

# COLLEGE OF

# SCIENCES & HEALTH

# PROFESSIONS

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The College of Sciences and Health Professions’ mission is to produce graduates who are critical thinkers, problem solvers, communicators, and contributors to the wellbeing of the community though competence in their areas of study. The College contains majors in the Departments of Criminal Justice and Forensic Science, Mathematics and Computer Science, Natural Sciences, and Nursing. The degrees and minors are listed on the table of contents on the previous page. The Department of Natural Sciences provides an avenue for students who are interested in Pre-engineering and many medical fields including Pre-Medicine, Pre-Pharmacy, Pre-Dentistry, Pre-Veterinary Medicine. The Natural Sciences Department, in collaboration with the College of Education, offers a Science Education curriculum at the Baccalaureate and Masters’ degree level. Additionally, Master degrees are offered and in Criminal Justice, Mathematics Education, as well as in Nursing, with a focus on Family Nurse Practitioner and Nurse Educator (see the Graduate Catalog).

The College office is housed in the Academic (ACAD) Building in room 130. The departments of the College are housed in various locations across the campus: Criminal Justice and Forensic Science is in Hartnett Hall; Mathematics and Computer Sciences is in Simmons Hall; Natural Sciences and Nursing are located in the (ACAD) building.

**Experiential and Lifelong Learning**

The College and departments strongly support experiential learning and lifelong learning. Practicum experiences and Internships are incorporated into the program of study or encouraged during the summer break. Articulations with Associate Degree granting institutions have been established to facilitate progression to Baccalaureate degree completion programs with minimal difficulty. Students are provided a basis for and are encouraged to pursue Masters degree education and beyond and to continue professional development.

## DEPARTMENT OF NURSING

The BSN Program is approved by the Georgia Board of Nursing and both the BSN and MSN programs are accredited by the National League for Nursing Accrediting Commission (NLNAC) and the Southern Association of Colleges and Schools (SACS).

The student who meets the criteria for general admission to Albany State University is enrolled in the core curriculum designated by the University. The student who has declared nursing as a major is admitted to the core each semester. The student is admitted to the professional nursing pro- gram during the fall semester of each year.

## SPECIFIC ADMISSION CRITERIA TO THE GENERIC NURSING PROGRAM

Admission into the Nursing Program, the following are required:

1. Completion of approximately 30 hours of the core curriculum with a minimum grade of “C” in each course and in institutional requirements.

2. A cumulative GPA of 2.75 in core courses.

3. Current enrollment in the last of (or completion of) all required basic science courses including anatomy and physiology, microbiology, and Area D science sequence with a grade of “C” or higher in each course, and no more than one (1) failure in any one of the sciences courses. (Only one failure in science courses is allowed. If the science failure occurred more than 5 years ago, the student has the opportunity to repeat the course one time.)

4. Generic nursing students considered for admission must have Anatomy and Physiology course(s) that are less than 6 years old at the time of potential admission into the nursing program. If the Anatomy and Physiology course(s) is/are older than 6 years, the student must retake the course(s) and pass with a “C” or better. The student can elect to challenge the course(s) by passing a national standardized exam on the content at the national average/percentile.

5. Completion of Standardized Nursing admissions diagnostics test with reading and math scores at the percentile approved by the Nursing Faculty. This exam is scheduled during the spring semester. The exam may also be scheduled once during the summer.

6. A completed health record on file in the Student Health Services indicating that all current health policies in the Department of Nursing have been met.

7. A current CPR (cardiopulmonary resuscitation/basic cardiac life support (BCLS) card. All students must be certified by the American Heart Association (AHA) in Child and Adult BCLS for health care providers. This certification must be maintained throughout the program (renewed every two years). An outdated CPR certification will prohibit the student from attending clinical practice experiences.

**OPTION:**

Students who do not meet the admission requirements or whose admission has been denied may request an interview (appeal) with the Nursing Admission Committee for a review of his/her entire collegiate academic record. All students should see their advisor prior to completing an application to the Nursing Program. Eligible students who do not meet admission criteria are encouraged to enroll in the Elective Foundations courses: For example, NURS 2112 – Foundations of Professional Nursing or NURS 2121: Foundations of Pathophysiology while working to meet admission requirements. These courses will prepare students for progression in the nursing program once they have met the pre-requisites.

**TRANSFER ADMISSION POLICY**

A. A student transferring into the nursing curriculum from an accredited four-year institution will be required to meet the above admission criteria and will follow the generic curriculum pattern including completion of required courses prior to clinical nursing course entry. Credit for any nursing courses taken will be evaluated on an individual basis.

B. A student transferring from another program with one failure in a nursing course may be considered for admission to upper level nursing, but must obtain a core GPA of 3.0 for 2 semesters in courses recommended by faculty, before admission. The failure will count as the first nursing failure.

C. A student who has failed (D or less) two nursing courses, whether at a two-year institution or at a four-year institution, will be ineligible for admission.

Appeals must be made in writing to the Nursing Admissions Subcommittee and submitted to the Department at the time of admission or after the second failure.

## APPEAL POLICY FOR READMISSION

This policy affects the student whose second failure in a nursing course is in NURS 4345/NURS 4344.

1. Student’s record will be reviewed for progression by the appropriate faculty committee.

2. Student may be allowed to retake the course the next time that it is offered, pending decision by faculty committee.

3. Approval must be supported by the Departmental Chair and Dean of the College.

## RN STUDENT ADMISSION

Specific Admission Criteria to the RN-BSN Nursing Program

The Albany State University Bachelor of Science in Nursing Degree program follows the collaborative Georgia RN-BSN Articulation Model for

Registered Nursing Students

1. Nursing credits accepted as advanced standing from prior college credits include the following with a “C” or better:

• Nutrition

• Pharmacology

2. The Georgia RN-BSN Articulation Model is followed for RNs. No validation testing for prior nursing content is required for students who meet the appropriate criteria of the model.

3. During registration of RN students for NURS 4240 (Community Health Nursing) and NURS 4344 (Senior Seminar), the nursing faculty will verify the RN’s original Georgia license and subsequently will sign a form indicating that the license is current. Student must also present a copy of the signed license during the admission process and each subsequent year of nursing education until graduation.

(Criteria of articulation model on file in the Department Chair’s Office or at the Georgia Board of Nursing, 237 Coliseum Drive, Macon, GA

31217-3858.) Website: <http://www.sos.state.ga.us>

## BACHELOR OF SCIENCE IN NURSING DEGREE

**CORE A-F AND ABOVE THE CORE REQUIREMENTS**

Each student must complete the Core Curriculum. The Core consists of 9 hours in Area A (Essential Skills), 5 hours in Area B (Institutional Options), 6 hours in Area C (Humanities/Fine Arts), 10-11 hours in Area D (Science, Mathematics and Technology), 12 hours in Area E (Social Science), 18 hours in Area F (Courses related to program of study), and 6 hours above the Core.

**Area F courses:**

NURS 2120 Human Growth and Development in the Health Professions 3 hours

BIOL 2411/2412 Anatomy and Physiology I and II 8 hours

BIOL 2211 Microbiology 4 hours

NURS 2601 Introduction to Geriatric Nursing 3 hours

**ADDITIONAL REQUIREMENTS**

Each student must maintain a “C” average in order to progress in the nursing major. The minimum score for obtaining a “C” is 75. A student who fails a nursing course will be allowed to repeat this nursing course one time when it is offered again in the curriculum; however, this failure means that the student will be unable to progress in the nursing program until the same course is satisfactorily completed. A second failure of a nursing course will constitute grounds for dismissal from the nursing program. (An appeal for readmission may be initiated after one year.)

**RE-ENTRY INTO PROGRAM**

All undergraduate nursing students who experience any interruption that results in non-completion of a Nursing Course will be required to successfully complete the appropriate NURS Remediation Course prior to re-entry into the Nursing Program. The course will be listed as NURS 4111 with the appropriate hours for the class needed to re-enter the nursing program. Students who have an interruption in matriculation of any nursing course must have a second criminal background check prior to re-enrollment. All background checks will be submitted before the last day of the university’s registration period for the semester.

Each student is responsible for an approved uniform, selected equipment, health and liability insurance, a criminal background check,, standardized testing (required with most nursing courses), transportation, yearly physical examinations, immunizations, chest X-rays and selected laboratory tests. The curriculum is designed for approximately four years of study. Courses in clinical nursing will begin in the sophomore year and continue through the remainder of the program

Clinical experiences are provided in home/community settings, hospitals, clinics, rehabilitation centers, nursing homes, primary health care centers, community health and social agencies, schools, industries and other selected settings.

