 1140, 2110*, 2150, 2510*, 3310*, 4650*, 4680*, 4820*, or another EES course as approved by the director of undergraduate studies of Environmental Sociology). <i>*Requires prerequisites.</i> <i>**1111s require permission of the director of Environmental Sociology.</i>	at least 6 credit hours
3. Research Skills SOC 2100 (or other statistics course approved by the director of undergraduate studies of Environmental Sociology) followed by or concurrent with SOC 3002 or HOD 2500 for those majoring in HOD.	6 credit hours
4. Environmental Sociology Core 15 credit hours selected from the following: SOC 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3321, 3604, 3605, 3881,* 4961;* ENVS 4101, ENVS 4101W <i>*As approved by the director of undergraduate studies of Environmental Sociology</i>	15 credit hours

Program II (Honors Research Track in Environmental Sociology)

A total of at least 36 credit hours as follows:

The Honors Research Track offers superior majors in environmental sociology the opportunity to pursue intensive work through an independent research project. Students interested in pursuing the Honors Research Track in Environmental Sociology should contact the director of undergraduate studies of Sociology for more information. To be considered for the Honors Research Track in Environmental Sociology, a student must have a minimum cumulative GPA of 3.3 and a minimum GPA of 3.3 for courses that count toward the environmental sociology major. Students who are recommended for the program by the director of undergraduate studies of Sociology will typically begin the program in the first semester of their junior or senior year.

The Honors Research Track in Environmental Sociology requires:

1. Successful completion of requirements 1 through 3 in the Standard Track.
2. At least 12 credit hours from requirement 4 in the Standard Track.
3. Successful completion of at least two semesters of SOC 4981 (Honors Research). The first semester of 4981 (Honors Research) is a 3 credit hour seminar in which students develop the literature review and research plan for the honors thesis. In the second semester of 4981 (Honors Research), also for 3 credit hours, students must complete the research and data collection, data analysis, and initial write-up of results of the thesis. Students may elect to take a third or fourth semester of 4981 during their senior year, when they may, for example, work on revisions of the project and/or on publication. Students who begin the Honors Program in

- their senior year may also take more than 6 credit hours of 4981, up to a maximum of 12 credit hours.
- Successful defense of the completed thesis through an oral defense attended by the chair and reader of the thesis; this oral defense typically takes place during the second semester of the student's senior year. To earn honors in environmental sociology, students must successfully complete and defend an honors thesis before graduation.

Comprehensive Exam

In order to graduate with an environmental sociology major, students must take a comprehensive exam during their senior year. The exam is not graded, and no grade will appear on the student's transcript. The purpose of the exam is to test the extent to which majors are retaining core aspects of the environmental sociology curriculum.

Minor in Sociology

The minor in sociology is intended for those students who want to gain an overview of the discipline and to sample some of the special lines of study in it.

Students are required to complete 18 credit hours of course work inside the department, distributed as follows:

1. Sociology 1010, 1010W, or 1020, 1020W	3
2. Sociology 3001	3
3. Four courses, including at least one from three of the four core areas listed in above major	12
Total credit hours:	18

Licensure for Teaching

Candidates for teacher licensure in sociology at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Spanish and Portuguese

[Program of Concentration in Spanish](#)

[Honors Program in Spanish](#)

[Minor in Spanish](#)

[Minor in Spanish for the Professions](#)

[Minor in Portuguese](#)

[Program of Concentration in Spanish and Portuguese](#)

[Program of Concentration in Spanish and European Studies](#)

[Teacher Licensure](#)

[Catalan](#)

[Portuguese](#)

[Spanish](#)

CHAIR N. Michelle Murray

DIRECTOR OF UNDERGRADUATE STUDIES María Paz Pintané

DIRECTOR OF GRADUATE STUDIES Christina Karageorgou-Bastea

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Associate Professor of the Practice: Chalene Helmuth

Assistant Professor of the Practice: Maria Pintane

Principal Senior Lecturer, Retired: Elena Olazagasti-Segovia

Principal Senior Lecturers: Lorraine Catanzaro, Heraldo Falconi, Victoria Gardner, Clint Hendrix, Benjamin Legg, Patrick Murphy, Amarilis Ortiz, Carolina Palacios

Senior Lecturer, Retired: Raquel Rincon

Senior Lecturers: Jose Aznar, Sarah Delassus, Alicia Lorenzo-Garcia, Cynthia Wasick, Steven Wenz

COURSES OFFERED: [CTLN](#), [PORT](#), [SPAN](#)

The Department of Spanish and Portuguese offers a wide range of courses in the language, culture, and literature of Spain and Spanish America and is well known for its program in Portuguese and Brazilian studies. Intensive Elementary Catalan is also offered.

The department offers programs of concentration in both Spanish and Spanish and Portuguese. Majors take courses in language, literature, linguistics, and culture. An interdisciplinary major is available in Spanish and European Studies. Qualified Spanish majors may elect to take graduate courses in their senior year or participate in honors work. Minors in Spanish and in Portuguese are also offered.

The department serves majors from the Center for Latin American Studies and the Max Kade Center for European and German Studies. On the graduate level, the department offers a doctoral program in Spanish and a combination doctoral degree in Spanish and Portuguese.

