ADVANCED AUTOMOTIVE TECHNOLOGY (AS)

Program Overview
Associate in Science Degree

The Automotive Technology Department provides in-depth study and application of the most current trends in the automotive field.

The department offers three automotive associate degree programs:

- Advanced Automotive Technology
- Advanced Automotive Technology with High Performance
- Advanced Automotive Technology with Fabrication and Refinishing

Students learn the design, theory of operation, and servicing techniques of the many systems and system components of today's automobiles. Training in engine construction and design, engine repair, electricity, electronics, suspension, steering, brakes, transmissions, heating and air conditioning systems, fuel systems, ignition systems, and emission controls is provided to assure maximum coverage. A final engine performance course covers computerized engine controls, fuel injection systems, and exhaust emissions diagnosis. NEIT uses the latest industry standards, up-to-date diagnostic equipment, and Automotive Service Excellence approved curriculum in its training program.

The High Performance degree programs offer an additional term of study in high performance vehicle modification and testing.

The Fabrication and Refinishing degree program offers two additional terms of study in the fabrication and refinishing of metal and fiberglass structural surfaces.

New England Institute of Technology participates in the Ford Maintenance and Light Repair (MLR) program which includes Ford Service Technician Specialty Training (STST) in the following areas: Electrical Systems, Climate Control, Brake Systems, Steering and Suspension, Tire, Chassis & Maintenance. Upon graduation, students will have completed the necessary requirements for the Ford MLR certification.

NEIT also participates in the Mopar Career Automotive Program (CAP) LOCAL curriculum, designed and developed by Fiat Chrysler Automotive (FCA) Performance Institute. The curriculum includes a variety of self-study web-based and instructor-led courses. The curriculum covers two levels: Level 0 provides the basics that every technician needs to know, includes the role of the technician in the dealership, new vehicle prep, FCA online systems and use of diagnostic scan tools; Level 1 adds increasingly more complex courses such as engine repair and performance, automatic transmissions, driveline, chassis systems and electrical and body systems. Upon completion, students are qualified to work on a variety of repair needs in Chrysler, Jeep, Dodge, and Ram dealerships.

These intensive programs prepare students for entry-to-industry-level technical capability and offer skills needed for rapid advancement. Graduates of this program are eligible to continue on for a Bachelor of Science Degree in Business Management with an Automotive Service/ Transportation Management (MGTT) concentration.

Certification Status

NEIT's Automotive Technology program has received Master Automobile Service Technology Accreditation by the:

ASE Accredited Training Program
Powered by ASE Education Foundation

ASE Education Foundation
1503 Edwards Ferry Rd., NE, Suite 401
Leesburg, VA 20176
(703) 669-6650
www.ASEeducationfoundation.org.

Curriculum

Course	Title	Quarter Credit Hours
Term I		
TT 106	Introduction to Vehicle Maintenance	3
AUT 103	Automotive Engines	7
AUT 104	Automotive Engines Lab	2
	Quarter Credit Hours	**12**
Term II		
AUT 105	Automotive Electricity and Electronics	7
AUT 106	Automotive Electricity and Electronics Lab	2
WEL 110	OFC/OAW, Electric Welding and Cutting	3
EN 106	Service Industry Communications (COM Core) [1]	5
	Quarter Credit Hours	**17**
Term III		
AUT 107	Automotive Brakes, Suspension and Steering	8
AUT 109	Automotive Brakes, Suspension and Steering Lab	4
EN 100	Introduction to College Writing (COM Core) [1]	4
	Quarter Credit Hours	**16**

Term IV		
AUT 209	Automotive Fuel and Ignition Systems	8
AUT 210	Automotive Fuel and Ignition Systems Lab	4
AUT 285	Automotive Heating and Air Conditioning Systems	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]	
	Quarter Credit Hours	**19-20**
Intersession		
HU 289	Racing Through Film (recommended) (or other Humanities Core Elective) [1]	4
	Quarter Credit Hours	**4**
Term V		
AUT 211	Automotive Powertrains	8
AUT 219	Automotive Powertrains Lab	2
Choose one of the following:		2-4
AUT 251	Internship/Practical Experience	
Technical Elective		
Choose one of the following (depending on future program choice):		4
PHY 126	Applied Physics & Lab (MA/SCI Core) [1]	
MA 200	Applied Math for Business (MA/SCI Core) (for MGT/BS Students) [1]	
	Quarter Credit Hours	**16-18**
Term VI		
AUT 221	Advanced Technologies/Hybrid	8
AUT 222	Advanced Technologies/Hybrid Lab	4
HU 242	The Automobile and American Culture (recommended) (or other Humanities Core Elective) [1]	4
SS 236	Small Business and the Law	4
	Quarter Credit Hours	**20**
	Total Quarter Credit Hours	**104-107**

[1] Liberal Arts Core.