**REQUIREMENTS FOR BACHELOR OF SCIENCE IN NURSING DEGREE**

1. Completion of 123 semester hours in the required program of study.

2. A grade point average (GPA) of 2.0 or better.

**PROGRAM OF STUDY FOR A BACHELOR OF SCIENCE IN NURSING DEGREE**

**Freshman Year Fall, Spring & Summer**

|  |  |  |  |
| --- | --- | --- | --- |
| ENGL | 1101 | English Composition I | 3 |
| MATH | 1111 | College Algebra or |  |
| MATH | 1101 | Math Modeling | 3 |
| AREA D | Area D | Science Course I | 4 |
| COHP | 2120 | Growth & Development/Health Professions | 2 |
| ASU | 1201 | Foundations of College Success | 3 |
| COHP | 2110 | Nutrition | 3 |
|  |  |  | 1 |
| ENGL | 1102 | English Composition II | 3 |
| BIOL | 2411 | Anatomy & Physiology I | 4 |
| PSYC | 1101 | General Psychology | 3 |
| AREA D |  | Area D Science II | 4 |
| COHP | 1231 | Professional Nursing Orientation Seminar (Elective) | 1 |
| NURS | 2600 | Health & Medical Terminology | 3 |
| BIOL | 2211 | Microbiology | 4 |
| **Total** |  |  | **(40 hours)** |

**Sophomore Year**

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL | 2412 | Anatomy & Physiology II | 4 |
| NURS | 3510 | Health Assessment | 3 |
| NURS | 2210 | Pharmacology | 3 |
| NURS | 2231 | Fundamentals of Professional Nursing Practice | 5 |
| NURS | 2331 | Adult Health Nursing I | 5 |
| COMM | 1100 | Public Speaking | 5 |
| SOCI | 2011 | Principles of Sociology | 3 |
| NURS | 3320 | Pathophysiology | 3 |
| PEDH |  | Activity PE | 1 |
| **Total** |  |  | **(30 hours)** |
| **Junior Year** |  |  |  |
| NURS | 3134 | Pediatric Nursing | 5 |
| POLS | 1101 | US & GA Government | 3 |
| MATH | 2411 | Basic Statistics | 3 |
| NURS | 2601 | Introduction to Geriatric Nursing | 3 |
| PEDH |  | Activity | 1 |
| HIST |  | History Option | 3 |
| \*NURS | 3312 | Orientation to Phil. Concepts (RN-BSN) | 5 |
| NURS | 3136 | Women’s Health Nursing | 5 |
| NURS | 3335 | Mental Health Nursing | 5 |
| AREA C | Area C | Fine Arts Option | 3 |
| **Total** |  |  | **(31 hours)** |
| **Senior Year** |  |  |  |
| PEDH |  | Activity | 1 |
| ENGL | 2111 | World Literature I | 3 |
| NURS | 4140 | Leadership | 2 |
| NURS | 4342 | Adult Health Nursing II | 5 |
| NURS | 4131 | Research | 3 |
| NURS | 4240 | Community Health Nursing | 5 |
| \*NURS | 4344 | Senior Seminar (RN-BSN) | 3 |
| NURS | 4345 | Senior Comprehensive Nursing | 5 |
| HIST | 1002 | Introduction to African Diaspora | 2 |

**Total (26 hours)**

**Total required for graduation (127 hours)**

\*Courses for RN students

**Nursing Electives available:**

|  |  |  |  |
| --- | --- | --- | --- |
| NURS | 4111 | Directed Study | Hours vary |
| NURS | 3010 | Junior Externship | 1 (1:VAR) |
| NURS | 4010 | Senior Externship | 1 (1:VAR) |
| NURS | 2112 | Foundations of Professional Nursing | 3 |
| NURS | 2121 | Foundations of Pathophysiology | 3 |
| NURS | 2212 | Foundations of Health Assessment | 3 |

**Total required for graduation (127 hours)**

## DEPARTMENT OF CRIMINAL JUSTICE AND FORENSIC SCIENCE

The Department of Criminal Justice and Forensic Science offers Bachelor of Science degrees in Criminal Justice and Forensic Science and the Master of Science de gree in Criminal Justice. These degree programs prepare students for professional employment in the criminal justice system, Forensic Science and/or for graduate studies in criminal justice, Forensic Science and law. The curriculum is both broad and flexible enough to permit students to pursue course work in a wide variety of criminal justice and Forensic Science topics cutting across law enforcement, courts, corrections, research, policy analysis, planning and operations and laboratory analysis/management.. Students are encouraged to take internships in criminal justice, Forensic Science labs, social service and/or human service agencies.

A minor in Criminal Justice studies, requiring 18 hours of designated study, is also offered with a concentration in the core curriculum.

The Criminal Justice and Forensic Science Department also has established 2+2 programs that permit students at selected area two-year colleges to transfer to the baccalaureate program in Criminal Justice and Forensic Science at Albany State University without loss of credit.

## BACHELOR OF SCIENCE DEGREE IN CRIMINAL JUSTICE

**Area F: Program of Study Related Courses (18 hours)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CRJU | 1100 | | Introduction to Criminal Justice | | | 3 |
|  |  | |  | | |  |
| **Select 15 hours** | | | | | |  |
| CRJU | 2210 | | Introduction to Criminal Procedure and Law | | | 3 |
| CRJU | 2400 | | Report Writing& Research Skills | | | 3 |
| SOCI | 2601 | | Urban Social Problems | | | 3 |
| PSYC | 2203 | | Advanced General Psychology | | | 3 |
| ECON | 2201 | | Survey of Economics | | | 3 |
| ENGL |  | | 2112/2204/2298 | | |  |
| POLS | | 2102 | | Introduction to Law | 3 | |
| POLS | 2101 | | Introduction to Political Science | | | 3 |
| Any Foreign | Language | |  | | | 3 |
| SOWK | 2411-2211 | | The Social Welfare Institution | | | 3 |
| SSCI | 2402 | | Microcomp. in the Soc. Sciences or CSCI 1101 | | | 3 |
| CRJU | 2210 and | | CRJU 2400 Strongly recommended for Criminal Justice Majors | | | 3 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Area G:**  CRJU | 2200 | Intro. to Law Enforcement | **(45 hours)**  3 |
| CRJU | 2600 | Juvenile Delinquency & Justice | 3 |
| CRJU | 2800 | American Correctional Systems | 3 |
| CRJU | 2900 | Criminology | 3 |
| CRJU | 3410 | Criminal Justice Research | 3 |
| CRJU | 3530 | Criminal Justice Ethics & Prof. | 3 |
| CRJU | 4210 | Philosophy of Law& Punishment | 3 |
| CRJU | 4530 | Comparative Criminology | 3 |
| CRJU | 4630 | Race, Gender & CRJU System | 3 |
| CRJU | 4650 | U.S. Court Systems | 3 |
| CRJU | 4999 | Senior Capstone Seminar | 3 |
|  |  |  |  |
| **Criminal Justice Electives** | | |  |
| **Select 12 Hours** | | |  |
| **(9 hours must be 3000-4000 level) from below:** | | |  |
| FOSC | 2110 | Survey of Forensic Science for NON-Forensic Science Majors | 3 |
| CRJU | 2500 | Constitution Procedure | 3 |
| CRJU | 2700 | Police Community Relations | 3 |
| CRJU | 2910 | Organization and Administration | 3 |
| CRJU | 3000 | Global Terrorism | 3 |
| CRJU | 3300 | Comp. International Legal System | 3 |
| FOSC | 3030 | Criminal Evidence and Court Proc | 3 |
| CRJU | 4130 | Law Enforcement & Legal Proces | 3 |
|  |  |  |  |
| CRJU | 4340 | Corrections & Legal Process | 3 |
| CRJU | 4350 | Treat & Evaluations in Corrections | 3 |
| CRJU | 4360 | Community-Based Corrections | 3 |
| CRJU | 4510 | Organized and White Collar Crimes | 3 |
| CRJU | 4520 | Drugs and Crimes | 3 |
| CRJU | 4610 | Internship (3-12 hours) | 3 |
| CRJU | 4620 | Special Topics in CRJ | 3 |

|  |  |  |
| --- | --- | --- |
| **Area H: (15 hours)** |  |  |
| SOCI  POLS | Upper Level Courses (3000-4000)  SOCI 3370 & 3371 will NOT fulfill upper level requirements. Upper Level Courses (3000-4000) | 3  3 |
| Statistics Course | ECON, SOCI, PSYC or SOWK 4300 OR CRJU 3420 | 3 |
| General Electives |  | (6 hours) |

