Maryland CTE Programs of Study

Medium/Heavy Truck Practicum (2025)

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INTRODUCTION 2

A Career and Technical Education (CTE) instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions. 2.A

B The Supply Chain & Transportation Career Cluster encompasses the transfer, coordination, and management of goods from production to consumption, ensuring efficient movement across various modes of transportation including air, ground, and water, as well as maintenance of the respective transport modes. This Cluster integrates logistics and distribution networks to facilitate the seamless flow of materials and products, playing a crucial role in global commerce, economic development, and community health. 2.B

C The Medium/Heavy Truck and Equipment Technician Program of Study is a comprehensive four-course sequence that prepares students for careers in diesel technology and heavy equipment maintenance. Throughout the program, students perform essential tasks such as testing electrical circuits, servicing brake systems, conducting engine diagnostics, and aligning steering components. The curriculum aligns with ASE Education Foundation standards, preparing students for ASE Entry-Level certification in Medium/Heavy Truck as well as other industry credentials such as EPA Section 609 MVAC certification. Graduates are prepared for entry-level positions as diesel technicians, fleet maintenance technicians, or heavy equipment service technicians. 2.C

D The Medium/Heavy Truck Practicum provides students with supervised, real-world application of skills in a medium/heavy truck or equipment service environment. Experiences may include internships, apprenticeships, or school-based enterprise operations. Students integrate academic knowledge, technical skills, and workplace competencies, preparing for ASE Entry- Level M/H Truck Maintenance & Light Repair certification. 2.D

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E **Students will participate in at least two Career-Connected Education and Work-Based Learning experiences in this course, which might include informational interviews or job shadowing relevant to the program of study.** 2.E

F **Students are encouraged to participate in extended learning experiences through aligned Career and Technical Student Organizations (CTSOs). CTSOs are a cocurricular requirement in the Carl D. Perkins Act, and alignment to CTSO activities is an expectation for CTE programs in the state of Maryland.** 2.F

KNOWLEDGE AND SKILLS 3

A **The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:** 3.A

1. Identify and demonstrate positive work behaviors that enhance employability and job advancement, such as regular attendance, promptness, proper attire, maintenance of a clean and safe work environment, and pride in work. 3.A.1
2. Demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, active listening, and a willingness to learn. 3.A.2
3. Employ effective reading, writing, and technical documentation skills. 3.A.3
4. Solve problems using critical thinking techniques and structured troubleshooting methodologies. 3.A.4
5. Demonstrate leadership skills and collaborate effectively as a team member. 3.A.5
6. Implement safety procedures, including proper handling of hardware and following OSHA guidelines. 3.A.6
7. Exhibit an understanding of legal and ethical responsibilities in the Medium/Heavy Truck and Equipment field, following applicable laws and best practices for safety. 3.A.7
8. Demonstrate time-management skills and the ability to prioritize tasks in a technical setting. 3.A.8

B **The student demonstrates appropriate personal and communication skills. The student is expected to:** 3.B

1. Demonstrate respectful interaction with peers, instructors, and customers. 3.B.1
2. Apply active listening techniques to gather information accurately. 3.B.2
3. Prepare written documentation that is clear, concise, and professional. 3.B.3
4. Deliver verbal explanations of technical work to both technical and non-technical audiences. 3.B.4

C **The student demonstrates academic skills related to the requirements of maintaining and repairing medium/heavy trucks. The student is expected to:** 3.C

1. Apply mathematical calculations to measurement, torque, and basic circuit analysis. 3.C.1
2. Interpret tables, charts, and technical diagrams. 3.C.2

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3 Read and follow technical service bulletins and manufacturer procedures. 3.C.3

D The student understands the technical knowledge and skills of automotive systems related to medium/heavy trucks. The student is expected to: 3.D

1 Identify the major systems of a medium/heavy truck and describe their functions. 3.D.1

2 Explain the interaction between powertrain, brake, steering, and suspension systems. 3.D.2

3 Describe the role of preventive maintenance in vehicle reliability and safety. 3.D.3

E The student applies integrated technical skills across ASE M/H Truck content areas. The student is expected to: 3.E

1 Perform full-system preventive maintenance inspections. (ASE IMMR A2–A3) 3.E.1

2 Diagnose and repair faults in diesel engines, electrical systems, brakes, and suspension/steering. (ASE T2–T6–T4–T5) 3.E.2

3 Diagnose and repair combined system faults where multiple vehicle systems interact, such as electrical issues causing engine performance concerns or brake system faults affecting suspension operation. (ASE IMMR A5, T2 A7, T4 C1, T5 B1, T6 A4) 3.E.3

F The student applies industry-standard diagnostic and repair procedures. The student is expected to: 3.F

1 Use scan tools and diagnostic software to retrieve/clear codes. (ASE IMMR A5) 3.F.1

2 Verify repairs through testing and inspection. (ASE IMMR A4) 3.F.2

G The student applies workplace readiness skills in a real or simulated environment. The student is expected to: 3.G

1 Document repairs in standard work order format. (IMMR A4) 3.G.1

2 Communicate findings and recommendations to customers and supervisors. (ASE IMMR A4) 3.G.2

3 Follow shop workflow procedures for efficiency. (ASE IMMR A4) 3.G.3