

CYBERSECURITY AND NETWORK ENGINEERING (AS)

Program Overview Associate in Science Degree

The Associate in Science in Cybersecurity and Network Engineering degree introduces core concepts in hardware, software, and networking fundamentals layered on a foundation of cybersecurity concepts. Students apply practical cybersecurity theory to real-life cyber incidents and computer system issues in hands-on scenarios. The curriculum focuses on providing students the skillset they need to properly deploy and secure information technology systems in a wide range of environments. Students will learn how operating systems like Linux and Windows along with core networking technology play a critical role in cyber operations. Students are introduced to the current cyber threat landscape and taught how to assess and plan for threats in both the business and personal realms.

From multi-national corporations to local small businesses, cybersecurity defense is an integral piece of an organization's strategy. Information and the technology infrastructure it resides on are two of an organization's most valuable assets and these are often continuously threatened or under active attack. Successful defense and protection of these assets requires a trained cybersecurity professional who not only understands the technical aspects, but also is aware of strategic business interests. An internship course is available in Term VI during which students work off-campus in an organization where they will practice and enhance their technical skills. Students will be prepared to take Microsoft MCP, Microsoft Technology Associate (MTA) Security Fundamentals, CCNA Cyber Ops, and the CompTIA+ exams.

Graduates of this program are prepared for entry-level positions as computer security specialists, information security analysts, and systems administrators. Associate degree graduates can continue in the NEIT's bachelor's degree programs in Cybersecurity and Network Engineering or Business Management.

Through input from a Technical Advisory Committee, professional cybersecurity organizations and local businesses, this program was developed to meet the current cybersecurity needs and those that may arise in the next several years.

Curriculum

Course	Title	Quarter Credit Hours
Term I		
IT 121	IT Visual Communications	3
NE 115	Computer and Networking Fundamentals	3
SE 116	Programming Essentials Using Python	4
Choose one of the following (depending upon Math Placement):		4-5
MA 105	Basic College Math with Lab (MA/SCI Core) ¹	
MA 110	Introduction to College Math (MA/SCI Core) ¹	

Elective	100-200 Level Humanities, Social Sciences, or Arts/ Foreign Language Core ¹	
Quarter Credit Hours		14-15
Term II		
CYB 123	Cybersecurity Threats and Defense	3
NE 255	Linux Fundamentals	3
SE 126	Intermediate Programming Using Python	4
EN 100	Introduction to College Writing	4
Quarter Credit Hours		14
Term III		
AI 240	Introduction to Artificial Intelligence	3
NE 131	Networking for Small Businesses	3
SE 111	HTML and JavaScript	4
MA 121	Business Math (MA/SCI Core) ¹	4
EN 200	Workplace Communications (COM Core) ¹	4
Quarter Credit Hours		18
Term IV		
NE 121	Windows Networking Essentials	4
NE 245	Introduction to Networks	4
NE 263	Introduction to Azure Administration	4
MA 125	Technical Math I (MA/SCI Core) ¹	4
Quarter Credit Hours		16
Term V		
CYB 241	Security of the Internet of Things	3
NE 247	Windows Server	4
NE 257	Routing and Switching Essentials	4
Elective	100-200 Level Humanities (or Arts/Foreign Language) Core ¹	4
PHY 200	Physics I & Lab (MA/SCI Core) ¹	4
Quarter Credit Hours		19
Term VI		
CYB 252	Cyber Scenarios	1
NE 249	Troubleshooting Fundamentals	4
NE 265	AS Capstone Project	4
Elective	100-200 Level Social Sciences Core	4
Quarter Credit Hours		13
Total Quarter Credit Hours		94-95

¹ Liberal Arts Core.

Legend

C = Number of lecture hours per week

L = Number of laboratory hours per week

T = Total Quarter Credit Hours where each lecture hour per week is one credit, every 2-4 laboratory hours are one credit depending on the expected amount of pre- or post-lab work.

All associate degree students are required to take 32 credits of liberal arts and math/science courses as selected from the liberal arts core. See the course descriptions section of this catalog for a list of the core area courses. Students who place out of MA 105 Basic College Math with Lab/MA 110 Introduction to College Math must still take 32 credits of core courses.

Subject to change.

