

# DIESEL TECHNOLOGY (DTEC)

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## **DTEC 216. Heavy Duty Engine Repair**

Credits: 4

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: FALL

Heavy-duty diesel engine theory and service will be covered in class and in the lab. Students gain knowledge in disassembly, assembly, injection timing and adjustment common to diesel engines used in agricultural, transportation and industrial industries.

## **DTEC 217. Servicing Heavy Duty Engine and Emission Systems**

Credits: 6

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: SPRING

This course explores diesel fuel injection, pre-combustion, combustion, and post-combustion emission systems. The students will study the design and operation of a variety of diesel fuel systems and related emission systems. Students will be required to inspect, disassemble, assemble, performance test and diagnose system components.

## **DTEC 226. Introduction to Heavy Duty Drivetrains**

Credits: 3

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: FALL

A lecture and lab course which provides the student with theory and hands-on operation of shop safety, operation, and repair of bearing seals, heavy duty steer axles, drive axles, medium and heavy-duty truck suspension and wheel end assemblies.

## **DTEC 227. Heavy Duty Chassis**

Credits: 4

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: FALL

A lecture and lab course which provides the student with theory and hands-on operation and repair of the latest types of heavy-duty drive systems that the agricultural, transportation, and industrial industries use on their equipment.

## **DTEC 235. Air Brake Service**

Credits: 2

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: FALL

This course covers the operation and repair of air and hydraulic brake systems used in diesel-powered equipment. This course includes refresher material in repair of drum, disc, power, manual, anti-lock brakes and parking brakes. Air brake components, function, operation, and service will be presented in class and in hands-on lab setting. DOT inspection procedures are also covered in this class.

## **DTEC 256. Heavy Duty Network and Control Systems**

Credits: 4

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: SPRING

The theory and application of diesel computer network theory, operation and diagnosis is covered in this course with classroom and practical application in a shop environment. Students will discover the use of scan tools, diagnosis of system faults, and how the system applies to added systems such as auto track, implement controls, and additional system monitoring.

## **DTEC 257. Heavy Duty Electrical Service**

Credits: 2

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: SPRING

A lecture and lab course covering the theory of operation, repair and diagnostic procedures used on heavy-duty and tractor electrical systems, electronic engines and transmissions.

## **DTEC 264. Introduction to Hydraulics**

Credits: 3

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: FALL

This course is a study of hydraulic system fundamentals and various system components used in a hydraulic system. Component theory, operation, and function will be discussed and observed in real-world situations to aid in the understanding of component and system operation. System components will be tested on actual equipment to help the student understand how the components contribute to the overall operation of the system and will be used to evaluate the students' performance.

**DTEC 266. Servicing Hydraulic Systems**

Credits: 4

Prerequisite: Concurrent registration in, or previous successful completion of Automotive Technology Certificate.

Typically Offered: SPRING

This course covers the service diagnostics and repair of the hydraulic functions on agricultural and industrial equipment. Systems covered include steering, hydrostatic drives, 3-point hitches, and hydraulic functions of today's equipment.