

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.

Registered students will receive a list of required basic tools for classes to prepare them to enter the trade, adequately prepared upon graduating.

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 successful completion of this program, students 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.

Degree Major Requirements

| DEPT/NO. | TITLE | UNITS |
|-----------|--|-------|
| DMECH 11 | Truck Mechanics Chassis Systems I | 4 |
| DMECH 22A | Truck Mechanics Chassis System I | 6 |
| DMECH 12 | Truck Mechanics Chassis Systems II | 4 |
| DMECH 23A | Truck Mechanics Brake and Electrical Systems I | 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 |

Minimum Required Units: 46

Recommended Course Sequence

| | COURSE | | UNITS | REQUIREMENT | COA GE AREA |
|-------------------------------|------------------------------|--|--------------|-------------|-------------------------|
| FALL 1 | DMECH 11 | Heavy-Duty Truck Chassis, Transmission, and Drive Axles | 4 | Major | |
| | DMECH 22A | Truck Mechanics Chassis System I | 6 | Major | |
| | ENGL 1A ENGL 1AS | Composition and Reading or Composition and Reading (w/ support) | 4 or 5 | GE | 4A |
| Total Number of Units | | | 14-15 | | |
| SPRING 1 | DMECH 12 | Heavy-Duty Truck's Electrical System and Brake System | 4 | Major | |
| | DMECH 23A | Truck Mechanics Brake and Electrical Systems I | 6 | Major | |
| | AUTOB 12 | Service Welding for Transportation Technology | 2 | Major | |
| | MATH 15 | Mathematics for Liberal Arts Students | 3 | Major | 4B |
| Total Number of Units: | | | 15 | | |
| SUMMER 1 | HUMAN 2 MUSIC 10 | Human Values or Music Appreciation | 3 | GE | 3 |
| | SOC 5 PSYCH 18 | Minority Groups or Psychology of U.S. Race & Ethnicity | 3 | GE | 2 & 5 |
| | Total Number of Units | | | 6 | |
| FALL 2 | 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 |
| Total Number of Units: | | | 15 | | |
| SPRING 2 | DMECH 15 | Diesel Engines II | 4 | Major | |
| | DMECH 21B | Diesel Engines Lecture/Laboratory | 6 | Major | |
| | GEOG 1 | Physical Geography | 3 | GE | 1 |
| | COMM 6 COMM 20 | Intercultural Communications or Interpersonal Communication Skills | 3 | GE | 2 or 4D or 4D |
| Total Number of Units: | | | 16 | | |

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

Recommended Course Sequence

| | COURSE | UNITS | REQUIREMENT |
|-------------------------------|--|--------------|--------------------|
| FALL 1 | DMECH 11 Heavy-Duty Truck Chassis, Transmission, and Drive Axles | 4 | Major |
| | DMECH 22A Truck Mechanics Chassis System I | 6 | Major |
| | Total Number of Units | | 10 |
| SPRING 1 | DMECH 12 Heavy-Duty Truck's Electrical System and Brake System | 4 | Major |
| | DMECH 23A Truck Mechanics Brake and Electrical Systems I | 6 | Major |
| | AUTOB 12 Service Welding for Transportation Technology | 2 | Major |
| | Total Number of Units: | | 12 |
| FALL 2 | DMECH 14 Diesel Engines I | 4 | Major |
| | DMECH 21A Diesel Engines Lecture/Laboratory | 6 | Major |
| | ATECH 23 Automotive Air Conditioning | 4 | Major |
| Total Number of Units: | | 14 | |
| SPRING 2 | DMECH 15 Diesel Engines II | 4 | Major |
| | DMECH 21B Diesel Engines Lecture/Laboratory | 6 | Major |
| | Total Number of Units: | | 10 |

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

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 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 22A**Truck Mechanics Chassis System I**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)

Hands-on experience in diagnosing, servicing and maintaining heavy duty truck chassis systems: Clutches, transmissions, rear axles, and front-end alignment; uses Internet and factory-based computerized support programs. Not open to students who have successfully completed DMECH 20A. 947.00

DMECH 22B**Truck Mechanics Chassis System II**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)

Advanced practical application of scientific principles of truck mechanics in servicing and repairing the powertrain: Transmissions, clutches, hydraulic, rear-axle systems and other components of the chassis. Not open to students who have successfully completed DMECH 20C. 947.00

DMECH 23A**Truck Mechanics Brake and Electrical Systems I**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)

Hands-on experience diagnosing, servicing, and maintaining heavy-duty truck brake and electrical systems: Emphas on problem solving and troubleshooting of heavy-duty brake and electrical systems. No open to students who have successfully completed DMECH 20B. 947.00

DMECH 23B**Truck Mechanics Brake and Electrical Systems II**

- 6 units, 2 hours lecture, 12 hours laboratory (GR)

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. Not open to students who have successfully completed DMECH 20D. 947.00

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