BS in Computer Science (BSCS), 2018-2019 Catalog

Pre-Professional Courses

CSE 1310 — Intro to Programming (prerequisite: MATH 1302)

CSE 1105 — Intro to CSE

ENGR 1250 — (Co-Req MATH 1421 or above)

MATH 1426 — Calculus I

PHYS 1443 — Technical Physics I

ENGL 1301
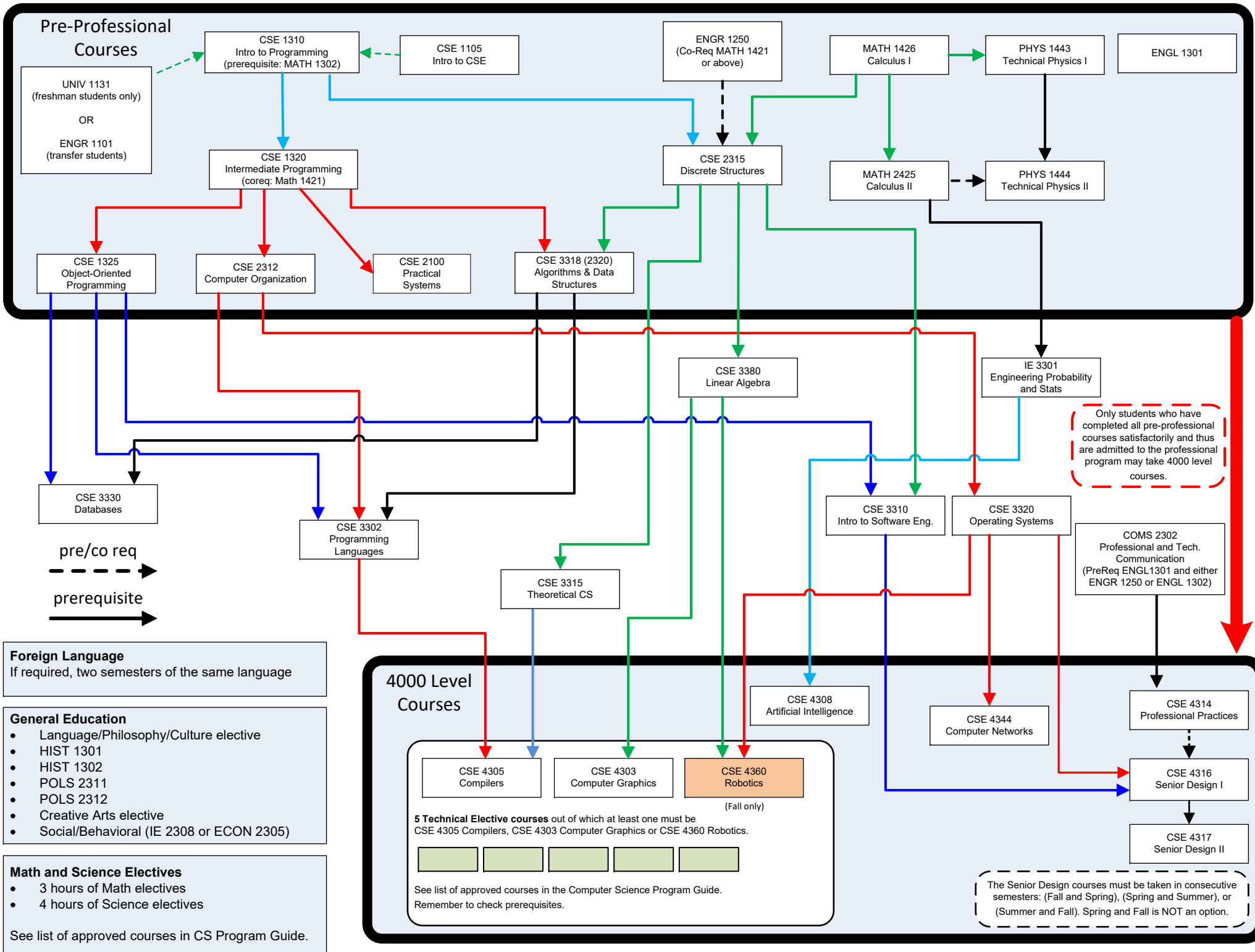
UNIV 1131 (freshman students only) OR **ENGR 1101** (transfer students)

CSE 1320 — Intermediate Programming (coreq: Math 1421)

CSE 2315 — Discrete Structures

MATH 2425 — Calculus II

PHYS 1444 — Technical Physics II

CSE 1325 — Object-Oriented Programming

CSE 2312 — Computer Organization

CSE 2100 — Practical Systems

CSE 3318 (2320) — Algorithms & Data Structures

CSE 3380 — Linear Algebra

IE 3301 — Engineering Probability and Stats

Only students who have completed all pre-professional courses satisfactorily and thus are admitted to the professional program may take 4000 level courses.

CSE 3330 — Databases

CSE 3302 — Programming Languages

CSE 3310 — Intro to Software Eng.

