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

Pre-Professional Courses

CSE 1310 Intro to Programming (pre-requisite: MATH 1302)
CSE 1105 Intro to CSE
CSE 1320 Intermediate Programming (co-requisite: Math 1421)
CSE 2100 Practical Systems
CSE 2441 Digital Logic
CSE 2320 Algorithms & Data Structures
CSE 2315 Discrete Structures
MATH 1426 Calculus I
PHYS 1443 Technical Physics I
ENGL 1301
CSE 1325 Object-Oriented Programming
CSE 2012 Computer Organization
CSE 2440 Circuit Analysis
MATH 1426 Calculus I
PHYS 1444 Technical Physics 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.

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-requisite
Pre-requisite

4000 Level Courses

CSE 3442 Embedded I
CSE 3313 Signal Processing
CSE 3320 Operating Systems
CSE 3380 Linear Algebra
IE 3301 Engineering Probability and Stats
CSE 3310 Intro to Software Eng.
COMS 2302 Professional and Tech. Communication (pre-requisite ENGL 1301)
CSE 3314 Professional Practices (pre-requisites COMS 2302 and CSE 2320/3318)
CSE 3323 Electronics
CSE 3442 Embedded II
CSE 4316 Senior Design I
CSE 4323 Quan. Computer Arch.
CSE 4317 Senior Design II
CSE 4344 Computer Networks
CSE 4360 Robotics
CSE 4340 Mobile Systems

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 on second page.
Remember to check 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
- 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)

Science Electives
- BIOL 1441 – Biology I for Science Majors (Fall, Spring, & Summer)
  pre-req: None
- CHEM 1401 – General Chemistry (Fall, Spring, & Summer)
  pre-req: MATH 1302
- CHEM 1465 – Chemistry for Engineers (Fall, Spring, & Summer)
  co-req: MATH 1421
- PHYS 3313 & PHYS 3183 – 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 4306 – 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)

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) 1302, 2303, 2309, 2319, 2329
- FRENCH (FREN) 2310, 2314
- GERMAN (GERM) 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) 1310
- 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 (DANCE) 1300
- ENGLISH (ENGL) 1375
- PHOTOJOURNALISM (JOUR) 2340
- MUSIC (MUSI) 1300, 1302, 1304, 2300, 2301
- THEATER ARTS (THEA) 1342, 1343

History Electives
- HIST 1301
- HIST 1302
- HIST 1331
- HIST 1332