COMPUTER SCIENCE, B.S. - CONCENTRATION: GENERAL

120 Overall Credits Required

LIBERAL EDUCATION PROGRAM AND WRITING REQUIREMENTS

Liberal Education Program

Students must complete a comprehensive three-tiered Liberal Education Program (LEP). View all requirements of the tiers on the Liberal Education Program.

While the choice of courses that fulfill the requirements is generally left up to students, courses in the major and/or cognate may also satisfy LEP requirements. These shared courses are recommended below to fulfill both areas, although the course credits are only counted once towards the 120 credits required for graduation.

Tier 1 – Quantitative Reasoning:
MAT 150 – Calculus I

Tier 2 – Natural World 1: Physical Realm (select one from):
CHE 120 – General Chemistry I
ESC 200 – Physical Geology
PHY 200 – General Physics I
PHY 230 – Physics for Scientists and Engineers I

Tier 2 – Natural World 2: Life and Environment (select one from):
BIO 100 – General Zoology
BIO 101 – General Botany
BIO 103 – Biology I
BIO 120 – Microbiology
BIO 200 – Human Biology I (formerly BIO 110)
BIO 201 – Human Biology II (formerly BIO 111)
ESC 201 – Historical Geology

Tier 3 – Capstone:
CSC 400 – Computer Science Project Seminar

Writing Requirements (“W-Courses”)

Three W-courses are required. These may not be taken until after a student has passed ENG 112 — Writing Arguments. W-courses may count toward LEP, major, or cognate requirements, as well as free electives. Course sections that meet this requirement are designated by section numbers ending in “W.”
Transfer students who enter with 60 to 89 credits are required to pass two W-courses, while transfer students who enter with 90 credits or more must pass one W-course.

**MAJOR REQUIREMENTS**

52 Credits Required

**Computer Science Requirements**
31 Credits Required

- CSC 152 – CS1: Programming Fundamentals
- CSC 207 – Computer Systems
- CSC 212 – CS2: Data Structures
- CSC 229 - Object-Oriented Programming
- CSC 235 - Web and Database Development
- CSC 265 - Computer Networking and Security I
- CSC 324 - Computer Ethics
- CSC 330 - Software Design and Development
- CSC 400 - Computer Science Project Seminar
- CSC 421 - Theory of Programming Language
- CSC 463 - Distributed and Parallel Computing

**Computer Science Concentration**
18 Credits Required

- CSC 305 - Computer Organization
- CSC 321 - Algorithm Design and Analysis
- CSC 425 - Operating Systems

Select 3 courses from:

- CSC 334 - Human-Computer Interactions
- CSC 335 - Database Systems
- CSC 341 - Digital Imaging
- CSC 398 - Special Topics
- CSC 431 - Computer Graphics
- CSC 443 - Internet Programming
- CSC 451 - Fundamentals of Deep Learning
- CSC 453 - Information Security
- CSC 465 - Computer Networking and Security II
- CSC 476 - Fundamentals of Data Warehousing
- CSC 477 - Data Mining
- CSC 481 - Artificial Intelligence
- CSC 497 - Computer Science Internship

**COGNATE REQUIREMENTS**

34 Credits Required
Requirements:
MAT 150 – Calculus I
MAT 151 – Calculus II
MAT 178 – Elementary Discrete Mathematics
MAT 221 – Intermediate Applied Statistics

Select one from these 4 sequence options:
CHE 120 and CHE121 - General Chemistry I and II
PHY 200 and PHY 201 - General Physics I and II
PHY 230 and PHY 231 - Physics for Scientists and Engineers I and II
PHY 200 and ESC 210 - General Physics I and Principles of Astronomy

Select one from:
MAT 252 - Calculus III
MAT 322 - Numerical Analysis
PHY 355 - Electricity and Electronics

Select one from:
BIO 100 – General Zoology
BIO 101 – General Botany
BIO 103 – Biology I
BIO 120 – Microbiology
BIO 200 – Human Biology I (formerly BIO 110)
BIO 201 – Human Biology II (formerly BIO 111)
ESC 201 – Historical Geology

Select one from:
CHE 120
- General Chemistry I
  ESC 200
- Physical Geology
  PHY 200
- General Physics I
  PHY 230
- Physics for Scientists and Engineers I

FREE ELECTIVES

Remaining credits to reach Overall Credits Required (listed above).