BS in Computer Engineering (BSCpE), 2021-2022 Catalog

Pre-Professional Courses

- CSE 1310 Intro to Programming (pre-requisite: MATH 1302)
- CSE 1320 Intermediate Programming (co-requisite: Math 1401)
- CSE 1325 Object-Oriented Programming
- CSE 2012 Computer Organization
- CSE 2441 Digital Logic
- CSE 3318 Algorithms & Data Structures
- CSE 3315 Discrete Structures
- MATH 1425 Calculus I
- MATH 1424 Calculus II
- PHYS 1443 Technical Physics I
- PHYS 1444 Technical Physics II
- ENGL 1301

Pre/co-requisite

- CSE 1106 Intro to CSE
- CSE 2315

Pre-requisite

- CSE 2440 Circuit Analysis
- CSE 3323 Electronics
- CSE 3314 Professional Practices (pre-requisites: COMS 2302 and CSE 3318)
- IE 3301 Engineering Probability and Stats
- COMS 2302 Professional and Tech. Communication (pre-requisite: ENGL 1301)

Foreign Language

- If required, two semesters of the same language.

General Education

- Language/Philosophy/Culture elective
- POLS 2311
- POLS 2312
- Creative Arts elective
- Social/Behavioral (IE 2308 or ECON 2305)
- 6 hours of HIST electives

Math and Science Electives

- 3 hour Math elective
- 4 hour Science elective

See list of approved courses on second page.

4000 Level Courses

- CSE 3380 Linear Algebra
- CSE 4317 Senior Design II
- CSE 4316 Senior Design I
- CSE 4342 Embedded II

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** – 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

You need to complete three tech electives for your degree plan, but you are only allowed to take ONE of the following: CSE 4308, CSE 4309, CSE 4310, CSE 4340, CSE 4360, CSE 4378, and CSE 4380.

- **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 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)

Only one of these classes will count in your degree plan:
- **CSE 4308** – Artificial Intelligence pre-reqs: CSE 3318, and CSE 3380 or MATH 3330 (Fall, Spring, and Summer)
- **CSE 4309** – Fundamentals of Machine Learning pre-reqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4310** – Fundamentals of Computer Vision pre-reqs: CSE 3318, IE 3301 or MATH 3313, CSE 3380 or MATH 3330 (Spring only)
- **CSE 4340** – Fundamentals of Wireless Networks pre-reqs: CSE 4344 or CSE 4352 (Fluctuates)
- **CSE 4360** – Autonomous Robot Design and Programming pre-reqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4378** – Intro to Unmanned Vehicle Systems pre-reqs: Admission to the professional program and permission from an advisor (Fall only)
- **CSE 4380** – Information Security pre-reqs: CSE 3320 (Fall and Spring)

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 (GERM) 2310, 2314**
- **GLOBAL (GLOBAL) 2301**
- **GREEK (GREQ) 2314**
- **HISTORY (HIST) 2377**
- **HISTORICAL GEOGRAPHY (HISTGEO) 2319**
- **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 (SOC/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 (DNCE) 1300**
- **ENGLISH (ENGL) 1375**
- **PHOTOJOURNALISM I (JOUR) 2340**
- **MUSIC (MUSI) 1300, 1302, 1304, 2300, 2301**
- **THEATER ARTS (THEA) 1342, 1343**

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