[ARCHIVED CATALOG]

Computer Science, B.S.

Program Learning Outcomes and Educational Effectiveness Evaluation Plans for B.S. in Computer Science.

Students pursuing the B.S. in Computer Science are required to:

- Earn an overall GPA of 2.500 for all required lower-division major courses.
- Earn an overall GPA of 2.000 for all required major courses.
- Complete all courses in the major for a letter grade of "C-" or higher, except those where the default grading option is P/NP.
- Complete a minimum of 21 credits from upper division courses in the major.

Majors are required to enroll in FFC 100B - First Year Foundations: Grand Challenges in Science and Engineering to satisfy their General Education requirement.

Grand Challenges Initiative (3 credits)

- SCI 150 - Grand Challenges in Science and Engineering I **1 credit**
- SCI 200 - Grand Challenges in Science and Engineering II **1 credit**
- SCI 250 - Grand Challenges in Science and Engineering III **1 credit**

lower-division core requirements (23-24 credits)

requirements (15 credits)

- ENGR 101 - Foundations of Design and Fabrication **3 credits**
- MATH 215 - Introduction to Linear Algebra and Differential Equations **3 credits**
- CPSC 230 - Computer Science I **3 credits**
- CPSC 231 - Computer Science II **3 credits**
- MATH 250 - Discrete Mathematics I **3 credits**

one of the following sequences (8-9 credits)

sequence 1

- MATH 110 - Single Variable Calculus I **3 credits**
- MATH 111 - Single Variable Calculus II **3 credits**
- MATH 210 - Multivariable Calculus **3 credits**

sequence 2

- MATH 115 - Accelerated Calculus Part I: Differentiation and Integration **4 credits**
- MATH 116 - Accelerated Calculus Part II: Series, Differential Equations and Multivariable Calculus **4 credits**

general science requirement (8 credits)

A two-semester sequence of laboratory natural science courses. One of these courses may be used to satisfy the natural science inquiry General Education requirement.

approved course sequences

sequence 1

- BIOL 204 - From Molecules to Cells: Evolution of Life on Earth (Gen Biol I) **3 credits**
- BIOL 204L - From Molecules to Cells: Evolution of Life on Earth (Gen Biol I), Lab **1 credit**
- BIOL 205 - Evolution and Diversity of Multicellular Organisms (Gen Biol II) **3 credits**
- BIOL 205L - Evolution and Diversity of Multicellular Organisms (Gen Biol II), Lab **1 credit**

sequence 2

- BIOL 204 - From Molecules to Cells: Evolution of Life on Earth (Gen Biol I) **3 credits**
- BIOL 204L - From Molecules to Cells: Evolution of Life on Earth (Gen Biol I), Lab **1 credit**
- BIOL 208 - Introduction to Molecular Genetics, Lecture and Laboratory **4 credits**

sequence 3

- CHEM 140 - General Chemistry I **3 credits**
- CHEM 140L - General Chemistry I Laboratory **1 credit**
- CHEM 150 - General Chemistry II **3 credits**
- CHEM 150L - General Chemistry II Laboratory **1 credit**

sequence 4

- PHYS 101 - General Physics I **3 credits**
- PHYS 101L - General Physics I Laboratory **1 credit**
- PHYS 102 - General Physics II **3 credits**
- PHYS 102L - General Physics II Laboratory **1 credit**

colloquium requirement (6 credits)

Students must complete six 1-credit sections of CPSC 298 - Computer Science Colloquium.

upper-division requirements (25 credits)

- CENG 330 - Digital Logic Design I **3 credits**
- CENG 330L - Lab - Digital Logic Design I **1 credit**
- CPSC 350 - Data Structures and Algorithms **3 credits**
- CENG 351 - Computer Architecture I **3 credits**
- CPSC 353 - Data Communications and Computer Networks **3 credits**
- CPSC 354 - Programming Languages **3 credits**
- CPSC 380 - Operating Systems **3 credits**
- CPSC 406 - Algorithm Analysis **3 credits**
- CPSC 408 - Database Management **3 credits**

electives (12 credits)

Students, in consultation with and approval of the computer science advising committee, will design individual elective programs to suit their academic goals. Electives may be satisfied by any of the following courses, at least three of which must be upper-division courses.

- CPSC 285 - Social and Ethical Issues in Computing **3 credits**
- SE 300 - Software Requirements and Testing **3 credits**
- SE 310 - Software Design **3 credits**
- SE 320 - The Software Development Lifecycle **3 credits**
- CPSC 349 - Human Factors **3 credits**
- CPSC 355 - Human Computer Interaction **3 credits**
- CPSC 356 - Android Application Development **3 credits**
- CPSC 357 - iOS Application Development **3 credits**
- CPSC 358 - Assistive Technology **3 credits**
- CPSC 359 - Computer-Supported Cooperative Work **3 credits**
- CPSC 360 - Computer Graphics **3 credits**
- ISP 363 - Cybersecurity 1 **3 credits**
- CPSC 370 - Topics in Computer Science **3 credits**
- CENG 381 - Modeling and Simulation **3 credits**
- CPSC 390 - Artificial Intelligence **3 credits**
- CPSC 392 - Introduction to Data Science **3 credits**

- CPSC 393 - Machine Learning **3 credits**
- CPSC 402 - Compiler Construction **3 credits**
- CPSC 445 - High Performance Computing **3 credits**
- CPSC 453 - Network Implementation and Security **3 credits**
- CPSC 458 - Web Engineering **3 credits**

total credits 77-78