ELECTRO-MECHANICAL ENGINEERING TECHNOLOGY

Program Overview
Associate in Science

The **Electro-Mechanical Engineering Technology (EMET)** Associate in Science degree program prepares students for careers in the design, installation, maintenance, and troubleshooting of automated systems that integrate electrical and mechanical components. This interdisciplinary program blends core concepts from mechanical engineering, electrical/electronic engineering, and computer control systems, equipping graduates with the versatile skills needed in today's high-tech industries.

Through hands-on lab work and theoretical instruction, students gain practical experience with programmable logic controllers (PLCs), robotics, AC/DC circuits, sensors and actuators, CAD, Metrology, machining fundamentals and digital electronics. Emphasis is placed on system-level thinking, problem-solving, and real-world application of mechatronic principles in manufacturing, energy systems, and automation.

Graduates of the EMET program are prepared for entry-level positions such as Electro-Mechanical Technician, Automation Technician, Maintenance Technician, Robotics Technician, and Engineering Assistant. The program also lays a strong foundation for those interested in pursuing further education in engineering technology or related fields.

Embedded Micro-Credentials may include:

1. NIMS I & II
2. OSHA 10 – Construction & Safety
3. Lean Six Sigma Yellow Belt
4. FANUC Robotics

Curriculum

Course	Title	Quarter Credit Hours
Term I		
MCT 115	Computer-Aided Design I	4
MCT 212	Metrology	3
ENG 118	Introduction to Engineering Technology and Lab	3
EN 100	Introduction to College Writing	4
Choose one of the following (depending upon Math Placement):		4-5
MA 100	Introduction to College Math with Lab	
MA 110	Introduction to College Math	
MA 105	Basic College Math with Lab	
Elective	100-200 level Math/Science Core	
	Quarter Credit Hours	**18-19**
Term II		
MCT 124	Computer-Aided Design II	4
MCT 125	Manufacturing Processes	4
OSH 010	OSHA Construction Safety & Health	2
MA 125	Technical Math I	4
EN 200	Workplace Communications	4
	Quarter Credit Hours	**18**
Term III		
MCT 134	Computer-Aided Design III	4
MCT 239	Quality	4
ERD 110	Fundamentals of Electronics	5
MA 210	Technical Math II	4
	Quarter Credit Hours	**17**
Term IV		
MCT 215	Statics	4
MCT 241	Machining Fundamentals & CNC	3
ERD 111	Electronic Circuit Construction	4
PHY 200	Physics I & Lab	4
Elective	100-200 Level Humanities Core	
	Quarter Credit Hours	**15**
Term V		
MCT 224	Mechanics of Materials	4
ERD 120	Digital Concepts	5
ERD 131	Advanced Circuits and Semiconductors	5
PHY 300	Physics II & Lab	4
	Quarter Credit Hours	**18**
Term VI		
ERD 242	Electro-Mechanical Systems & Industrial Controls	4
ERD 246	Data Acquisition Systems	4
ENG 210	Introduction to Programmable Automation Controllers & Lab	5
SS 274	Human Relations in the Workplace	4
Choose one of the following options:		4
MCT 235	Industrial Robotic Automation	
ENG 281	Engineering Internship	
	Quarter Credit Hours	**21**
	Total Quarter Credit Hours	**107-108**

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.

NOTE

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 Electro-Mechanical Engineering Technology A.S. program is to provide a high-quality, hands-on education that prepares students for immediate employment and lifelong learning in the fields of electro-mechanical systems, automation, and advanced manufacturing. The program strives to meet industry needs through a curriculum that emphasizes technical competence, ethical responsibility, and workforce readiness.

Program Goals

1. **Technical Proficiency** – Prepare students with a strong foundation in electrical, mechanical, and automation principles.
2. **Applied Learning** – Provide practical, hands-on experience with industry-relevant tools, technologies, and systems.
3. **Workforce Preparation** – Equip students with the knowledge and skills needed to succeed in entry-level positions in diverse technical fields.
4. **Lifelong Learning** – Encourage students to pursue further education, certifications, or professional development.
5. **Professionalism and Ethics** – Promote responsible engineering practices, effective communication, teamwork, and ethical decision-making.

