

Area: Technical Education
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Degree: A.S. - Diesel Technology
 Certificates: Diesel Technology

Diesel Technology Degree and Certificate

This degree provides training in diesel technology. Topics include an introduction to diesel technology, diesel engine repair, basic hydraulic principles of diesel technology, diesel brake systems, and diesel power trains.

Career Opportunities

This degree prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- identify and properly utilize shop equipment and chemicals used in the diesel repair environment including hazardous waste disposal.
- apply proper techniques for complete engine removal, disassembly, cleaning, and reassembly of diesel engine.
- identify and explain brake system components, as well as application of proper technique for removal and repair of diesel brake system components.
- select and use proper test equipment to evaluate electrical systems, including voltmeters, ammeters, and ohmmeters.
- identify and explain diesel power train components and their functions to assist in diagnosis of drive train failure.

Requirements for Degree or Certificate	24 Units
AT 150 Introduction to Diesel Technology	4
AT 151 Diesel Engine Repair	4
AT 152 Basic Hydraulic Principles of Diesel Technology	4
AT 153 Diesel Brake Systems	4
AT 154 Diesel Electrical Systems	4
AT 155 Diesel Power Trains	4

Associate Degree Requirements: The Diesel Mechanics Associate in Science (A.S.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

Automotive Technology

AT 150 Introduction to Diesel Technology 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course introduces the field of diesel technology. It covers proper safety and hazardous waste training, use of basic hand and power tools, and the basic workings of the diesel engine.

AT 151 Diesel Engine Repair 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course covers basic engine principles for the diesel engine. It covers disassembly and reassembly of diesel engine systems, including cleaning and safe removal of engines, fuel injection systems, valve trains, and engine heads.

AT 152 Basic Hydraulic Principles of Diesel Technology 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course provides an introduction to the basic hydraulic principles and functions of the diesel engine. Topics include hydraulic fundamentals and principles, functions of hydraulic fluids, directional and flow control valves, and machine hydraulic overview.

AT 153 Diesel Brake Systems 4 Units

Advisory: AT 100

Hours: 54 hours LEC; 54 hours LAB

This course covers the operation of diesel brake systems and components. Topics include band, shoe, caliper, and full disc brakes.

AT 154 Diesel Electrical Systems 4 Units

Corequisite: AT 105

Advisory: AT 100

Hours: 54 hours LEC; 54 hours LAB

This course covers the operation of diesel electrical systems. Topics include electrical circuits, test instruments, charging systems, and electrical starting systems.

AT 155 Diesel Power Trains 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course covers the diesel power train. Topics include inspection and adjustment of clutch linkage, flywheel inspection, and replacement of clutch brakes.

Diesel / Clean Diesel Technology

DCDT 101 Diesel Preventive Maintenance 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course introduces the field of clean diesel technology and preventative maintenance. It covers proper safety and hazardous waste training, use of basic hand and power tools, and the basic workings of the diesel engine. This course may be taken two times for credit using different equipment.

DCDT 102 Biodiesel Fuel and Fuel Systems 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers the chemistry, production, and impact of biodiesel technology. It also covers how to convert vehicle fuel systems to biodiesel and how this process affects warranties.

DCDT 103 Clean Diesel Systems 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course provides a complete overview of the clean diesel engine system. Topics include fuel injection systems, emission regulations, and diesel emission control systems. This course can be taken two times for credit using different equipment.

DCDT 104 Clean Diesel Rebuild, Retrofit, Repower, Retire 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers clean diesel rebuilding, repowering, retrofitting, or retiring of equipment decisions. Topics include rebuilding, replacement, and retirement of diesel systems and components. This course may be taken two times for credit using different equipment.

DCDT 110 Diesel Engine Repair 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers basic engine principles for diesel engine repair. It covers disassembly and reassembly of diesel engine systems, including cleaning and safe removal of engines, fuel injection systems, valve trains, and engine heads. This course may be taken two times for credit using different equipment.

DCDT 112 Clean Diesel Retrofit 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers diesel engine retrofit needs for older diesel engines. Topics include troubleshooting, fault codes, and diesel particulate filter systems. This course may be taken two times for credit using different equipment.

DCDT 120 Basic Hydraulic Principles of Diesel Technology 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course provides an introduction to the basic hydraulic principles and functions of the diesel engine. Topics include hydraulic fundamentals and principles, functions of hydraulic fluids, directional and flow control valves, and machine hydraulic overview. This course may be taken two times for credit using different equipment.

DCDT 130 Diesel Brake Systems 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers the operation of diesel brake systems and components. Topics include band, shoe, caliper, and full disc brakes. This course may be taken two times for credit using different equipment.

DCDT 140 Diesel Electrical Systems 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers the operation of diesel electrical systems. Topics include sensors used in emission control, electrical circuits, test instruments, charging systems, and electrical starting systems. This course may be taken two times for credit using different equipment.

DCDT 142 Diesel Emission Control Systems 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers the emission control system of the diesel engine. Topics include performance maintenance and emissions control within emission limits. This course may be taken two times for credit using different equipment.

DCDT 150 Diesel Power Trains 4 Units*Hours: 54 hours LEC; 54 hours LAB*

This course covers the diesel power train. Topics include inspection and adjustment of clutch linkage, flywheel, and replacement of clutch brakes. This course can be taken two times for credit using different equipment.

DCDT 162 Clean Diesel Software Support 4 Units*Hours: 72 hours LEC*

This course covers the skills needed to adequately retrieve and apply system information using internet based technical manuals specifically geared toward diesel tractor emission control systems. This course may be taken two times for credit using different software.