## Automotive Technology (AUTO)

Community and Technical College  
Automotive Technology Program (https://www.ctc.uaf.edu/programs/automotive-technology/)

907-455-2800

**AUTO F080  Driver and Safety Education**  
2 Credits  
Offered As Demand Warrants  
Driver education for the beginning driver. Alaska Driver's Manual and material necessary to gain an Alaska Driver's Permit. Defensive driving methods for accident-free driving and basic mechanical information.  
**Lecture + Lab + Other:** 2 + 0 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F081  Behind-the-Wheel Training**  
1 Credit  
Offered As Demand Warrants  
Practical driver training in actual situations. Expected student outcome is obtaining a State of Alaska driver's license.  
**Prerequisites:** Current Alaska driver's permit required.  
**Lecture + Lab + Other:** 0 + 3 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F100  Introduction to Small Engine Repair**  
1 Credit  
Offered As Demand Warrants  
Parts and functions of a small engine and its electrical system. Dismantling procedures, cleaning and reassembly techniques, gasket-making, lubrication, troubleshooting, and minor repairs.  
**Lecture + Lab + Other:** 1 + 0 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F102  Introduction to Automotive Technology**  
3 Credits  
Offered Fall  
Provides career information in the automotive industry. Shop safety, hand tools, fasteners, fittings, and an introduction to the major automotive systems.  
**Lecture + Lab + Other:** 2 + 2 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F103  Auto Tune-Up**  
1 Credit  
Offered As Demand Warrants  
**Lecture + Lab + Other:** 1 + 0 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F110  Basic Electrical Systems**  
3 Credits  
Offered Spring  
The history and origins of electrical theory, the generation of electricity and diagnosis, minor repair and general servicing of alternators, starters and batteries.  
**Lecture + Lab + Other:** 2 + 2 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F112  Basic Auto Maintenance**  
1 Credit  
Offered As Demand Warrants  
**Lecture + Lab + Other:** 0 + 0 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F113  Gasoline Fuel Delivery Systems**  
4 Credits  
Offered As Demand Warrants  
Basics of carburation and electronic fuel injection. Emphasis on theory, diagnostic/repair skills, inputs and outputs of the PCM, engine performance, use of on-board diagnostic data (OBD II) and special test equipment.  
**Recommended:** AUTO F110.  
**Lecture + Lab + Other:** 2 + 2 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F122  Engine Theory and Diagnosis**  
3 Credits  
Offered Fall  
Introduction to fundamental aspects of engine design, general diagnosis and engine related service, to include combustion process, engine noise, basics of exhaust emissions, vacuum/pressure, compression, intake and exhaust systems, valve and ignition timing.  
**Prerequisites:** AUTO F102.  
**Lecture + Lab + Other:** 2 + 2 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F131  Automotive Electrical II**  
3 Credits  
Offered Spring  
Theory, diagnosis and repair of automotive electrical/electronic systems to include testing tools, schematics and on-board computers.  
**Prerequisites:** AUTO F110.  
**Lecture + Lab + Other:** 2 + 2 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F150  Brake Systems**  
4 Credits  
Offered Fall  
Theory, diagnosis and servicing of light- and heavy-duty vehicle hydraulic brake and traction control systems. Includes discussion and tasks on disc brakes, drum brakes, power assist systems and anti-lock/traction controls.  
**Prerequisite:** AUTO F102.  
**Lecture + Lab + Other:** 3 + 3 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F162  Suspension Alignment**  
4 Credits  
Offered Fall  
Theory, diagnosis and repair of suspension, steering and wheel alignment of automobiles and trucks.  
**Prerequisites:** AUTO F102.  
**Lecture + Lab + Other:** 3 + 3 + 0  
**Grading System:** Letter Grades with option of Plus/Minus

**AUTO F170  Snowmachine Maintenance and Repair**  
1 Credit  
Offered As Demand Warrants  
Fundamental skills for operation and repair. Engine tune-up, lubrication, belt and track repair, alignment and basic problems encountered during operation.  
**Lecture + Lab + Other:** 1 + 0 + 0  
**Grading System:** Pass/Fail Grades
AUTO F172  All-Terrain Vehicle Maintenance and Repair  
1 Credit  
Offered As Demand Warrants  
Teaches fundamental skills for maintenance and repair of an All-Terrain Vehicle (ATV). Engine tune-up, lubrication, clutch and belt (if applicable), transmission troubleshooting, tire and wheel repair, alignment and other basic problems encountered during operation along with safe shop procedures.  
Lecture + Lab + Other: 1 + 0 + 0  
Grading System: Pass/Fail Grades  
Repeatable for Credit: May be taken 3 times for up to 3 credits  

AUTO F190  Automotive Practicum I  
1-6 Credits  
Offered Fall and Spring  
Provides supervised workplace experience in selected industry settings. Integrates knowledge and practice to achieve competencies in basic skills. A maximum of 6 credits may be earned.  
Prerequisites: Advisor approval required.  
Lecture + Lab + Other: 0 + 0 + 1-6  
Grading System: Letter Grades with option of Plus/Minus  

AUTO F202  Auto Fuel and Emissions Systems  
4 Credits  
Offered Spring  
Builds on the skills and knowledge gained in AUTO F122. Combustion chemistry, volumetric efficiency, design and function of emission control devices, laws and regulations concerning vehicle emissions are covered, with an emphasis on interfacing with on-board computers, automotive computer networking, and four and five gas analysis.  
Lecture + Lab + Other: 3 + 2 + 0  
Grading System: Letter Grades with option of Plus/Minus  

AUTO F209  Automatic Transmissions and Transaxles  
5 Credits  
Offered As Demand Warrants  
Automatic transmissions and transaxles. Includes the operation, diagnosis and repair of planetary gears, clutches, pumps, hydraulic controls and electronic shifting controls. Study and hands-on tasks.  
Recommended: AUTO F110 strongly recommended.  
Lecture + Lab + Other: 4 + 3 + 0  
Grading System: Letter Grades with option of Plus/Minus  

AUTO F215  Engine Analyzer, Scopes and Scan Tools  
4 Credits  
Offered As Demand Warrants  
Use and interpretation of diagnostic analyzers for spark ignition engines, digital data, fault code and input/output information retrieval, scan tool usage and other diagnostic tools used in the vehicle repair industry.  
Recommended: AUTO F110.  
Lecture + Lab + Other: 3 + 3 + 0  
Grading System: Letter Grades with option of Plus/Minus  

AUTO F219  The Auto/Diesel Repair Business  
2 Credits  
Offered As Demand Warrants  
Overview of practices common in the vehicle repair industry. Includes flat rate, repair order write-up, customer relations, repair industry related OSHA and EPA regulations, and financing and acquiring a repair business.  
Lecture + Lab + Other: 2 + 0 + 0  
Grading System: Letter Grades with option of Plus/Minus  

AUTO F222  Automotive Engine Performance  
3 Credits  
Offered Spring  
Builds on skills and knowledge gained in AUTO F122 and AUTO F202. Applies strategies for diagnosing fuel and ignition systems, automotive computers and multiplexing. Includes communication strategies, on-board diagnostics, testing and diagnosis of engine performance-related components.  
Prerequisites: AUTO F202.  
Lecture + Lab + Other: 2 + 2 + 0  
Grading System: Letter Grades with option of Plus/Minus  

AUTO F227  Automotive Electrical III  
3 Credits  
Offered Spring  
The theory, diagnosis and repair of automotive electrical and electronic systems to include accessories.  
Prerequisites: AUTO F131.  
Lecture + Lab + Other: 2 + 2 + 0  
Grading System: Letter Grades with option of Plus/Minus