**PROGRAM OF STUDY FOR BACHELOR OF SCIENCE**

**DEGREE IN CRIMINAL JUSTICE**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Freshman**  **Fall** |  | |  | |  | | **Spring** | |  | |  | |  | |
| ENGL | | | 1101 | | English Composition I | | 3 | | ENGL | | 1102 | | English Composition II | | 3 | |
| MATH | | | 1111 | | College Algebra | | 3 | | HEDP | |  | | Intro. to Wellness | | 1 | |
| COMM | | | 1101 | | Public Speaking | | 3 | | HIST | | 1002 | | Intro. to the African Diaspora | | 2 | |
| ASU | | | 1200 | | Freshman Seminar & Service to Leadership | | 3 | | BIOL | | 1112K | | Intro. to Biological Sciences | | 4 | |
| BIOL | | | 1111K | | Intro. to Bio. Sciences | | 4 | | POLS | | 1101 | | U.S. & GA Government | | 3 | |
|  | | |  | |  | |  | | CRJU | | 1100 | | Intro. to Criminal Justice | | 3 | |
| **Total** | | |  | |  | | **(16hrs)** | |  | |  | | **Total** | | **(16 hrs)** | |
|  | | |  | |  | |  | |  | |  | |  | |  | |
| **Sophomore Fall** | | |  | |  | |  | | **Spring** | |  | |  | |  | |
| HIST | | | 1111 | | Survey of World History I | | 3 | | PSYC | | 1101 | | General Psychology | | 3 | |
| SOCI | | | 2011 | | Principles of Sociology | | 3 | | ENGL | | 2111 | | World Literature I | | 3 | |
| CRJU | | | 2400 | | Report Writing & Research Skills | | 3 | | Area C | |  | | Choice | | 3 | |
| CRJU | | | 2210 | | Intro. to Crim. Procedure | | 3 | | Area D | |  | | Choice | | 3 | |
| SSCI | | | 2402 | | Micro. In the Soc. Sciences | | 3 | | PEDH | |  | |  | | 1 | |
| PEDH | | |  | |  | | 1 | | CRJU | | 2200 | | Intro. Law Enforcement | | 3 | |
| **Total** | | |  | |  | | (16 hrs) | | **Total** | |  | |  | | **(16 hrs)** | |
|  | | |  | |  | |  | |  | |  | |  | |  | |
| **Junior Year**  **Fall** | | |  | |  | |  | | **Spring** | |  | |  | |  | |
| CRJU 2500 | | | 2500 | | Constitutional Procedure in CJ | | 3 | | Upper Criminal Justice | | | | choice | | 12 | |
| CRJU 2900 | | | 2800 | | American Correctional Systems | | 3 | | PEDH | |  | |  | | 1 | |
| CRJU 2910 | | | 2900 | | Criminology | | 3 | | CRJU | | 3420 | | CRJU Statistics | | 3 | |
| CRJU 3410 | | | 3410 | | Criminal Justice Research | | 3 | |  | |  | |  | |  | |
| CRJU | | | 3530 | | CRJU Ethics & Professionalism | | 3 | |  | |  | |  | |  | |
| **Total** | | |  | |  | | **(15 hrs)** | | **Total** | |  | |  | | **(16 hrs)** | |
|  | | |  | |  | |  | |  | |  | |  | |  | |
| **Senior Year**  **Fall** | | |  | |  | |  | | **Spring** | |  | |  | |  | |
| Upper Sociology | | |  | |  | | 3 | | General Electives | | | |  | | 6 | |
| POLS | | | Choice | |  | | 3 | | CRJU | | 4650 | | US Court Systems | | 3 | |
| CRJU | | | 4210 | | Philosophy of Law & Punish | | 3 | | CRJU | | 4999 | | Senior Capstone Seminar | | 3 | |
| CRJU 3530 | | | 4530 | | Comparative Criminology | | 3 | |  | |  | |  | |  | |
| CRJU 4999 | | | 4630 | | Sr. Capstone Seminar | | 3 | |  | |  | |  | |  | |
| **Total** | | |  | |  | | **(15 hrs)** | | **Total** | |  | |  | | **(12 hrs)** | |

**FORENSIC SCIENCE DEGREE PROGRAM**

The Bachelor of Science degree in Forensic Science is the only four-year degree program in Georgia and is housed in the Department of Crimi nal Justice and Forensic Science. Our Forensic Science is accredited by the American Academy of Forensic Science (AAFC) accreditation body-Forensic Education Program Accreditation Commission (FEPAC)., Forensic Science is the application of scientific methods to crime scene investigation and criminal prosecution. The program is interdisciplinary and is based on the natural sciences; chemistry, physics and biology. This program prepares students for professional careers in crime laboratories as criminalists, trace evidence specialists, serologists, DNA specialists, toxicologists, drug analysts, firearms and fingerprint examiners, staff photographers and evidence technicians.

## BACHELOR OF SCIENCE IN FORENSIC SCIENCE

MAJOR EXIT EXAM FOSC 4201 L

(No Minimum or Maximum Required Score)

The Academic requirements for Forensic Science program have been modified and specific admission criteria have been developed as recommended by the American Academy of Forensic Science's (AAFS) Forensic Science Education Programs Commission (FEPAC)

Requirements for Specific admission Criteria for Forensic Science Majors:

1. Completion of 32 hours of the core curriculum with a min grade of C in each course and institutional requirements.

2. Completion of General Chemistry I and II (Chem 1211 and Chem 1212) and Organic Chem I, Intro/Prin of Physics I and II with a minimum grade of C.

3. A cumulative Grade Point Average of 2.5

**AREA F: Program of Study Related Courses (18 hrs)**

FOSC 2100 Intro to FOSC w/lab

FOSC 2120 Forensic Photography

CHEM 2301 Organic Chemistry I CHEM 2302 Organic Chemistry II

Select Any One

CHEM 2351 Quantitative Analysis

BIOL 2111 General Biology

**AREA G 23 Hours Supporting Courses for the Major** Minimum one course (3 or 4 hr) required in each of CHEM, PHYS, BIOL, and MATH or SOC Groups (I-IV)

|  |  |  |
| --- | --- | --- |
| **Group I**  CHEM | 3250 | Biochemistry |
| CHEM | 3221 | Physical Chemistry I |
| CHEM | 3222 | Physical Chemistry II |
| **Group I**  PHYS | 2221 | Principles of Physics I and |
| PHYS | 2222 | Principles of Physics II or |
| PHYS | 1111 | Introductory Physics I and |
| PHYS | 1122 | Introductory Physics II |
| **Group III** |  |  |
|  |  |  |
|  |  |  |
| BIOL | 3101 | Environmental Biology |
| BIOL | 3501 | Principles of Genetics |
| BIOL | 4701 | Cell and Molecular Biology |

**Group IV**

CRJU 3420 Criminal Justice Statistics, or R

SOCI 4300 Behavioral Statisitcs, required

**AREA H 37 Hours Forensic Science Courses**

Required all 33 hours courses below:

FOSC 2120 Forensic Photography

FOSC 2130 Crime Scene Investigation I

FOSC 2140 Crime Scene Investigation II

FOSC 3020 Forensic Micro of Trace (w/lab)

FOSC 3030 Criminal Evid. & Court Proc

FOSC 4040 Forensic Sero & DNA (w/lab)

FOSC 4050 Forensic Chemistry (w/lab)

FOSC 4060 SEM-EDX of Trace Evid (w/lab)

FOSC 4201L Evidence Analysis & Research I

FOSC/CRJU 4999 Senior Capstone Seminar

CRJU 1100 Introduction to Criminal Justice

FOSC 3100 International Forensic DNA

FOSC 3200 Bio-Terrorism and Biotechnology

FOSC 4120 Electron Optics (w/lab)

FOSC 4130 Expert Witness at Mock Trial

FOSC 4140 Fingerprint Technology (w/lab)

FOSC 4150 Evid. Proc. for Med. Techs. (w/lab)

FOSC 4160 Evidence Collection (w/lab)

Study/Chemistry Seminar

FOSC 2140 Crime Scene Investigation II

**PROGRAM OF STUDY FOR BACHELOR OF SCIENCE DEGREE IN FORENSIC SCIENCE**

**Freshman Year**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Fall** |  |  |  | **Spring** |  | | |
| ENGL | 1101 | English Composition I | 3 | ENGL | 1102 | English Composition II | 3 |
| MATH | 1111 | College algebra | 3 | CHEM | 1212 | General Chemistry II | 4 |
| COMM | 1101 | Public Speaking | 3 | MATH | 1211/2212 | Pre Calculus/Calculus 1 | 3 or 4 |
| ASU | 1200 | Freshman Seminar & |  |  |  |  |  |
|  |  | Service to Leadership | 3 | HIST | 1002 | Intro to African Diaspora | 2 |
| BIOL |  |  |  | POLS | 1101 | US & Georgia Govt. | 3 |
| CHEM | 1211 | General Chemistry I | 4 |  |  |  |  |
| **Total** |  |  | **(16 hrs)** | **Total** |  |  | **(15-16 hrs)** |

**Sophomore Year**

**Fall Spring**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CHEM | 2301 | Organic Chemistry I | 4 | HIST Area E | 1111-2/ 2111-3 | Select one History | 3 |
| PHYS | 1111/2221 | Introductory Physics I |  |  |  |  |  |
|  |  | /Principles of physics I | 4 | PHYS | 1122/2222 | Introductory Physics I |  |
|  |  |  |  |  |  | /Principles of physics I | 4 |
| PEDH | 1001-1007 | ( Above the Core ) select one) | 1 | CHEM | 2302 | Organic Chemistry II | 4 |
| BIOL | Area G | Select one from Part III | 4 | FOSC | 2100/2000 | Introduction to Forensic Science | 3 |
| ENG | 2111 | World Literature | 3 | PEDH/HEDP | 1001-1007/1001 | ( Above the Core ) select one) | 1 |
| **Total** |  |  | **(16 hrs)** | **Total** |  |  | **(15hrs)** |

**Junior Year**

**Fall Spring**

CRJU 1100 Introduction to Criminal Justice 3 CHEM 3250 Biochemistry 4

CRJU/SOCI Area G Select one from Part IV 3 FOSC 2120 Forensic Photography 3

FOSC 2130 Crime Scene Investigation I 3 FOSC 2140 Crime Scene Investigation II 3

PEDH/HEDP 1001-1007/1001 ( Above the Core select one) 1 Area E Area E Select One other than History 3

FOSC 3030 Criminal Evidence & Court Proc. 3 PHYS 2100 Computer applications 3

Area E Area E Select one other than History 3

**Total (16 hrs) Total (16 hrs)**

**Senior Year**

**Fall Spring**

FOSC 3020 Forensic Micro of Trace (w/Lab 3 FOSC Area H Select one from the Specialization2/3

Area G Select one from Part I 4 Area C Select one World Literature II

or any of the languages 3

FOSC 4040 Forensic Serology & DNA

Technology 3 FOSC 4201L Evidence Anal/Research 3

FOSC 4050 Forensic Chemistry 3 FOSC /CRJU 4999 Senior Capstone seminar 3

FOSC 4060 SEM-EDX of Trace Evidence 3 Area G Area G Select one from Part I/II/III/IV 4

**Total (16 hrs) Total (15-16 hrs)**

## DEPARTMENT OF NATURAL SCIENCES

The Department of Natural Sciences offers degrees in biology and chemistry with course offerings in physics and engineering. The department also offers a degree in science education with a broad based emphasis in biology area.

