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 2100 Practical Systems
- CSE 2300 Algorithms & Data Structures
- CSE 2315 Discrete Structures
- MATH 1426 Calculus I
- PHYS 1443 Technical Physics I
- ENGL 1301

CSE 1325 Object-Oriented Programming
- CSE 2312 Computer Organization
- CSE 2320 Algorithms & Data Structures
- CSE 3302 Programming Languages
- CSE 3330 Databases

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

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

Foreign Language
If required, two semesters of the same language

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

ENGR 1250 (Co-Req MATH 1421 or above)

ENGR 1101 (Transfer students)

MATH 2425 Calculus II

ENGR 1301 (Freshman students only)

PHYS 2444 Technical Physics 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.

CSE 2315 Discrete Structures
- CSE 3315 Theoretical CS
- CSE 3380 Linear Algebra
- MATH 2425 Calculus II
- PHYS 1444 Technical Physics II
- ENGR 1250 (Co-Req MATH 1421 or above)

CSE 4316 Senior Design I
- CSE 4314 Professional Practices
- CSE 4317 Senior Design II

CSE 4380 Information Security
- COMS 2302 Professional and Tech. Communication (PreReq ENGL1301 and either ENGR 1250 or ENGL 1302)

CSE 3310 Intro to Software Eng.
- CSE 3315 Theoretical CS
- CSE 3380 Linear Algebra

CSE 4361 Software Design Patterns
- CSE 4321 Software Testing
- CSE 4322 Software Project Management
- CSE 4380 Information Security

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.
SE 2019-2020 Classes

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
- ARABIC (ARAB) 2310, 2314
- ARCHITECTURE (ARCH) 2300
- ART & ART HISTORY (ART) 1317
- CHINESE (CHIN) 2310, 2314
- INTRO TO CLASSICAL MYTHOLOGY (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
- INTRO TO POPULAR CULTURE (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