Program Mission, Goals, and Outcomes

Program Mission

The mission of the Cybersecurity and Network Engineering associate degree program is to provide a program that will allow students to pursue an entry-level career in Information Technology and prepare them to further their education in our Bachelor of Science degree program.

Program Goals

1. Provide appropriate opportunities for students to acquire the knowledge, applicable skills, and professional attitude necessary to function as an entry level security analyst and IT professional via experiential learning.
2. Introduce students to some of the objectives for various entry level industry certifications and help prepare students to acquire those certifications.
3. Endeavor to cultivate each student's ability to critically analyze security problems, and efficiently and correctly troubleshoot those problems.
4. Strive to instill in each student a sense of professional commitment and integrity with respect to the security and privacy of clientele and information, the rights of copyright holders, and the inherent responsibilities of license users.
5. Provide an environment that encourages self-learning and the continuation of each student's education beyond graduation with the goal of furthering each student's ability to adapt to and incorporate new concepts, ideas, and evolving technologies.

Program Outcomes

Graduates of this program will be able to:

1. Follow and meet objectives of a project plan and recognize the need for adaptation, adjustments, and restructuring of the plan, both as an individual security professional, and in a team environment. Assessments will be conducted using exams, performance reviews, projects, and reports.
2. Acquire proficiency with and provide support for security principles, computer hardware, operating systems, software, Internet/network connectivity based on legacy, current, and state of the art technologies.
3. Analyze digital evidence to determine user and intruder activity on systems.
4. Demonstrate effective oral and written communications with supervisors, team members and clients. In particular, students should exhibit lucid, clear and concise technical and professional communication as well as be able to communicate complex technical ideas in layman's terms to non-technically trained people. This will be assessed via reports, self-assessments, instructor observations, peer evaluations, and technical documentation.
5. Research, formulate and critique security policies regarding the collection, preservation, safeguarding and disposition of log data and personally identifiable information.

Q&A and Technical Standards

Questions & Answers

1. When do my classes meet?

Day Classes: Technical classes normally meet for at least three hours a day for up to five days a week. Classes normally begin in the early morning (7:45 a.m.), late morning (usually 11:25 a.m.), or mid-afternoon. The time slot for your program may vary from term to term.

Evening Classes: Technical classes meet on the average of three nights a week, although there may be times when they will meet four nights a week. Classes normally begin at 5:45 p.m.

In addition, to achieve your associate degree, you will take a total of approximately eight liberal arts courses, which will be scheduled around your technical schedule over the course of your entire program. Each liberal arts course meets approximately four hours per week. Liberal arts courses are offered days, evenings, and Saturdays.

At the beginning of each term you will receive a detailed schedule giving the exact time and location of all your classes. The College requires that all students be prepared to take classes and receive services at any of NEIT's locations where the appropriate classes and services are offered.

When a regularly scheduled class falls on a day which is an NEIT observed holiday (Columbus Day, Veterans Day, Martin Luther King, Jr. Day, and Memorial Day), an alternate class will be scheduled as a make up for that class. The make up class may fall on a Friday. It is the student's responsibility to take note of when and where classes are offered.

2. How large will my classes be?

The average size for a class is about 20 to 25 students; however, larger and smaller classes occur from time to time.

3. How much time will I spend in lab?

Almost half of your technical courses consist of laboratory work. In order for you to get the most out of your laboratory experiences, you will first receive a thorough explanation of the theory behind your lab work.

4. Where do my classes meet?

Students should be prepared to attend classes at any of NEIT's classroom facilities: either at the Post Road, Access Road, or East Greenwich campus.

5. I have not earned my high school diploma or GED: can I enroll in an Associate Degree Program?

A candidate for admission to an associate degree program must have a high school diploma, have earned a recognized equivalency diploma (GED), or meet the federal home school requirements.

6. How long should it take me to complete my program?

To complete your degree requirements in the shortest possible time, you should take the courses outlined in the prescribed curriculum. For a typical six-term curriculum, a student may complete the requirements in as little as 18 months.

To complete all your degree requirements in the shortest time, you should take at least one liberal arts course each term.

Students may also elect to complete some of their liberal arts requirements during Intersession (except for EN courses), a five-week term scheduled between Spring and Summer Terms. Students will not be assessed any additional tuition for liberal arts courses taken during the Intersession but may be assessed applicable fees.

