BS in Computer Science (BSCS), 2017-2018 Catalog

Pre-Professional Courses

- CSE 1310 Intro to Programming (pre-requisite: MATH 1302)
- CSE 1105 Intro to CSE
- ENGR 1300 (co-requisite MATH 1421 or above)
- MATH 1426 Calculus I
- PHYS 1443 Technical Physics I
- ENGL 1301

CSE 1320 Intermediate Programming (co-requisite: Math 1421)

- CSE 2100 Practical Systems
- CSE 2320 Algorithms & Data Structures
- CSE 2315 Discrete Structures
- MATH 2425 Calculus II
- PHYS 1444 Technical Physics II

- CSE 2325 Object-Oriented Programming
- CSE 2312 Computer Organization

- CSE 2320 Programming Languages
- CSE 2322 Computer Organization
- CSE 2330 Databases
- CSE 3310 Programming Languages
- CSE 3380 Linear Algebra
- CSE 3330 Theoretical CS
- CSE 3314 Professional Practices (pre-requirements COMS 2302 and CSE 2302/3318)

- CSE 3315 Theoretical CS
- CSE 3320 Operating Systems
- CSE 3322 Programming Languages
- CSE 3330 Databases

- CSE 3330 Databases
- CSE 3331 Theoretical CS
- CSE 3332 Programming Languages

- CSE 3310 Intro to Software Eng.
- CSE 3314 Operating Systems
- CSE 3320 Operating Systems
- CSE 3322 Programming Languages

- CSE 3330 Theoretical CS
- CSE 3315 Theoretical CS
- CSE 3314 Professional Practices (pre-requirements COMS 2302 and CSE 2302/3318)

- MATH 1426 Calculus I
- PHYS 1443 Technical Physics I
- ENGL 1301

Technical Elective courses out of which at least one must be
CSE 4305 Compilers, CSE 4303 Computer Graphics, or CSE 4360 Robotics.

Math and Science Electives

- 3 hour Math elective
- 4 hour Science elective

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)

4000 Level Courses

- CSE 4305 Compilers
- CSE 4303 Computer Graphics
- CSE 4360 Robotics
- CSE 4308 Artificial Intelligence
- CSE 4344 Computer Networks

5 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.

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 (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 1445 – Chemistry for Engineers (Fall, Spring, & Summer) co-req: MATH 1421
- PHYS 3313 & PHYS 3318 – Intro to Modern Physics (Fall & Spring) pre-req: MATH 2425 and PHYS 1444

Technical Electives
- CSE 4303 – Computer Graphics
  pre-reqs: CSE 2320 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 2320, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4310 – Fundamentals of Computer Vision
  pre-reqs: CSE 2320, 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)
- 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 4345 – Computational Methods
  pre-reqs: CSE 2320, 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 2320, 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 2320, and CSE 3310 (Fall, Spring, & Summer)
- CSE 3313 – Signal Processing
  pre-reqs: CSE 2320 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 LGBTIQ+ STUDIES (DIVR) 2315
- ENGLISH (ENGL) 1350, 2303, 2309, 2319, 2329
- FRENCH (FREN) 2310, 2314
- GERMAN (GERM) 2310, 2314
- GLOBAL (GLOBAL) 2301
- GREEK (GRET) 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 (SOC/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