# Automotive Technology (AMTC)

**AMTC 100 Essentials of Mechanics**
5 credits , REEL
Quarter(s): S, W

Develops beginning mechanical skills and knowledge essential to successful completion of the automotive and/or diesel technology program. Includes shop safety, fasteners, measurements, cutting tools, lifting, tool usage, shop orientation, manuals (including computer retrieval systems), bearings and seals, and special emphasis on preventive/predictive maintenance. Lab hours are required for this course. This is an introductory course for beginning students of Automotive or Diesel Technology. Course can be waived if student has completed principles of technology and auto program in high school.

Prerequisites: None

**AMTC 104 Automotive Electrical Systems**
15 credits , REEL
Quarter(s): F

Introduces the theory of electricity fundamentals including solid state technology. Discusses electrical safety. Includes solving and proving Ohm's Law in series, parallel, and series-parallel circuits. Includes automotive wiring and circuits, including how to read and understand wiring diagrams to diagnose an electrical malfunction. Covers circuit tracing and wiring repair techniques. Presents diagnosis and repair of low voltage systems (12V), including batteries, starting systems, charging systems, instrumentation and warning devices, lighting systems, power accessories, and computer operation and circuit analysis. Discusses high voltage energy and electronic ignition systems. Lab hours are required for this course.

Prerequisites: None

**AMTC 105 Vehicle Climate Control**
5 credits , REEL
Quarter(s): S, Sp

Introduces the theory of operation, design, diagnosis and repair of both manual and automatic heating, ventilation and air conditioning systems (HVAC) used in automobiles, trucks and heavy equipment. Emphasizes component identifications, performance testing, recovering, evacuation and recharging. Covers materials necessary to pass ASE (A7) test. Course is cross listed with DHET 105. Lab hours are required for this course.

Prerequisite: AMTC 104 or DHET 104 or Instructor Permission

**AMTC 114 Automotive Chassis**
15 credits , REEL
Quarter(s): W

Introduces the theory of hydraulics, fundamentals of manual, power, drum, and disc brake systems. Covers theory, diagnosis, and repairing anti-lock brakes and traction control systems. Include scan tool diagnosis as well as functional and visual tests. Prepares the student to perform all aspects of automotive type suspension and alignment work, including powered and non-powered steering systems, inspection, diagnosis, adjustment, and repair of front and rear suspension systems, and related components such as tires and wheels. Use of four-wheel alignment equipment is an integral part of this course. Lab hours are required for this course.

Prerequisites: None

**AMTC 124 Automotive Engines**
15 credits , REEL
Quarter(s): Sp

Provides introductory content for the student with little or no experience with gasoline engines. Covers theory of operation, performance factors, and routine diagnosis and maintenance of spark ignition engines. Includes removing, inspecting, cleaning, measuring, machining, re-assembling, re-installing, and testing gasoline engines.





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Includes rebuilding a gasoline engine. Lab hours are required for this course.

Prerequisites: None

**AMTC 206 Fuels and Emissions**
15 credits , REEL
Quarter(s): W

Introduces the theory of operation, design, diagnosis and repair of automotive fuel systems. Includes injection, storage, and delivery systems. Covers materials necessary to pass ASE (A8) certification. Lab hours are required for this course.

Prerequisite: AMTC 104 or Instructor Permission

**AMTC 207 Computer Engine Controls**
15 credits , REEL
Quarter(s): Sp

Introduces advanced theory, operation, diagnosis and repair of automotive fuel systems. Discusses injection, storage, and delivery systems. Covers materials necessary to pass ASE (A8 and L1) certification. Lab hours are required for this course.

Prerequisite: AMTC 104 or Instructor Permission

**AMTC 214 Automotive Drivetrains**
15 credits , REEL
Quarter(s): F

Introduces hydraulic principle of pressure and force multiplication, operation, diagnosis and repair of automotive automatic transmissions and transaxles. Presents the theory of operation, diagnosis and repair of clutches, manual transmission/transaxles, drivelines, drive axles and transfer cases. Covers all of the mechanical components used to transfer power from the engine to the drive wheels - both 2 and 4 wheel drive. Lab hours are required for this course.

Prerequisite: AMTC 104 or Instructor Permission

**AMTC 288 Cooperative Work Experience**
1 – 15 credits

Provides work-based learning experience in a specific program of study. Individualized student outcomes are developed, focusing on behaviors that contribute to workplace success.

Prerequisites: Instructor or Cooperative Education Coordinator permission
Concurrent requirements: COLL 289 or BUS 294 must be taken prior to or concurrent with this course.

**AMTC 299 Independent Study**
1 – 10 credits

Offers individualized learning opportunities for knowledge or skill development. Content and expectations are established between the student and instructor, and documented in an Independent Study contract.

Prerequisites: By instructor permission only.



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