**BIOLOGY**

The major in biology provides courses and course sequences leading to the Bachelor of Science degree in biology. The program prepares a student for professional careers and employment in biological sciences and teaching in the area of biology. Flexibility and design of the program aids in preparation for entrance into graduate, medical, pharmacy and dental schools, as well as other professional schools. Students interested in attending medical and dental schools choose from a select number of biology and chemistry courses and are advised by the Pre-Health Advisor.

Students majoring in biology must complete a minimum of 32 hours in biology, including Biology 2111K, 2112K, 2211K, 2311K, 3101K, 3501K, 4001,

4222 and 4701K. Additionally, the Biology major must complete 13 hours of biology electives with a minimum of 8 hours at the 3000 and 4000 level. The electives will be chosen by the student with the advisor from a list of approved electives. Biology majors and minors must make a “C” or better in all biology, chemistry, physics, and mathematics courses. Students must meet the requirements of the Core Curriculum. Students must also take the Area Concentration Achievement Test (ACAT) in biology during the senior year.

**CHEMISTRY**

The major in chemistry provides courses and sequences leading to the Bachelor of Science degree in chemistry. The program is designed to follow the criteria for baccalaureate degrees set forth by the Committee on Professional Training of the American Chemical Society. The program prepares students for professional employment after graduation and also provides strong academic and laboratory experiences for those who wish to pursue graduate degrees in chemistry or attend professional schools.

Students must meet the requirements listed in the Core Curriculum. Students must also complete a minimum of 49 semester hours of chemistry. All students are required to earn at least a grade of “C” in all chemistry, biology, physics, and mathematics courses. All students are required to take the American Chemical Society standardized test in the area in which they are enrolled. Students must also take the chemistry exit exam, the Major Field Test (MFT) during the senior year.

**SCIENCE EDUCATION**

The Bachelor of Science in Science Education is approved by Georgia Professional Standards Commission (PSC) and National Council of Accreditation for Teacher Education. The program leads to Level-4 teacher certification and is Broad field Science with biology emphasis.

Upon admission to Albany State University, students who have declared science education as their major must formally apply to the Teacher Education Program. Students must meet the following requirements to be fully admitted to the Teacher Education Program. These requirements include: 1) completion of a minimum 36 semester hours in core and prescribed courses with a cumulative grade point average (GPA) of 2.5 or better; 2) successful completion of Basic Test for Georgia Assessment for Certification of Educators (GACE1); and 3) acceptable history of mental, emotional and physical health. The exit exam for the program is GACE II, which is content area must be taken by all students.

**ENGINEERING**

Albany State University offers two tracks of pre-engineering programs that lead to a Bachelor of Engineering degree from the Georgia Institute of Technology: (1) The Regents’ Engineering Transfer Program (RETP) and (2) Dual Degree Program.

**TRACK 1**

The Regents Engineering Transfer Program (RETP) is a cooperative program between the Georgia Institute of Technology and Albany State University that allows students to complete the first two years of the engineering program at Albany State University and then transfer to Georgia Tech to their chosen field of engineering to complete the requirements of B.S. degree in engineering. Student will be admitted to Georgia Tech upon completion of the prescribed courses at Albany State University provided (s)he maintains an overall GPA of 2.7 as well as 2.7 in science and mathematics courses at ASU. At times Georgia Tech may add certain requirements for admission to junior level, which will equally be applied to Georgia Tech students also for advancing to the junior level in that field.

To be eligible for admission to the RETP at Albany State University student must be a resident of Georgia and must have a combined minimum SAT score of 1090 including minimum of 560 on the math and 440 on the verbal portion and a high school GPA of “B” or better. Students who prefer to live and study in a smaller community may also transfer to Georgia Tech Regional Engineering Program (GTREP) at coastal city of Savannah and receive the Georgia Tech engineering degree by completing their studies at Georgia Tech campus at Savannah.

TRACK 2

The Dual Degree Program is also a cooperative program between Georgia Tech and Albany State University that is designed for students who want to have a broad liberal arts background in addition to their chosen field of engineering. The student will complete approximately three years of study towards a program in Chemistry, Computer Science or Mathematics at Albany State University and then transfer to Georgia Tech for two additional years of study in his/her chosen field of engineering. Upon successful completion of the two programs, student will earn a B.A. degree from Albany State University and a B.S. degree in Engineering from Georgia Tech. The admission and transfer GPA requirements for Dual Degree Program are the same as the RETP program though additional courses as described later in this catalog are needed to qualify for transfer under the Dual Degree Program.

Students are advised to follow the customized list of courses as detailed in this catalog for each engineering discipline in order to complete their degree goal in the most efficient manner. Non-residents of Georgia and international students can also join the engineering program at ASU though the transfer to Georgia Tech will require higher GPA. After completing the program one may also apply for transfer to any other ABET accredited engineering college any. In the past, students have transferred to the engineering programs at Auburn, Florida A & M, Tuskegee, North Carolina A&T Mercer, Southern Polytechnic and University of Texas at Arlington.

## BACHELOR OF SCIENCE DEGREE IN BIOLOGY

Biology I. Required: 18 hours, lower division (1000-2000 Level)

**Area F Title Credit hrs.**

BIOL 2111K Biology I 4

BIOL 2112K Biology II 4

CHEM 2301K Organic Chemistry I 4

CHEM 2302K Organic Chemistry II 4

2 credits from Area D or Area F2

**Total Area F (18 hours)**

**Total Core Curriculum (60 hours)**

**AREA G: Major Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL | 2211K | General Microbiology | 4 |
| BIOL | 2311K | General Botany | 4 |
| BIOL | 3101K | Environmental Biology | 4 |
| BIOL | 3501K | Principles of Genetics | 4 |
| BIOL | 4001 | Research and Independent Study I | 1 |
| BIOL | 4222 | Biology Research | 3 |
| BIOL | 4701K | Cell and Molecular Biology | 4 |
| CHEM | 3250K | Biochemistry | 4 |
| MATH | 1211 | Calculus I | 4 |
| PHYS | 1111K | Introductory Physics I | 4 |
| PHYS | 1111K | Introductory Physics II | 4 |
| PHYS | 2100 | Computer Applications (If not in Area D) |  |
| SPAN, FREN OR GRMN Foreign Language sequence | | | 6 | |
| Electives (Non-Science) | | | 3 | |
| Electives (Biology) | | | 13 | |
| Total (Major and other courses) | | | **(62 hours)** | |
| Total above Core Hours | | | **(6 hrs)** | |
| **Total Hours in Program** | | | **(126 hours)** | |

**PROGRAM OF STUDY FOR A BACHELOR OF SCIENCE DEGREE IN BIOLOGY**

***(Suggested Program of Study Only! Student should consult with faculty advisor)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Freshman Year Fall** | | | | | | **Spring** |
| ASU | 1200 | Freshman Seminar | | 3 | |  |
| HIST | 1002 | Intro. to African Diaspora | | 2 | |  |
| ENGL | 1101 and 1102 | English Composition I & II | | 3 | | 3 |
| MATH | 1113 | Pre-Calculus | |  | | 3 |
| CHEM | 1211K and 1212K | General Chemistry I & II | | 4 | | 4 |
| BIOL | 2111K and 2112K | Biology I & II | | 4 | | 4 |
| BIOL | 1801 | (Suggested Elective) | |  | | 1 |
| PEDH | Choice |  | |  | | 1 |
| **Total** |  |  | | **(16 hrs)** | | **(16 hrs)** |
| **Sophomore Year** | |  | | **Fall** | | **Spring** |
| PEDH | Choice |  | | **1** | | **1** |
| ENGL | 2111 | World Literature | |  | | **3** |
| CHEM | 2301K and 2302K | Organic Chemistry I and II | | **4** | | **4** |
| BIOL | 2211K | General Microbiology | |  | | **4** |
| POLS | 1101 | U.S. & GA Government | |  | | **3** |
| MATH | 1211 | Calculus I | | **4** | |  |
| PHYS | 2100 | Computer Applications | | **3** | |  |
| BIOL | 2311K | Botany I | | **4** | |  |
| Total |  |  | | **(16 hrs)** | | **(15 hrs)** |
| **Junior Year** | |  | | **Fall** | | **Spring** |
| HIST | 1111 | World History I | |  | | **3** |
| MUSC | 1100 | Music Apprec. or ARAP 1100 Art Apprec. | |  | | **3** |
| PHYS | 1111K and 1112K | Introduction to Physics I and II | | **4** | | **4** |
| BIOL | 3101K | Environmental Biology | |  | | **4** |
| CHEM | 3250K | Biochemistry | | **4** | |  |
| COMM | 1100 | Fundamentals of Public Speaking | | **3** | |  |
| BIOL | 3501K | Principles of Genetics | | **4** | |  |
| BIOL |  | Elective | |  | | **3** |
| Total |  |  | | **(15 hrs)** | | **(17 hrs)** |
| **Senior Year** | |  | | **Fall** | | **Spring** |
| BIOL 4222 Biology Research | | | |  | | 2 | |
| BIOL 4701K Cell and Molecular Biology | | | | 4 | |  | |
| Foreign Language (Spanish, French of German sequence) | | | | 3 | | 3 | |
| NON-Science Electives | | | |  | | 3 | |
| Biology Electives | | | | 4 | | 4 | |
| BIOL 4001 Research and Indep. Study I | | | | 1 | | 1 | |
| Area E Choice | | | | 3 | | 3 | |
| **Total** | | | | **(15 hrs)** | | **(17 hrs)** | |