Many students participate in Vanderbilt programs in Seville, Barcelona, Madrid, and Palma de Mallorca in Spain; Argentina, Chile, and Brazil in South America; and Cuba and the Dominican Republic in the Caribbean. Maymesters in Spain and Peru are also offered. Activities organized by the department include lectures, films, symposia, and Brazil Week. The department has a chapter of the national honor society Sigma Delta Pi for students of Spanish.

Note for all programs: An AP score of 5 on the Spanish literature test, with a proctored departmental placement score of 460 or greater, may substitute for SPAN 3301W. An AP score of 5 on the Spanish language test, with a proctored departmental placement test of 460 or greater, may substitute for Spanish 3302. A student who earns an AP score of 5 on both tests and receives a proctored departmental placement score of 460 or greater may choose only one substitution.

Program of Concentration in Spanish

The major requires 30 credit hours in Spanish courses numbered 3301W and above. The distribution requirements are as follows:

1. *Core requirements:* 3301W, 3302, and 3303. A more advanced composition course may be substituted for 3301W. A more advanced conversation course may be substituted for 3302. See note above for AP test scores that, paired with a proctored departmental placement score, may substitute for *one* of these courses.
2. *Literature:* 9 credit hours from courses numbered 3835 or 3893 or 4400-4980.
3. *Linguistics:* 3 credit hours from courses numbered 3892 or 4300-4360.
4. *Electives:* 9 credit hours from courses numbered 3320-3835 or 3891-4980. Students may substitute 3 credit hours of a language course in either Portuguese (1103 or higher) or Catalan (1103 or higher) as one elective.

All courses that count towards the major must be taken in Spanish and taken for a letter grade. The core courses 3301W and 3303 must be taken on the Vanderbilt campus. (This requirement does not apply to students who transfer to Vanderbilt from other U.S. institutions and have completed equivalent courses at their previous institution.) Students must take Spanish 3301W, 3302, and 3303 in order to participate in most study abroad programs. Students may count toward the major up to 12 credit hours of pre-approved course work from Vanderbilt study abroad programs in Spain or Latin America. Of the total number of credit hours taken abroad, no more than 6 credit hours may count toward the same distribution requirement area. A Maymester abroad course taught by a professor with an appointment in the Department of Spanish and Portuguese does not count against the 12 credit hour limit. Students may count toward elective credit up to 3 credit hours of supervised Independent Study, pre-approved by the director of undergraduate studies, in Vanderbilt study abroad programs in Spain or Latin America; such independent study counts toward the maximum limit of 12 credit hours. Students may count towards the major PORT 1103 or CTLN 1103.

Honors Program in Spanish

Candidates for honors in Spanish who meet college and departmental requirements must complete 36 credit hours in Spanish courses numbered 3301W and above. Students satisfy the requirements of the 30-credit-hour major in Spanish, in which one of the required literature courses is either the undergraduate seminar, Spanish 4980 (3 credit hours), which may be taken during either the junior or senior year, or a graduate seminar (course numbered 7000-9520) approved by the adviser to the Honors Program, which may only be taken during the senior year. If Spanish 4980 is not available, it may, with permission of the adviser to the Honors Program, be substituted by an "enriched" undergraduate literature course in which the instructor assigns outside research and a second or longer term paper.

The remaining 6 credit hours of the honors program consist of a senior honors thesis, which is completed during the senior year as independent study (Spanish 4998-4999) under the direction of a faculty adviser. Candidates must submit a proposal for the thesis to their prospective faculty adviser no later than the second semester of their junior year. The completed thesis must be submitted within the second semester of the senior year (deadlines are available from the department). An oral examination on the thesis and the general area of research, administered by a committee of the department, will follow.

Minor in Spanish

The minor in Spanish requires a minimum of 18 credit hours. The specific requirements are as follows:

1. 3301W (A more advanced composition course may be substituted)	3
2. 3302 (A more advanced conversation course may be substituted)	3
3. 3303	3
4. 3 credit hours of advanced Spanish literature chosen from courses numbered from 3835 or 3893 or 4400-4980	3
5. 6 credit hours of electives chosen from courses numbered 3320-3835, 3891-4980	6
Total credit hours:	
18	

All courses that count toward the minor must be taken in Spanish and taken for a letter grade. The core courses 3301W and 3303 must be taken on the Vanderbilt campus. (This requirement does not apply to students who transfer to Vanderbilt from other U.S. institutions and have completed equivalent courses at their previous institution.) Students must take Spanish 3301W, 3302, and 3303 in order to participate in most study abroad programs. Students may count toward the minor up to 6 credit hours of pre-approved course work from Vanderbilt study abroad programs in Spain or Latin America. A Maymester abroad course taught by a professor with an appointment in the Department of Spanish and Portuguese does not count against this limit. Students may transfer up to 3 credit hours of pre-approved course work from non-Vanderbilt study abroad programs.

