

Cybersecurity and System Administration B.S.

Cybersecurity and System Administration Major

The B.S. Cybersecurity and System Administration major requires a minimum of 120 total hours to graduate. This total includes UNIFI/General Education requirements and the following specified major requirements, plus electives to complete the minimum of 120 hours.

Required

Mathematics:		
STAT 1772	Introduction to Statistical Methods [^]	3
MATH 3530	Combinatorics	3
Computer Science Core:		
CS 1410	Computer Organization	3
CS 1510	Introduction to Computing	4
CS 1520	Data Structures	4
CS 1800	Discrete Structures	3
CS 2530	Intermediate Computing	3
CS 3730/5730	Project Management	1
Cybersecurity Major Courses:		
CS 2470	Networking	3
CS 3140/5140	Database Systems	3
CS 3430/5430	Operating Systems	3
CS 3530	Design and Analysis of Algorithms	3
CS 3750/5750	Software Verification and Validation	3
CS 4400/5400	System Administration	3
CS 4410/5410	System Security	3
CS 4800	Undergraduate Research in Computer Science	1
Physics:		
PHYSICS 1511 or PHYSICS 1701	General Physics I [^] Physics I for Science and Engineering	4
PHYSICS 3100	Introduction to Quantum Computing	3
Ethics:		
PHIL 1560	Science, Technology, and Ethics (STE)	3
Total Hours		56

[^] Has prerequisite of satisfactory score on ALEKS exam or subsequent remediation.

Four-Year Plan

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This is a sample plan of study with a suggested sequencing of classes for the major. University electives may be applied to earn additional academic majors, minors, or certificates. Students should regularly meet with their academic advisor to plan their specific semester schedule to include UNIFI/General Education program and/or university elective hours required.

Course	Title	Hour
Freshman		
Fall		
CS 1510	Introduction to Computing	4
MATH 1420	Calculus I	4
UNIFI/General Education or University Electives		9
Hours		17
Spring		
CS 1520	Data Structures	4
CS 1800	Discrete Structures	3
MATH 1421	Calculus II	4
UNIFI/General Education or University Electives		3
Hours		14
Sophomore		
Fall		
PHYSICS 1511	General Physics I	4
CS 1410	Computer Organization	3
UNIFI/General Education or University Electives		9
Hours		16
Spring		
CS 2530	Intermediate Computing	3
PHYSICS 1512	General Physics II	4
Area Elective		3
UNIFI/General Education or University Electives		6
Hours		16
Junior		
Fall		
CS 2470	Networking	3
PHYSICS 4300/5300	Introduction to Electronics	4
UNIFI/General Education or University Electives		10
Hours		17
Spring		
CS 3430/5430	Operating Systems	3
CS 3730/5730	Project Management	1
CS 4400/5400	System Administration	3
Area Elective		3
UNIFI/General Education or University Electives		6
Hours		16
Senior		
Fall		
CS 4410/5410	System Security	3
Area Elective		4
UNIFI/General Education or University Electives		6
Hours		13

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Spring		
CS 4420	Applied Systems Forensics	3
Area Elective		3
UNIFI/General Education or University Electives		4
Computer Science Research		1
Hours		11
Total Hours		120

Learning Outcomes

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- **Goal 1:** Students will be able to effectively communicate networking and computer system information to colleagues and the public.
 - **Outcome 1:** Students will be able to prepare and produce written communications using standard computing style and format.
 - **Outcome 2:** Students will be able to prepare and deliver an oral presentation on networking and computer system topics.
- **Goal 2:** Students will be able to apply networking and computer system knowledge to problems involving data and process.
 - **Outcome 3:** Students will demonstrate proficient knowledge and application of networking and computer system content.
- **Goal 3:** Students will be able to think critically about networking and computer system problems.
 - **Outcome 4:** Students will be able to specify a computing system's interface and design its implementation.
 - **Outcome 5:** Students will be conduct a research or development project in which they specify a networking or computer system problem, investigate possible solutions, and implement a working system.
- **Goal 4:** Students will demonstrate the skills needed to work on a team successfully.
 - **Outcome 6:** Students will work on a team to analyze a networking or computer system problem and implement its solution.

Policies

Notes:

1. Undergraduate students who have been admitted to the university provisionally because of non-satisfaction of the high school mathematics requirements may not enroll in any computer science credit course before this requirement has been met.
2. All courses counting toward a major or minor in the Department of Computer Science must be passed with a grade of C- or better.
3. Prerequisite courses in the Department of Computer Science must be passed with a grade of C before taking a subsequent course.
4. All majors in the Department of Computer Science require a project course (marked with asterisk in the degree statements). The course used to meet this requirement is to be taken in the area of specialization, i.e., an area in which at least three courses are taken.
5. All courses in a prerequisite chain to a course are considered regressive to it - students may not take them for credit after passing the later course. Additionally, CS 1120, CS 1130, CS 1160, CS 1170, CS ED 1310, and CS ED 1320 are regressive to CS 1520 and any course having it as prerequisite.

6. A student with a major in the Department of Computer Science cannot also receive a Computer Science minor.
7. A student with a major in the Department of Computer Science cannot also receive a Certificate in Computer Science.
8. A student with a minor in the Department of Computer Science cannot also receive a Certificate in Computer Science.

Related Programs

- Data Science Minor
- Mathematics Minor