**Biology Electives Credit Hrs.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Courses** | **Title** |  | |
| BIOL | 1801 | Science Career Explorations | 1 |
| BIOL | 2113K | Invertebrate Zoology | 3 |
| BIOL | 2312K | General Botany II | 4 |
| BIOL | 2412K | Anatomy and Physiology II | 4 |
| BIOL | 2320K | Lab Research Techniques | 3 |
| BIOL | 2415 | Scientific Writing | 3 |
| BIOL | 2702K | Fundamentals of Biotechnology | 4 |
| BIOL | 3201K | Entomology | 4 |
| BIOL | 3309K | Plant Anatomy | 3 |
| BIOL | 3311K | Introduction to Natural Resources | 3 |
| BIOL | 3312K | Planning and Managing Natural Resources | 3 |
| BIOL | 3313K | Natural Resources and Environmental Policy | 3 |
| BIOL | 3314K | Use of Energy Resources | 3 |
| BIOL | 3315K | Conservation of Energy Resources | 3 |
| BIOL | 3316K | Sources and Uses of Plant & Wildlife Resources | 3 |
| BIOL | 3317K | Natural Resources and Food Production | 3 |
| BIOL | 3318K | Marine Life Resources | 3 |
| BIOL | 3319K | Conservation of Marine Life Resources | 3 |
| BIOL | 3320K | Principles and Techniques in Water Resource Services | 4 |
|  |  |  |  |
| BIOL | 3321K | Conservation of Plant and Wildlife Resources | 3 |
| BIOL | 3401K | Introduction to Histology | 4 |
| BIOL | 3506 | Bioinformatics | 3 |
| BIOL | 3611K | Medical Mycology | 4 |
| BIOL | 3701 | Current Issues and Topics in Biotechnology | 2 |
| BIOL | 3801K | Electron Microscopy | 3 |
| BIOL | 3901 | Pathophysiology | 3 |
| BIOL | 4002 | Research and Independent Study II | 1 |
| BIOL | 4101K | General Physiology | 4 |
| BIOL | 4201K | Introduction to Parasitology | 4 |
| BIOL | 4301K | Developmental Biology | 4 |
| BIOL | 4401K | Comparative Vertebrate Anatomy | 4 |
| BIOL | 4501K | Immunology | 4 |
| BIOL | 4601K | Plant Physiology | 4 |
| BIOL | 4702K | Biotechnology | 4 |
| BIOL | 4703K | Genetic Engineering | 4 |

**RECOMMENDED ELECTIVES FOR SPECIFIC CAREER CHOICES I. Graduate School Courses selected in conjunction with advisor.**

**II. Pre-Health Careers (Courses are selected from those listed below).**

|  |  |  |
| --- | --- | --- |
| BIOL | 3401K | Histology |
| BIOL | 4101K | General Physiology |
| BIOL | 4301K | Developmental Biology |
| BIOL | 4401K | Comp. Vert. Anatomy |

**III. Biological Careers (Botanical Emphasis)**

|  |  |  |
| --- | --- | --- |
| BIOL | 3309K | Plant Anatomy |
| BIOL | 2312K | Botany |
| BIOL | 4601K | Plant Physiology |

**IV. Biotechnology Concentration Credit hrs**

BIOL 2702K Fundamentals of Biotechnology 4

BIOL 3506 Bioinformatics 3

BIOL 3701 Current Issues and Topics in Biotechnology 2

BIOL 4703K Genetic Engineering 4

**MINOR IN BIOLOGY (Minimum of 20 hours)**

Students desiring a minor in Biology are required to complete the following courses:

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL | 2111K and 2112K | General Biology I and II | 8 |
| BIOL | 2311K | General Botany I | 4 |
| BIOL | 3101K | Environmental Biology or appropriate Biology substitute | 4 |
| BIOL | 4701K | Cell and Molecular Biology | 4 |
| **Total** |  |  | **20** |

**MINOR IN Biology (**Environmental Emphasis)

(Minor acquired after completion of a minimum of 21 hours)

**Required Courses for a Minor in Natural Resources (9 hours)**

BIOL 3311K Introduction to Natural Resources 3

BIOL 3312K Planning and Managing Natural Resources 3

BIOL 3313K Natural Resources and Environmental Policy 3

Four Additional Courses from Categories I, II, III and IV:

I .BIOL 3314K Use of Energy Resources or 3

BIOL 3315K Conservation of Energy Resources 3

II. BIOL 3318K Marine Life Resources or

BIOL 3319K Conservation of Marine Life Resources 3

III. BIOL 3320K Principles and Techniques in Water Resources Services 4

BIOL 3316K Sources and Uses of Plants and Wildlife Resources 3

IV. BIOL 3317K Natural Resources and Food Production 3

BIOL 3321K Conservation of Plant and Wildlife Resources 3

## BACHELOR OF SCIENCE DEGREE IN SCIENCE EDUCATION

**BROAD BASED SCIENCE**

**Courses Titles Credit Hrs.**

18 hours lower division (1000-2000 level)

|  |  |  |  |
| --- | --- | --- | --- |
| PHYS | 1111K | Introductory Physics I | 4 |
| PHYS | 1112K | Introductory Physics II | 4 |
| BIOL | 2111K | Biology I | 4 |
| EDUC | 2110 | Invest Critical/Contemporary Issues in Ed. | 3 |
| EDUC | 2120 | Explore Soci/Cul Perspectives | 3 |
|  |  |  |  |
| **Total Hours** |  |  | **(18 hours)** |

**Major Courses Titles Credit Hrs.**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
| EDUC | 2130 | Expl Teaching/ Learning | 3 |
| EDUC | 4412 | Student Teaching | 12 |
| EDUC | 4405 | Methods/Material of Teaching Science | 3 |
| EDUC | 4400 | Prep. for Teaching | 2 |
| EDUC | 4441 | Teaching Reading in Sec. Sch. | 3 |
| CHEM | 2301K | Organic Chemistry I | 4 |
| CHEM | 2302K | Organic Chemistry II | 4 |
| CHEM | 3250K | Biochemistry | 4 |
| PHYS | 3002 | Advance Earth Space Science | 4 |
| BIOL | 2112K | Biology II | 4 |
| BIOL | 2211K | Intro to Microbiology | 4 |
| BIOL | 3501K | Principle of Genetics | 4 |
| BIOL | 2311K | General Botany I | 4 |
| SPED | 3230 | Contemp. Perspective of Exceptional Students | 3 |
| **Total Hours** |  |  | **(58 hours)** |

