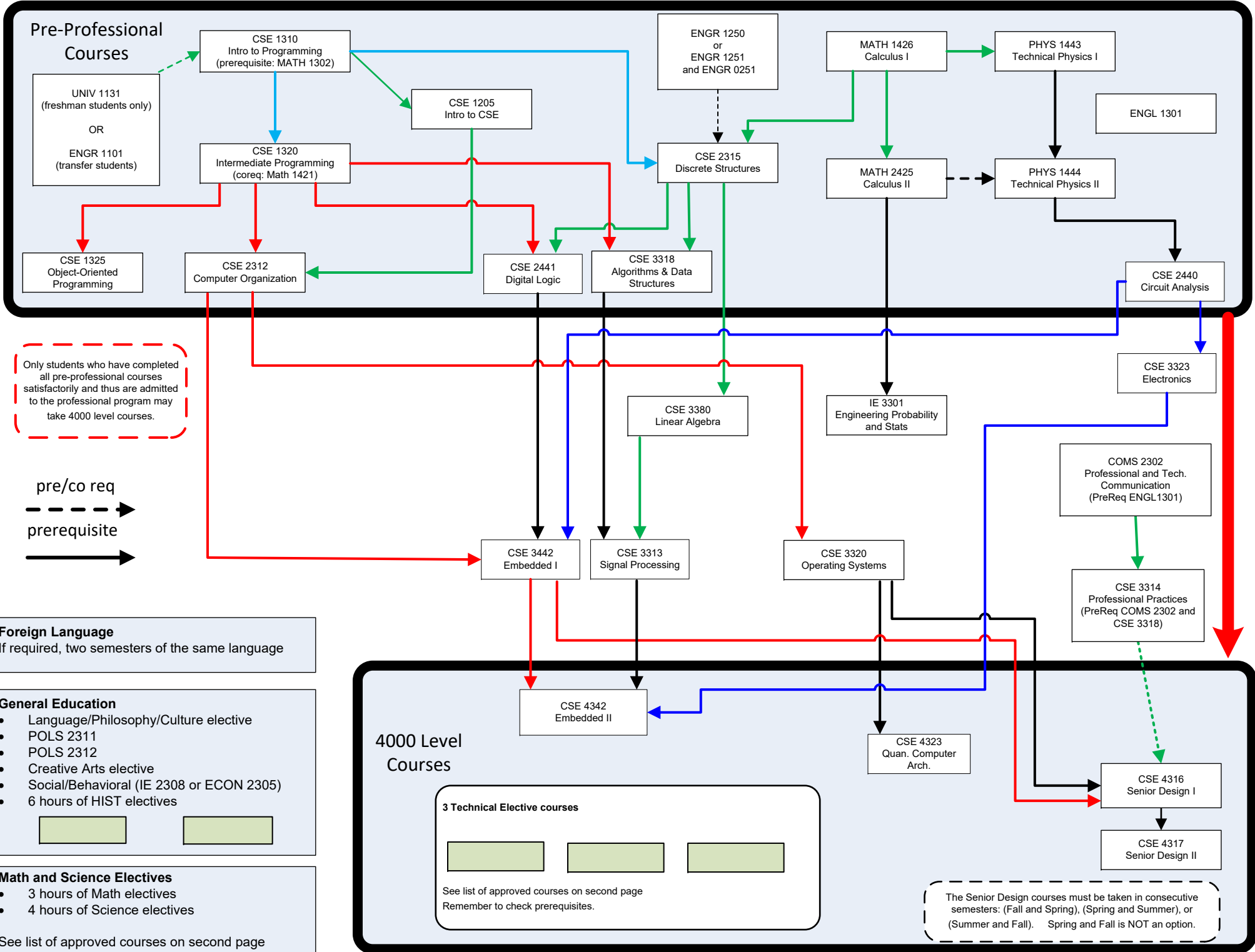


BS in Computer Engineering (BScPE), 2020-2021 Catalog



**Pre-Professional Courses**

UNIV 1131  
(freshman students only)  
OR  
ENGR 1101  
(transfer students)

CSE 1310  
Intro to Programming  
(prerequisite: MATH 1302)

CSE 1205  
Intro to CSE

CSE 1320  
Intermediate Programming  
(coreq: Math 1421)

ENGR 1250  
or  
ENGR 1251  
and ENGR 0251

MATH 1426  
Calculus I

PHYS 1443  
Technical Physics I

ENGL 1301

CSE 1325  
Object-Oriented Programming

CSE 2312  
Computer Organization

CSE 2441  
Digital Logic

CSE 3318  
Algorithms & Data Structures

MATH 2425  
Calculus II

PHYS 1444  
Technical Physics II

CSE 2440  
Circuit Analysis

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

pre/co req  
----->  
prerequisite  
----->

**Foreign Language**  
If required, two semesters of the same language

**General Education**

- Language/Philosophy/Culture elective
- POLS 2311
- POLS 2312
- Creative Arts elective
- Social/Behavioral (IE 2308 or ECON 2305)
- 6 hours of HIST electives

**Math and Science Electives**

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

See list of approved courses on second page

**4000 Level Courses**

**3 Technical Elective courses**

See list of approved courses on second page  
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.