Minor in Spanish for the Professions -- 18 credits

CORE COURSES (9 credits/3 courses) taken from
 SPAN 3290 Introduction to Spanish for the Professions or
 SPAN 3301W Intermediate Spanish Writing or

SPAN 3310W Spanish for Heritage Speakers

AND
 SPAN 3302 Spanish for Oral Communication

AND
 SPAN 3303 Introduction to Spanish and Spanish American Literature or
 SPAN 3304 Current and Contemporary Issues

PROFESSIONAL COURSES (6 credits/2 courses) taken from
 SPAN 3345 Spanish in Business and the Global Economy
 SPAN 3830 Spanish, Health and Society
 SPAN 3350 Spanish for the Legal Profession
 SPAN 4310 Translation and Interpretation
 SPAN 3891 Special Topics Course for the Professions

ELECTIVE (3 credits/1 course) taken from
 SPAN 3303 or 3304, if not taken as a core course; or any SPAN course above 3304;

Approved Study Abroad course or approved Maymester Abroad course (3325, 3330); or
 Approved Internship SPAN 3881

The minor in Spanish for the Professions requires a minimum of 18 credit hours. All courses that count toward the minor must be taken in Spanish and taken for a letter grade. The core courses 3290, 3301W, 3303 and 3304 must be taken at Vanderbilt. (This requirement does not apply to students who transfer to Vanderbilt from other U.S. institutions and have completed equivalent courses at their previous institution.) Students must take Spanish 3290

or 3301W; 3302; and 3303 or 3304 in order to participate in most study abroad programs. Students may count up to 6 credit hours of pre-approved course work from Vanderbilt study abroad programs in Spain or Latin America, or a Maymester abroad course taught by a professor with an appointment in the Department of Spanish and Portuguese.

Minor in Portuguese

The minor in Portuguese consists of a minimum of 15 credit hours. The specific requirements are as follows:

1. Portuguese 2203 (<i>Intermediate Portuguese; a more advanced language course may, subject to approval by the department, be substituted</i>)	3
2. One of the following two courses: Portuguese 3301 (<i>Portuguese Composition and Conversation</i>) or Portuguese 3302 (<i>Brazilian Pop Culture</i>)	3
3. Portuguese 3303 (<i>Introduction to Luso-Brazilian Literature</i>)	3
4. At least one of the following two courses: Portuguese 4420 (<i>Brazilian Literature through the Nineteenth Century</i>) or Portuguese 4425 (<i>Modern Brazilian Literature</i>)	3
5. At least 3 additional credit hours selected from among the courses listed below (or a graduate course numbered 7000–9520 for qualified seniors; procedures may be found in the Academic Regulations section of the Undergraduate Catalog).	
Portuguese 2205 (<i>Portuguese and Global Health</i>), 2995 (<i>Literatures and Cultures of Lusophone Africa</i>), 4350 (<i>Brazilian Culture through Native Material</i>), 4420 (<i>Brazilian Literature through the Nineteenth Century</i>), 4425 (<i>Modern Brazilian Literature</i>), 3892 (<i>Special Topics in Portuguese Language, Literature, and Civilization</i>)	3
Total credit hours:	15

Program of Concentration in Spanish and Portuguese

This major focuses on the two dominant languages (Spanish and Portuguese) of the Iberian Peninsula and Latin America and their literatures and cultures. The basic requirement for this major is a minimum of 33 credit hours in Spanish and Portuguese. The distribution is as follows:

1. Core requirements of Spanish 3301W, 3302, and 3303; Portuguese 2203, 3301 (or 3302), and 3303.
2. At least two Spanish courses numbered between 3320–3330, 3355–3385, 4400–4980 or 3835, 3891 or 3893.
3. At least two of the following Portuguese courses: 2205, 2995, 3892, 4350, 4420, 4425, 7070, 7071, and 9520.
4. One additional elective to be chosen from the courses listed under area 2 and 3 above.

A student who studies abroad may be able to substitute similar culture or literature courses with the permission of the director of undergraduate studies.

Program of Concentration in Spanish and European Studies

Students pursuing the interdisciplinary major in Spanish and European studies combine their focus on Spanish language and literature with a study of modern Europe in its political, economic, and cultural diversity. Students may elect this interdisciplinary major, which requires a minimum of 33 credit hours of course work. A semester of study abroad in Spain is recommended. Course work for the major is distributed as follows:

Spanish (21 credit hours)

Spanish language and literature core courses (9 credit hours): 3301W, 3302, and 3303 (a more advanced composition course may be substituted for 3301W; a more advanced conversation course may be substituted for 3302).

Spanish culture and civilization and/or Spanish literature (12 credit hours): 3320, 3325, 3355, 3360, 3365, 4400, 4405, 4410, 4415, 4440, 4445, 4455 4470, 4620, 4640, 4670, 4690, or, subject to a variance, any other courses dealing with Spain or Iberian issues.

Students may substitute 3 credit hours of a language course in either Portuguese (1103 or higher) or Catalan (1103 or higher) as an elective.

European Studies (12 credit hours)

European Studies core courses (3 credit hours): EUS 2201 or 2203

European Studies courses or alternative topical courses as approved by major adviser (6 credit hours)

Senior Tutorial (3 credit hours): EUS 4960 or equivalent course in Spanish

Teacher Licensure

Candidates for teacher licensure in Spanish at the secondary level should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Catalan

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language.

Portuguese

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will

forfeit the test credit if they complete a lower-level course taught in that same language.

Spanish

Entering students should consult their advisers or the director of undergraduate studies at the Department of Spanish and Portuguese for advice on placement. Students who have not studied Spanish in high school should begin their studies at Vanderbilt in Spanish 1100. Students with high school Spanish on their records must present a department placement test score in Spanish to be placed correctly. (See department website for more details.)

