BS in Software Engineering (BSSE), 2022-2023 Catalog

Pre-Professional Courses

- UNIV 1131 (Freshman students only)
- OR
- ENGR 1101 (Transfer students)

- CSE 1310 Intro to Programming (pre-requisite MATH 1302)
- CSE 1315 Discrete Structures
- CSE 1320 Intro to CSE
- CSE 1325 Object Oriented Programming
- CSE 2310 Intro to Software Eng.
- CSE 2312 Computer Organization
- CSE 2315 Linear Algebra
- CSE 3302 Programming Languages
- CSE 3310 Object-Oriented Software Engineering
- CSE 3311 Theoretical CS
- CSE 3312 Software Design Patterns
- CSE 3315 Algorithms & Data Structures
- CSE 3316 Intro to Software Eng.
- CSE 3317 Senior Design I
- CSE 3318 Algorithms & Data Structures
- CSE 3320 Operating Systems
- CSE 3321 Software Testing
- CSE 3322 Software Project Management
- CSE 3323 Information Security
- CSE 3330 Databases
- CSE 3331 Programming Languages
- CSE 3332 Professional Practices
- CSE 3333 Information Security
- CSE 3334 Professional Practices
- CSE 3335 Software Design Patterns
- CSE 3336 Software Testing
- CSE 3337 Software Project Management
- CSE 3338 Information Security
- CSE 3339 Senior Design I
- CSE 3340 Information Security
- CSE 3341 Professional Practices
- CSE 3342 Software Design Patterns
- CSE 3343 Software Testing
- CSE 3344 Software Project Management
- CSE 3345 Information Security
- CSE 3346 Senior Design I
- CSE 3347 Professional Practices
- CSE 3348 Software Design Patterns
- CSE 3349 Software Testing
- CSE 3350 Software Project Management
- CSE 3351 Information Security
- CSE 3352 Senior Design I
- CSE 3353 Professional Practices
- CSE 3354 Software Design Patterns
- CSE 3355 Software Testing
- CSE 3356 Software Project Management
- CSE 3357 Information Security
- CSE 3358 Senior Design I
- CSE 3359 Professional Practices
- CSE 3360 Software Design Patterns
- CSE 3361 Software Testing
- CSE 3362 Software Project Management
- CSE 3363 Information Security
- CSE 3364 Senior Design I
- CSE 3365 Professional Practices
- CSE 3366 Software Design Patterns
- CSE 3367 Software Testing
- CSE 3368 Software Project Management
- CSE 3369 Information Security
- CSE 3370 Senior Design I
- CSE 3371 Professional Practices
- CSE 3372 Software Design Patterns
- CSE 3373 Software Testing
- CSE 3374 Software Project Management
- CSE 3375 Information Security
- CSE 3376 Senior Design I
- CSE 3377 Professional Practices
- CSE 3378 Software Design Patterns
- CSE 3379 Software Testing
- CSE 3380 Software Project Management
- CSE 3381 Information Security
- CSE 3382 Senior Design I
- CSE 3383 Professional Practices
- CSE 3384 Software Design Patterns
- CSE 3385 Software Testing
- CSE 3386 Software Project Management
- CSE 3387 Information Security
- CSE 3388 Senior Design I
- CSE 3389 Professional Practices
- CSE 3390 Software Design Patterns
- CSE 3391 Software Testing
- CSE 3392 Software Project Management
- CSE 3393 Information Security
- CSE 3394 Senior Design I
- CSE 3395 Professional Practices
- CSE 3396 Software Design Patterns
- CSE 3397 Software Testing
- CSE 3398 Software Project Management
- CSE 3399 Information Security
- CSE 3318 Algorithms & Data Structures
- COMS 2302 Professional and Tech. Communication (pre-requisite ENGL1301)

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

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

Math and Science Electives
- 3 hour Math elective
- 4 hour Science elective
See list of approved courses on second page.

4000 Level Courses

- CSE 4310 Intro to Software Eng.
- CSE 4311 Theoretical CS
- CSE 4312 Software Design Patterns
- CSE 4313 Software Testing
- CSE 4314 Software Project Management
- CSE 4315 Information Security

3 Technical Elective Courses
See list of approved courses on second page.
Remember to check pre-requisites.

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.
SE 2022-2023 Classes

Mathematics Electives
- **MATH 2326** - Calculus III (Fall, Spring, & Summer) pre-req: MATH 2425
- **CSE 4345** - Computational Methods (Fall & Spring) pre-reqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330

Science Electives
- **BIOL 1441** – Biology I for Science Majors (Fall, Spring, & Summer) pre-req: None
- **CHEM 1441** – General Chemistry (Fall, Spring, & Summer) pre-req: 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
- **CSE 4303** – Computer Graphics pre-reqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 4305** – Compilers pre-reqs: CSE 3302 and CSE 3315 (Fall & Spring)
- **CSE 4308** – Artificial Intelligence pre-reqs: CSE 3318 and IE 3301 (Fall, Spring, & Summer)
- **CSE 4309** – Fundamentals of Machine Learning pre-reqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4310** - Fundamentals of Computer Vision pre-reqs: CSE 3318, IE 3301 or MATH 3313, CSE 3380 or MATH 3330 (Spring only)
- **CSE 4323** – Quantitative Computer Architecture pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4331** – Database Implementation and Theory pre-reqs: CSE 3330 (Fall, Spring, & Summer)
- **CSE 4334** – Datamining pre-reqs: IE 3301 or MATH 3313 and co-req: CSE 3330 (Fall & Spring)
- **CSE 4340** – Fundamentals of Wireless Networks pre-reqs: CSE 4344 or CSE 4352 (Fluctuates)
- **CSE 4344** – Computer Network Organization pre-reqs: CSE 3320 (Fall, Spring, & Summer)
- **CSE 4345** – Computational Methods pre-reqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 4351** – Parallel Processing pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4360** - Autonomous Robot Design and Programming pre-reqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4378** – Intro to Unmanned Vehicles pre-reqs: Department consent (Fall only)
- **CSE 4381** – Information Security 2 pre-reqs: CSE 3320 and co-req CSE 4344 (Fall & Spring)
- **CSE 4382** – Secure Programming pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 3313** – Signal Processing pre-reqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- **IE 3315** – Operations Research I pre-reqs: co-req MATH 2326 (Fall & Spring)

Language, Philosophy & Culture Electives
- **ANTHROPOLOGY (ANTH) 2322**
- **ARABIC (ARAB) 2310, 2314**
- **ARCHITECTURE (ARCH) 2300**
- **ART & ART HISTORY (ART) 1304, 2300**
- **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**