Total Quarter Credit Hours = 104-105 for AAUT (Standard Option) Students
Total Quarter Credit Hours = 106-107 for AAUT (Internship Option) Students

Technical Electives (Term V)

Course	Title	Quarter Credit Hours
AUT 265	OEM Factory Training Seminar	2
AUT 276	Light Duty Diesel Diagnostics and Repair	2
AUT 277	Vehicle Service Practices with Career Preparation	2
AUT 280	Advanced Troubleshooting	2

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.

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.

Subject to change.

Program Mission, Goals, and Outcomes

Program Mission

The mission of both the Automotive (AUT) and Advanced Automotive Technology (AAUT) programs is to create entry-level Automotive technicians prepared for employment in new vehicle automobile dealerships, independent automotive repair businesses, fleet service and repair centers and car rental companies. Through participation in classroom, hands-on and lab activities, students will gain the knowledge and experiences necessary to obtain an Associate in Science degree. This will enable them to pursue employment at an entry level in the automotive repair industry or acceptance into an advanced-level training program and lay the foundation for future progression into a management discipline, if so desired.

Program Goals

1. Students will be introduced to various opportunities and careers in the auto industry. Students will identify industry certifications and degree requirements needed to pursue automotive careers.
2. Students will be able to experience theoretical and practical applications which will prepare them for business and industry.
3. Students will participate in peer learning lab activities, which will utilize the gathering of information using both electronic and traditional methods that can be used to generate a comprehensive vehicle report that will be used for repairs and to communicate to the customer the diagnosis and need repairs.
4. Students will develop a sense of professionalism which is expected in the automotive industry and will be encouraged to become lifelong learners.

Program Outcomes

Students successfully completing the Automotive or Advanced Automotive training programs will be able to:

1. Perform basic automobile engine diagnosis through the use of vacuum testing, compression testing and cylinder leakage testing.

2. Perform basic electrical system diagnosis and testing on vehicle lighting, starting and charging systems.

3. Perform front-end and four-wheel vehicle alignments and repairs on vehicle suspension systems, utilizing the latest, state-of-the-art alignment equipment.

4. Repair all types of light vehicle tires and wheels.

5. Perform drivability diagnosis and repairs to automobile fuel, ignition and emission systems.

6. Diagnose and repair manual and automatic transmission shifting and performance concerns.

7. Recover, recycle, and recharge automotive air conditioning systems in accordance with EPA regulations.

8. Diagnose and repair automotive engine cooling system concerns and replace water pumps, thermostats accessory drive belts and other cooling system components.

9. Perform automotive drum and disc brake system diagnosis, repairs, and replacement of component parts in accordance with current industry standards for automobile service.

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 seven liberal arts courses customized or specifically selected for automotive technicians. These courses will be scheduled around your technical schedule over the course of your entire program.

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 all your degree requirements in the shortest 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.

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 (formerly the Commission on Institutions of Higher Education of the New England Association of Schools and Colleges, Inc.). 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 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-entrees 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 five terms to complete your automotive training and the additional sixth term courses necessary to complete your associate 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. What is the difference between the Advanced Automotive Technology (AAUT) and the Advanced Automotive Technology with High Performance (AAHP) associate degree programs?
AAUT and AAHP associate degree programs have a different number of terms. The AAUT associate degree is a six term program and the AAHP associate degree is a seven term program. The additional seventh term is the high performance term which includes lab experiences with the dynamometer and horsepower measurements not included in the Advanced Automotive curriculum.

16. What is included in the automotive program?
The Automotive Technology program includes a prescribed automotive training curriculum that is distributed over five academic terms, each ten weeks long. To receive an associate degree, you will take a total of six academic terms each ten weeks long, that includes seven liberal arts courses customized or specifically selected for automotive technicians. These courses are scheduled around your technical courses.

17. Will I need tools or special equipment?
No. Any tools you will need will be available for your use either in the main tool crib or in classroom lockers. You will, however, be responsible for the return of any and all tools you check out of the tool crib. Tools not returned or replaced will be charged to your account.

18. Will I be required to wear special clothing?
Yes. Each student is required to purchase and wear uniform shirts. In addition, proper navy blue work pants must be worn (no jeans, sweatpants, nylon pants, shorts, tattered, too tight or oversized pants). Students must have purchased their uniforms and be wearing them to class and lab by the end of the third week of classes. Students who have not purchased their uniforms and/or who do not wear their uniforms will not be allowed to attend class after the third week of classes. Also, proper footwear such as good quality work boots are to be worn at all times. No sneakers, sandals or soft type footwear, shorts and tee shirts are allowed at any time.