Note: Students may not earn credit for an introductory language course if they previously have earned credit for a higher-level course taught in that same language. In addition, students may not earn credit for an intermediate-level language course if they previously have earned credit for a higher-level course taught in that same language.

Students who have earned Advanced Placement or International Baccalaureate credit in a foreign language will forfeit the test credit if they complete a lower-level course taught in that same language. Exception: Students who take Spanish 3301W do not forfeit credit for Spanish 3302.

Teacher Education

[Early Childhood and Elementary Education](#)

[Secondary Education](#)

[Special Education](#)

Students interested in preparing for licensure as early childhood, elementary, special education, or secondary school teachers should meet with Associate Dean Roger Moore, College of Arts and Science, as soon as possible to initiate discussion with appropriate personnel in teacher education.

Specific information on program requirements will be found under Licensure for Teaching in the Peabody College section of this catalog.

Early Childhood and Elementary Education

Students interested in preparing to teach early childhood or elementary school pupils major in a single discipline or an interdisciplinary program in the College of Arts and Science as well as in education at Peabody College.

Secondary Education

The College of Arts and Science and Peabody College offer teacher education programs leading to secondary school teacher licensure in the following fields:

English

Mathematics

Science (Biological Sciences, Chemistry, Earth and Environmental Sciences, Physics)

Social Studies (History and Political Science). Economics, Psychology, and Sociology may become additional endorsement areas for students who also have selected history or political science as an endorsement area.

Students major in an academic discipline in the College of Arts and Science and complete a second major in education at Peabody College.

Special Education

Students interested in preparing to teach children with special needs major in special education at Peabody College. Areas of teacher licensure available are mild and moderate disabilities, multiple and severe disabilities, visual impairment, hearing impairment, and early childhood special education.

Theatre

[Program of Concentration in Theatre](#)

[Honors Program](#)

[Minor in Theatre](#)

CHAIR Phillip N. Franck

INTERIM CHAIR Claire Cisco King

DIRECTOR OF UNDERGRADUATE STUDIES Elizabeth Haynes

Professors, Emeriti: Jon Hallquist, Terry Hallquist

Professors: Elizabeth Essin, Phillip Franck, Mary Leah Lowe

Associate Professor: Norbert Ross

Assistant Professors: Elizabeth Cizmar, Kristyl Tift

Assistant Professors of the Practice: Hannah Chalman, Elizabeth Haynes, Alexandra Sargent Capps

Writer in Residence: Krista Knight

COURSES OFFERED: [THTR](#)

Vanderbilt's Department of Theatre offers a vital center of innovative scholarship, teaching, creative expression, and exploration. The study of theatre introduces students to a major form of literature and performing arts, thereby developing a familiarity with one of the greatest cultural heritages and an understanding of human behavior and civilization as it is reflected through the ages. Theatre uniquely shapes perceptions about life into an active experience. Because this process encourages critical thought and discussion, the department provides a singular and important aspect of a liberal arts education through its production season and course work. Viewed as a practical extension of the department's curriculum, plays are produced in Neely Auditorium, a laboratory where students learn to form creative expressions as well as to evaluate and to critique them.

On one level, the Department of Theatre helps the general liberal arts student develop reasoned standards of criticism and an understanding of the intimate correlation between the theatre and the society which it reflects, preparing Vanderbilt graduates for successful careers in theatre as well as other fields of interest. For its majors and minors, the department provides a more detailed and specialized study of the major components of theatrical endeavor, allowing opportunities for the practical application of course work in the productions staged at the theatre. In many cases, the department helps to prepare students with professional aspirations as either artists or teachers in their specialized area of interest.

Work in the productions at Vanderbilt reflects the instruction that occurs in the classroom at Neely Auditorium. Because the academic endeavors require hands-on, project-oriented teaching, students can expect small-to-medium class enrollments and numerous opportunities for exposure to faculty instruction outside of the classroom. The department's curriculum includes courses in acting, directing, design, technology, dramatic literature, theatre history and criticism, and playwriting. The Department of Theatre frequently offers a Maymester program of study of theatre in London and the U.K. Students can either major or minor in theatre at Vanderbilt. The major consists of a minimum of 35 credit hours that include courses in acting, directing, dramatic literature, theatre history/criticism, design, technology, and stagecraft. For the minor, students select one of three more narrowly focused tracks (dramatic literature/theatre history, acting/directing, or design/technology) and complete a minimum of 18 credit hours of course work.

Students may also learn about theatre by studying with Coe Artists, distinguished guest-artist professionals brought to campus each year to benefit majors, minors, and those with a serious interest in theatre. Weeklong master classes are taught by playwrights, actors, designers, and directors from the professional world of theatre, television, and film. Previous Coe Artists have included such celebrated artists as Tim Miller, Sojourn Theatre, Katie Pearl, Lisa D'Amour, and Shawn Hall. Theatre also brings professional directors and designers as Coe Artists to campus to work within the department's production season.

Students have the opportunity to participate in a variety of theatrical experiences working with professional guests, as well as hear professional artists speak as guest lecturers.

