BS in Computer Engineering (BSCpE), 2016-2017 Catalog

**Pre-Professional Courses**

- CSE 1310 Intro to Programming (pre-requisite: MATH 1302)
- CSE 1105 Intro to CSE
- ENGR 1300 (co-requisite: MATH 1421 or above)
- MATH 1426 Calculus I
- PHYS 1443 Technical Physics I
- ENGL 1301

- CSE 1320 Intermediate Programming (co-requisite: MATH 1421)
- CSE 1315 Discrete Structures
- MATH 2425 Calculus II
- PHYS 1444 Technical Physics II
- CSE 2440 Circuit Analysis

- CSE 1325 Object-Oriented Programming
- CSE 2012 Computer Organization
- CSE 2441 Digital Logic
- CSE 3310 Intro to Software Eng.

- CSE 2315 Algorithms & Data Structures
- CSE 3320 Operating Systems
- CSE 3314 Professional Practices (pre-requisites: COMS 2302 and CSE 2320/3318)

- CSE 2312 Computer Organization
- CSE 2315 Discrete Structures
- CSE 3310 Intro to Software Eng.
- CSE 3314 Professional Practices (pre-requisites: COMS 2302 and CSE 2320/3318)

- CSE 2320 Algorithms & Data Structures
- CSE 3320 Operating Systems
- CSE 3314 Professional Practices (pre-requisites: COMS 2302 and CSE 2320/3318)

- CSE 2415 Computer Networks
- CSE 3416 Senior Design II

- MATH 1421 Calculus I
- PHYS 1443 Technical Physics I
- CSE 1315 Discrete Structures
- CSE 3320 Operating Systems
- CSE 4317 Senior Design II

- PHYS 1444 Technical Physics II
- CSE 2440 Circuit Analysis
- CSE 4317 Senior Design II

**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 hour Math elective
- 4 hour Science elective

See list of approved courses on second page.

**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 hour Math elective
- 4 hour Science elective

See list of approved courses on second page.

Remember to check the pre-requisites.

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 (Fall, Spring, & Summer) pre-req: MATH 2425
- **CSE 4345** - Computational Methods (Fall & Spring) pre-req: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330
- **CSE 3315** - Theoretical Concepts in CSE (Fall & Spring) pre-req: CSE 2315

## Science Electives
- **Biol 1441** - Biology I for Science Majors (Fall, Spring, & Summer) pre-req: None
- **Chem 1441** - Chemistry for Engineers (Fall, Spring, & Summer) co-req: MATH 1421
- **Phys 3313 & Phys 3181** - Intro to Modern Physics (Fall & Spring) pre-req: MATH 2425 and PHYS 1444

## Technical Electives
- **CSE 4303** - Computer Graphics pre-reqs: CSE 2320 and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 4305** - Compilers pre-reqs: CSE 3302 and CSE 3315 (Fall & Spring)
- **CSE 4308** - Artificial Intelligence pre-reqs: CSE 2320 and IE 3301 (Fall, Spring, & Summer)
- **CSE 4309** - Fundamentals of Machine Learning pre-reqs: CSE 2320, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4310** - Fundamentals of Computer Vision pre-reqs: CSE 2320, IE 3301 or MATH 3313, CSE 3380 or MATH 3330 (Spring only)
- **CSE 4321** - Software Testing and Maintenance pre-reqs: CSE 3310 (Fall, Spring, & Summer)
- **CSE 4322** - Software Project Management pre-reqs: CSE 3310 (Fall & Spring)
- **CSE 4340** - Fundamentals of Wireless Networks pre-reqs: CSE 4344 or CSE 4352 (Fluctuates)
- **CSE 4342** - Embedded Systems II pre-reqs: CSE 3442 and co-req CSE 3313 (Fall & Spring)
- **CSE 4345** - Computational Methods pre-reqs: CSE 2320, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 4351** - Parallel Processing pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4352** - IoT and Networking pre-reqs: CSE 3442 (Spring only)
- **CSE 4354** - Real-time Operating Systems pre-reqs: CSE 3320 and CSE 3442 (Fall only)
- **CSE 4355** - Electromechanical Systems and Sensors pre-reqs: CSE 3323 and CSE 3442 (Fall only)
- **CSE 4356** - System on Chip (SoC) Design pre-reqs: CSE 3442 (Fall only)
- **CSE 4357** - Advanced Digital Logic Design pre-reqs: CSE 3442 (Spring only)
- **CSE 4358** - Microprocessor Systems pre-reqs: CSE 3442 (Spring only)
- **CSE 4360** - Autonomous Robot Design and Programming pre-reqs: CSE 2320, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4372** - RISC Processor Design pre-reqs: CSE 3442 (Spring only)
- **CSE 4373** - General Purpose GPU Programming pre-reqs: CSE 3320 (Fall only)
- **CSE 4376** - Digital Communication Systems pre-reqs: CSE 3313 (Fall only)
- **CSE 4377** - Wireless Communication Systems pre-reqs: CSE 3313 (Spring only)
- **CSE 4378** - Intro to Unmanned Vehicles pre-reqs: Department consent (Fall only)
- **CSE 4380** - Information Security pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4381** - Information Security 2 pre-reqs: CSE 3320 and co-req CSE 4344 (Fall & Spring)
- **CSE 4382** - Secure Programming pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 3315** - Theoretical Concepts in CSE pre-reqs: CSE 2315 (Fall & Spring)
- **CSE 3330** - Database Systems and File Structures pre-reqs: CSE 1325 and CSE 2320 (Fall, Spring, & Summer)

## Language, Philosophy & Culture Electives
- **Anthropology (Anth) 2322**
- **Arabic (Arab) 2310, 2314**
- **Architecture (Arch) 2300**
- **Art & Art History (Art) 1317**
- **American Sign Language (Asl) 2314**
- **Chinese (Chin) 2310, 2314**
- **Classics (Clas) 1300**
- **Intro to LGBTQ+ Studies (Divr) 2315**
- **English (Engl) 1350, 2303, 2309, 2319, 2329**
- **French (Fren) 2310, 2314**
- **German (Ger) 2310, 2314**
- **Global (Global) 2301**
- **Greek (Grek) 2314**
- **History (Hist) 2377**
- **Korean (Kore) 2310, 2314**
- **Latin (Latn) 2314**
- **Linguistics (Ling) 2371**
- **Mexican American Studies (Mas) 2300**
- **Philosophy (Phil) 1304, 2300**
- **Portuguese (Port) 2310, 2314**
- **Russian (Russ) 2310, 2314**
- **Intro to Popular Culture (Soci/Ints) 2310**
- **Spanish (Span) 2310, 2314, 2315**
- **Women's Studies (Woms) 2310, 2315**

## Creative Arts Electives
- **Architecture (Arch) 1301**
- **Art & Art History (Art) 1301, 1309, 1310**
- **Dance (Dnce) 1300**
- **English (Engl) 1375**
- **Photography (Jour) 2340**
- **Music (Mus) 1300, 1302, 1304, 2300, 2301**
- **Theater Arts (Thea) 1342, 1343**

## History Electives
- **Hist 1301**
- **Hist 1302**
- **Hist 1331**
- **Hist 1332**