BS in Software Engineering (BSSE), 2019-2020 Catalog

**Pre-Professional Courses**
- CSE 1310 Intro to Programming (prerequisite: MATH 1302)
- CSE 1105 Intro to CSE
- CSE 1320 Intermediate Programming (coreq: Math 1421)
- CSE 1325 Object-Oriented Programming
- CSE 2312 Computer Organization
- CSE 2100 Practical Systems
- CSE 2320 Algorithms & Data Structures
- CSE 3315 Discrete Structures
- CSE 3310 Intro to Software Eng.
- CSE 3330 Databases
- CSE 3302 Programming Languages

**Math and Science Electives**
- 3 hours of Math electives
- 4 hours of Science electives

**General Education**
- Language/Philosophy/Culture elective
- HIST 1311
- HIST 1312
- POLS 2311
- POLS 2312
- Creative Arts elective
- Social/Behavioral (IE 2308 or ECON 2305)

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

**4000 Level Courses**
- CSE 4381 Software Design Patterns (Fall only)
- CSE 4321 Software Testing
- CSE 4322 Software Project Management
- CSE 4380 Information Security
- CSE 4314 Professional Practices
- CSE 4316 Senior Design I
- CSE 4317 Senior Design II

**2 Technical Elective Courses**
- See list of approved courses in the Software Engineering Program Guide. Remember to check prerequisites.

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

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
- MATH 3303 - Mathematical Game Theory
- MATH 3304 - Linear Optimization Applications
- CSE 4345 - Computational Methods

Science Electives

- BIOL 1441 – Cell and Molecular Biology
- CHEM 1441 – General Chemistry
- CHEM 1465 – Chemistry for Engineers

Technical Electives

- CSE 4303 – Computer Graphics
  prereqs: CSE 2320 and CSE 3380 or MATH 3330
- CSE 4305 – Compliers
  prereqs: CSE 3302 and CSE 3315
- CSE 4308 – Artificial Intelligence
  prereqs: CSE 2320 and IE 3301
- CSE 4309 – Intro to Machine Learning
  prereqs: CSE 2320, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4310 - Intro to Computer Vision
  prereqs: CSE 2320, IE 3301 or MATH 3313, CSE 3380 or MATH 3330 (Spring only)
- 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 co-req: CSE 3330
- CSE 4340 - Mobile Systems Engineering
  prereqs: CSE 3320 and co-req CSE 4344
- CSE 4344 – Computer Network Organization
  prereqs: CSE 3320
- CSE 4345 – Computational Methods
  prereqs: CSE 2320, 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 2320, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4378 – Intro to Unmanned Vehicles
  prereqs: Department consent (Fall only)
- CSE 4381 – Information Security 2
  prereqs: CSE 3320 and coreq CSE 4344
- CSE 4382 – Secure Programming
  prereqs: CSE 3320
- CSE 3313 – Signal Processing
  prereqs: CSE 2320 and CSE 3380 or MATH 3330
- IE 3315 – Operations Research I
  prereqs: co-req MATH 2326

Language, Philosophy & Culture

- ANTHROPOLOGY (ANTH) 2322
- ARCHITECTURE (ARCH) 2300
- ART & ART HISTORY (ART) 1317
- INTRO TO CLASSICAL MYTHOLOGY (CLAS) 1300
- ENGLISH (ENGL) 2303 2309 2319 2329
- GLOBAL (GLOBAL) 2301
- INTERDISCIPLINARY STUDIES (INTS) 1310
- LINGUISTICS (LING) 2371
- MEXICAN AMERICAN STUDIES (MAS) 2300
- PHILOSOPHY (PHIL) 1304 2300
- INTRO TO POPULAR CULTURE (SOCI) 1310
- ARABIC (ARAB) 2314
- CHINESE (CHIN) 2314
- FRENCH (FREN) 2314
- GERMAN (GERM) 2314
- GREEK (GREK) 2314
- KOREAN (KORE) 2314
- LATIN (LATN) 2314
- PORTUGUESE (PORT) 2314
- RUSSIAN (RUSS) 2314
- SPANISH (SPAN) 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