Theatre majors and minors from Vanderbilt have entered a wide variety of professions and post-graduate opportunities after they graduate. Those seeking employment in the fields of theatre, film, radio, or television have secured positions at appropriate graduate schools or internships with professional companies immediately following their study at Vanderbilt. Many distinguished professional theatre companies across the nation, television networks in New York, and the film industry in Los Angeles include Vanderbilt University Theatre alumni as writers, actors, designers, technicians, dramaturgs, and stage managers. In addition, many Vanderbilt theatre students have secured teaching assignments at either the college/university level (once they have completed appropriate post-graduate education) or the elementary/secondary education level. Theatre also prepares students for success in other professions including medicine, law, education, policy, engineering, and business to name a few.

The study and practice of theatre offers individuals opportunities to participate through a variety of means: to collaborate with all other members of a production team; to express elements of abstract thought in both oral and written form; and to develop the critical ability to assess and analyze aesthetic choices.

Program of Concentration in Theatre

Students majoring in theatre are required to complete a minimum of 35 credit hours in courses concerned exclusively with theatre and dramatic literature. Required courses are 1010/1010W or 1111, 1711, 1611 2651, and 4961; two courses chosen from 2201, 2202W, 2204, and 4201; one course chosen from 3721, 3761, and 3741; additional 9 credit hours chosen from other theatre courses above the 2000 level.

Honors Program

The Honors Program in Theatre is designed to afford superior students the opportunity to pursue more intensive work within their major field. Admission requirements are: (1) completion of junior year; (2) completion of at least 21 credit hours of the theatre major; (3) 3.3 minimum cumulative GPA and a 3.5 minimum GPA in courses counting toward the major. Candidates who successfully complete the following requirements may graduate with honors or highest honors: (1) maintain the aforementioned GPA throughout the senior year; (2) complete all requirements of the theatre major; (3) complete 6 credit hours of independent research 4998-4999 (Honors Research and Thesis) normally taken during the senior year; (4) write an honors thesis to be completed by the second semester of the senior year; (5) successfully complete an honors oral examination on the topic of the thesis.

Minor in Theatre

A minor in theatre requires a minimum of 18 credit hours of courses in the department. All students minoring in theatre must complete 1010/1010W or 1111 and 4201. In addition, each student must complete one of the following three clusters: Dramatic Literature/Theatre History: 2201, 2202W, 2204, and 3201W; Acting/Directing: 1611, 3611, 4611, and 2651; Design/Technology: 1711 is required; choose three from 3721, 3761, 3741, or 3781.

Campus Resources

Life at Vanderbilt

Accommodations for Students with Disabilities

Student Access provides accommodations to students with disability-related limitations. Common accommodations include, but are not limited to, extended time for testing, assistance with locating sign language interpreters, audio textbooks, physical adaptations, supplemental notes, and reading services. Students may also request accommodations related to housing, dining, and transportation. Accommodations are determined on an individual, case-by-case basis. Specific concerns pertaining to student accommodations or access on campus should be directed to the Office for Student Access (studentaccess@vanderbilt.edu) or by calling (615) 343-9727. For additional information please visit the Student Access website: vanderbilt.edu/student-access.

Nondiscrimination, Anti-Harassment, Anti-Retaliation, and Sexual Misconduct

The Title IX Office (vanderbilt.edu/title-ix) and/or the Equal Opportunity and Access Office (vanderbilt.edu/EOA) investigate allegations of prohibited discrimination, harassment, and retaliation involving members of the Vanderbilt community. This includes allegations of sexual misconduct and other forms of power-based personal violence.

If you believe that a member of the Vanderbilt community has engaged in prohibited discrimination, harassment, or retaliation, based on a protected identity other than sex please contact the Equal Opportunity and Access Office. If the offense is criminal in nature, you may file a report with Vanderbilt University Police Department.

The Title IX Office also facilitates the provision of supportive measures and other accommodations for students affected by sexual misconduct and power-based personal violence. Some examples of these supportive measures are mutual no contact directives, adjusted course schedules, and housing adjustments.

Specific concerns pertaining to prohibited discrimination, harassment, or retaliation should be directed to the Equal Opportunity and Access Office at (615) 343-9336. Allegations of sex discrimination, sexual misconduct and other forms of power-based personal violence, should be directed to the Title IX Office at (615) 343-9004.

Official University Communications

Certain federal statutes require that information be delivered to each student. Vanderbilt delivers much of this information via email. Official electronic notifications, including those required by statutes, those required by university policy, and instructions from university officials, will be sent to students' Vanderbilt email addresses: user.name@vanderbilt.edu. Students are required to be familiar with the contents of official university notifications, and to respond to instructions and other official correspondence requiring a response. Some messages will include links to the YES Message Center, which is a secure channel for official communication of a confidential nature. However, students should not wait to receive such a message, and should check YES frequently to remain current on official, confidential communications.

The university makes every effort to avoid inundating students with nonessential email (often called "spam"), and maintains separate lists from which students may unsubscribe for announcements of general interest.

Directory information should be kept current. Students may report address changes, emergency contact information, and missing person contact information via the web by logging in to YES (Your Enrollment Services) <https://yes.vanderbilt.edu> and clicking on the Personal Information link.

