# CYBERSECURITY, BACHELOR OF SCIENCE

### Bachelor of Science in Cybersecurity

Cybersecurity (CYBR) is an emerging, rapidly expanding science that addresses problems in the fundamental understanding of the design, development, implementation and lifecycle support of secure information systems. The need for secure information systems has become a paramount concern as the computer-enabled, internet-connected, digital-based global society of the 21st century continues to emerge. The lack of adequately secure information systems has been cited as one of the likely impediments to the emergence of the digital society.

## **Student Groups**

NULLify is UNO's student-led computer security group. Contact the group at nullify@unomaha.edu.

## **Fast Track**

The School of Interdisciplinary Informatics (SI2) has developed a Fast Track program for highly qualified and motivated students providing the opportunity to complete a bachelor's degree and a master's degree in an accelerated time frame. With Fast Track, students may count up to 9 graduate credit hours towards the completion of their undergraduate program as well as the graduate degree program. Students will work with both undergraduate and graduate advisors to ensure graduate classes selected will count toward both programs, should a student wish to earn a graduate degree in a separate College of Information Science & Technology (CIST) area than their undergraduate degree.

**Program Specifics:** 

- This program is available for undergraduate students pursuing any CIST undergraduate degree desiring to pursue an MS in either the same or a related CIST field.
- Students must have completed no less than 60 undergraduate hours.
- Students must have a minimum undergraduate GPA of 3.0.
- Students must complete the Fast Track Approval form and obtain all signatures and submit to the Office of Graduate Studies prior to first enrollment in a graduate course.
- Students will work with their undergraduate advisor to register for the graduate courses.
- A minimum cumulative GPA of 3.0 is required for graduate coursework to remain in good standing.
- Students remain undergraduates until they meet all the requirements for the undergraduate degree and are eligible for all rights and privileges granted undergraduate status including financial aid.
- Near the end of the undergraduate program, formal application to the graduate program is required. All applicants will need to meet any other admission requirements established for the MS in selected CIST program. The application fee will be waived if the applicant contacts the Office of Graduate Studies for a fee waiver code prior to submitting the MS application.
  - Admission to Fast Track does NOT guarantee admission to the graduate program.
  - The admit term must be after the completion term of the undergraduate degree.

### Contact

For more information, contact the College of IS&T Academic Advising Office at 402.554.3819.

### Website (https://www.unomaha.edu/ college-of-information-science-andtechnology/school-of-interdisciplinaryinformatics/cybersecurity/) Cybersecurity, Bachelor of Science in Cybersecurity Requirements

A minimum of 120 credit hours is required for a Bachelor of Science degree in Cybersecurity. Thirty of the last 36 hours must be University of Nebraska at Omaha courses. Registering for courses without having taken the stated prerequisites could result in administrative withdrawal.

To obtain a Bachelor of Science in Cybersecurity, a student must fulfill the University General Education, College, and Departmental requirements. Some courses may satisfy requirements in more than one area, but credit is awarded only once, thereby reducing the total number of credit hours for the degree to 120. (This total does not include prerequisites.)

Code	Т	itle Cr	edits
General Educ	ation Re	quirements - 34 Hours Required	
Minimum of "C	"require	d	
Fundamental	Skills		15
Writing – 6	hrs.		
ENGL 1150	E	NGLISH COMPOSITION I	
ENGL 1160	C II	OLLEGE RESEARCH AND NFORMATION LITERACY	
Oral Comm	unicatio	on – 3 hrs.	
CMST 1110	Р	UBLIC SPEAKING FUNDS	
or CMST 2	2120 A	RGUMENTATION AND DEBATE	
Quantitativ	ve Litera	cy – 3 hrs.	
MATH 1120	11 A	NTRODUCTION TO MATHEMATICAL ND COMPUTATIONAL THINKING	
or MATH	1130 Q	UANTITATIVE LITERACY	
or MATH	1140 Q P	UANTITATIVE REASONING FOR HEALTHCARE ROFESSIONALS	
or MATH	1300 C	OLLEGE ALGEBRA WITH SUPPORT	
Data Litera	<b>cy – 3 h</b>	rs.	
Select one fr	om the fo	ollowing:	
STAT 1100	D	ATA LITERACY AND VISUALIZATION	
STAT 1530	E	LEMENTARY STATISTICS	
Until Fall 202 approved da social scienc	28, stude ta literac e genera	nts can satisfy this requirement with an y course, or any approved natural or I education course.	
Breadth of Kn	owledg	e	13
Social Science	ce – 3 hrs	•	
Humanities -	– 3 hrs.		
Natural & Ph	nysical Sc	ience (must complete a lab) – 4 hrs.	
Arts – 3 hrs.			
ndividual and	d Social	Responsibility	6
Cultural Kno	wledge –	3 hrs.	
Civic Knowle	dge and	Engagement – 3 hrs.	
MAJOR REQU	IREMEN	ITS - 71 Hours Required	
*Course will so	atisfy UN	O's General Education Requirement	
Course require	es pre-req	uisite(s)	

