

A Certificate of Achievement in Diesel Mechanics will be awarded upon satisfactory completion of the major course requirements listed below. The AS degree will be awarded upon completion of the major course requirements listed below and the General Education requirements for the Associate in Science Degree listed in the Degrees and Programs section of this Catalog.

### Helpful Qualities for Success in the Program

- Proficiency in basic math, reading, communication and personal computers.
- Experience in High School auto shop.
- Self-discipline, Mechanical aptitude, and ability.
- Good physical condition and coordination.
- Commitment to continuing education in advancing technologies.

### Career Opportunities

The Diesel Mechanics program in heavy duty truck and diesel mechanics prepares students to enter the job market as beginning mechanics or apprentices in this field..

### Program Learning Outcomes

*Upon completion of this program a student will be able to:*

- Apply safe work habits and practices.
- Troubleshoot and perform repairs in mechanical, electrical, and electronic systems.
- Use computers to diagnose equipment and research information.
- Perform preventative maintenance and inspections including engine tune-ups, front-end alignments, and brake service.
- Operate shop machinery and equipment including hoists, overhead cranes, forklifts, hydraulic jacks, steam cleaners, floor jacks, disassembly stands, grinders, drill presses, hydraulic presses, and bead blasters.
- Select and use precision tools such as torque wrenches, micrometers, dial indicators, tap and dies, and bore gauges.
- Maintain professional attitude in challenging working conditions, develop self-confidence and pride in workmanship and think analytically and make professional decisions.

DEPT/NO.	TITLE	UNITS
DMECH 11	Truck Mechanics Chassis Systems I	4
DMECH 20A	Truck Mechanics I	6
DMECH 12	Truck Mechanics Chassis Systems II	4
DMECH 20B	Truck Mechanics II	6
AUTOB 12	Service Welding for Transportation Technology	2
DMECH 14	Diesel Engines I	4
DMECH 21A	Diesel Engines Lecture/Laboratory	6
ATECH 23	Automotive Air Conditioning	4
DMECH 15	Diesel Engines II	4
DMECH 21B	Diesel Engines Lecture/Laboratory	6

**Total Required Units: 46**

### Recommended:

Students may wish to take additional courses from the following, in consultation with a counselor:

- DMECH 20C, Truck Mechanics III (4)
- DMECH 20D, Truck Mechanics IV (4)
- DMECH 21C, Diesel Engines Lecture/Laboratory (6)
- DMECH 21D, Diesel Engines Lecture/Laboratory (6)

**Recommended Course Sequence**

	COURSE		UNITS	REQUIREMENT	COA GE AREA
<b>FALL 1</b>	DMECH 11	Heavy-Duty Truck Chassis, Transmission, and Drive Axles	4	Major	
	DMECH 20A	Truck Mechanics I	6	Major	
	ENGL 1A	Composition and Reading <b>or</b>	4 or 5	GE	4A
	ENGL 1AS	Composition and Reading (w/ support)			
<b>Total Number of Units</b>			<b>14-15</b>		
<b>SPRING 1</b>	DMECH 12	Heavy-Duty Truck's Electrical System and Brake System	4	Major	
	DMECH 20B	Truck Mechanics II	6	Major	
	AUTOB 12	Service Welding for Transportation Technology	2	Major	
	MATH 15	Mathematics for Liberal Arts Students	3	Major	4B
<b>Total Number of Units:</b>			<b>15</b>		
<b>SUMMER 1</b>	HUMAN 2	Human Values <b>or</b>	3	GE	3
	MUSIC 10	Music Appreciation			
	SOC 5	Minority Groups <b>or</b>	3	GE	2 & 5
	PSYCH 18	Psychology of U.S. Race & Ethnicity			
<b>Total Number of Units</b>			<b>6</b>		
<b>FALL 2</b>	DMECH 14	Diesel Engines I	4	Major	
	DMECH 21A	Diesel Engines Lecture/Laboratory	6	Major	
	ATECH 23	Automotive Air Conditioning	4	Major	
	CIS 205	Computer Literacy	1	GE	4C
<b>Total Number of Units:</b>			<b>15</b>		
<b>SPRING 2</b>	DMECH 15	Diesel Engines II	4	Major	
	DMECH 21B	Diesel Engines Lecture/Laboratory	6	Major	
	GEOG 1	Physical Geography	3	GE	1
	COMM 6	Intercultural Communications <b>or</b>	3	GE	2 <b>or</b> 4D or 4D
	COMM 20	Interpersonal Communication Skills			
<b>Total Number of Units:</b>			<b>16</b>		

