

Heavy Duty and Diesel Service Endorsement

Specifications, Competencies & Requirements

PURPOSE

This endorsement is meant for certified teachers interested in teaching **Heavy-Duty & Diesel Service** courses. It attaches to a current Utah Educator License with a license area of concentration in **Secondary** or **CTE** Education.

Upon attachment of this endorsement to a Utah educator license, educators will be approved to teach the following USBE courses:

ASE Diesel IMMR
ASE Diesel Brakes
ASE Diesel Steering & Suspension
ASE Diesel Electrical Systems
ASE Diesel Engines

ENDORSEMENT TYPES

Prerequisite

Demonstrate an understanding of Career and Technical Education (CTE) basics.

CTE Knowledge

Associate Level Requirements

Applicants must complete **TWO** of the following competency requirements. The associate level endorsement is valid for up to three school years before it expires. Associate-level endorsements are non-renewable.

Diesel Engines
Diesel Brakes
Diesel Steering & Suspension
Diesel Electrical/Electronic Systems
Diesel Preventative Maintenance Inspection
Auto, Diesel, & Collision Shop Management

Professional Level Requirements

The applicant must meet **ALL** the competency areas listed above and CTSO Knowledge for the professional level.

CTSO Knowledge

COMPETENCY DETAILS & DESCRIPTIONS

Prerequisite

1. CTE Knowledge

Demonstrate an understanding of CTE basics:

- Explain how CTE links learning to specific Utah industries and what its main goals are.

- Know the licenses and endorsements needed to teach specific CTE courses.
- Describe how CTE is organized into clusters and pathways at the state, district (LEA), and school levels, and how this helps students succeed after graduation.
- Locate and use the state's strands and standards in lesson plans.
- Explore CTE student organizations (CTSOs) and professional groups and explain how they support students and teachers.
- Explain how advisory boards, with industry members, make sure programs meet job market needs and maintain safe learning environments.
- Understand the basics of securing funding, planning for the future of the program, and participating in the state Program of Quality Review (PQR) to ensure program excellence.

Select one of the following options:

- **USBE Course:** [CTE Orientation](#)
- **Complete THREE years of full-time CTE Teaching in Utah**
- **Currently hold a professional-level CTE endorsement**

Endorsement Competencies

2. Diesel Engines

Demonstrate competency in general diesel engine diagnosis, cylinder head and valve train diagnosis and repair, engine block diagnosis and repair, lubrication systems diagnosis and repair, and cooling system diagnosis and repair. Skills in air induction and exhaust systems diagnosis and repair, as well as fuel system diagnosis and repair, are also essential. Be proficient in using diagnostic equipment, understanding technical service information, and applying safety and environmental protocols. Show knowledge of engine brake diagnosis and repair to meet the ASE standards for heavy truck diesel engine maintenance and repair.

Select one of the following options:

- **TEDT 1600 - Engines I** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **ASE T2: Diesel Engine**
- **Industry Certification:** Verifiable certificate covering the required competency skills.

3. Diesel Brakes

Demonstrate a comprehensive understanding in identifying brake system components and configurations, retrieving and recording Diagnostic Trouble Codes (DTCs), monitoring On-Board Diagnostics (OBD) status, and clear codes and data as directed. Show skill in performing road tests to check brake system operation, including anti-lock brake systems (ABS), and proficiency in installing wheels and torquing lug nuts to specification. Demonstrate familiarity with the procedures for inspecting, diagnosing, and repairing various brake systems, ensuring adherence to safety standards and regulations.

Select one of the following options:

- **TEDT 1300 - Brakes** (Utah State University)

- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **ASE T4:** Brakes
- **Industry Certification:** Verifiable certificate covering the required competency skills.

4. Diesel Steering & Suspension

Demonstrate the ability to diagnose and repair steering mechanisms, wheel alignment, and suspension systems. Show knowledge about the various types of steering systems found in heavy trucks, such as recirculating ball, rack and pinion, and power-assisted systems. Skills in diagnosing and repairing issues with steering gearboxes, power steering pumps, and suspension components like leaf springs, air springs, and shock absorbers are essential. Perform wheel alignments, adjusting steering geometry, and ensuring that all repairs meet safety and quality standards.

Select one of the following options:

- **TEDT 1200 - Steering and Suspension** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **ASE T5:** Suspension & Steering
- **Industry Certification:** Verifiable certificate covering the required competency skills.

5. Diesel Electrical/Electronic Systems

Possess a comprehensive understanding of diesel, electrical, and electronic systems as per ASE standards, which includes the ability to diagnose and repair complex electrical circuits, starting and charging systems, and electronic control modules. Be proficient in using diagnostic tools to troubleshoot issues, interpreting wiring diagrams, and performing repairs that comply with safety and environmental regulations. Demonstrate knowledge of battery maintenance, lighting systems, and instrumentation, as well as the skills to service and repair vehicle communication systems and electronic accessories.

Select one of the following options:

- **TEDT 1100 - Electrical I** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **ASE T6:** Electrical/Electronic Systems
- **Industry Certification:** Verifiable certificate covering the required competency skills.

6. Diesel Preventative Maintenance Inspection

Possess a comprehensive set of skills and knowledge that includes the ability to perform detailed inspections of engine systems, brakes, electrical systems, and steering mechanisms. Diagnose and repair faults, maintain and replace parts, and ensure compliance with safety regulations. Be proficient in using diagnostic equipment and tools, interpreting technical manuals and schematics, and applying knowledge of diesel engine operation. Demonstrate an understanding and adhere to environmental

regulations and be capable of conducting road tests to verify the proper functioning of heavy trucks post-maintenance.

Select one of the following options:

- **TEDT 1500 - Preventative Maintenance I** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **ASE B5:** Preventative Maintenance Inspection
- **Industry Certification:** Verifiable certificate covering the required competency skills.

7. Auto, Diesel, & Collision Shop Management

Demonstrate best practices relevant to Automotive/Diesel shop management:

- Equipment & tool management
- Shop management
- Safety

Select one of the following options:

- **USBE Microcredential:** Auto, Diesel, & Collision Shop Management
- **TEDT 1010 - Introduction to Diesel Technology** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.

8. CTSO Knowledge

Demonstrate Career and Technical Student Organization (CTSO) knowledge:

- **Help students lead:** Give students opportunities to build their leadership abilities and take charge.
- **Mentor students:** Offer guidance to help students set goals and overcome difficulties as they grow.
- **Manage the organization:** Coordinate meetings, events, and budgets, and handle administrative tasks smoothly.
- **Create helpful programs:** Develop activities that match the CTSO's goals of building leadership, exploring careers, and developing skills.
- **Communicate effectively:** Clearly talk with students, school leaders, and community members, and promote the CTSO.
- **Work with others:** Partner with teachers, businesses, and other organizations to create opportunities like internships and community service.
- **Advocate for CTE:** Promote Career and Technical Education and work to get the resources and recognition it needs.
- **Keep learning:** Stay up-to-date on CTSO management and trends in CTE.
- **Focus on student success:** Support students' interests and celebrate their accomplishments.

Select one of the following options:

- **USBE Course:** [SkillsUSA Utah Advisor Training](#)
- **Attend a CTSO Fall Leadership Conference:** Reflected on MIDAS transcripts.
- **USBE Microcredential:** Career & Technical Student Organizations