BS in Computer Science (BSCS), 2022-2023 Catalog

**Math Elective**
- 3 hour Math elective
  See list of approved courses on second page.

**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

**Pre-Professional Courses**
- CSE 1310 Intro to Programming (pre-requisite: MATH 1302)
- CSE 1320 Intermediate Programming (co-requisite: Math 1421)
- CSE 2312 Computer Organization
- CSE 3318 Algorithms & Data Structures
- CSE 3315 Theoretical CS
- CSE 3312 Programming Languages
- CSE 3330 Databases

**Pre/co-req**

**4000 Level Courses**
- CSE 4305 Compilers
- CSE 4303 Computer Graphics
- CSE 4360 Robotics (Fall only)

6 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 on second page. Remember to check pre-requisites.

**Security Elective**
- CSE 4300 Information Security
- CSE 4381 Information Security 2
- CSE 4382 Secure Programming

Complete ONE of the following three security courses. CSE 3320 is a pre-requisite for all three courses.

**Pre-requisite**

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

**General Education**

**Pre/co-req**

**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

**Pre-Professional Courses**
- CSE 1310 Intro to Programming (pre-requisite: MATH 1302)
- CSE 1320 Intermediate Programming (co-requisite: Math 1421)
- CSE 2312 Computer Organization
- CSE 3318 Algorithms & Data Structures
- CSE 3315 Theoretical CS
- CSE 3312 Programming Languages
- CSE 3330 Databases

**Pre/co-req**

**4000 Level Courses**
- CSE 4305 Compilers
- CSE 4303 Computer Graphics
- CSE 4360 Robotics (Fall only)

6 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 on second page. Remember to check pre-requisites.

**Security Elective**
- CSE 4300 Information Security
- CSE 4381 Information Security 2
- CSE 4382 Secure Programming

Complete ONE of the following three security courses. CSE 3320 is a pre-requisite for all three courses.

**Pre-requisite**

**Chemical Elective**
- Only students who have completed all pre-professional courses satisfactorily and thus are admitted to the professional program may take 4000 level courses.
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 count 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 3326** - 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

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 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 4321** - Software Testing and Maintenance
  pre-reqs: CSE 3310 (Fall, Spring, & Summer)
- **CSE 4322** - Software Project Management
  pre-reqs: CSE 3310 (Fall & Spring)
- **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** - Datalogging
  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 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 4361** - Software Design Patterns
  pre-reqs: CSE 3311 (Fall & Spring)
- **CSE 4373** - General Purpose GPU Programming
  pre-reqs: CSE 3320 (Fall only)
- **CSE 4376** - Digital Communication Systems
  pre-reqs: CSE 3313 (Fall only)
- **CSE 4377** - Wireless Communication Systems
  pre-reqs: CSE 3313 (Spring only)
- **CSE 4378** – Intro to Unmanned Vehicles
  pre-reqs: Department consent (Fall only)
- **CSE 4379** – Unmanned Vehicles Development
  pre-reqs: B or better in CSE 4378 (Spring only)
- **CSE 4380** – Information Security
  pre-reqs: CSE 3320 (Fall & Spring)
- **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 3311** – Object-orientated Software Engineering
  pre-reqs: CSE 1325, CSE 3318, and CSE 3310 (Fall, Spring, & Summer)
- **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)** 1317
- **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 (GREEK)** 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)** 2310
- **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**