CSE 3320 — Operating Systems

COMS 2302 — Professional and Tech. Communication (PreReq ENGL1301 and either ENGR 1250 or ENGL 1302)

pre/co req

prerequisite

CSE 3315 — Theoretical CS

CSE 4308 — Artificial Intelligence

Legend boxes

Foreign Language
If required, two semesters of the same language

General Education
- Language/Philosophy/Culture elective
- HIST 1301
- HIST 1302
- POLS 2311
- POLS 2312
- Creative Arts elective
- Social/Behavioral (IE 2308 or ECON 2305)

Math and Science Electives
- 3 hours of Math electives
- 4 hours of Science electives

See list of approved courses in CS Program Guide.

4000 Level Courses

CSE 4344 — Computer Networks

CSE 4314 — Professional Practices

CSE 4316 — Senior Design I

CSE 4317 — Senior Design II

CSE 4305 — Compilers

CSE 4303 — Computer Graphics

CSE 4360 — Robotics (Fall only)

5 Technical Elective courses out of which at least one must be CSE 4305 Compilers, CSE 4303 Computer Graphics or CSE 4360 Robotics.

See list of approved courses in the Computer Science Program Guide.
Remember to check prerequisites.

The Senior Design courses must be taken in consecutive semesters: (Fall and Spring), (Spring and Summer), or (Summer and Fall). Spring and Fall is NOT an option.

Mathematics Electives
- MATH 2326 - Calculus III
- CSE 4345 - Computational Methods

Science Electives
- BIOL 1441 – Cell and Molecular Biology
- CHEM 1441 – General Chemistry
- CHEM 1465 – Chemistry for Engineers

Technical Electives
- CSE 4303 – Computer Graphics
  prereqs: CSE 3318 and CSE 3380 or MATH 3330

- CSE 4305 – Compliers
  prereqs: CSE 3302 and CSE 3315

- CSE 4309 – Fundamentals of Machine Learning
  prereqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330

- CSE 4310 - Fundamentals of Computer Vision
  prereqs: CSE 3318, IE 3301 or MATH 3313, CSE 3380 or MATH 3330 (Spring only)

- CSE 4321 – Software Testing and Maintenance
  prereqs: CSE 3310

- CSE 4322 – Software Project Management
  prereqs: CSE 3310

- CSE 4323 – Quantitative Computer Architecture
  prereqs: CSE 3320

- CSE 4331 – Database Implementation and Theory
  prereqs: CSE 3330

- CSE 4334 – Datamining
  prereqs: IE 3301 or MATH 3313 and coreq: CSE 3330

- CSE 4340 – Fundamentals of Wireless Networks
  prereqs: CSE 4344 or CSE 4352

- CSE 4345 – Computational Methods
  prereqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330

- CSE 4351 – Parallel Processing
  prereqs: CSE 3320

- CSE 4360 - Autonomous Robot Design and Programming
  prereqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)

- CSE 4361 – Software Design Patterns
  prereqs: CSE 3311

- CSE 4378 – Intro to Unmanned Vehicles
  prereqs: Department consent (Fall only)

- CSE 4380 – Information Security
  prereqs: CSE 3320

- CSE 4381 – Information Security 2
  prereqs: CSE 3320 and coreq CSE 4344

- CSE 4382 – Secure Programming
  prereqs: CSE 3320

- CSE 3311 – Object-orientated Software Engineering
  prereqs: CSE 1325, CSE 3318, and CSE 3310

- CSE 3313 – Signal Processing
  prereqs: CSE 3318 and CSE 3380 or MATH 3330

- IE 3315 – Operations Research I
  prereqs: coreq MATH 2326

Language, Philosophy & Culture
- ANTHROPOLOGY (ANTH) 2322
- ARABIC (ARAB) 2310, 2314
- ARCHITECTURE (ARCH) 2300
- ART & ART HISTORY (ART) 1317
- CHINESE (CHIN) 2310, 2314
- CLASSICS (CLAS) 1300
- ENGLISH (ENGL) 2303, 2309, 2319, 2329
- FRENCH (FREN) 2310, 2314
- GERMAN (GERM) 2310, 2314
- GLOBAL (GLOBAL) 2301
- GREEK (GREK) 2314
- HISTORY (HIST) 2377
- INTERDISCIPLINARY STUDIES (INTS) 1310
- KOREAN (KORE) 2310, 2314
- LATIN (LATN) 2314
- LINGUISTICS (LING) 2371
- MEXICAN AMERICAN STUDIES (MAS) 2300
- PHILOSOPHY (PHIL) 1304, 2300
- PORTUGUESE (PORT) 2314
- RUSSIAN (RUSS) 2310 , 2314
- SOCIOLOGY (SOCI) 1310
- SPANISH (SPAN) 2310, 2314

Creative Arts Electives
- ARCHITECTURE (ARCH) 1301
- ART & ART HISTORY (ART) 1301, 1309, 1310
- DANCE (DNCE) 1300
- MUSIC (MUSI) 1300, 1302, 2300, 2301
- THEATER ARTS (THEA) 1342, 1343