BS in Software Engineering (BSSE), 2018-2019 Catalog

Pre-Professional Courses

UNIV 1131
(Freshman students only)

OR

ENGR 1101
(Transfer students)

CSE 1310
Intro to Programming
(prerequisite: MATH 1302)

CSE 1105
Intro to CSE

CSE 1320
Intermediate Programming
(coreq: Math 1421)

ENGR 1250
(Co-Req MATH 1421 or above)

MATH 1426
Calculus I

CSE 3310
Intro to Software Eng.

MATH 2425
Calculus II

CSE 2315
Discrete Structures

PHYS 1443
Technical Physics I

PHYS 1444
Technical Physics II

MATH 2425
Calculus II

CSE 2100
Practical Systems

CSE 2320
Algorithms & Data Structures

CSE 3315
Theoretical CS

IE 3301
Engineering Probability and Stats

CSE 2312
Computer Organization

CSE 2320
Object-Oriented Programming

CSE 3302
Programming Languages

CSE 3380
Linear Algebra

ENGL 1301

IE 3301

ENGR 1250

(Co-Req MATH 1421 or above)

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.

Foreign Language
If required, two semesters of the same language

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
See list of approved courses in SE Program Guide.

Pre/co req
prerequisite

4000 Level Courses

CSE 4310
Intro to Software Eng.

CSE 4314
Professional Practices

CSE 4316
Senior Design I

CSE 4317
Senior Design II

CSE 4321
Software Testing

CSE 4314
Professional Practices

CSE 4322
Software Project Management

CSE 4361
Software Patterns

CSE 4380
Information Security

CSE 3330
Databases

CSE 3332
Operating Systems

CSE 3333
Programming Languages

CSE 3311
Object-Oriented Software Engineering

COMS 2302
Professional and Tech.
Communication
(PreReq ENGL1301 and either ENGR 1250 or ENGL 1302)

Only students who have completed all pre-professional courses satisfactorily and thus are admitted to the professional program may take 4000 level courses.
SE 2018-2019 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