BS in Computer Engineering (BSCpE), 2018-2019 Catalog

Pre-Professional Courses

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

CSE 1310 Intro to Programming (prerequisite: MATH 1302)
CSE 1105 Intro to CSE
ENGR 1250 (Co-Req MATH 1421 or above)
MATH 1426 Calculus I
PHYS 1443 Technical Physics I
ENGL 1301

PRE-REQ
prerequisite

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

CSE 1320 Intermediate Programming (coreq: Math 1421)
CSE 2100 Practical Systems
CSE 3318 (2320) Algorithms & Data Structures
CSE 3315 Discrete Structures
CSE 2312 Computer Organization
CSE 2315 Discrete Structures
CSE 3310 Intro to Software Eng.

4000 Level Courses

CSE 3380 Linear Algebra
CSE 3320 Operating Systems
CSE 3313 Signal Processing
CSE 3314 Professional Practices (PreReq COMS 2302 and CSE 3318)
CSE 2440 Circuit Analysis
CSE 3311 Embedded II
CSE 3301 Engineering Probability and Stats
CSE 4344 Computer Networks
CSE 4310 Senior Design I
CSE 4300 Mobile Systems
CSE 3323 Electronics
CSE 2441 Digital Logic
CSE 3320 Intro to Circuit Analysis
CSE 3314 Professional Practices
CSE 3300 Professional Practices
CSE 3312 Object-Oriented Programming
CSE 3320 Operating Systems

Pre-Professional Courses

CSE 1325 Object-Oriented Programming
CSE 2312 Computer Organization
CSE 2100 Practical Systems
CSE 2441 Digital Logic
MATH 1426 Calculus I
ENGR 1250 Calculus I
PHYS 1443 Technical Physics I
ENGL 1301

Math and Science Electives

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

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.

General Education

- Language/Philosophy/Culture elective
- HIST 1301
- HIST 1302
- POLS 2311
- POLS 2312
- Creative Arts elective
- Social/Behavioral (IE 2308 or ECON 2305)

Foreign Language

If required, two semesters of the same language

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.

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 prerequisites.
CPE 2018-2019 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
- CSE 4303 – Computer Graphics
  prereqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- CSE 4305 – Compilers
  prereqs: CSE 3302 and CSE 3315 (Fall & Spring)
- CSE 4308 – Artificial Intelligence
  prereqs: CSE 3318 and IE 3301 (Fall, Spring, & 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 4321 – Software Testing and Maintenance
  prereqs: CSE 3310 (Fall, Spring, & Summer)
- CSE 4322 – Software Project Management
  prereqs: CSE 3310 (Fall & Spring)
- CSE 4340 – Fundamentals of Wireless Networks
  prereqs: CSE 4344 or CSE 4352 (Fluctuates)
- CSE 4342 – Embedded Systems II
  prereqs: CSE 3442 and coreq CSE 3313 (Fall & Spring)
- CSE 4345 – Computational Methods
  prereqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall & Spring)
- CSE 4351 – Parallel Processing
  prereqs: CSE 3320 (Fall & Spring)
- 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 2320, 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 Vehicles
  prereqs: Department consent (Fall only)
- CSE 4380 – Information Security
  prereqs: CSE 3320 (Fall & Spring)
- CSE 4381 – Information Security 2
  prereqs: CSE 3320 and coreq CSE 4344 (Fall & Spring)
- CSE 4382 – Secure Programming
  prereqs: CSE 3320 (Fall & Spring)
- CSE 3335 – Theoretical Concepts in CSE
  prereqs: CSE 2315 (Fall & Spring)
- CSE 4330 – Database Systems and File Structures
  prereqs: 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 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