BS in Computer Science (BSCS), 2020-2021 Catalog

Pre-Professional Courses

- CSE 1310 Intro to Programming (prerequisite: MATH 1302)
- CSE 1320 Intermediate Programming (core: Math 1421)
- CSE 2312 Computer Organization
- CSE 2315 Discrete Structures
- CSE 3318 Algorithms & Data Structures
- CSE 3302 Programming Languages
- CSE 3314 Theoretical CS
- CSE 3380 Linear Algebra
- CSE 3390 Operating Systems
- CSE 4305 Compilers
- CSE 4303 Computer Graphics
- CSE 4360 Robotics

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

Foreign Language
- If required, two semesters of the same language

Math Elective
- 3 hours of Math electives

See list of approved courses in the Computer Science Program Guide.

4000 Level Courses

- CSE 4305 Compilers
- CSE 4303 Computer Graphics
- CSE 4360 Robotics
- CSE 4308 Artificial Intelligence
- CSE 4382 Secure Programming
- CSE 4380 Information Security
- CSE 4381 Information Security 2

5 Technical Elective courses out of which at least one must be
CSE 4305 Compilers, CSE 4303 Computer Graphics or CSE 4360 Robotics.

See list of approved courses in the Computer Science Program Guide.
Remember to check prerequisites.

Pre/co 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.

Pre/req

FT ONLY

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.
Each course taken can be used to satisfy only one degree plan requirement. For example, you can CSE 4380 as your security elective, but it will not also as a technical elective. If you take CSE 4380 and CSE 4381, CSE 4380 can satisfy your security elective and CSE 4381 can count as a technical elective.

Mathematics Electives
- MATH 2326 - Calculus III
- CSE 4345 - Computational Methods

Technical Electives
- CSE 4303 – Computer Graphics
  prereqs: CSE 3318 and CSE 3380 or MATH 3330
- CSE 4305 – Compliers
  prereqs: CSE 3302 and CSE 3315
- CSE 4309 – Fundamentals of Machine Learning
  prereqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330
- 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
- CSE 4322 – Software Project Management
  prereqs: CSE 3320
- CSE 4323 – Quantitative Computer Architecture
  prereqs: CSE 3320
- CSE 4331 – Database Implementation and Theory
  prereqs: CSE 3330
- CSE 4334 – Datamining
  prereqs: IE 3301 or MATH 3313 and coreq: CSE 3330
- CSE 4340 – Fundamentals of Wireless Networks
  prereqs: CSE 4344 or CSE 4352
- CSE 4345 – Computational Methods
  prereqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330
- CSE 4351 – Parallel Processing
  prereqs: CSE 3320
- CSE 4360 - Autonomous Robot Design and Programming
  prereqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4361 – Software Design Patterns
  prereqs: CSE 3311

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 3311 – Object-orientated Software Engineering
  prereqs: CSE 1325, CSE 3318, and CSE 3310
- CSE 3313 – Signal Processing
  prereqs: CSE 3318 and CSE 3380 or MATH 3330
- IE 3315 – Operations Research I
  prereqs: coreq MATH 2326

Language, Philosophy & Culture
- ANTHROPOLOGY (ANTH) 2322
- ARABIC (ARAB) 2310, 2314
- ARCHITECTURE (ARCH) 2300
- ART & ART HISTORY (ART) 1317
- 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
- PORTUGUESE (PORT) 2314
- RUSSIAN (RUSS) 2310, 2314
- SOCIOLOGY (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

History Electives
- HIST 1301
- HIST 1302