19. Where can I purchase a uniform and what kind of uniform do I need?
Students may purchase items for their uniforms online at Alexander's Uniforms http://aucorporateapparel.com/. At the site's homepage, click "New England Institute of Technology" from either the icon or the left tab, then select your department from the list. All items are priced to include a discount. If you have any questions, contact Wendy Magnette via email at wmagnette@alexandersuniforms.com or at 401-654-6500.

The required uniforms include:

Required Uniform	Size/Pricing
2 - Navy Shirt w/ Screen Printing	S-5X (Contact Alexander's Uniforms for current pricing.)
Navy Work Pants	waist: 28-52 (Contact Alexander's Uniforms for current pricing.)

You may also purchase your uniform items at Alexander's Uniforms at one of their three locations (recommended if you are unsure of the size): 1) Rhode Island: Marshall's Plaza, 1 Lambert Lind Highway, Warwick RI 02886, 860-889-7744, 401-654-6500; 2) Connecticut: 77 Salem Turnpike, Norwich, CT 06360, 781-762-1449; 3) Massachusetts: 500 Providence Highway, Norwood MA 02062. A Student ID is needed to ensure you receive your discount at checkout.

20. Will I be required to wear any special safety equipment?
Yes, eye and ear protection must be worn when performing special tasks or in areas that require them. Students are responsible for the purchasing of proper eye protection and must be carried on them at all times. Eye protection must be worn at all times in the automotive labs. Ear protection is supplied by the university. Also, as a safety precaution, work shoes or boots must be properly laced and tied at all times, shirts must be worn tucked in pants, and no rings, watches, earrings, nose rings and or dangling jewelry is allowed during lab or shop conditions.

21. Can I work on my own vehicle?
It is often possible for students to work on their own vehicles. NEIT does not take in any outside work for the purpose of students having vehicles to work on. However, the student may bring in his/her vehicle providing the work is related to the course that is being taken at that time.

22. Is there any open lab time?
All lab time is specifically for the courses being taken. Students may arrange with an instructor to do some necessary repair to a vehicle, and emergency repairs will be dealt with as they arise. However, all lab work is limited to what is being taught at the particular time. In the event that a student wants some work done that is not related to his or her studies,

it may be possible to arrange with a student from another class to do the work for him in a class where the work is related to the course.

23. Does NEIT supply repair parts?
NEIT supplies repair parts for vehicles which NEIT provides for the students to work on. Students are responsible for purchasing their own repair parts if they are working on their own vehicle. There are several parts supplier in the area.

24. Is there any state or federal licensing required in my field?
No license is required for automotive technicians; students are, however, urged to take the Automotive Service Excellence (ASE) test upon completion of their NEIT program. ASE certification shows your prospective employer that you are competent in diagnosing and repairing vehicle problems. ASE recognizes your 18 months of training at NEIT as equivalent to one year's experience in the field toward certification. (Two years field experience are required.)

25. What kind of jobs will I be qualified to look for?
Upon completion of your automotive technical training, you will be employable as a technician in independent garages, dealerships, mass merchandisers, service stations, specialty shops, automotive parts stores and car rental agencies.

Jobs range from entry level technician to owner/operator or manager. The U.S. Department of Labor occupational handbook predicts that job opportunities in the automotive field will grow at a faster than average rate with the greatest potential in the higher technologies. Competition for jobs will be keen and requirements will increasingly emphasize an applicant's training and education. ASE certification greatly enhances your position.

Due to the uniqueness of the automotive repair trade, students will not be limited to the automotive field when looking for a job. A qualified student will be able to pursue work in many other areas such as: auto parts stores, automotive machine shops, boat yards (marine engine repair), farm equipment repair and motorcycle repair.

Technical Standards

These technical standards, set forth by the Automotive/Auto body and Marine Technology Departments, establish the essential qualities considered necessary for students admitted to these programs 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 obtain a score of 3 or higher on a ten-point scale mechanical reasoning test.
- Ability to read and understand warning labels associated with various hazardous chemicals.
- 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 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.
- Possession of basic keyboarding skills and knowledge of computer programs.

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 automotive tools and instruments, wires, and components.
- 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 (such as, but not limited to: air guns, engine noises, drills, radios etc.

Degree Progress Checklist

Advanced Automotive Technology - AS

Degree Progress Checklists

- For students entering October 2024 or later
- For students entering October 2023 to September 2024
- For students entering April 2023 to September 2023
- For students entering January 2022 to March 2023
- For students entering April 2021 to December 2021
- For students entering October 2018 to March 2021