CS Elective Concentrations

https://cs.uoregon.edu

Computer Networks (24 credits)

Complete the following course:

CS 432 Introduction to Computer Networks

Complete 2 courses selected from the following:

- CIS 429 Computer Architecture
- CIS 433 Computer and Network Security

Complete 8 additional upper-division CS elective credits Complete 4 upper-division math elective credits

Computer Security (24 credits)

Complete the following course:

CS 433 Computer and Network Security

Complete 2 courses selected from the following:

- CS 333 Applied Cryptography
- CS 432 Introduction to Networks
- CS 434 Computer and Network Security II

Complete 8 additional upper-division CS elective credits Complete 4 upper-division math elective credits

Foundations (24 credits)

Complete 12 upper-division CS elective credits taken graded

Complete 8 additional upper-division CS elective credits

- Choose electives from CS upper-division courses, including Individualized Study Courses.
- CS 399 and 410 *must have regular class meetings, homework assignments and a prerequisite of 313 or higher.* CS 399 and 410 are repeatable with different course titles only.
- A maximum of 8 credits may be taken from courses numbered 399 409, and a maximum of 4 credits in any one course numbered 400-409.

Complete 4 upper-division math elective credits

- Choose any upper-division math course (300-level or higher) with a prerequisite of MATH 252 or higher, or CS 413, 420, 427, 473
- CS courses used to complete mathematics elective cannot be used toward upper-division CS elective credits

 MATH 458 Introduction to Mathematical Cryptography

CIS 445 Modeling and Simulation

Computer Science Fall 2022

High Performance Computing/Computational Science (24 credits)

Complete the following course:

CS 455 Computational Science

Complete 2 courses selected from the following:

- CS 413 Advanced Data Structures
- CS 429 Computer Architecture
- CS 431 Introduction to Parallel Computing

Complete 8 additional upper-division CS elective credits

Complete 4 upper-division math elective credits (Recommended: MATH 341, 342, 461, 462)

Machine Learning/AI/Data Science (24 credits)

Complete the following course:

CS 472 Machine Learning

Complete 2 courses selected from the following:

- DSCI 311 Principles and Techniques of Data Science
- CS 372M Machine Learning for Data Science

Complete 8 additional upper-division CS elective credits Complete 4 upper-division math elective credits

Software Development (24 credits)

Complete 3 courses selected from the following:

- CS 423 Software Methodology II
- CS 431 Introduction to Parallel Computing
- CS 436 Secure Software Development
- CS 443 User Interfaces
- CS 445 Modeling and Simulation
- CS 451 Database Processing
- CS 461 Introduction to Compilers

Complete 8 additional upper-division CS elective credits (Recommended: CS 322 Intro to Software Eng) Complete 4 upper-division math elective credits

CS 451 Database Processing

CS 445 Modeling and Simulation

CIS 471 Introduction to Artificial Intelligence

- CS 471 Introduction to Artificial Intelligence
- CS 473 Probabilistic Methods for Artificial Intelligence