Students wishing to extend the number of terms needed to complete the required technical courses in their curriculum will be assessed additional tuition and fees.

7. Is NEIT accredited?

NEIT is accredited by the New England Commission of Higher Education. Accreditation by NECHE is recognized by the federal government and entitles NEIT to participate in federal financial aid programs. Some academic departments have specialized professional accreditations in addition to accreditation by NECHE. For more information on accreditation, see NEIT's catalog.

8. Can I transfer the credits that I earn at NEIT to another college?

The transferability of a course is always up to the institution to which the student is transferring. Students interested in the transferability of their credits should contact the Office of Teaching and Learning for further information.

9. Can I transfer credits earned at another college to NEIT?

Transfer credit for appropriate courses taken at an accredited institution will be considered upon receipt of an official transcript for any program, biology, science, and mathematics courses in which the student has earned a "C" or above within the past three years and for English or humanities courses in which the student has earned a "C" or above within the last ten years. An official transcript from the other institution must be received before the end of the first week of the term for transfer credit to be granted for courses to be taken during that term. Students will receive a tuition reduction for the approved technical courses based on the program rate and will be applied against the final technical term of the curriculum's tuition amount. No tuition credit is provided for courses which are not a part of the technical curriculum.

10. What is the "Feinstein Enriching America" Program?

New England Institute of Technology is the proud recipient of a grant from the Feinstein Foundation. To satisfy the terms of the grant, the College has developed a one-credit community enrichment course which includes hands-on community enrichment projects. The course can be taken for a few hours per term, spread over several terms. Students who are already engaged in community enrichment on their own may be able to count that service towards course credit.

11. How many credits do I need to acquire my Financial Aid?

In order to be eligible for the maximum financial aid award, you need to maintain at least 12 credits per academic term.

12. What does my program cost?

The cost of your program will be as outlined in your enrollment agreement, along with your cost for books and other course materials. Students who decide to take more terms than the enrollment agreement describes to complete the technical courses in their curriculum will be subject to additional fees and possible additional tuition costs. Students who elect to take the technical portion of the degree requirements at a rate faster than the rate prescribed in the curriculum and the enrollment agreement will be assessed additional tuition.

Students who require prerequisite courses will incur additional tuition and fees above those outlined in their enrollment agreement.

If a student elects to take a course(s) outside of the prescribed curriculum, additional tuition and fees will be assessed.

Remember, students who withdraw and re-enter, one time only, pay the tuition rate that was in effect for them at the time of their last day of attendance for up to one year from their last day of attendance. Second re-entries and beyond pay the tuition rate in effect at the time they re-enter. The most economical way for you to complete your college degree

is to begin your program now and continue your studies straight through for the six terms necessary to complete your degree requirements.

13. Are there any minimum grade requirements in the program?

Yes. A minimum grade of C is required in MA 100/110 Introduction to College Math for IT, SE or NE courses that have a MA 100/110 prerequisite.

14. What kind of employment assistance does NEIT offer?

The Career Services Office assists NEIT students and graduates in all aspects of the job search, including resume writing, interviewing skills, and developing a job search strategy. Upon completion of their program, graduates may submit a resume to the Career Services Office to be circulated to employers for employment opportunities in their fields. Employers regularly contact us about our graduates. In addition, our Career Services Office contacts employers to develop job leads. A strong relationship with employers exists as a result of our training students to meet the needs of industry for over fifty years. No school can, and NEIT does not, guarantee to its graduates employment or a specific starting salary.

15. Where will job opportunities exist?

Graduates have obtained employment in the local area. However, one of the most exciting aspects of this program is the ability to look nationally for employment opportunities.

16. What kind of jobs will I be qualified to look for?

Generally jobs will exist in the entry-level positions in the computer industry. Entry-level programmer, entry-level network administration, computer technician, database specialist, or web developer may be some of the job choices available to a graduate with an associate degree. Upon completion of a bachelor's degree at NEIT, positions on the management level become attainable.

17. What is an MCP?

Microsoft Certified Professional (MCP) certification validates IT professional and developer technical expertise through rigorous, industry-proven, and industry-recognized exams. MCP exams cover a wide range of Microsoft products, technologies, and solutions.

