BS in Computer Science 2019

Computer Science Core

Students can apply to the CSCI major in the quarter they are completing CSCI 241, 247, 301. At most two attempts at one of these three classes is allowed.

Math prerequisites are listed underneath the CSCI core courses for which they are required. These are minimum prerequisites and may not be taken concurrently.

CSCI 491, 492, 493 (the senior project series) should be taken in your last three quarters. Requires department permission to register.

All students must complete 40 credits of math and science courses outside of the CSCI Core. See catalog for complete list of approved courses.

You must fulfill the requirements of the year in which you declared the major.

You must pass all required courses and prerequisites with a C- or better

Please refer to the catalog for the complete list of requirements for the BS in Computer Science.

Computer Science Electives

16 credits of electives from list on back of this page.

Math Requirements

MATH 124, 125, 204, 341

Science Requirements

A three course science sequence chosen from:
- CHEM 161, 162, 163
- PHYS 161, 162, 163
- GEOL 211, 212, and one of 303, 308, 309, 314, 315, 340
Computer Science Electives (with prerequisites in parentheses)

A student must take 16 credits from the list of electives below with no more than 4 coming from independent study or research.

- CISS 346 Secure Software Development (CISS 247 or CSCI 247)
- CISS 421 Computer Forensics (CISS 461 or CSCI 461)
- CSCI 321 Game Programming (CSCI 241)
- CSCI 342 Web Scripting (CSCI 330)
- CSCI 351 Windows Software Development (CSCI 345)
- CSCI 372 Robotics: Applications of Artificial Intelligence (Permission of Instructor)
- CSCI 380 Numerical Computations (CSCI 241, MATH 204)
- CSCI 400 Independent Study (Permission of Instructor)
- CSCI 401 Automata and Formal Language Theory (CSCI 301)
- CSCI 402 Artificial Intelligence (CSCI 301)
- CSCI 404 Natural Language Processing (CSCI 301)
- CSCI 410 Programming Languages (CSCI 301)
- CSCI 412 Mobile Device Programming (CSCI 330, CSCI 367)
- CSCI 415 Parallel Computation (CSCI 305, CSCI 347, CSCI 367)
- CSCI 424 Social Network Analysis (CSCI 241, MATH 204, MATH 341)
- CSCI 426 Principles of Human-Centered Technology Design (CSCI major status or permission of instructor)
- CSCI 430 Database Theory (CSCI 301, CSCI 330)
- CSCI 436 Technology for Social Good (CSCI major status or permission of instructor)
- CSCI 442 Advanced Web Programming in Java (CSCI 342, CSCI 351 recommended)
- CSCI 450 Compilers (CSCI 301)
- CSCI 461 Computer Security (CSCI 301, CSCI 367 recommended)
- CSCI 462 OS Device Drivers (CSCI 460)
- CSCI 463 Cyber Defense (Permission of Instructor)
- CSCI 467 Computer Networks II (CSCI 367)
- CSCI 471 Machine Learning Algorithms (CSCI 241, MATH 341, MATH 204 recommended, MATH 224 recommended)
- CSCI 474 Bioinformatics (Permission of Instructor)
- CSCI 477 Data Mining (CSCI 241, MATH 204, MATH 341)
- CSCI 479 Spoken Language Processing (CSCI 301, CSCI 305 and CSCI 341) (or Permission of instructor)
- CSCI 480 Computer Graphics (CSCI 241, MATH 204)
- CSCI 496 Research (Permission of Instructor)
- CSCI 497 This course number is reserved for new topics. It will always have a single letter suffix such as 497D. (Prereqs TBA)
- M/CS 335 Linear Optimization (MATH 204, CSCI 141)
- M/CS 375 Numerical Computation (MATH 204, CSCI 141)
- M/CS 435 Nonlinear Optimization (MATH 204,224, CSCI 141)
- M/CS 475 Numerical Analysis (MATH 224, M/CS 375)
- M/CS 478 Fundamentals of Cryptography (MATH 204, MATH 341 and one of: CSCI 140, CSCI 141, MATH 307)