BS in Computer Engineering (BSCpE), 2015-2016 Catalog

**Pre-Professional Courses**

- **CSE 1310** Intro to Programming (prerequisite: MATH 1302)
- **CSE 1320** Intermediate Programming (coreq: Math 1421)
- **CSE 1325** Object-Oriented Programming
- **CSE 2312** Computer Organization
- **CSE 2100** Practical Systems
- **CSE 2441** Digital Logic
- **CSE 2320** Algorithms & Data Structures
- **CSE 3380** Linear Algebra
- **CSE 3313** Signal Processing
- **CSE 3320** Operating Systems
- **CSE 3442** Embedded I
- **CSE 3444** Computer Networks
- **CSE 4342** Embedded II
- **CSE 4343** Professional Practices
- **CSE 4344** Embedded Systems II
- **CSE 4345** Computer Networks
- **CSE 4360** Robotics
- **CSE 4340** Mobile Systems

**Math and Science Electives**

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

See list of approved courses in CpE Program Guide.

**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 CpE Program Guide.

**4000 Level Courses**

- **CSE 4323** Quan. Computer Arch.
- **CSE 4314** Professional Practices
- **CSE 4326** Calculus I
- **CSE 4332** Operating Systems
- **CSE 4316** Senior Design I
- **CSE 4330** Intro to Software Eng.
- **CSE 4317** Senior Design II
- **CSE 4340** Mobile Systems
- **CSE 4344** Computer Networks
- **CSE 4343** Professional Practices
- **CSE 4342** Embedded Systems II

2 Technical Elective courses out of which at least one must be CSE 4340 Mobile Systems, CSE 4360 Robotics, or CSE 4342 Embedded Systems II.

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

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

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.
CPE 2015-2016 Classes

Mathematics Electives
• MATH 2326 - Calculus III
• CSE 3315 - Theoretical Concepts in CSE
• 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 2320 and CSE 3380 or MATH 3330
• CSE 4305 – Compliers
  prereqs: CSE 3302 and CSE 3315
• CSE 4308 – Artificial Intelligence
  prereqs: CSE 2320 and IE 3301 or MATH 3313
• CSE 4309 – Fundamentals of Machine Learning
  prereqs: CSE 2320, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330
• CSE 4310 - Fundamentals of Computer Vision
  prereqs: CSE 2320, 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 4340 – Fundamentals of Wireless Networks
  prereqs: CSE 4344 or CSE 4352
• CSE 4342 – Embedded Systems II
  prereqs: CSE 3442 and coreq CSE 3313
• CSE 4345 – Computational Methods
  prereqs: CSE 2320, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330
• CSE 4351 – Parallel Processing
  prereqs: CSE 3320
• 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 – Electomechanical 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 2320, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
• 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 3315 – Theoretical Concepts in Computer Science & Engineering
  prereqs: CSE 2315
• CSE 3330 – Database Systems and File Structures
  prereqs: CSE 1325 and CSE 2320

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 (GREEK) 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