**PROGRAM OF STUDY FOR THE BACHELOR OF SCIENCE DEGREE IN SCIENCE**

**EDUCATION BROAD BASED EMPHASIS**

**Freshman Year Fall Spring**

ASU 1200 Freshman Seminar & Service to Leadership 3

HEDP 1001 Introduction to Wellness or PEDH 1

HIST 1002 Intro. to the African Diaspora 2

ENGL 1101 English Composition I 3

ENGL 1102 English Composition II 3

MATH 1113 Pre-Calculus 3

BIOL 2111K Biology I 4

BIOL 2112K Biology II 4

CHEM 1211K General Chemistry I 4

CHEM 1212K General Chemistry II 4

EDUC 2110 Inves. Critical/Contemporary Issues in Edu. 3

**Totals (17 hrs) (17 hrs)**

**Sophomore Year Fall Spring**

ENGL 2111 World Literature 3

PEDH 100X Fitness or other choice 1

MATH 1211 Calculus I 4

BIOL 2311K Botany I 4

EDU 2120 Explore Socio. Culture Perspective on Divers. 3

BIOL 2211K General Microbiology 4

POLS 1101 U.S. and GA Government 3

CHEM 2301K Organic Chemistry I 4

CHEM 2302K Organic Chemistry II 4

EDU 2130 Explore Teaching/Learning 3

**Totals (16 hrs) (17 hrs)**

**Junior Year Fall Spring**

PHYS 1111K Introductory Physics I 4

PHYS 1112K Introductory Physics II 4

BIOL 3501K Principles of Genetics 4

CHEM 3250K Biochemistry 4

COMM 1100 Anal. Disc. Of Global Issues 3

SPED 3230 Contemp Perspective of Except Students 3

Area C elective Fine Arts/ Humanity elective 3

PHYS 3002 Adv Earth/ Space Science 4

PEDH Choice 100X Physical Education Choices 1

Area E elective Social Science Elective 3

**Total (18 hrs) (15 hrs)**

**Senior Year Fall Spring**

Area E Social Science Elective 3

EDUC 4400 Prep. for Teaching 2

EDUC 4441 Teaching Reading 3

HIST 1111 World History I (or other history elective) 3

EDUC 4405 Methods of Teaching Science 3

EDUC 4412 Student Teaching 12

**Total (14 hrs) (12 hrs)**

## BACHELOR OF SCIENCE DEGREE IN CHEMISTRY

**Area F. Required: 18 hours, lower division (1000-2000 Level)**

**Courses Credit Hrs.**

CHEM 1211K General Chemistry I 4

CHEM 1212K General Chemistry II 4

CHEM 2301K Organic Chemistry I 4

CHEM 2302K Organic Chemistry II 4

2 credit hours course taken from Area D for science majors 2

**Total (18 hours)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Area G: Major Courses** | | |  |
| BIOL | 2111K | Biology I | 4 |
| MATH | 2212 | Calculus II | 4 |
| MATH | 2213 | Calculus III | 4 |
| CHEM | 2351K | Quantitative Analysis I | 4 |
| CHEM | 2352K | Quantitative Analysis II | 4 |
| CHEM | 3221K | Physical Chemistry I | 4 |
| CHEM | 3222K | Physical Chemistry II | 4 |
| CHEM | 3231 | Intermediate Inorganic Chemistry I | 3 |
| CHEM | 3250K | Biochemistry | 4 |
| CHEM | 4100K | Instrumental Analysis | 4 |
| CHEM | 4110 | Chemical Literature | 1 |
| CHEM | 4111 | Junior Seminar | 1 |
| CHEM | 4120 | Senior Research I | 1 |
| CHEM | 4130K | Senior Research II | 3 |
| PHYS | 2100 | Computer Applications | 3 |
| Electives (2000 level or higher including at least one 3 hr. class outside the department) | | | 12 |
| **Total** | | | **(60 hours)** |

Electives (2000 level or higher including at least one 3 hr. class outside the department) 12

**Total (60 hours)**

**PROGRAM OF STUDY FOR THE BACHELOR OF**

**SCIENCE DEGREE IN CHEMISTRY**

**Freshman Year Fall Spring**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ASU | 1200 | Freshman Seminar & Service to Leadership | 3 |  |
| ENGL | 1101 | English Composition I | 3 |
| ENGL | 1102 | English Composition II |  | 3 |
| MATH | 1113 | Pre-Calculus | 3 |  |
| MATH | 1211 | Calculus I |  | 4 |
| CHEM | 1211K | General Chemistry I | 4 |  |
| CHEM | 1212 K | General Chemistry II |  | 4 |
| PHYS | 2100 | Computer Applications |  | 3 |
| CORE E |  | Social Sciences | 3 |  |
| HIST | 1002 | Intro. to African Diaspora |  | 2 |
| **Totals** |  |  | **(16 hrs)** | **(16 hrs)** |

**Sophomore Year Fall Spring**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ENGL | 2111 | World Literature I |  | 3 |
| PEDH | 1001-1010 |  |  | 1 |
| PHYS | 2221K | Principles of Physics I |  | 4 |
| CHEM | 2301K | Organic Chemistry I | 4 |  |
| CHEM | 2302K | Organic Chemistry II |  | 4 |
| CHEM | 2351K | Quantitative Analysis I | 4 |  |
| CHEM | 2352K | Quantitative Analysis II |  | 4 |
| MATH | 2212 | Calculus II | 4 |  |
| Area C |  | Humanities/Fine Arts | 3 |  |
| HEDP | 1001 | Introduction to Wellness | 1 |  |
| **Total** |  |  | **(16 hrs)** | **(16 hrs)** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Junior Year** |  |  | **Fall** | **Spring** |
| CHEM | 3221K | Physical Chem. I |  | 4 |
| CHEM | 4110 | Chemical Literature | 1 |  |
| Core E |  | Social Sciences | 3 | 3 |
| Core E |  | Social Sciences or CHEM 2351K |  | 3 |
| BIOL | 2111K | Biology I |  | 4 |
| MATH | 2213 | Calculus III | 4 |  |
| PHYS | 2222K | Principles of Physics II | 4 |  |
| COMM | 1100 | Fundamentals of Public Speaking | 3 |  |
| PEDH | 1001-1010 |  | 1 |  |
| CHEM | 4111 | Junior Seminar I |  | 1 |
| **Total** |  |  | **(16 hrs)** | **(15 hrs)** |
| **Senior Year** | **Fall** | **Spring** |  |  |
| CHEM | 3222K | Physical Chemistry II | 4 |  |
| CHEM | 3231 | Intermediate Inorganic I |  | 3 |
| CHEM | 4100K | Instrumental Analysis |  | 4 |
| CHEM | 4120 | Senior Research I | 1 |  |
| CHEM | 4130K | Senior Research II |  | 3 |
| CHEM | 3250K | Biochemistry | 4 |  |
| Electives | Core F |  | 6 | 6 |
| **Total** |  |  | **(15 hrs)** | **(16 hrs)** |
| **Total** |  |  |  | **(126 hrs)** |

## 

## REQUIRED COURSES FOR A MINOR IN CHEMISTRY

Minor in Chemistry acquired after completing 20 Semester hours. Students must complete courses with a grade of ‘C’ or better.

|  |  |  |  |
| --- | --- | --- | --- |
| **Courses** |  | **Titles** | **Credit Hrs.** |
| CHEM | 1212K | General Chemistry II | 4 |
| CHEM | 2301K | Organic Chemistry I | 4 |
| CHEM | 2302K | Organic Chemistry II | 4 |
| CHEM | 3250K | Biochemistry | 4 |
| CHEM | 2351K | Quant. Analysis I or other 2000 level or higher chemistry course | 4 |
| **Total** |  |  | **(20 hours)** |

## REQUIRED COURSES FOR PRE-ENGINEERING AND DUAL DEGREE PROGRAMS

The program is structured to transfer students specifically to Georgia Institute of Technology but may equally be useful to transfer to any other ABET accredited engineering program. The minimum course requirement imposed by Georgia Tech for both RETP and Dual Degree programs is dependent on the type of engineering major students choose. However, additional courses are required by Albany State University before granting recommendation for transfer which guarantees placement in the junior year at Georgia Tech. *The following course list is designed for RETP transfer. Dual Degree transfer students have to complete additional courses.* However, at any time, students can, ***on their own***, apply to Georgia Tech without completing the recommended courses and may get admitted.

**Engineering Majors in Georgia Institute of Technology:**

AE– Aerospace Engineering , BME– Biomedical Engineering, ChE – Chemical Engineering, CE – Civil Engineering’ EnvE – Environmental Engineering, EE – Electrical Engineering, CmpE – Computer Engineering, ISyE – Industrial & Systems Engineering, MSE – Materials Science Engineering, ME – Mechanical Engineering, NRE – Nuclear and Radiological Engineering, PTFE – Polymer, Textile & Fiber Engineering

**Courses Engineering Major**

**GA TECH RETP Required Courses**

BIOL 1111K Biology I BME, ChE\*

MATH 1211 Calculus I Required for all Engineering Majors

MATH 2212 Calculus II Required for all Engineering Majors

MATH 2213 Calculus III Required for all Engineering Majors

MATH 3211 Differential Equations AE, BME, ChE, CE, EnvE, EE, CmpE, MSE, ME, NRE, PTFE

MATH 2111 Linear Algebra Required for all Engineering Majors

CHEM 1211K Chemistry I AE, BME, ChE, CE, EnvE, EE, CmpE, MSE, ME, NRE, PTFE

CHEM 1212K Chemistry II ChE, EnvE, MSE, PTFE

PHYS 2221K Physics I Required for all Engineering Majors

PHYS 2222K Physics II Required for all Engineering Majors

Science Elective I AE\*, CE, EnvE, EE, CmpE, ISyE, ME, NRE,

Science Elective II ISyE

CSCI 1301 Computer Science I Required for all Engineering Majors\*

ENGL 1101 English Comp I Required for all Engineering Majors

ENGL 1102 English Comp II Required for all Engineering Majors

ASU RETP Required Courses

POLS 1101 US & GA Gov Required for all Engineering Majors

ECON 2105 or 2106 Macro or Microeconomics Required for all Engineering Majors

ENGR 1200 Engineering Computing Required for all Engineering Majors

ENGR 1203 Engineering Graphics AE, CE, ME

Principles of Engineering

ENGR 1103 Analysis & Design Required for all Engineering Majors

ENGR 2001 Introduction to Engineering Materials Required for all Engineering Majors

ENGR 2201 Engineering Statics Required for all Engineering Majors

CSCI 2030 Introduction to Computer Engineering EE, CmpE

MATH 3112 Discrete Mathematics ISyE

MATH 3314 Mathematical Statistics AE, BME, CE, EE, CmpE, ME

PSYC 1101 General Psychology ISyE

CHEM 2301K Organic Chemistry I BME, ChE

CHEM 2302K Organic Chemistry II ChE

CHEM 3222K Physical Chemistry I ChE

CHEM 3221K Physical Chemistry II ChE

CHEM 3250 Biochemistry) BME

1. \*Courses may be taken at Georgia Tech; however, it is recommended that they are completed prior to transferring to Tech for these majors if possible.
2. Science electives may be selected from Chemistry, Biology, Physics, Earth and Atmospheric Science, or other courses approved by the engineering school.
3. Students may need to take College Algebra (MATH 1111) & Pre-Calculus (MATH 1113) in order to take Calculus I (MATH 1211)
4. ***In order to guarantee transfer to Georgia Institute of Technology under Regents Engineering Transfer Program (RETP), a student must successfully finish the entire curriculum as described above and secure an overall GPA of at least 2.7 as well as Mathematics and Science GPA of at least 2.7.***
5. As Georgia Tech follows a no forgiveness policy, in calculating GPA, grades in all courses are counted including those taken at other institutions and those repeated here at Albany State University in order to improve the previous grade.