Please meet with a counselor to develop a personalized education plan to help you meet your specific goals.

**Recommended Course Sequence**

	<b>COURSE</b>	<b>UNITS</b>	<b>REQUIREMENT</b>
<b>FALL 1</b>	DMECH 11 Heavy-Duty Truck Chassis, Transmission, and Drive Axles	4	Major
	DMECH 20A Truck Mechanics I	6	Major
<b>Total Number of Units:</b>		<b>10</b>	
<b>SPRING 1</b>	DMECH 12 Heavy-Duty Truck's Electrical System and Brake System	4	Major
	DMECH 20B Truck Mechanics II	6	Major
	AUTOB 12 Service Welding for Transportation Technology	2	Major
<b>Total Number of Units:</b>		<b>12</b>	
<b>FALL 2</b>	DMECH 14 Diesel Engines I	4	Major
	DMECH 21A Diesel Engines Lecture/Laboratory	6	Major
<b>Total Number of Units:</b>		<b>10</b>	
<b>SPRING 2</b>	DMECH 15 Diesel Engines II	4	Major
	DMECH 21B Diesel Engines Lecture/Laboratory	6	Major
<b>Total Number of Units:</b>		<b>10</b>	

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## Diesel Mechanics (DMECH)

### Prepare for a well-paying career in Diesel and Truck Mechanics!

Journeyman-level diesel and truck mechanics are well sought after, highly respected, technical experts. Mechanics work independently, repairing and maintaining vehicles and equipment using professional judgment, advanced electronic diagnostic equipment, and computer resources.

The DMECH program prepares students to enter the job market as beginning mechanics or apprentices in this field, and allows students to earn a certificate and their A.S. degree. Opportunities exist in industry to broaden your skills and education in areas of management and advanced technology. Instruction progresses through principles of engines, drive trains, and chassis theory, operation, maintenance and repairs.

#### **DMECH 11** **Heavy-Duty Truck Chassis, Transmission, and Drive Axles**

- 4 units, 4 hours lecture (GR)
- Also offered as APPR 451. Not open for credit to students who have completed or are currently enrolled in APPR 451.
- Acceptable for credit: CSU

Operation, service, maintenance, and problem solving of heavy-duty truck chassis systems: Clutches, transmission, rear axles, and front-end alignment; uses Internet- and factory-based computerized research materials. 0947.00

#### **DMECH 12** **Heavy-Duty Truck's Electrical System and Brake System**

- 4 units, 4 hours lecture (GR)
- Also offered as APPR 452. Not open for credit to students who have completed or are currently enrolled in APPR 452.
- Acceptable for credit: CSU

Operation, service, and maintenance of heavy-duty truck brake and electrical systems: Emphasis on critical thinking and problem solving of the air brake and electrical systems, including computer diagnostics and computer on-board networking programs. 0947.00

#### **DMECH 14** **Diesel Engines I**

- 4 units, 4 hours lecture (GR)
- Also offered as APPR 453. Not open for credit to students who have completed or are currently enrolled in APPR 453.
- Acceptable for credit: CSU

Theory and operation of truck diesel engines and related sub-systems: Newest available technology on the commercial market. 0947.00

#### **DMECH 15** **Diesel Engines II**

- 4 units, 4 hours lecture (GR)
- Acceptable for credit: CSU
- Also offered as APPR 454. Not open for credit to students who have completed or are currently enrolled in APPR 454.

