BS in Computer Engineering (BSCpE), 2022-2023 Catalog Pre-Professional CSE 1310 MATH 1426 PHYS 1443 Intro to Programming Courses Calculus I Technical Physics I (pre-requisite: MATH 1302) **UNIV 1131** CSE 1106 (freshman students only) **ENGL 1301** Intro to CSE OR CSE 1320 **ENGR 1101** CSE 2315 Intermediate Programming (transfer students) Discrete Structures MATH 2425 **PHYS 1444** (co-requisite: Math 1421) Calculus II Technical Physics II CSE 3318 CSE 1325 CSE 2312 CSE 2441 Algorithms & Data Object-Oriented CSE 2440 Computer Organization Digital Logic I Structures Programming Circuit Analysis CSE 3323 Only students who have completed Electronics all pre-professional courses satisfactorily and thus are admitted IE 3301 to the professional program may CSE 3380 Engineering Probability Linear Algebra take 4000 level courses. and Stats COMS 2302 Professional and Tech. Communication pre/co-requisite (pre-requisite ENGL1301) pre-requisite CSE 3442 CSE 3313 CSE 3320 CSE 3314 Embedded I Signal Processing Operating Systems Professional Practices (pre-requisites COMS 2302 and CSE 3318) Foreign Language If required, two semesters of the same language. **General Education** CSE 4342 Language/Philosophy/Culture elective Embedded II **POLS 2311** 4000 Level CSE 4323 POLS 2312 Quan. Computer Courses Arch. Creative Arts elective CSE 4316 Social/Behavioral (IE 2308 or ECON 2305) Senior Design I 6 hours of HIST electives 4 Technical Elective courses CSE 4317 Senior Design II **Math and Science Electives** See list of approved courses on second page. 3 hour Math elective The Senior Design courses must be taken in consecutive Remember to check pre-requisites. semesters: (Fall and Spring), (Spring and Summer), or 4 hour Science elective (Summer and Fall). Spring and Fall is NOT an option. See list of approved courses on second page.

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
- <u>CSE 3315</u> Theoretical Concepts in CSE (Fall & Spring) pre-req:
 CSE 2315

Science Electives

- <u>BIOL 1441</u> Biology I for Science Majors (Fall, Spring, & Summer) pre-req: None
- <u>CHEM 1441</u> General Chemistry (Fall, Spring, & Summer) prereq: 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 four 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.

- <u>CSE 3341</u> Digital Logic Design II pre-reqs: CSE 2441 (Fall and Spring)
- <u>CSE 4352</u> IoT and Networking pre-regs: CSE 3442 (Spring only)
- <u>CSE 4354</u> Real-time Operating Systems pre-regs: CSE 3320 and CSE 3442 (Fall only)
- <u>CSE 4355</u> Electomechanical Systems and Sensors pre-regs: CSE 3323 and CSE 3442 (Fall only)
- <u>CSE 4356</u> System on Chip (SoC) Design pre-regs: CSE 3442 (Fall only)
- <u>CSE 4358</u> Microprocessor Systems pre-reqs: CSE 3442 (Summer only)
- <u>CSE 4372</u> RISC Processor Design pre-reqs: CSE 3442 (Spring only)
- <u>CSE 4373</u> General Purpose GPU Programming pre-reqs: CSE 3320 (Fall only)
- <u>CSE 4376</u> Digital Communication Systems pre-reqs: CSE 3313 (Fall only)
- <u>CSE 4377</u> Wireless Communication Systems pre-reqs: CSE 3313 and CSE 3442 (Spring only)

Only one of these classes will count in your degree plan:

 <u>CSE 4308</u> – Artificial Intelligence pre-reqs: CSE 3318, and CSE 3380 or MATH 3330 (Fall, Spring, and Summer)

- <u>CSE 4309</u> Fundamentals of Machine Learning pre-reqs: CSE 3318, MATH 2326 or the consent of the instructor, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- <u>CSE 4310</u> Fundamentals of Computer Vision pre-reqs: CSE 3318, IE 3301 or MATH 3313, CSE 3380 or MATH 3330 (Spring only)
- <u>CSE 4340</u> Fundamentals of Wireless Networks pre-regs: CSE 4344 or CSE 4352 (Fluctuates)
- <u>CSE 4360</u> Autonomous Robot Design and Programming pre-reqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- <u>CSE 4378</u> Intro to Unmanned Vehicle Systems pre-reqs: Admission to the professional program and permission from an advisor (Fall only)
- <u>CSE 4380</u> 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 (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) 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 (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