**Dual Degree Requirements**

**Additional Chemistry Courses Required for Dual Degree in Chemistry**

**Required Chemistry Courses Credits Semester Offered**

CHEM 1211K General Chemistry I 4 Fall and Spring

CHEM 1212K General Chemistry II 4 Fall, Spring, Summer

CHEM 2301K Organic Chemistry I 4 Fall and Spring

CHEM 2302K Organic Chemistry II 4 Fall and Spring

CHEM 2351K Quantitative Analysis I 4 Fall

CHEM 2352K Quantitative Analysis II 4 Spring

CHEM 3221K Physical Chemistry I 4 Spring

CHEM 3222K Physical Chemistry II 4 Fall

Chemistry Electives (2000 level or higher) 5

Total Chemistry Credit Hours Required (37 hours)

**Additional Courses Required for Dual Degree in Computer Science for Computer Engineering Majors**

**ALBANY STATE UNIVERSITY HOURS GEORGIA TECH SUBSTITUTIONS HOURS**

CSCI 1301 COMPUTER SCIENCE I 4

CSCI 1302 COMPUTER SCIENCE II 4

CSCI 3111 DISCRETE STRUCTURES 3

CSCI 3122 DATA STRUCTURES 3

CSCI 4113 OPERATING SYSTEMS & 3 ECE 3055 COMPUTER ARCHITECTURE AND

CSCI 3212 COMPUTER ORG. & ARCHITECTURE II 3 OPERATING SYSTEMS 4

CSCI 4123 COMPUTER NETWORKS 3 ECE 3076 COMPUTER COMMUNICATIONS 3

CSCI 3211 COMPUTER ORG. & ARCHITECTURE I 3 ECE 2031 DIGITAL DESIGN LABORATORY 3

CSCI 4151 SYSTEMS SIMULATION 3 ISYE 3044 SIMULATION ANALYSIS AND DESIGN 3

CSCI 4311 COMPUTER GRAPHICS 3

CSCI 4221 SOFTWARE ENGINEERING 3

MATH 2212 CALCULUS II 3

MATH 2213 CALCULUS III 3

MATH 2111 LINEAR ALGEBRA 3

MATH 3423 INTRO TO OPERATIONS RESEARCH 3

**TOTAL CREDIT HOURS (47 hrs) (13 hrs)**

**Courses Required for Dual Degree in Mathematics**

**Courses Hours**

Calculus I\*, II, III 12

Basic Statistics 3

MATH 4211 Elements of Analysis I 3

MATH 4111 Modern Algebra I 3

MATH 3314 Statistical Methods 3

MATH 3211 Ordinary Differential Equations 3

MATH 3423 Introduction to Operations Research 3

MATH 3213 Modern Geometry 3

MATH 3411 Statistcial Methods 3

MATH 3101 Introduction to Number Theory 3

MATH 4215 Numericval Analysis 3

MATH 3112 Discrete Mathematics 3

MATH 2111 Linear Algebra\* 3

**Total (48 hrs)**

## DEPARTMENT OF MATHEMATICS

## AND COMPUTER SCIENCE

The Department of Mathematics and Computer Science offers programs of study leading to the Bachelor of Arts degree in Mathematics, the Bachelor of Science degree in Computer Science with emphasis in mathematics, Bachelor of Science degree in Computer Science with emphasis in business and offers graduate courses to support the Master of Education degree with concentration in mathematics. The Department also provides courses in support of the curriculums of other departments at the University and minor programs in mathematics and computer science. The minor programs are designed for those students interested in pursuing graduate study or the wide variety of careers in the fields of mathematics and computer science. Students in computer science may choose to concentrate in business or mathematics. To be admitted to the department as a major, the student must have a cumulative grade point average of 2.25 or higher.

The major in mathematics provides course work that leads to the Bachelor of Arts degree in mathematics. In addition to the general institutional requirements, the major in mathematics is required to complete 60 semester hours in major courses which include six (6) hours of foreign language and 15 semester hours of general electives.

The Bachelor of Science degree in computer science with mathematics emphasis is for those students who want to combine mathematics and computer science. In addition to the general institutional requirements, the major completes 60 semester hours in major courses which include 33 hours in computer science, 20 hours in mathematics courses, including Calculus II, and Calculus III, 6 semester hours in major electives

and 1 hour in general electives.

The Bachelor of Science degree in computer science with business emphasis is for those students who want to combine computer science and business. In addition to the general institutional requirements, the major completes 60 semester hours in major courses, which include 39 hours in computer science and mathematics courses, 12 hours in business courses, 6 semester hours in major electives and 3 semester hours in general electives. The Bachelor of Science degree in computer science with business emphasis is a cooperative program between Albany State University and Albany Technical College that allows qualified students to earn 99 quarter hours at Albany Technical College and then transfer to Albany State University to complete the requirements for the Bachelor of Science degree with emphasis in business. Upon admission to Albany State University students may transfer up to 60 semester hours of credit to Albany State to satisfy Areas A, B, C, D, and E of the Core Curriculum.

All majors must complete a minimum of 126 semester hours. All majors and minors in the department must achieve a grade of "C" or better in all mathematics, science, and computer science and business courses. A cumulative grade point average of at least 2.25 is required for graduation.

## BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE

## (MATHEMATICS EMPHASIS)

|  |  |  |  |
| --- | --- | --- | --- |
| **Courses** |  | **Titles** | **Credit Hrs.** |
| CSCI | 1201 | Intro to Computer Science | 3 |
| CSCI | 1301 | Computer Science I | 4 |
| CSCI | 1302 | Computer Science II | 4 |
| MATH | 1211 | Calculus 1 | 4 |
| MATH | 2411 | Basic Statistics | 3 |
| **Subtotal** |  |  | **(18 hours)** |

**Major Requirements**

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI | 3111 | Discrete Structures | 3 |
| CSCI | 3122 | Data Structures | 3 |
| CSCI | 3211 | Computer Organization & Architecture I | 3 |
| CSCI | 3212 | Computer Organization& Architecture II | 3 |
| CSCI | 4113 | Operating Systems | 3 |
| CSCI | 4123 | Computer Networks | 3 |
| CSCI | 4151 | System Simulation | 3 |
| CSCI | 4221 | Software Engineering | 3 |
| CSCI | 4311 | Computer Graphics | 3 |
| CSCI | 4211 | Systems Analysis I | 3 |
| CSCI | 4921 | Senior Project I | 1 |
| CSCI | 4922 | Senior Project II | 2 |
| MATH | 2212 | Calculus II | 4 |
| MATH | 2213 | Calculus III | 4 |
| MATH | 2111 | Linear Algebra | 3 |
| MATH | 3211 | Ordinary Differential Equations | 3 |
| MATH | 3423 | Introductions to Operations Research | 3 |
| MATH | 4215 | Numerical Analysis | 3 |
| **Subtotal** |  |  | **(53 hours)** |