Student Records (Family Educational Rights and Privacy Act)

Vanderbilt University is subject to the provisions of federal law known as the Family Educational Rights and Privacy Act (also referred to as FERPA). This act affords matriculated students certain rights with respect to their educational records. These rights include:

1. The right to inspect and review their education records within 45 days of the day the University receives a request for access. Students should submit to the Office of the University Registrar written requests that identify the record(s) they wish to inspect. The Office of the University Registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the Office of the University Registrar does not maintain the records, the student will be directed to the University official to whom the request should be addressed.
2. The right to request the amendment of any part of their education records that a student believes is inaccurate or misleading. Students who wish to request an amendment to their educational record should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the student will be notified of the decision and advised of his or her right to a hearing.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records to third parties, except in situations that FERPA allows disclosure without the student's consent. These exceptions include:
 - Disclosure to school officials with legitimate educational interests. A "school official" is a person employed by the University in an administrative, supervisory, academic or research, or support-staff position (including University law enforcement personnel and health staff); contractors, consultants, and other outside service providers with whom the University has contracted; a member of the Board of Trust; or a student serving on an official University committee, such as the Honor Council, Student Conduct Council, or a grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
 - Disclosure to parents if the student is a dependent for tax purposes
 - Disclosure to appropriate individuals (e.g., parents/guardians, spouses, housing staff, health care personnel, police, etc.) where disclosure is in connection with a health or safety emergency and knowledge of such information is necessary to protect the health or safety of the student or other individuals.
 - Disclosure to a parent or legal guardian of a student, information regarding the student's violation of any federal, state, or local law, or of any rule or policy of the institution, governing the use or possession of alcohol or a controlled substance if the University has determined that the student has committed a disciplinary violation with respect to the use or possession and the student is under the age of 21 at the time of the disclosure to the parent/guardian.
 - Disclosure to various authorized representatives of government entities (such as, compliance with Student and Exchange Visitors Information System [SEVIS], Solomon Amendment, etc.).

FERPA provides the university the ability to designate certain student information as "directory information." Directory information may be made available to any person without the student's consent unless the student gives notice as provided for, below. Vanderbilt has designated the following as directory information: the student's name, address, telephone number, email address, student ID photos, major field of study, school, classification, participation in officially recognized activities and sports, weights and heights of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, and other information that would not generally be considered harmful or an invasion of privacy if disclosed. Any student who does not wish disclosure of directory information should notify the Office of the University Registrar in writing. No element of directory information as defined above is released for students who request nondisclosure except as required by statute.

The request for nondisclosure does not apply to class rosters in online class management applications, or to residential rosters—or rosters of groups a student may join voluntarily—in online, co-curricular engagement applications, or rosters of other information on the websites of student organizations that a student may join. Neither class rosters in online class management applications, nor residential rosters in online co-curricular engagement applications, are available to the public.

As of January 3, 2012, the U.S. Department of Education's FERPA regulations expand the circumstances under which students' education records and personally identifiable information (PII) contained in such records—including Social Security Numbers, grades, or other private information—may be accessed without consent. First, the U.S. Comptroller General, the U.S. Attorney General, the U.S. Secretary of Education, or state and local

education authorities (“Federal and State Authorities”) may allow access to student records and PII without consent to any third party designated by a Federal or State Authority to evaluate a federal- or state-supported education program. The evaluation may relate to any program that is “principally engaged in the provision of education,” such as early childhood education and job training, as well as any program that is administered by an education agency or institution.

Second, Federal and State Authorities may allow access to education records and PII without consent, to researchers performing certain types of studies, in certain cases even when the University objects to or does not request such research. Federal and State Authorities must obtain certain use-restriction and data security promises from the third parties that they authorize to receive PII, but the Authorities need not maintain direct control over the third parties.

In addition, in connection with Statewide Longitudinal Data Systems, State Authorities may collect, compile, permanently retain, and share without student consent, PII from education records, and may track student participation in education and other programs by linking such PII to other personal information that they obtain from other Federal or State data sources, including workforce development, unemployment insurance, child welfare, juvenile justice, military service, and migrant student records systems.

If a student believes the university has failed to comply with FERPA, he or she may file a complaint using the Student Complaint and Grievance Procedures as outlined in the *Student Handbook*. If dissatisfied with the outcome of this procedure, students may file a written complaint with the Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue SW, Washington, DC 20202-5920.

Questions about the application of the provisions of the Family Educational Rights and Privacy Act should be directed to the Office of the University Registrar or to the Office of General Counsel.

The Vanderbilt Honor Code and the Honor System

Vanderbilt University takes pride in its honor code and its student-run honor system.

The statement of the honor code is shared by all ten schools of the university:

Vanderbilt University students pursue all academic endeavors with integrity. They conduct themselves honorably, professionally, and respectfully in all realms of their studies in order to promote and secure an atmosphere of dignity and trust. The keystone of our honor system is self-regulation, which requires cooperation and support from each member of the University community.

The Honor System is a time-honored tradition that began with the first classes at Vanderbilt in 1875. Students established the system and continue to manage it today. It rests on the presumption that all work submitted as part of course requirements is produced by the student, without help from any other source unless acknowledgement is given in a manner prescribed by the instructor. Cheating, plagiarizing, or otherwise falsifying results of study are specifically prohibited. The system applies not only to examinations but also to written work and computer programs submitted to instructors. Detailed descriptions of Honor System violations and Undergraduate Honor Council procedures are published in the *Student Handbook*, available on the web at vanderbilt.edu/student_handbook.

