Auto/Diesel Technology (ADT)

Courses

ADT A071 Fundamentals of Diesel Engines 2 Credits
Survey of different types, uses, operating conditions, and maintenance of diesel engines. Kodiak College

ADT A102 Introduction to Automotive Technology 3 Credits
Provides career information about the automotive industry. Covers shop safety, hand tools, fasteners, fittings and an introduction to the major automotive systems.

ADT A121 Basic Electrical Systems 3 Credits
Covers basic automotive and heavy-duty equipment electrical theory, diagnosis, minor repair, and general service of alternators, starters, and batteries.

Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.

Prerequisites: ADT A102 with a minimum grade of C or concurrent enrollment.

ADT A122 Engine Theory and Diagnosis 3 Credits
Introduces students to fundamental aspects of engine design, general diagnosis, and engine-related service. Includes combustion process, engine noise, basics of exhaust emissions, vacuum/pressure, compression, intake and exhaust systems, and valve and ignition timing.

Prerequisites: ADT A102.

ADT A131 Auto Electrical II 3 Credits
Theory, diagnosis and repair of automotive and heavy-duty electrical systems, to include testing tools, schematics, and computer inputs and outputs.

Prerequisites: ADT A102 with a minimum grade of C or concurrent enrollment and ADT A121 with a minimum grade of C or concurrent enrollment.

ADT A140 Automotive Engine Repair 3 Credits
Introduces skills essential to diagnose, repair, overhaul, and recondition automotive internal combustion engines. Includes cylinder head, valve train, and engine block service.

Prerequisites: ADT A102.

ADT A150 Brake Systems 4 Credits
Theory, diagnosis, and repair of automotive brake systems.

Prerequisites: ADT A121 or concurrent enrollment.

ADT A152 Heavy-Duty Suspension and Steering 4 Credits
Introduces theory, operation and maintenance of suspension and steering systems on medium- and heavy-duty trucks and equipment.

Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.

Prerequisites: ADT A102 with a minimum grade of C or concurrent enrollment.

ADT A153 Medium/Heavy-Duty Diesel Engines 4 Credits
Introduces theory and application of design, operation, diagnosis, disassembly, repair, and service procedures for engines used in medium and heavy-duty trucks and equipment.

Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.

Prerequisites: ADT A102 with a minimum grade of C or concurrent enrollment.

ADT A155 Heavy-Duty Brake Systems 4 Credits
Introduces theory, operation, diagnosis, repair and service procedure of brake systems on medium- and heavy-duty trucks and equipment.

Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.

Registration Restrictions: Completion of ADT A121 and ADT A131 with a minimum grade of C or concurrent enrollment is recommended.

Prerequisites: ADT A102 with a minimum grade of C or concurrent enrollment.

ADT A156 Heavy-Duty Maintenance and Inspection 3 Credits
Introduces regulations and inspection/maintenance procedures on medium- and heavy-duty trucks and equipment.

Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.

Registration Restrictions: Must be eligible to enroll in WRTG A090 and MATH A055.

Prerequisites: ADT A102 with a minimum grade of C or concurrent enrollment.

ADT A160 Manual Drive Trains and Axles 4 Credits
Introduces theory, diagnosis, and repair of manual drive train components and drive axles. Content includes clutches, manual transmissions and transaxles, 4-wheel drive components, and drive axles.

Prerequisites: ADT A102.

ADT A162 Suspension and Alignment 4 Credits
Modern automotive suspension, alignment, and steering theory, inspection, service, and adjustments including four wheel alignment.

Prerequisites: ADT A121.

ADT A195 Automotive Practicum I 1-6 Credits
Provides supervised workplace experience in selected industry settings. Integrates knowledge and practice of competencies gained in program coursework.

Special Note: May be repeated for a maximum of 18 credits.

Registration Restrictions: Recommendation by faculty advisor, at least 12 credits of advisor-approved ADT program technical courses and a valid Alaska driver's license.

ADT A202 Auto Fuel and Emissions Systems 4 Credits
Presents combustion chemistry, volumetric efficiency, design and function of emission control devices, laws and regulations concerning vehicle emissions. Emphasis on interfacing with on-board computers, automotive computer networking, and 4- and 5-gas analysis.
ADT A222 Automotive Engine Performance 3 Credits
Presents strategies for diagnosing fuel and ignition systems, manifold design, superchargers, automotive computers and multiplexing, communication strategies, on-board diagnostics, testing and diagnosis of engine performance related components.
Prerequisites: ADT A122.

ADT A225 Mobile Heating, Ventilation and Air Conditioning Systems 3 Credits
Presents theory, operation, diagnosis and repair of heating, ventilation and air conditioning (HVAC) systems used in automotive and heavy-duty applications.
Prerequisites: ADT A131 with a minimum grade of C.

ADT A227 Auto Electrical III 3 Credits
Studies the description, operation and diagnosis of automotive and heavy duty computerized systems. Covers the study of computer inputs, outputs, networks, and programming; including advanced lighting, sensors, instrument cluster gauges, accessories, safety systems, and security systems as well as several other computer control systems and networks.
Special Note: Digital Volt Ohm Meter (DVOM) and test light required.
Prerequisites: ADT A131.

ADT A260 Electronic and Automatic Transmissions 3 Credits
Applies theory, diagnosis, and repair of modern automatic transmissions, including application devices, friction materials, seals, gaskets, electronic controls, adaptive strategies, and valve bodies.
Prerequisites: ADT A131.

ADT A267 Heavy-Duty Diesel Engine Performance 4 Credits
Covers design, operation, diagnosis, repair and service procedures of engines, fuel systems and emissions systems on engines used in the medium- and heavy-duty diesel industry. Emphasizes engine performance and computer systems diagnosis.
Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.
Prerequisites: ADT A131 with a minimum grade of C and ADT A153 with a minimum grade of C.

ADT A268 Mobile Hydraulic Systems 4 Credits
Includes diagnosis, repair and service of hydraulic systems and components used on medium- and heavy-duty equipment.
Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.
Registration Restrictions: Students are strongly encouraged to complete ADT A121 and ADT A131 prior to enrolling in this course.
Prerequisites: ADT A102 with a minimum grade of C.

ADT A269 Heavy-Duty Drive Trains 3 Credits
Includes design, operation, diagnosis, repair and service procedures for transmissions and drive trains used in medium- and heavy-duty applications.
Special Note: Students are expected to provide the basic hand tools needed to participate in lab activities. See faculty advisor for tool list.
Registration Restrictions: Completion or concurrent enrollment in ADT A156 is strongly recommended.
Prerequisites: ADT A102 with a minimum grade of C or concurrent enrollment.

ADT A295 Automotive Practicum II 3 Credits
Provides supervised workplace experience in industry settings. Integrates advanced level knowledge and practice to achieve skill competencies.
Registration Restrictions: Department approval and valid Alaska driver's license.
Prerequisites: ADT A195.