Major Electives 6

General Electives 1

Any courses in the college curriculum

**Subtotal (60 hours)**

**Total Required For Graduation (126 hours)**

**PROGRAM OF STUDY FOR THE BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE (MATHEMATICS EMPHASIS)**

Total number of hours= 126

**Freshman Year**

**Fall Spring**

ENGL 1101 English Comp. I 3 ENGL 1102 English Comp. 11 3

CSCI 1201 Intro to Computer Science 3

ASU 1200 Service to Leadership 3 MATH 1113 Pre-Calculus 3

MATH 1111 College Algebra 3 MUSC 1100 Music 3

HIST 1111 History I 3 CSCI 1301 Computer Science I 4

PEDH 1 COMM 1100 Public Speaking 3

**Total (16 hrs) (16 hrs)**

**Sophomore Year**

**Fall Spring**

ENGL 2111 World Literature I 3 POLS 1101 US & Georgia Govt 3

CSCI 1302 Computer Science II 4 MATH 2411 Basis Statistics 3

MATH 1211 Calculus I 4 PHYS 2221 Principles of Physics I 4

HIST 1002 Intro to African Diaspora 2 CSCI 3122 Data Structures 3

PEDH 1 MATH 2212 Calculus II 4

**Total (14 hrs) (17 hours)**

**Junior Year**

**Fall Spring**

PHYS 2222 Principles of Physics 4 HIST 1112 World History II 3

CSCI 3211 Comp. Org. & Arch. 1 3 CSCI 4311 Computer Graphics 3

CSCI 3111 Discrete Structures 3 CSCI 4211 System Analysis I 3

MATH 2111 Linear Algebra 3 CSCI 3212 Comp. Org. & Arch 11 3

MATH 2213 Calculus III 4 MATH 3211 Differential Equations 3

PEDH 1

**Total (17 hrs) (16 hrs)**

**Senior Year**

**Fall Spring**

CSCI 4113 Operating Systems 3 CSCI 4123 Computer Networks 3

CSCI 4921 Senior Project I 1 MATH 4215 Numerical Analysis 3

CSCI 4151 Systems Simulation 3 AREA E Elective 3

MATH 3423 Intro. Operations Research 3 CSCI Major Elective 3

CSCI 4221 Software Engineering 3 CSCI 4922 4922 Senior Project II 2

Major Electives 3 General Electives 1

**Total (16 hrs) (15 hrs)**

## BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE (BUSINESS EMPHASIS)

|  |  |  |  |
| --- | --- | --- | --- |
| **Courses** | **Titles** |  | **Credit Hrs.** |
| ACCT | 2101 | Accounting Principles I | 3 |
|  |  |  |  |
|  |  |  |  |
| CSCI | 1201 | Introduction to Computer Science | 3 |
| CSCI | 1301 | Computer Science I | 4 |
| CSCI | 1302 | Computer Science II | 4 |
| MATH | 1211 | Calculus I | 4 |
| **Subtotal** |  |  | **(18 hours)** |

**Major Requirements**

Computer Science Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI | 2211 | Visual Basic Programming | 3 |
| CSCI | 3111 | Discrete Structures | 3 |
| CSCI | 3122 | Data Structures | 3 |
| CSCI | 3132 | Database Management | 3 |
| CSCI | 4211 | Systems Analysis I | 3 |
| CSCI | 4212 | Systems Analysis II | 3 |
| CSCI | 4113 | Operating Systems | 3 |
| CSCI | 4123 | Computer Networks | 3 |
| CSCI | 4311 | Computer Graphics | 3 |
| CSCI | 4921 | Senior Project I | 1 |
| CSCI | 4922 | Senior Project II | 2 |
| **Subtotal** |  |  | **(30 hours)** |

**Mathematics Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| MATH | 2111 | Linear Algebra | 3 |
| MATH | 2411 | Basic Statistics I | 3 |
| MATH | 3423 | Operations Research | 3 |
| **Subtotal** |  |  | **9** |

**Management/Economic Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| ACCT | 2102 | Accounting Principles II | 3 |
| ECON | 2106 | Principles of Microeconomics | 3 |
| MGMT | 3105 | Legal Environment for Business | 3 |
| MKTG | 3120 | Principles of Marketing | 3 |
| **Subtotal** |  |  | **(12 hours)** |

**Major Electives (6 hours)**

Six hours from the following courses:

Computer Science Courses 2000 Level or higher

Management Courses 3000 Level or above

General Electives 3

Any courses in the college curriculum

**Subtotal (60 hours)**

**Total Required For Graduation (126 hours)**

**PROGRAM OF STUDY FOR THE BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE (BUSINESS EMPHASIS)**

125 Semester Hours

**Freshman Year Fall Spring**

ENGL 1101 English Comp I 3 ENGL 1102 English Comp. II 3

MATH 1111 College Algebra 3 MATH 1113 Precalculus 3

ASU 1200 Services to Leadership 3 COMM 1100 Public Speaking 3

CSCI 1201 Intr to Comp Science 3 CSCI 1301 Computer Science I 4

HIST 1111 History I 3 MUSC 1100 Music 3

PEDH 1

**Total (16 hrs) (16 hrs)**

**Sophomore Year**

MMATH 1211 Calculus I 4 MATH 2411 Basic Statistics 3

ENGL 2111 World Literature I 3 POLS 1101 U.S. & Georgia Govt 3

CSCI 1302 Computer Science II 4 ACCT 2102 Accounting Principles II 3

HIST 1002 Intro. to African Diaspora 2 CSCI 3122 Data Structures 3

ACCT 2101 Accounting I 3 BIOL 1111 Intro to Biological Science 4

**Total (16 hrs) (16 hrs)**

**Junior Year**

CSCI 3111 Discrete Structures 3 CSCI 2211 Visual Basic Programming 3

MATH 2111 Linear Algebra 3 ECON 2106 Principles of Microeconomics 3

BIOL 1112 Intro to Biological Science 4 CSCI 4211 System Analysis I 3

CSCI 3132 Database Management 3 HIST 1112 Survey of World History II 3

ECON 2105 Macroeconomics 3 CSCI 4311 Computer Graphics 3

PEDH 1

**Total (16 hrs) (16 hrs)**

**Senior Year**

CSCI 4113 Operating Systems 3 CSCI 4123 Computer Networks 3

CSCI 4212 System Analyis II 3 MGMTT 3120 Principle of Marketing 3

MATH 3423 Intro. to Operations Research 3 CSCI 4922 Senior Project II 2

MGMT 3105 Legal Environment of Business3 General Electives 3

CSCI 4921 Senior Project I 1 Major Electives 3

Major Electives 3 PEDH 1

**Total (16 hrs) (15 hrs)**

## BACHELOR OF ARTS DEGREE IN MATHEMATICS

|  |  |  |  |
| --- | --- | --- | --- |
| **Courses** | **Titles** | **Credit Hrs.** |  |
| MATH | 1211 | Calculus I | 4 |
| MATH | 2212 | Calculus II | 4 |
| MATH | 2213 | Calculus III | 4 |
| MATH | 2411 | Basic Statistics | 3 |
|  |  |  |  |
| FREN | 1101 | Elem. French or GRMN 1121 Elem German | 3 |
| **Subtotal** |  |  | **(17 hours)** |

**Major Requirements**

|  |  |  |  |
| --- | --- | --- | --- |
| MATH | 2111 | Linear Algebra | 3 |
|  |  |  |  |
| MATH | 3101 | Introduction to Number Theory | 3 |
| MATH | 3211 | Ordinary Differential Equations | 3 |
| MATH | 3213 | Modern Geometry | 3 |
| MATH | 3314 | Math Statistics | 3 |
| MATH | 3411 | Statistical Methods | 3 |
| MATH | 4111 | Modern Algebra I | 3 |
| MATH | 4112 | Modern Algebra II | 3 |
| MATH | 4211 | Elem. of Analysis I | 3 |
| MATH | 4212 | Elem. of Analysis II | 3 |
| MATH | 4215 | Numerical Analysis | 3 |
|  |  |  |  |
| MATH | 4921 | Senior Project i | 1 |
| MATH | 4922 | Senior Project II | 2 |
| FREN | 1102, Elem. | Fren or GRMN 1121, Elem. German | 3 |
| **Subtotal** |  |  | **(39 hours)** |

**Major Electives**

Six hours from the Mathematics Courses 3000 or above **(6 hours)**

|  |  |
| --- | --- |
|  |  |
| General Electives |  |
| Any course from the college curriculum. | **(15 hours)** |
| **Subtotal** | **(60 hours)** |
| **Total Required for Graduation** | **(126 hours)** |

**PROGRAM OF STUDY FOR THE BACHELOR OF ARTS DEGREE IN MATHEMATICS**

125 Semester Hours

**Freshman Year Fall Spring**

ENGL 1101 English Comp. I 3 ENGL 1102 English Comp. II 3

MATH 1113 Precalculus 3 MATH 1211 Calculus 1 4

COMM 1100 Analytic Discussion 3 PEDH Elective 1

CHEM 1211K General Chemistry I or 4 CHEM 1212K General Chemistry II 4

ASU 1200 Fresh. Sem. & Serv. to Lead. 3 POLS 1101 U.S. & GA Government 3

**Total Hours (16 hrs) (15 hrs)**

**Sophomore Year**

ENGL 2111 World Lit. I 3 MATH 2213 Calculus III 4

MATH 2212 Calculus II 4 Hum./Fine Arts Elective 3

Social Science Elective 3 MATH 2111 Linear Algebra 3

MATH 2411 Basic Statistics 3 Social Science Elective 3

General Elective 3 PEDH Elective 1

HIST 1002 Intro. to African Diaspora 2

**Total Hours (16 hrs) (16 hrs)**

**Junior Year**

MATH 3213 Modern Geometry 3 MATH 4112 Modern Algebra II 3

MATH 3211 Ordinary Diff. Equa. 3 MATH 3101 Intro to Number Theory 3

MATH 4111 Modern Algebra I 3 FREN or GRMN II 3

General Elective 3 MATH 3314 Math Statistics 3

FREN 1101 OR GRMN 1121 3 Social Science Elective 3

PEDH Activity 1

**Total Hours (16 hrs) (15 hrs)**

**Senior Year**

MATH 4211 Elements of Analysis I 3 MATH 4212 Elements of Analysis II 3

MATH Elective 3 MATH 4215 Numeric Analysis 3

MATH Elective 3

General Electives 6

MATH 4921 Senior Project I 1 MATH 4922 Senior Project II 2

Math 3411 Statistical Methods 3

General Electives 3

Social Science Electives 3

**Total Hours (16 hrs) (17 hrs)**