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

**Pre-Professional Courses**

- **CSE 1310** Intro to Programming (prerequisite: MATH 1302)
- **CSE 1105** Intro to CSE
- **ENGR 1300** (Co-Req MATH 1421 or above)
- **MATH 1426** Calculus I
- **PHYS 1443** Technical Physics I
- **ENGL 1301**

- **CSE 1320** Intermediate Programming (coreq: Math 1421)
- **CSE 2100** Practical Systems
- **CSE 2105** Object-Oriented Programming
- **CSE 2112** Computer Organization
- **CSE 2441** Digital Logic
- **CSE 2442** Embedded I
- **CSE 3313** Signal Processing
- **CSE 3380** Linear Algebra
- **IE 3301** Engineering Probability and Stats
- **CSE 3310** Intro to Software Eng.
- **CSE 3323** Electronics

- **CSE 1105** Intro to CSE
- **MATH 1426** Calculus I
- **CSE 3310** Intro to Software Eng.

- **CSE 2315** Discrete Structures
- **MATH 2425** Calculus II
- **PHYS 1444** Technical Physics II
- **CSE 2440** Circuits & Signals
- **CSE 3323** Electronics

- **CSE 3313** Signal Processing
- **CSE 3320** Operating Systems
- **CSE 3310** Intro to Software Eng.
- **CSE 3310** Intro to Software Eng.

- **CSE 3320** Operating Systems
- **CSE 3323** Electronics
- **CSE 4314** Professional Practices
- **CSE 4316** Senior Design I
- **CSE 4317** Senior Design II

- **CSE 4340** Mobile Systems
- **CSE 4360** Robotics
- **CSE 4342** Embedded Systems II
- **CSE 3320** Operating Systems

- **CSE 4344** Computer Networks
- **CSE 4323** Quan. Computer Arch.
- **CSE 4316** Senior Design I

- **CSE 4344** Computer Networks
- **CSE 4323** Quan. Computer Arch.
- **ENGR 1300** (Co-Req MATH 1421 or above)
- **MATH 1426** Calculus I

- **CSE 4342** Embedded II
- **CSE 4360** Robotics
- **CSE 4340** Mobile Systems

**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.

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.
Mathematics Electives
- MATH 2326 - Calculus III
- MATH 3303 - Mathematical Game Theory
- MATH 3304 - Linear Optimization Applications
- 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 – Intro to Machine Learning
  prereqs: CSE 2320, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4310 - Intro to 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 - Mobile Systems Engineering
  prereqs: CSE 3320 and co-requisite CSE 4344
- 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
- CSE 4354 – Real-time Operating Systems
  prereqs: CSE 3320 and CSE 3442
- CSE 4356 – System on Chip (SoC) Design
  prereqs: CSE 3442
- 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
- INTRO TO CLASSICAL MYTHOLOGY (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
- INTRO TO POPULAR CULTURE (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