Responsibility for the preservation of the system falls on the individual student who, by registration, acknowledges the authority of the Undergraduate Honor Council. Students are expected to demand of themselves and their fellow students complete respect for the Honor Code. Ignorance of the regulations is not a defense for abuse of regulations. All incoming students attend a mandatory signing ceremony and educational program on the Honor System at the beginning of the fall semester. Additional information about the Honor

System is available on the web at studentorg.vanderbilt.edu/honorcouncil/.

VA Compliance Statement

Any covered individual will be able to attend or participate in the course of education during the period beginning on the date on which the individual provides to the educational institution a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 (a "certificate of eligibility" can also include a "Statement of Benefits" obtained from the Department of Veterans Affairs' (VA) website - eBenefits, or a VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

1. The date on which payment from VA is made to the institution.
2. 90 days after the date the institution certified tuition and fees following the receipt of the certificate of eligibility.

Vanderbilt University will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement funding from VA under chapter 31 or 33.

Vanderbilt University

Accreditation

Vanderbilt University is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award baccalaureate, masters, and doctorate degrees. Vanderbilt University also may offer credentials such as certificates and diplomas at approved degree levels. Questions about the accreditation of Vanderbilt University may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (www.sacscoc.org).

Commencement

The university holds its annual Commencement ceremony following the spring semester. Degree candidates must have completed successfully all curriculum requirements and have passed all prescribed examinations by the published deadlines to be allowed to participate in the ceremony. A student completing degree requirements in the summer or fall semester will be invited to participate in Commencement the following May; however, the semester in which the degree was actually earned will be the one recorded on the diploma and the student's permanent record. Financially clear students unable to participate in the graduation ceremony will receive their diplomas by mail.

Please refer to the Commencement webpage at vanderbilt.edu/commencement for complete information on the May ceremony.

Modification Policy and Nondiscrimination Statement

The university reserves the right, through its established procedures, to modify the requirements for admission and graduation and to change other rules, regulations, and provisions, including those stated in this bulletin and other publications, and to refuse admission to any student, or to require the withdrawal of a student if it is determined to be in the interest of the student or the university. All students, full time or part time, who are enrolled in Vanderbilt courses are subject to the same policies.

Policies concerning noncurricular matters and concerning withdrawal for medical or emotional reasons can be found in the Student Handbook, which is on the Vanderbilt website at vanderbilt.edu/student_handbook.

NONDISCRIMINATION STATEMENT

In compliance with federal law, including the provisions of Title VI and Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendment of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, the ADA Amendments Act of 2008, Executive Order 11246, the Vietnam Era Veterans Readjustment Assistance Act of 1974 as amended by the Jobs for Veterans Act, and the Uniformed Services Employment and Reemployment Rights Act, as amended, and the Genetic Information

Nondiscrimination Act of 2008, Vanderbilt University does not discriminate against individuals on the basis of their race, sex, sexual orientation, gender identity, religion, color, national or ethnic origin, age, disability, military service, covered veterans status, or genetic information in its administration of educational policies, programs, or activities; admissions policies; scholarship and loan programs; athletic or other university-administered programs; or employment. In addition, the university does not discriminate against individuals on the basis of their gender expression. Requests for information, inquiries or complaints should be directed to these offices: Equal Opportunity and Access Office, eo@vanderbilt.edu, telephone (615) 343-9336; Title IX Office, Title IX Coordinator, titleix@vanderbilt.edu, telephone (615) 343-9004, 110 21st Avenue South, Suite 975, Nashville TN 37203; Student Access Office, studentaccess@vanderbilt.edu, telephone (615) 343-9727.

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Obtaining Information about the University

Notice to current and prospective students:

In compliance with applicable state and federal law, the following information about Vanderbilt University is available:

Institutional information about Vanderbilt University, including accreditation, academic programs, faculty, tuition, and other costs, is available in the catalogs of the colleges and schools on the Vanderbilt University website at vanderbilt.edu/catalogs.

Information about financial aid for students at Vanderbilt University, including federal and other forms of financial aid for students, is available from the Office of Student Financial Aid and Scholarships on the Vanderbilt University website at vanderbilt.edu/financialaid. The Office of Student Financial Aid and Scholarships is located at 2309 West End Avenue, Nashville, Tennessee 37240-7810, (615) 322-3591 or (800) 288-0204.

Information about graduation rates for students at Vanderbilt University is available on the Vanderbilt University website at vanderbilt.edu/faculty-affairs/oapraa/student-achievement. Paper copies of information about graduation rates may be obtained by writing the Office of the University Registrar, Vanderbilt University, PMB 407701, 110 21st Avenue South, Suite 110, Nashville, Tennessee 37240-7701 or by calling (615) 322-7701.

The Vanderbilt University Annual Security Report on university-wide security and safety, including related policies, procedures, and crime statistics, is available from the Vanderbilt University Police Department on the university website at police.vanderbilt.edu/crimeinfo/annual-security-report.pdf. A paper copy of the report may be obtained by writing the Vanderbilt University Police Department, 2800 Vanderbilt Place, Nashville, Tennessee 37212, or by calling (615) 343-9750. For more information, see the "Vanderbilt University Police Department" section of this catalog.