All	of	the	Foll	owina

CYBR 1100	INTRODUCTION TO INFORMATION SECURITY (**)	
CIST 1400	INTRODUCTION TO COMPUTER SCIENCE I (^)	
CSCI 1620	INTRODUCTION TO COMPUTER SCIENCE II (^)	
MATH 1950	CALCULUS I (^)	
ACMP 2000	DATA ANALYSIS AND MACHINE LEARNING (^)	
CSCI 2030	MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE (^)	
or MATH 2030	DISCRETE MATHEMATICS	
CYBR 2250	LOW-LEVEL PROGRAMMING (^)	
CYBR 2600	SYSTEM ADMINISTRATION (^)	
CYBR 3050	PRINCIPLES OF CYBER OPERATIONS AND DEFENSE (^) <sup>1</sup>	
CIST 3110	INFORMATION TECHNOLOGY ETHICS (** ^)	
CSCI 3320	DATA STRUCTURES (^)	
CSCI 3550	COMMUNICATION NETWORKS (^)	
CYBR 3570	CRYPTOGRAPHY (^)	
CYBR 3600	CYBERSECURITY POLICY AND AWARENESS (^)	
CSCI 3720	COMPUTER ORGANIZATION (^)	
CSCI 4500	<b>OPERATING SYSTEMS (^)</b>	
CYBR 4580	CAPSTONE (^)	
<b>Complete Require</b>	ments for One Concentration	18
ELECTIVES		

53

#Elective hours as required to reach a total of 120 hours

<sup>1</sup> Students who have previously earned credit for CYBR 4360 may substitute CYBR 4360 and PSCI 4260 in place of CYBR 3050.

### **Cybersecurity, Bachelor of Science Concentrations**

- Cyber Defense Concentration (http://catalog.unomaha.edu/ undergraduate/college-information-science-technology/schoolinterdisciplinary-informatics-si2/cybersecurity-bs/cybrdefense/)
- Cyber Operations Concentration (http://catalog.unomaha.edu/ undergraduate/college-information-science-technology/schoolinterdisciplinary-informatics-si2/cybersecurity-bs/cyberoperations/)

### Minor Offered

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• Cybersecurity Minor (http://catalog.unomaha.edu/undergraduate/ college-information-science-technology/school-interdisciplinaryinformatics-si2/cybersecurity-minor/)

### **Cybersecurity, Bachelor of Science in Cybersecurity Four Year Plan**

First tear		
Fall		Credits
ENGL 1150	ENGLISH COMPOSITION I	3
CYBR 1100	INTRODUCTION TO INFORMATION SECURITY	3

CIST 1400	INTRODUCTION TO COMPUTER SCIENCE I	3
MATH 1950	CALCULUS I	5
General Education Co	ourse or Elective	1
	Credits	15
Spring		
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	3
CSCI 1620	INTRODUCTION TO COMPUTER SCIENCE II	3
CSCI 2030 or MATH 2030	MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE or DISCRETE MATHEMATICS	3
CMST 1110 or CMST 2120	PUBLIC SPEAKING FUNDS or ARGUMENTATION AND DEBATE	3
General Education Co	ourse or Elective	3
	Credits	15
Second Year		
Fall		
CYBR 2250	LOW-LEVEL PROGRAMMING	3
ACMP 2000	DATA ANALYSIS AND MACHINE LEARNING	3
CYBR 2600	SYSTEM ADMINISTRATION	3
General Education Co	ourse or Elective	3
General Education Co	ourse or Elective	3
	Credits	15
Spring		
CIST 3110	INFORMATION TECHNOLOGY ETHICS	3
CSCI 3320	DATA STRUCTURES	3
CSCI 3720	COMPUTER ORGANIZATION	3
General Education Co	ourse or Elective	3
General Education Co	ourse or Elective	3
	Credits	15
Third Year		
Fall		
CSCI 3550		3
CYBR 3570		3
CTBR 3030	AND DEFENSE	3
General Education Co	ourse or Elective	3
General Education Co	ourse or Elective	3
	Credits	15
Spring		
CYBR 3600	CYBERSECURITY POLICY AND AWARENESS	3
<b>Concentration Course</b>	9	3
<b>Concentration Course</b>	9	3
General Education Co	ourse or Elective	3
General Education Co	ourse or Elective	3
	Credits	15
Fourth Year		
Fall		
CSCI 4500	OPERATING SYSTEMS	3
Concentration Course	9	3
Concentration Course	9	3
General Education Co	ourse or Elective	3
General Education Co	ourse or Elective	3
	Credits	15

#### Spring

Total Credits	120
Credits	15
General Education Course or Elective	3
General Education Course or Elective	3
Concentration Course	3
Concentration Course	3
CYBR 4580 CAPSTONE	3

This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult an advisor in your major program for further guidance.

This plan is not a contract and curriculum is subject to change.

Additional Information About this Plan:

University Degree Requirements: The minimum number of hours for a UNO undergraduate degree is 120 credit hours. Please review the requirements for your specific degree program to determine all requirements for the program. In order to graduate on time (four years for an undergraduate degree), you need to take 30 credit hours each year.

Placement Exams: For Math, English, and Foreign Languages, a placement exam may be required. More information on these exams can be found at https://www.unomaha.edu/enrollment-management/testing-center/ placement-exams/information.php

Please note that transfer credit or placement exam scores may change a suggested plan of study.