CSE 3442  
Embedded I

CSE 3313  
Signal Processing

CSE 3320  
Operating Systems

COMS 2302  
Professional and Tech. Communication  
(PreReq ENGL 1301)

CSE 3314  
Professional Practices  
(PreReq COMS 2302 and CSE 3318)

CSE 4342  
Embedded II

CSE 4323  
Quan. Computer Arch.

CSE 4316  
Senior Design I

CSE 4317  
Senior Design II

## CPE 2021-2022 Classes

### Mathematics Electives

- MATH 2326 - Calculus III (Fall, Spring, & Summer)
- CSE 4345 - Computational Methods (Fall & Spring)
- CSE 3315 - Theoretical Concepts in CSE (Fall & Spring)

### Science Electives

- BIOL 1441 – Cell and Molecular Biology (Fall, Spring, & Summer)
- CHEM 1441 – General Chemistry (Fall, Spring, & Summer)
- CHEM 1465 – Chemistry for Engineers (Fall, Spring, & Summer)
- PHYS 3313 & PHYS 3183 – Intro to Modern Physics (Fall & Spring)

### Technical Electives

You need to complete three tech electives for your degree plan, but you are only allowed to take **ONE** of the following: CSE 4308, CSE 4309, CSE 4310, CSE 4340, CSE 4360, CSE 4378, and CSE 4380.

- CSE 4308 – Artificial Intelligence  
prereqs: CSE 3318, and CSE 3380 or MATH 3330 (Fall, Spring, and Summer)
- CSE 4309 – Fundamentals of Machine Learning  
prereqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4310 - Fundamentals of Computer Vision  
prereqs: CSE 3318, IE 3301 or MATH 3313, CSE 3380 or MATH 3330 (Spring only)
- CSE 4340 – Fundamentals of Wireless Networks  
prereqs: CSE 4344 or CSE 4352 (Fluctuates)
- CSE 4352 – IoT and Networking  
prereqs: CSE 3442 (Spring only)
- CSE 4354 – Real-time Operating Systems  
prereqs: CSE 3320 and CSE 3442 (Fall only)
- CSE 4355 – Electromechanical Systems and Sensors  
prereqs: CSE 3323 and CSE 3442 (Fall only)
- CSE 4356 – System on Chip (SoC) Design  
prereqs: CSE 3442 (Fall only)
- CSE 4357 – Advanced Digital Logic Design  
prereqs: CSE 3442 (Spring only)
- CSE 4358 – Microprocessor Systems  
prereqs: CSE 3323 (Spring only)
- CSE 4360 - Autonomous Robot Design and Programming  
prereqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4372 – RISC Processor Design  
prereqs: CSE 3442 (Spring only)
- CSE 4373 – General Purpose GPU Programming  
prereqs: CSE 3320 (Fall only)

- CSE 4376 – Digital Communication Systems  
prereqs: CSE 3313 (Fall only)
- CSE 4377 – Wireless Communication Systems  
prereqs: CSE 3313 (Spring only)
- CSE 4378 – Intro to Unmanned Vehicle Systems  
prereqs: Admission to the professional program and permission from an advisor (Fall only)
- CSE 4380 – Information Security  
prereqs: CSE 3320 (Fall and Spring)

### Language, Philosophy & Culture Electives

- ANTHROPOLOGY (ANTH) 2322
- ARABIC (ARAB) 2310, 2314
- ARCHITECTURE (ARCH) 2300
- ART & ART HISTORY (ART) 1317
- American Sign Lang. (ASL) 2314
- 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, 2314
- RUSSIAN (RUSS) 2310, 2314
- SOCIOLOGY (SOCI) 1310
- SPANISH (SPAN) 2310, 2314, 2315
- WOMEN'S & GENDER STUDIES (WOMS) 2310

### Creative Arts Electives

- ARCHITECTURE (ARCH) 1301
- ART & ART HISTORY (ART) 1301, 1309, 1310
- DANCE (DNCE) 1300
- ENGLISH (ENGL) 1375
- MUSIC (MUSI) 1300, 1302, 1304, 2300, 2301
- THEATER ARTS (THEA) 1342, 1343

### History Electives

- HIST 1301
- HIST 1302
- HIST 1331
- HIST 1332