Advanced theory and operation of truck diesel engines and related sub-systems: Newest available technology on the commercial market. 0947.00

#### **DMECH 20A** **Truck Mechanics I**

- 6 units, 18 hours laboratory (GR)
- Corequisite: DMECH 11
- Acceptable for credit: CSU

Hands-on experience in diagnosing, servicing, and maintaining heavy-duty truck chassis systems: Clutches, transmission, rear axles, and front-end alignment; uses Internet- and factory-based computerized support programs. 0947.00

#### **DMECH 20B** **Truck Mechanics II**

- 6 units, 18 hours laboratory (GR)
- Corequisite: DMECH 12
- Acceptable for credit: CSU

Hands-on experience in diagnosing, servicing, and maintaining heavy-duty truck brake and electrical systems: Emphasizes on problem solving and troubleshooting of heavy-duty brake and electrical systems. 0947.00

#### **DMECH 20C** **Truck Mechanics III**

- 6 units, 18 hours laboratory (GR)
- Prerequisite: DMECH 20A and 20B
- Acceptable for credit: CSU

Advanced practical application of scientific principles of truck mechanics in servicing and repairing the powertrain: Transmission, clutches, hydraulic and rear-axle systems and other components of the chassis. 0947.00

#### **DMECH 20D** **Truck Mechanics IV**

- 4 units, 12 hours laboratory (GR)
- Prerequisite: DMECH 20C
- Acceptable for credit: CSU

Advanced practical application of scientific principles of truck mechanics in servicing and repairing truck air brake and electrical systems: Air valves, pots, electrical system, starter lighting, computer engine controls and programming. 0947.00

**DMECH 21A****Diesel Engine Lecture/Laboratory**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)
- Corequisite: DMECH 14
- Acceptable for credit: CSU

Theory, operation, and practical application of truck diesel engines and related sub-systems: Engine oil and filters, fuel system, air-induction system, cooling system, fan belts, engine tune-up, water pump, fuel injectors, fuel pump, and other related components. 0947.00

**DMECH 21B****Diesel Engine Lecture/Laboratory**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)
- Corequisite: DMECH 15
- Acceptable for credit: CSU

Theory, operation, and practical application of truck diesel engines and related sub-systems: Cylinder head, pistons and liners, main bearings, turbo/blower, Cummins accessory drive, cam timing, and other related components; engine troubleshooting. 0947.00

**DMECH 21C****Diesel Engine Lecture/Laboratory**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)
- Prerequisite: DMECH 21A and 21B
- Acceptable for credit: CSU

Advanced theory, operation, and practical application of truck diesel engines and related sub-systems: Engine oil and filters, fuel system, air-induction system, cooling system, fan belts, engine tune-up, water pump, fuel injectors, fuel pump, and other related components. 0947.00

**DMECH 21D****Diesel Engine Lecture/Laboratory**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)
- Prerequisite: DMECH 21C
- Acceptable for credit: CSU

Advanced theory, operation, and practical application of truck diesel engines and related sub-systems: Replacement and removal of cylinder heads, pistons and liners, main bearings, turbo/blower, Cummins accessory drive, cam timing, and other related components; advanced engine troubleshooting. 0947.0

**DMECH 49****Independent Study in Diesel Mechanics**

- .5-5 units, .5-5 hours lecture (GR or P/NP)
- Acceptable for credit: CSU

In-depth exploration of an area or problem of the student's choice not covered by regular catalog offerings in Diesel Mechanics. Student must obtain approval from an appropriate faculty member. For more details, see the section on independent study in the college catalog. 0947.00

**DMECH 202****Forklift Operation and Certification**

- 1 units, 1 hours lecture, 3 hours laboratory (GR or P/NP)

Training in forklift operations typically used in the warehousing and distribution industries. Training covers operation, inspection, basic maintenance and safety. 0947.00