When you pass your first qualifying MCP exam, you automatically become a Microsoft Certified Professional.

18. Am I automatically an MCP when I complete the coursework at NEIT?

No. Upon completion of the coursework, students are eligible to pursue certification as an MCP. Tests for certification are given locally. However, a student may apply for positions as a computer network administrator without the MCP certification.

19. What is a MCSA?

Microsoft offers courses to install, configure, service, and support Microsoft networks. These courses are offered to IT bachelor's degree students who have successfully completed the associate degree courses. The objective of these courses is to demonstrate the skills needed to install, maintain, and update a Microsoft Windows network. A student completing these courses is eligible to take the required tests for Microsoft certification as a Microsoft Certified System Administrator (MCSA).

20. Am I automatically an MCSA when I complete the coursework at NEIT?

No. Upon completion of the coursework, students are eligible to pursue certification as an MCSA. Tests for certification are given locally.

However, a student may apply for positions as a network administrator without the MCSA certification.

21. What is a Cisco Local Academy?

NEIT is proud to be a Cisco Local Academy. This agreement allows NEIT to offer authorized Cisco training courses to our matriculating students.

22. What is a CCNA?

Cisco offers training courses to maintain and administer their local area networks. These courses are offered to NEIT Computer Science Associate Degree students. The objective of these courses is to acquire the mastery of installing, configuring, and operating simple-routed LAN, routed WAN, and switched LAN networks. A student completing these courses is eligible to take the required tests for Microsoft certification as a Cisco Certified Network Associate (CCNA).

23. Am I automatically a CCNA when I complete the coursework at NEIT?

No. Upon completion of the coursework, students are eligible to pursue certification as a CCNA. Tests for certification are given locally. However, a student may apply for positions as a computer network administrator without the CCNA certification.

Technical Standards

These technical standards set forth by the IT department establish the essential qualifications considered necessary for students admitted to the program. The successful student must possess the following skills and abilities or be able to demonstrate they can complete the requirements of the program with or without reasonable accommodation, using some other combination of skills and abilities.

Cognitive Ability

- Good reasoning and critical thinking skills.
- Ability to learn, remember and recall detailed information and to use it for problem solving.
- Ability to deal with materials and problems such as organizing or reorganizing information.
- Ability to use abstractions in specific concrete situations.
- Ability to separate complex information into its component parts.
- Ability to perform tasks by observing demonstrations.
- Ability to perform tasks by following written instructions.
- Ability to perform tasks following verbal instructions.
- Possession of basic keyboarding skills and knowledge of computer programs.

Communications Skills

- Ability to speak in understandable English in a classroom situation on a one-on-one basis as well as before a group.
- Ability to communicate effectively with faculty and other students.
- Ability to demonstrate and use the knowledge acquired during the classroom training process.
- Ability to verbally express technical concepts clearly and distinctly.
- Ability to express thoughts clearly.

Adaptive Ability

- Ability to remain calm in the face of computer lab equipment and/or software failure.

- Ability to maintain emotional stability and the maturity necessary to interact with members of the faculty and students in a responsible manner.
- Ability to tolerate the differences in all students, faculty, and administration.
- Ability to follow instructions and complete tasks under stressful and demanding conditions.
- Ability to adapt in a positive manner to new and changing situations with an open mind and flexibility.
- Ability to think clearly and act quickly and appropriately in stressful situations.

Physical Ability

- Ability to sit continuously at a personal computer for long periods of time in order to learn and become proficient in computer programming and networking.
- Ability to perform learned skills independently, with accuracy and completeness within reasonable time frames in accordance with classroom and business procedures.

Manual Ability

- Sufficient motor function and sensory abilities to participate effectively in the classroom laboratory.
- Sufficient manual dexterity and motor coordination to coordinate hands, eyes and fingers in the operation of computers and business equipment.

Sensory Ability

Visual

- Acute enough to see clearly and interpret the contents on the computer screen.

Degree Progress Checklist

Cybersecurity and Network Engineering - AS

Degree Progress Checklists

- For students entering October 2024 or later
- For students entering April 2023 to September 2024
- For students entering October 2020 to March 2023