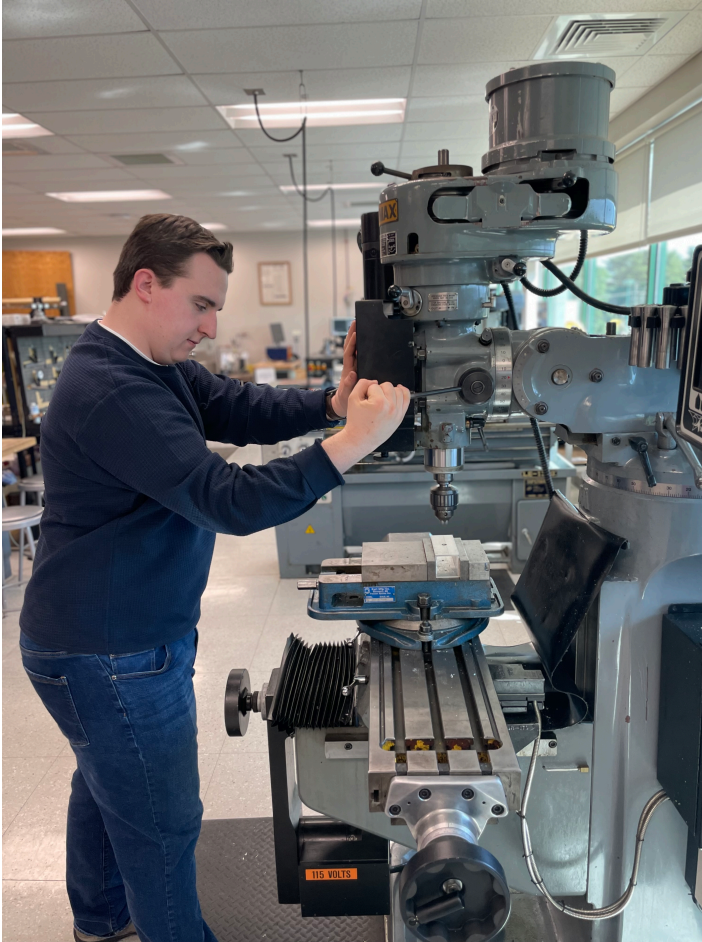


MECHANICAL ENGINEERING TECHNOLOGY (AS)

Program Overview Associate in Science Degree



Students at the Associate in Science level of the Mechanical Engineering Technology program concentrate on product design. They study the design of products by learning design principles, sketching, problem-solving, and how both the engineering materials and manufacturing processes and machines are selected and scheduled. Students gain a wide background of knowledge in such areas as electricity and electronics, metrology and the measurements of products, manufacturing processes, and tool design.

Design is emphasized utilizing the latest in computer drafting technology (CAD). Product design also affords an opportunity to work in an area of special interest such as a hobby. Graduates could work in the design of recreational equipment such as wing surfers or bicycles, or possibly automotive design or even toy design. Product design can be an extremely exciting and rewarding career.

Every item that we buy today has been the result of a product design development process. Today's product designer works as a member of a product design and development team. Cross-functional product design and development teams are responsible for bringing a product from initial conception to product launch when it becomes available to the public.

They also work to continually improve products after product launch. Graduates of the Mechanical Engineering Technology program are prepared for several types of design and technologist positions on these teams, including positions such as product designer, CADD designer, tool designer, R&D technician, or manufacturing technician.

Graduates with an Associate in Science in Mechanical Engineering Technology are eligible to continue on for a Bachelor of Science in Mechanical Engineering Technology.

