

# DST - DIESEL SERVICE TECHNICIAN

DST 101 Power Trains. 3 Credits

Term Typically Offered: Spring

3cr. Instructs students in the design and operation of manual transmissions.

Emphasis will be placed on diagnosis and service procedures for clutches, transmissions, drivelines, and differentials in on and off highway trucks, heavy equipment, and agricultural applications. Students will be expected to perform service tasks on clutches, transmissions, differentials, and drivelines using supplied training equipment.

Lecture Hours 1, Lab Hours 4

Department: Transportation - COT

DST 117 Intro to Diesel Fuel Systems. 4 Credits

Term Typically Offered: Spring

Introduces students to diesel fuel hydromechanical injection systems. Students are required to disassemble and reassemble assorted diesel fuel system components. Students will be exposed to mechanical inline and distributor pumps, unit, poppet, and pintle injectors and nozzles, and basic electronic control methods. The course will also cover manufacturer-specific systems including Detroit, Caterpillar, Cummins PT, and John Deere pumps, injectors, and governors.

Lecture Hours 4

Department: Transportation - COT

DST 132 Diesel Engine Overhaul. 6 Credits

Term Typically Offered: Fall

Prerequisite(s): TRID 170.

Provides a detailed overview of the design, operation, and repair procedures for diesel engines. The lecture portion of this class covers procedures for overhauling, machining, and dynamometer performance testing. Students are then required to apply lectured topics in the lab portion of this class.

Lecture Hours 6

Department: Transportation - COT

DST 140 Intro to Hydraulics. 2 Credits

Term Typically Offered: Fall

Corequisite(s): DST 141.

Presents the theories of basic hydraulic principles and their uses in heavy-duty truck, heavy equipment, and agricultural applications. Students are exposed to the application of standard fluid power schematic symbols.

Lecture Hours 2

Department: Transportation - COT

DST 141 Intro to Hydraulics Lab. 2 Credits

Term Typically Offered: Fall

Corequisite(s): DST 140.

Provides students a means to demonstrate knowledge of basic principles on live work stations, as well as disassemble and reassemble components. Students will work with linear and rotary actuators, directional valves, fixed displacement gear pumps, and pressure controls.

Lab Hours 2

Department: Transportation - COT

DST 155 Adv Hydraulics & Pneumatics. 4 Credits

Term Typically Offered: Spring

Prerequisite(s): DST 140 & DST 141.

Instructs students on fluid power system pressure, flow, and directional controls.

Students receive training on fluid conductors, seals, and fixed and variable displacement pumps. Diagnosis and repair of controls, conductors, seals, and pumps are also covered. Students will be required to understand, describe, and design fluid power systems using standard schematic symbols.

Lecture Hours 4

Department: Transportation - COT

DST 202 Advanced Power Trains. 2 Credits

Term Typically Offered: Spring

Prerequisite(s): DST 141, DST 140.

Instructs students in the design and operation of automated twin counter shafts, automatic, and powershift transmissions. Emphasis will be placed on diagnosis and service procedures for twin counter shaft, powershifts, and automatic transmissions in on and off highway truck, heavy equipment, and agricultural applications. Students will be expected to perform service tasks on twin counter shafts, powershifts, and automatic transmissions using supplied training equipment.

Lecture Hours 2

Department: Transportation - COT

DST 212 Diesel Electric and Electronic. 2 Credits

Term Typically Offered: Fall

Prerequisite(s): TRID 181, TRID 182.

Corequisite(s): AST 230.

2cr. Studies electrical/electronic systems and applications found in today's diesel industry. This course is designed to give the student a strong background in the operation, diagnosis, and repair of electrical/electronic systems. Upon completion of this course, the student will have acquired the knowledge and developed the skills necessary to effectively diagnose and repair the vehicles and equipment presently used in the industry.

Lab Hours 4

Department: Transportation - COT

DST 250 Heavy Duty Chassis. 5 Credits

Term Typically Offered: Fall

5cr. Instructs students on suspension and braking systems for on- and off-road truck, heavy equipment, and agricultural applications. Studies will include heavy duty truck suspension diagnosis, repair, and alignment procedures, as well as hydraulic and pneumatic braking systems.

Lecture Hours 2, Lab Hours 6

Department: Transportation - COT

DST 256 Applied Diesel Service Oper I. 2 Credits

Term Typically Offered: Fall

Applies diagnosis and repair procedures for chassis, powertrains, preventative maintenance, and engine systems for on and off road trucks and heavy equipment. The course will simulate an actual shop environment.

Lab Hours 2

Department: Transportation - COT

DST 257 Applied Diesel Service Oper II. 2 Credits

Term Typically Offered: Spring

Applies diagnosis and repair procedures for chassis, powertrains, preventative maintenance, and engine systems for on and off road trucks and heavy equipment. The course will simulate an actual shop environment.

Lab Hours 2

Department: Transportation - COT

DST 258 Applied Diesel Service. 4 Credits

Term Typically Offered: Spring

4cr. Applies diagnosis and repair procedures for chassis, powertrains, preventative maintenance, and engine systems for on and off road trucks and heavy equipment.

The course will simulate an actual shop environment.

Lab Hours 8

Department: Transportation - COT

DST 260 Diesel Eng Diag & Troubleshoot. 5 Credits

Term Typically Offered: Fall

Prerequisite(s): DST 140 & DST 141, DST 117, DST 132, TRID 170, TRID 180.

Coordinates diagnosis and testing of diesel engine problems using electrical test equipment and an engine dynamometer. This course will expand on engine assembly and startup procedures, as well as tuning and performance testing.

Lecture Hours 5

Department: Transportation - COT

DST 277 Adv Fuel Systems & Diesel Eng. 6 Credits

Term Typically Offered: Spring

Prerequisite(s): DST 140 & DST 141, DST 117, DST 132, DST 155, DST 260, TRID 180.

Provides an in-depth study of modern diesel fuel systems used in on- and off-road truck, heavy equipment, agricultural, and stationary engine applications. The course will cover engine and powertrain electronic management systems used for common high speed diesel engines. Students will also be exposed to stationary industrial engine electronic control systems.

Lecture Hours 6

Department: Transportation - COT

DST 292 Independent Study. 1-6 Credits

Department: Transportation - COT

DST 294 Seminar/Workshop. 1-3 Credits

Provides students an opportunity to investigate intensively topics pertinent to the field of diesel technology.

Department: Transportation - COT

DST 298 Internship/Cooperative Educ. 1-9 Credits

Term Typically Offered: Fall, Spring, Summer

(45 hours/credit) Provides university credit for a sophomore work experience in the area of Diesel Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Department: Transportation - COT