AUTOMOTIVE TECHNOLOGY

Associate in Applied Science Degree | Career Program
Department of Engineering, Physics and Technology

Program Description
The Automotive Technology curriculum, the only one of its kind in the City University of New York, prepares the student for a career as an automotive technician. This curriculum develops understanding of operational principles, service sequences and diagnostic techniques for the automobile. Upon completion of this curriculum, the graduate is prepared for entry-level positions in various areas of the automotive industry dealing with development, testing, diagnosis and service of mechanical, hydraulic, electrical and thermodynamic automotive systems.

Automotive Technology graduates are employed in a variety of automotive-oriented positions including test technician, diagnostician, equipment sales and service, independent business administrator, dealership service manager, service writer, engine machinist, fuel injection, automatic transmission and engine management specialist, as well as general service technician.

Further training and education can lead to careers in technical education, engineering, insurance appraisal, accident investigation and other specialties. The program articulates with SUNY Empire State College. See the Transfer Planning web site for more information.

The Automotive Technology associate degree program is accredited by the ASE Education Foundation (http://www.aseeducation.org/).

Learning Outcomes
Upon successful completion of the Automotive Technology program requirements, students will be able to:

1. Demonstrate proper safety procedures, accident prevention and shop procedures in an active garage.
2. Demonstrate understanding of fundamental internal combustion engines and be able to perform basic mechanical diagnosis and repair.
3. Calculate hydraulic pressures within a drum and disc brake system.
4. Demonstrate proficiency in the use of computer diagnostic equipment, such as proper use of a scantool and oscilloscope.
5. Calculate gear ratios and demonstrate understanding of torque multiplication in transmissions.
6. Explain how alignment angles can affect a vehicle’s handling performance and tire wear.
7. Demonstrate a working knowledge of manifold gauge set readings and how they relate to air conditioning performance.
8. Use wiring schematics and electrical test equipment to diagnose electrical problems.
9. Diagnose automatic transmission issues including torque converter operation.

Upon successful completion of the Automotive Technology Option requirements, students will be able to:

1. Recognize different configurations of hybrid vehicles, and how to interact with them safely.
2. Demonstrate emissions diagnostics by utilizing knowledge of 5 gas analyzation, stoichiometry, and interaction with the OBD2 system.

Upon successful completion of the Diesel Technology Option requirements, students will be able to:

1. Demonstrate understanding of the environmental issues concerning diesel fuel emissions.
2. Demonstrate the understanding of basic fuel delivery of diesel engines.
3. Locate and identify the components of an air brake system.

AUTOMOTIVE TECHNOLOGY CURRICULUM (PATHWAYS)
60 Credits required for AAS Degree
Curriculum Coordinator: Clement Drummond

Required Core

A. English Composition
- ENG 110 English Composition I: Fundamentals of Writing and Rhetoric OR ENG 111 English Composition I: Writing and Rhetoric (3 Credits)
- ENG 112 English Composition II: Writing and Rhetoric

C. Life and Physical Sciences
- CHM 11 General Chemistry I OR CHM 17 Fundamentals of General Chemistry I (4 Credits)
Flexible Core

A. World Cultures and Global Issues
   • HIS 10 History of the Modern World OR
     HIS 11 Introduction to the Modern World (3 Credits)

B. C. 3 credits of Humanities Restricted Electives
   SUBTOTAL 23

D. Individual and Society
   • COMM 11 Fundamentals of Interpersonal Communication (3 Credits)

E. Scientific World
   • PHY 11 College Physics I (4 Credits)

Major Requirements

   • ACS 10 Introduction to Automotive Technology (1 Credits)
   • ACS 11 Engine Repair (4 Credits)
   • ACS 12 Brake Systems (3 Credits)
   • ACS 23 Heating and Air-Conditioning (3 Credits)
   • ACS 24 Electrical Systems (3 Credits)
   • ACS 25 Automatic/Manual Transmission and Drive Trains OR
     ACS 38 Advanced Vehicle Diagnostics (4 Credits)
   • ACS 35 Alternate Fuel Systems OR
     ACS 36 Hybrid / Electric Vehicles (3 Credits)
   • ACS 36 Engine Repair (4 Credits)
   • ACS 45 Diesel Technology (3 Credits)
   • ACS 21 Steering and Suspension Systems (3 Credits)
   • ACS 27 Air Brakes and Suspension (3 Credits)
   • ACS 25 Automatic/Manual Transmission and Drive Trains OR
     ACS 38 Advanced Vehicle Diagnostics (4 Credits)
   • ACS 35 Alternate Fuel Systems OR
     ACS 36 Hybrid / Electric Vehicles (3 Credits)
   • ACS 36 Engine Repair (4 Credits)
   • ACS 45 Diesel Technology (3 Credits)
   • ACS 21 Steering and Suspension Systems (3 Credits)
   • ACS 27 Air Brakes and Suspension (3 Credits)
   • ACS 25 Automatic/Manual Transmission and Drive Trains OR
     ACS 38 Advanced Vehicle Diagnostics (4 Credits)
   • ACS 35 Alternate Fuel Systems OR
     ACS 36 Hybrid / Electric Vehicles (3 Credits)
   • ACS 36 Engine Repair (4 Credits)
   • ACS 45 Diesel Technology (3 Credits)
   • ACS 21 Steering and Suspension Systems (3 Credits)
   • ACS 27 Air Brakes and Suspension (3 Credits)

SUBTOTAL 37

1 Three credits of Humanities Restricted Electives must be selected to fulfill Pathways Flexible Core Areas B or C. In order to get the broadest college experience, it is advised that the Humanities elective be chosen from disciplines OTHER THAN COMM, MEST, or HIS.

*Please Note: The Diesel Technology Option is not admitting new students at this time.