

Name: _____ Date: [Click here to enter a date.](#) Year of Relevant Catalog: _____

Technical and General Education Courses

First Semester				Second Semester			
Course Title		Status	Credits	Course Title		Status	Credits
ENV 102	Safety Orientation (OSHA 10)		1	DST 106	Drive Trains		3
DST 101	Diesel Engines 1		5	DST 107	Standard Transmissions		3
DST 102	Electrical/Electronic Systems		5	DST 108	Wheel ends		3
DST 103	Emissions		2	DST 109	Brakes		3
	General Education Writing		3		General Education humanities/Social Sciences		3
COM 105	Public Speaking		3				
			Total Credits				Total Credits
			19				15

First Semester				Second Semester			
Course Title		Status	Credits	Course Title		Status	Credits
DST 201	Powershifts		4	DST 207	Advanced Diesel Engines (Pre-req: DST 101)		5
DST 202	Torque convertors		1	DST 208	Fuel lab		1
DST 203	Hydrostatic Drive		2	DST 209	Advanced Electrical/Electronic Systems (Pre-req: DST 102)		5
DST 204	Hydraulics		5	DST 211	HVAC		2
DST 206	Suspension and Steering		3		General Education Computer Sciences/Science		3
	General Education Mathematics		3				
			Total Credits				Total Credits
			18				16
						Total Education Credits	68

Optional

Fall Semester		
Course Title		Credits
CTD 105	Entry-Level Commercial Motor Vehicle Driver Training	12
CTD 115	CDL Endorsements	4
Total Technical Certificate Credits		16

All courses listed with a prerequisite required must be passed with a C or better before moving on to the next course.

PROGRAM OUTCOMES

- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Basic Engines.
- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Basic Power Trains and Cab Air Conditioning.
- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Brakes-Hydraulic and Air.
- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Electrical Systems.
- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Torque-Converters and Power Shift Transmissions.
- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Hydraulics, Hydrostatic Drive, Steering and Suspension Systems.
- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Diesel Fuel Injection Systems.
- Develop a basic understanding and demonstrate the ability to perform the entry level skills in Major Diesel Engine Overhaul, Dyno Testing and Tune-Up.
- Develop communication, critical thinking and technical skills needed to attain employment.

- Develop human relation skills and professional behavior for the workplace, including appropriate business attire, attendance, punctuality, telephone and business protocol and professionalism.
- Develop an understanding of the importance of work-related skills, such as: working independently, teamwork, following directions, time management, problem solving and critical thinking.

GENERAL EDUCATION PROGRAM OUTCOMES

- Compose coherent written communication.
- Deliver coherent oral communication.
- Show proficiency in locating, analyzing, documenting, and ethically using information sources.
- Perform and interpret calculations.
- Develop logical problem-solving skills and/or critical thinking skills.
- Identify appropriate strategies for gathering, analyzing, and displaying data to draw conclusions from scientific data.
- Collaborate effectively, which cultivates a respect for human diversity.
- Demonstrate technology literacy appropriate to area of study.

Student Signature

Advisor

The physical demands described here are representative of those that must be met by a student to successfully perform the essential functions of working in this field. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this program, the student is regularly required to stand, walk, and talk or hear. The student frequently is required to sit and use hands to handle or feel. The student is occasionally required to reach with hands and arms; climb or balance; and stoop, kneel, crouch, or crawl. The student must work in various weather conditions such as excessive heat or cold. The student must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this field include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

DIESEL TECHNOLOGY

DST 101 Diesel Engines 1

5 credits (2:6)

Diesel Engines 1 introduces the theory of operation and the use of the engine's mechanical components; disassembling, inspecting, measuring, reassembling, and performing maintenance procedures on diesel engines.

DST 102 Electrical/Electronic Systems

5 credits (2:6)

Electrical/Electronic Systems studies the principles of electricity through operations and testing procedures and provides an introduction to electronics. Diagnostics and repair of starting and charging electrical systems are covered, in addition to practical applications of the principles of electricity. Electronic management programs are referenced and studied.

DST 103 Emissions

2 credits (1:2)

This is an introductory course into the theory and operation of diesel engine emission control systems. Both EGR and SER systems will be studied and discussed.

DST 106 Drive Trains

3 credits (1:4)

Basic power trains follow the natural path of diesel torque through clutches, mechanical transmission, drive trains, differentials and final drive units, finishing with wheels and track applications on diesel powered equipment. Operation and characteristics of each of these components are studied, demonstrated and tested. Components are disassembled, inspected, evaluated, adjusted and rebuilt.

DST 107 Standard Transmissions

3 credits (1:4)

This course covers the theory of power transmissions, disassembly, inspection, adjustments, and reassembly of single and double countershaft transmission.

DST 108 Wheel Ends

3 credits (1:4)

This course covers troubleshooting, inspection and adjustment of wheel bearings, seals and hubs.

DST 109 Brakes

3 credits (1:4)

Brakes will cover the theory and operations of hydraulic and air brake systems, troubleshooting, disassembly, and the inspection and adjustments of hydraulic and air brake systems, including ABS.

DST 201 Powershifts

4 credits (1.5:5)

Instruction will include principles and application of the operation, disassembly, and failure analysis, rebuilding, testing, and troubleshooting of countershaft and planetary power shift transmissions. Manual, automatic, and electronic shifting in valve controls is covered.

DST 202 Torque Converters

1 credit (1:0)

Instruction will include principles and application of the operation, disassembly, and failure analysis, rebuilding, testing, and troubleshooting of torque converters.

DST 203 Hydrostatic Drive

2 credits (.7:2.6)

Students will learn the principles and application of operation, disassembly, failure analysis, rebuilding, testing, and troubleshooting for hydrostatic drives.

DST 204 Hydraulics

5 credits (1.8:6.4)

Students will learn the application of basic principles of applied hydraulics that reference confined fluids. They will study system components and functions, multiplication of work force, safety, performance testing, line hookups, and the identification of hydraulic pump characteristics, as related to basic hydraulic systems.

DST 206 Suspension and Steering

3 credits (1:4)

Suspension and Steering addresses the theory, operations and troubleshooting of various steering and suspension system components.

DST 207 Advanced Diesel Engines

5 credits (1.7:6.6)
(Prerequisite: DST 101)

Advanced Diesel Engines studies the theory and operation of electronic controlled diesel engines, parts identification, parts failure, operating principles, familiarization of shop procedures, areas of specialized repair, and preventive maintenance.

DST 208 Fuel Lab

1 credit (.7-.6)

This course covers the principles, applications, and operations of removing, testing, rebuilding, calibrating, timing and installation of the four major diesel fuel injection systems including: distribution pumps, inline diesel pumps, PT pump/injectors, unit injection systems, and high pressure common rail fuel systems. Course material also includes the operation and troubleshooting of electronic fuel systems.

DST 209 Advanced Electrical/Electronic Systems

5 credits (1.7:6.6)
(Prerequisite: DST 102)

Advanced Electrical/Electronic Systems provides a study of electronic management components and their operation. Several major electronic management programs are referenced and studies.

DST 211 HVAC

2 credits (1:2)

Air conditioning is a study and practice of servicing the components of mobile Heating, Ventilation, and Air Conditioning systems. Diagnostic evaluations, evacuation of downed systems and repair are practiced. Handling refrigerant products and safety are demonstrated and practiced throughout this course. Retrofitting heavy-duty A/C systems and complying with the service requirements of the Clean Air Act complete this course in driver cab comfort. An optional certification test is offered at the conclusion of this unit.