

Course of Study Academy of Automotive Technology

Freshman

Power Mechanics	15 credits
CP or Honors English I	5 credits
CP or Honors U.S. History I	5 credits
CP or Honors Level Mathematics	5 credits
CP or Honors Lab Biology	5 credits
Fitness for Life I	5 credits
CP or Honors Spanish I or Italian I	5 credits

Sophomore

Automotive Technology Specialization I	15 credits
CP or Honors English II	5 credits
CP or Honors U.S. History II	5 credits
CP or Honors Level Mathematics	5 credits
CP or Honors Lab Chemistry	5 credits
Fitness for Life II	5 credits
One Elective (World Language, Performing Arts or Financial Literacy)	5 credits

Junior

Automotive Technology Specialization II	15 credits
CP or Honors English II	5 credits
CP, Honors or College Level World History	5 credits
CP or Honors Level Mathematics	5 credits
CP or Honors or Lab Science	5 credits
Fitness for Life III or Fitness for Life III – Indep/Sports	5 credits
One Elective (World Language, Performing Arts, or Financial Literacy)	5 credits

Senior

College Level Phys Fitness/Contemporary Health at RCSJ, Fitness for Life IV or Fitness for Life IV- Indep/Sports	5 credits
CP, Honors or College Level English Composition 101 at RCSJ	5 credits
Financial Literacy or Performing Arts or World Language IV or Electives	5-30 credits

Attention: Understand that registering for a college-level course, means college level credit will be awarded. Regardless of the final grade, this information will be posted to the student's PERMANENT academic transcript at Rowan College of South Jersey. Be aware that unsuccessful completion of these courses may negatively affect a students' eligibility for financial aid in the future.

ACADEMY OF AUTOMOTIVE TECHNOLOGY

AUTOMOTIVE TECHNOLOGY – Freshman

Power Mechanics

15 credits

Students will be acquainted with Power Mechanic businesses, and gain basic knowledge and skills needed to work in related industries. Power Mechanics students will learn basic theory, operation, and repair procedures of systems used in related industries. This course will cover basic safety, tool usage, measuring devices, mechanical and electrical system fundamentals, and service procedures.

AUTOMOTIVE TECHNOLOGY (Sophomore)

Automotive Technology Specialization I

15 credits

The first year of Automotive Specialization consists of four major ASE areas: Automotive Braking Systems, Automotive Chassis Systems, Engine Performance and Repair, and Specialized Electronic Training.

Automotive Braking Systems: Theory, Operation and Repair

The automotive braking systems course will prepare the student to be familiar with standard, four-wheel disc, and anti-lock braking systems. The student should be able to service, diagnose, and repair all of these braking systems. The student should be able to explain the hydraulic and mechanical principles of a brake system. This course also contains the diagnosis and repair of traction control and stability control systems.

Automotive Chassis Systems: Theory, Operation and Repair

The automotive chassis systems course will prepare the student to service tapered roller bearings and service steering systems. The student will be able to service, diagnose and repair front suspension systems and rear suspension systems. The student will be able to perform pre-alignment inspections and adjust wheel alignment including four-wheel alignments to industry specs.

Engine Performance & Repair

The automotive engine repair course will familiarize the student with engine operating principles and disassembly and diagnostic procedures. The student will be able to diagnose and repair lubrication systems, cooling systems, and cylinder blocks. Training will also include crankshafts, bearings, pistons, connecting rods, camshafts, and timing components. The student should be able to assemble cylinder heads, air induction, and exhaust systems. The performance part of this course will include ignition systems, fuel injection systems, turbo charging, and electronic engine controls. The final part of this course will be automotive emissions diagnosis and repair.

Specialized Electronic Training (SET)

After completing the Specialized Electronic Training, the student will be familiar with basic electrical components and systems, test equipment, types of faults, protection devices, and types of circuits. The student should be able to determine the wire gauge needed, diagnose causes of battery drain, interpret wiring diagrams, find shorts and grounds, and inspect, test, and replace circuit protection devices. The student will be able to list the different electrical systems and describe common electrical tools and test equipment.

AUTOMOTIVE TECHNOLOGY – Junior

Automotive Technology Specialization II

15 credits

The second year of Automotive Specialization consists of the four ASE areas: Manual Drive Train and Axles, Automatic Transmission and Transaxle, Automotive Heating and Air Conditioning Systems, and Advanced Engine Performance.

Manual Drive Train & Axles

The manual drive train course will familiarize the student with clutch diagnosis and repair, transmission diagnosis and repair, transaxle diagnosis, and repair and drive (half) shaft and universal joint diagnosis and repair. Also included in this course are rear axle diagnosis and repair, and four-wheel-drive components diagnosis and repair.

Automatic Transmission & Transaxle

The automotive transmission/transaxle course will familiarize the student with automatic transmission theory and operation. The course will include general transmission/transaxle diagnosis and transmission/transaxle maintenance adjustment. In-vehicle transmission/transaxle repair along with off-vehicle transmission/transaxle repair. Overhaul procedures are included in this course.

Automotive Heating & A/C Systems

The heating and air conditioning system course will prepare the student to service operating systems and related controls. Refrigerant recovery, recycling, and handling is a requirement. Students will be familiar with air conditioning system diagnosis and repair, and refrigeration system component diagnosis, and repair. The course will also contain heating and cooling system diagnosis and repair.

Advanced Engine Performance

The Advanced Engine Performance course is the final course of this curriculum. This course will familiarize the student with general power train diagnosis, computerized engine controls diagnosis, ignition system diagnosis, fuel systems and air induction system diagnosis, and I/M Failure diagnosis.

Automotive/Collision/Small Engine – Senior

1. Take HSOP courses on RCSJ's campus for a discounted fee.
2. Take College English Composition 101 and College Physical Fitness/Contemporary Health on RCSJ's campus and return to GCIT for elective courses that can be found under the "Elective" title in this course guide.
3. Take CP or Honors level English and Fitness for Life and additional electives on GCIT or RCSJ's campus.