

Major in Cybersecurity

Cybersecurity is an emerging science that concerns the protection of assets through assessing the vulnerabilities of cyber systems and creating incident response strategies to promptly countermeasure adversaries attacks. A wide range of knowledge and practical skills is needed to design and maintain the security of information systems and underlying infrastructures. The Cybersecurity Program at the Department of Computer Science covers fundamental and advanced security topics to prepare graduates for joining the cybersecurity workforce or starting and successfully completing a Master's degree in Cybersecurity or related fields. In addition to the fundamentals of programming, data structures, and algorithms, students who complete the program will learn cryptography and its applications, networking and network security, operating systems and security, Internet and application security, security auditing, vulnerability assessment and penetration testing, incident response and enterprise security frameworks, and digital forensics. Hands-on laboratories are an essential component of the security courses, where students put the learned knowledge into practice.

Same as the admission requirements of the Major in Computer Science.

Freshman Applicants:

Beginning in Fall 2021, NEIU, and implicitly the proposed Cybersecurity program, are test-optional. Standardized test scores are not required for admission to the University. Applicants, however, are encouraged to submit test scores in order to meet some scholarship and prerequisite requirements. Test scores also can be helpful with determining your placement in math and English courses. Scores will not be used to make an admissions decision. Applicants with a 2.5 cumulative high school grade-point average will be guaranteed admission.

Transfer Applicants:

Transfer students must have a cumulative grade point average (GPA) of 2.0 or higher on a 4.0 scale from all colleges, universities and trade schools attended. Upon admission, an evaluation of the prospective transfer student's credits will be undertaken to determine which and how many of the previously-earned credits will meet the degree requirements at Northeastern. High school transcript is required if the applicant has completed fewer than 24 semester hours of college credit.

International Applicants:

An international applicant must fulfill all of the admission requirements and submit all the required documents that domestic applicants do. Additionally, they must demonstrate that they meet eligibility requirements for:

- Non-immigrant student visa status
- English language proficiency: TOEFL (Paper-based TOEFL: 500, Computer-based TOEFL: 173, Internet-based TOEFL: 61), IELTS (Composite score of 6.0)

University Core Curriculum Requirements

General Education Distribution Area	Cr. Hrs.
Fine Arts (FA)*	6
2 courses, from at least two of the following areas of study: Art, CMT (Mass Media or Theatre), Music (includes Dance).	
Humanities (HU)*	9
3 courses, from at least two of the following areas of study: CMT (Communication), English, Linguistics, Philosophy, Women's and Gender Studies, World Languages and Cultures, (Note: No more than two foreign language courses may be used to fulfill this requirement.)	
Behavioral/Social Sciences (SB)*	9
3 courses, from at least two of the following areas of study: African & African American Studies, Anthropology, Computer Science, Economics, Geography & Environmental Studies, History, Justice Studies, Latino & Latin American Studies, Political Science, Psychology, Sociology, Social Work	
Natural Sciences (NS and NSL)**	9
3 courses, from at least two of the following areas of study; one course must have a laboratory component (NSL): Biology, Chemistry, Earth Science, Environmental Science, Physics (Note: If an FYE ANTH that counts as Natural Science is taken, only one Biology course may be used for Natural Science).	

Engaged Learning Experiences

Students must complete, at Northeastern, three courses designated as Engaged Learning Experiences courses. One of the Engaged Learning Experiences courses must be at the 300-level, and one Engaged Learning Experiences course must be designated as "Boundary Crossing".

Discipline Specific (ELE-DS)

These courses have pre-requisites that are specific courses within a program of study. Discipline Specific courses give students a deeper understanding of how knowledge is created and applied in their field.

Boundary Crossing (ELE-X)

These are courses that cross disciplinary boundaries and/or cross boundaries through engagements outside the classroom or University allowing students to see how knowledge gained in one field might inform other fields or other aspects of society.

Math/Quantitative Reasoning (MA)

1 Math course, that has intermediate Algebra as prerequisite OR is a course listed on the General Education Distributive Learning List of Approved Courses. Any 3 hour college level math course, beyond Intermediate Algebra, meets this requirement.

- * Majors in Fine Arts, Humanities or Social/Behavioral Sciences, may waive up to 6 credit hours of General Education requirements in the corresponding distribution area.
- ** Majors in Natural Sciences may waive up to 9 credit hours of General Education requirements in the Natural Sciences distribution area.

Students should also be aware of all other university requirements to obtain a degree - NEIU requirements (<http://catalog.neiu.edu/graduation-requirements/bachelors-degree/>)

Major Requirements

Forty-eight hours of Cybersecurity course work including at least 33 hours of 300-level courses. Students should also be aware of the University requirements for the Bachelor's degree. Transfer students must complete a minimum of 24 credit hours of 300-level Cybersecurity courses at Northeastern and meet all major requirements.

Students who intend to pursue a Master's degree in Computer Science should plan on completing Calculus II and are advised to take a course in Linear Algebra.

Code	Title	Hours
Required Major Courses		42
CS-200	Programming Fundamentals	4
CS-201	Discrete Structures	3
CS-323	Cyberlaw	3
CS-207	Object-Oriented Programming And Data Structures	5
CS-260	Computer Security	3
CS-331	Computer Networks	3
CS-315	Modern Database Management	3
CS-324	Introduction To The Design Of Algorithms	3
CS-355	Cryptography	3
CS-308	Operating Systems	3
CS-360	CyberSecurity	3
CS-362	Digital Forensics	3
CS-345	Network Security	3
Select two from the following:		6
CS-349	Introduction To The Internet Of Things	
CS-359	Machine Learning	
CS-301	Computer Organization	
CS-319	Writing Intensive Program: Fundamentals Of Software Engineering	
CS-314	Independent Study In Computer Science	
or any CS 300-level courses, approved by the department		

NO SUBSTITUTIONS ARE ALLOWED FOR MAJOR COURSES.