Curriculum

Course	Title	Quarter Credit Hours
Term I		
ENG 118	Introduction to Engineering Technology and Lab	3
MCT 115	Computer-Aided Design I	4
MCT 212	Metrology	3
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	
MA 125	Technical Math I (MA/SCI Core) ¹	
Quarter Credit Hours		14-15
Term II		
MCT 124	Computer-Aided Design II	4
MCT 125	Manufacturing Processes	4
EN 100	Introduction to College Writing (COM Core) ¹	4
Choose one of the following (depending upon Term I):		4
MA 125	Technical Math I (MA/SCI Core) ¹	
MA 210	Technical Math II (MA/SCI Core) ¹	
Quarter Credit Hours		16
Term III		
MCT 113	Design Principles	3
MCT 134	Computer-Aided Design III	4
PHY 200	Physics I & Lab (MA/SCI Core) ¹	4
Choose one of the following (depending upon Term II):		4
MA 210	Technical Math II ¹	
Elective	100-200 Level Math/Science Core ¹	
Quarter Credit Hours		15
Term IV		
MCT 130	Engineering Materials	4
MCT 215	Statics	4
ERD 110	Fundamentals of Electronics	5
EN 200	Workplace Communications (COM Core) ¹	4
Quarter Credit Hours		17
Term V		
MCT 224	Mechanics of Materials	4
MCT 239	Quality	4
ERD 246	Data Acquisition Systems	4

PHY 300	Physics II & Lab (MA/SCI Core) ¹	4
Quarter Credit Hours		16
Term VI		
MCT 235	Industrial Robotic Automation	4
MCT 237	Capstone Project	4
Elective	100-200 Level Humanities, Social Sciences or Arts/Foreign Language Core ¹	4
Choose one of the following:		3-4
ENG 281	Engineering Internship	
MCT 221	AutoCAD Essentials	
MCT 240	Manufacturing Planning	
MGM 133	Principles of Management	
MGM 233	Planning Your Financial Future	
MGM 243	Career Development	
MGM 277	Leadership in Action	
WEL 110	OFC/OAW, Electric Welding and Cutting	
Quarter Credit Hours		15-16
Total Quarter Credit Hours		93-95

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 Associate in Science in Mechanical Engineering Technology is to provide students a concentration on product design. They study the design of products by learning design principles, sketching, problem solving, and how both the engineering materials and manufacturing processes are selected and scheduled. Students gain a wide background of knowledge in such areas as electricity and electronics, metrology and the measurements of products, manufacturing processes, and engineering documentation. Design is emphasized utilizing the latest in computer drafting technology (CADD).

Program Educational Objectives

1. Graduates from the Associate in Science Degree in Mechanical Engineering Technology will have gained the knowledge, problem-solving abilities, and hands-on skills to succeed in a career in the manufacturing, design, specification, installation, testing, operation, maintenance, sales, or documentation of mechanical systems.

2. Graduates from the Associate in Science Degree in Mechanical Engineering Technology will be able to employ communication and teamwork skills to effectively bridge the gap between professional engineers and skilled production workers and to assist engineers to design, develop, and manufacture industrial machinery and consumer products.
3. Graduates from the Associate in Science Degree in Mechanical Engineering Technology will be able to apply knowledge and a propensity for learning to continuously develop new skills and to learn about new areas needed for long-term career development, including science, engineering, and technology knowledge and communication and teamwork skills.
4. Graduates from the Associate in Science Degree in Mechanical Engineering Technology will achieve professional employment within the broad field of mechanical engineering technology or related disciplines.

Program Outcomes

Students will develop:

1. an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline;
2. an ability to design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline;
3. an ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
4. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results; and
5. an ability to function effectively as a member of a technical team.

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.

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 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 of 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. No school can, and NEIT does not, guarantee to its graduates employment or a specific starting salary.

13. 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.

14. 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.

15. 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

16. How much time will I spend on Computer Assisted Drafting (CAD)?

You will receive approximately 60 hours of formal training on CAD during the first term of your program.

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

Yes. Students who earn an associate degree in Mechanical Engineering Technology can earn a baccalaureate degree with approximately 6 additional terms of study (18 months).

Technical Standards

These technical standards set forth by the Mechanical Engineering Technology Department, 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 Mechanical Engineering Technology - AS

Degree Progress Checklists

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