A copy of the annual Equity in Athletics Disclosure Act Report on the Vanderbilt University athletic program participation rates and financial support data may be obtained by writing the Vanderbilt University Office of Athletic Compliance, 2601 Jess Neely Drive, P.O. Box 120158, Nashville, Tennessee 37212 or by calling (615) 322-7992.

Information about your rights with respect to the privacy of your educational records under the Family Educational Rights and Privacy Act is available from the Office of the University Registrar on the Vanderbilt University website at registrar.vanderbilt.edu/ferpa. Paper copies of this information about educational records may be obtained by writing the Office of the University Registrar, Vanderbilt University, PMB 407701, 110 21st Avenue South, Suite 110, Nashville, Tennessee 37240-7701, or by calling (615) 322-7701. For more information,

see the "Student Records (Family Educational Rights and Privacy Act" section of this catalog.

The University

Commodore Cornelius Vanderbilt, who gave a million dollars to build and endow Vanderbilt University in 1873, expressed the wish that it "contribute . . . to strengthening the ties which should exist between all geographical sections of our common country."

A little more than a hundred years later, the Vanderbilt Board of Trust adopted the following mission statement: "We reaffirm our belief in the unique and special contributions that Vanderbilt can make toward meeting the nation's requirements for scholarly teaching, training, investigation, and service, and we reaffirm our conviction that to fulfill its inherited responsibilities, Vanderbilt must relentlessly pursue a lasting future and seek highest quality in its educational undertakings."

Today as Vanderbilt pursues its mission, the university more than fulfills the Commodore's hope. It is one of a few independent universities with both a quality undergraduate program and a full range of graduate and professional programs. It has a strong faculty of more than 4,200 full-time members and a diverse student body of more than 12,800.

The 334-acre campus is about one and one-half miles from the downtown business district of the city of Nashville, combining the advantages of an urban location with a peaceful, parklike setting of broad lawns, shaded paths, and quiet plazas.

The schools of the university offer the following degrees:

College of Arts and Science. Bachelor of Arts.

Blair School of Music. Bachelor of Music, Bachelor of Musical Arts.

Divinity School. Master of Divinity, Master of Theological Studies, Master of Theology, Doctor of Ministry.

School of Engineering. Bachelor of Engineering, Bachelor of Science, Master of Engineering.

Graduate School. Master of Arts, Master of Fine Arts, Master of Liberal Arts and Science, Master of Science, Doctor of Philosophy.

Law School. Master of Laws, Master of Legal Studies, Doctor of Jurisprudence.

School of Medicine. Master of Education of the Deaf, Master of Genetic Counseling, Master of Imaging Science, Master of Public Health, Master of Science in Clinical Investigation, Master of Science in Medical Physics, Master of Science (Applied Clinical Informatics, Speech-Language Pathology), Doctor of Audiology, Doctor of Medical Physics, Doctor of Medicine.

School of Nursing. Master of Nursing, Master of Science in Nursing, Doctor of Nursing Practice.

Owen Graduate School of Management. Master of Accountancy, Master of Business Administration, Master of Management in Health Care, Master of Marketing, Master of Science in Finance.

Peabody College. Bachelor of Science, Master of Education, Master of Public Policy, Doctor of Education.

No honorary degrees are conferred.

Vanderbilt University Administration

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C. CYBELE RAVER, Ph.D., Provost and Vice Chancellor for Academic Affairs

STEVEN K. ERTEL, B.A., Vice Chancellor for Communications and Marketing

NATHAN GREEN, B.B.A., Vice Chancellor for Government and Community Relations

ANDERS W. HALL, M.B.A., Vice Chancellor for Investments and Chief Investment Officer

ERIC C. KOPSTAIN, M.B.A., Vice Chancellor for Administration

CANDICE S. LEE, Ed.D., Vice Chancellor for Athletics and University Affairs and Athletic Director

JOHN M. LUTZ, A.B., Vice Chancellor for Development and Alumni Relations
SYDNEY SAVION, Ed.D., Vice Chancellor for People, Culture, and Belonging
RUBY Z. SHELLAWAY, J.D., Vice Chancellor, General Counsel, and University Secretary
BRETT C. SWEET, M.B.A., Vice Chancellor for Finance, Information Technology and Chief Financial Officer
Deans of the Schools and Colleges
JEFFREY R. BALSER, M.D., Ph.D., Dean of the School of Medicine
CAMILLA PERSSON BENBOW, Ed.D., Dean of Peabody College
C. ANDRE CHRISTIE-MIZELL, Ph.D., Dean of the Graduate School
CHRIS GUTHRIE, J.D., Dean of the Law School
PAMELA R. JEFFRIES, Ph.D., Dean of Vanderbilt School of Nursing
JOHN KURIYAN, Ph.D., Dean of School of Medicine Basic Sciences
TIMOTHY P. MCNAMARA, PhD., Dean of the College of Arts and Science
YOLANDA PIERCE, Ph.D., Dean of the Divinity School
MELISSA K. ROSE, Ph.D., Dean of Blair School of Music
KRISHNENDU ROY, Ph.D., Dean of the School of Engineering
THOMAS J. STEENBURGH, Ph.D., Dean of Owen Graduate School of Management

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