Program Outcomes

Graduates of this program will be able to:

1. **Apply engineering principles** to analyze, troubleshoot, and maintain electro-mechanical systems.
2. **Use modern tools and technology**, including PLCs, CAD software, instrumentation, and robotics, in solving technical problems.
3. **Demonstrate knowledge** of AC/DC circuits, mechanical systems, sensors, and actuators.
4. **Interpret technical documents**, such as schematics, blueprints, and manuals, to support system operations and diagnostics.
5. **Function effectively as part of a team**, including working on multidisciplinary projects and communicating technical information clearly.
6. **Apply safety standards** and industry best practices in the operation and maintenance of electro-mechanical systems.
7. **Engage in continuous improvement** through self-directed learning, awareness of emerging technologies, and pursuit of certifications or further education.

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 university 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, 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 (NECHE). 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.

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 university 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. 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.

14. 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.

15. Will I be able to continue toward a bachelor's degree?

Yes. Students who earn an associate degree in Electro-Mechanical Engineering Technology can earn a baccalaureate degree in Electrical Engineering Technology or in Mechanical Engineering Technology after taking additional required courses.

16. Is there any state or federal licensing required in my field?

No licensing is required for any of the careers which you will be preparing to enter.

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

You will be qualified to obtain entry- level positions in the area of:

- Design Drafting
- Mechanical Design
- Machine Design
- Automation Design
- Tool Design
- Product Design
- Technical Sales
- Manufacturing Engineering
- Project Engineering
- Production Supervisor
- Engineering Technician
- Applications Engineering
- Mechanical Engineering

Technical Standards

These technical standards set forth for the Electro-Mechanical Engineering Technology program, establishes the essential qualities considered necessary for students admitted to this program to achieve the knowledge, skills and competencies to enter these fields. The successful student must possess the following skills and abilities or be able to demonstrate that they can complete the requirements of the program with or without reasonable accommodation, using some other combination of skills and abilities.

Cognitive Ability:

- Ability to concentrate for long periods of time and retain information on intricate details of component theory and analysis of engineering design and operation of computers and machinery.

- Ability to deal with materials and problems such as organizing or reorganizing information.
- Ability to use abstractions in specific concrete situations.
- Ability to break information into its component parts.
- Ability to understand spatial relationships.
- Possession of basic math skills through addition, subtraction, multiplication and division of whole numbers and fractions using both the U.S. and Metric systems of measurement.
- Ability to perform tasks by observing demonstrations.
- Ability to perform tasks by following written instructions.
- Ability to perform tasks following verbal instructions.

Communications Skills:

- Ability to communicate effectively with faculty and students.
- Ability to demonstrate and use the knowledge acquired during the classroom training process and in the lab setting.

Adaptive Ability:

- Ability to maintain emotional stability and the maturity necessary to interact with other members of the faculty and students in a responsible manner.

Physical Ability:

- An ability to work in a standing, sitting, squatting, kneeling, or lying position
- An ability to lift, lower, push, and pull using both arms and legs.
- Ability to lift objects weighing up to 35 pounds.
- Ability to stand on a hard surface, usually concrete, for 4-6 hours at a time.
- Sufficient upper body strength to carry 20 pounds.
- Sufficient strength and agility to lift equipment and move large pieces of equipment independently.
- Sufficient strength and agility to grasp and maintain tension for long periods of time.
- Ability to wear and tolerate ear plugs, safety glasses and other protective equipment.
- Ability to perform learned skills, independently, with accuracy and completeness within reasonable time frames in accordance with procedures.

Manual Ability:

- Ability to manipulate wrenches, screwdrivers, and other tools.
- 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 tools and other equipment.

Sensory Ability:

Visual

- Visual ability, with or without correction, to enable the student to differentiate tools and instruments, wires, and components.
- Acute enough to read dials, and position of control settings of measurement and industrial equipment.
- Acute enough to read small print.
- Acute enough to read small numbers on precision measuring instruments.

Auditory

- Acute enough to hear and understand words spoken by others in an environment with a high level of noise in the background.

Degree Progress Checklist

Electro-Mechanical Engineering Technology - AS

Degree Progress Checklist

- For students entering October 2025 or later