

COMPUTING AND INFORMATION SCIENCE MAJOR REQUIREMENTS

NOTE: FOR STUDENTS ENROLLED BEFORE THE FALL 2017 SEMESTER ONLY

All Computing and Information Science majors must fulfill the core curriculum requirements as well as the requirements for one of three concentrations: 1) Computer Science; 2) Information Technology; or 3) Security. A minor in another discipline such as Mathematics, Business, Communications, Graphic Design or Criminology, Law and Society is a useful complement to this major. A statistics course such as MA 208 or BA 350 and a linear algebra course such as MA115 are recommended, especially for those considering graduate school. PL 120 is recommended as one of the courses chosen for the philosophy core curriculum requirement.

Requirements for a Bachelor of Science Degree in Computing and Information Science

Computer Science Concentration (CS)

The student must complete the requirements listed in the following categories:

1) CIS Core Courses (37credits):

CS 102	Fundamentals of IT and Computing	3
CS 110	C++ Programming I	3
CS 111	C++ Programming II	3
CS 170	Discrete Structures I	3
CS 171	Discrete Structures II	3
CS 221	Data Structures	3
CS 310	Programming Languages	3
CS 321	Data Communication and Computer Networks	3
CS 330	Computer Architecture and Operating Systems	3
CS 350	Database Concepts and Information Structures	3
CS 355	Software Engineering	3
CS 357	Computing Science Project I	2
CS 358	Computing Science Project II	2

2) CIS Electives (12 credits):

Any CIS department courses numbered 200 or above may be included. One approved computer course from another department (such as BA 420, CA 235, and CA 285) may be included, subject to the approval of the CIS department chairperson.

3) CIS Mathematics Requirement (8 credits):

MA 111, 112 Calculus I and II 8

or

MA 109, 110 Calculus I and II 8

Either choice gives an 8-credit sequence, but 4 credits can be used to fulfill the core curriculum mathematics requirement.

**All students will take one course designated as a First-Year Seminar which will satisfy a core curriculum requirement.*

INFORMATION TECHNOLOGY CONCENTRATION (IT)

The student must complete the requirements listed in the following categories:

1) CIS Core Courses (37 credits):

CS 102	Fundamentals of IT Computing	3
CS 109	Introduction to Visual Basic Programming	3
CS 110	C++ Programming I	3
CS 111	C++ Programming II	3
CS 170	Discrete Structures I	3
CS 265	Information Systems Management	3
CS 321	Data Communications and Computer Networks	3
CS 322	Advanced Networking	3
CS 330	Computer Architecture and Operating Systems	3
CS 350	Database Concepts and Information Structures	3
CS 351	Information Systems Analysis and Design	3
CS 357	Computing Science Project I	2
CS 358	Computing Science Project II	2

2) CIS Electives (12 credits):

Any CIS department courses numbered 200 or above may be included. One approved computer course from another department (such as BA 420, CA 235 and CA 285) may be included, subject to the approval of the CIS department chairperson.

3) CIS Mathematics Requirement (4 credits):

MA 111	Calculus I	4
or		
MA 109	Calculus I	4

Four credits fulfill the core curriculum mathematics requirement.

4) Required Social Science Courses (6 credits):

This concentration also requires 6 credits chosen from business and/or economics. These credits can be included under the core curriculum social science requirement.

SECURITY CONCENTRATION (SEC)

The student must complete the requirements listed in the following categories:

1) CIS Core Courses (43 credits):

CS 102	Fundamentals of IT and Computing	3
CS 110	C++ Programming I	3
CS 111	C++ Programming II	3
CS 170	Discrete Structures I	3
CS 221	Data Structures	3
CS 225	Cybersecurity	3
CS 265	Information Systems Management	3
CS 310	Programming Languages	3
CS 321	Data Communications and Computer Networks	3
CS 325	Advanced Topics in Cybersecurity	3
CS 330	Computer Architecture and Operating Systems	3
CS 350	Database Concepts and Information Structures	3
CS 351	Information Systems Analysis and Design	3
or		
CS 355	Software Engineering	3
CS 357	Computing Science Project I	2
CS 358	Computing Science Project II	2

2) CIS Electives (6 credits):

Any CIS department courses numbered 200 or above may be included. One of the following courses may be included, subject to the approval of the CIS department chairperson (CLS 320, CLS 340, CLS 345 or CLS 344).

3) CIS Mathematics Requirement (4 credits):

MA 111	Calculus I	4
or		
MA 109	Calculus I	4

Four credits fulfill the core curriculum mathematics requirement.