

Massachusetts Technical Teacher Testing Program Diesel Technology Content Outline

Written and Performance Exam General Overview

- The intent of this exam is to assess your ability to teach the skills found in the Massachusetts Technical Education Framework.
- This exam is aligned to the frameworks which can be accessed [here](#).
- Many questions and tasks require a synthesis of knowledge based on experience in the field and may not be found in any book.
- Candidates are encouraged to prepare for their exam by reviewing textbooks and reference material which has been listed as part of this exam outline. These resources can be found using online search tools, online vendors, and websites.
- Contact the Technical Teacher Testing Office if you need further assistance in locating resources listed in the exam outline.
- Use this exam outline and the Massachusetts Technical Education Framework to focus your preparation for the exam.

Written Exam

- Number of Questions: 100
- Administration Time: 3 hours
- Administration Method: Remote Proctoring Online Session

Written Exam Content Coverage

7% Diesel Health and Safety

5% Diesel Tools and Equipment

5% Truck Electrical Systems

13% Diesel Engine System

4% Diesel Truck Inspection

5% Diesel Fuel Systems

4% Diesel Air Conditioning

15% Diesel Drive Train

18% Diesel Engine Components

10% Diesel Truck Brakes

5% Diesel Engine Electronics

4% Diesel Steering and Suspension

5% Diesel Technology Related Mathematics

Written Exam Reference Materials (Reference Current Edition)

- **Diesel Technology: Fundamentals, Service, and Repair** by Andrew Norman, John Corinchock, and Robert Scharff (Goodheart-Willcox)
- **Heavy Duty Truck Systems** by Andrew Norman, John Corinchock and Robert Scharff (Cengage Learning)
- **Hydraulics: Fundamentals of Service** by John Kuhar (Deere & Co.)

Materials Needed for the Written Exam

- A four-function calculator is included in the online testing system. No other calculators are permitted.
- Scrap paper and pencil/pen are permitted.

Written Exam Sample Items

Each question on the exam consists of one incomplete sentence or question followed by four choices. Some items reference an image or diagram. A few sample items are included below; the correct answer is designated with an asterisk (*).

Balancing-Coil and Electronic are two types of:

- a. shutterstats.
- *b. fuel gauges.
- c. fuel injectors.
- d. ignition coils.

An alternator full field test is used to:

- a. test the polarity of the alternator diodes.
- *b. determine whether the fault is in the alternator or regulator.
- c. find an open in the stator.
- d. test the alternator capacitor.

Performance Exam

- Administration Time: 4 hours
- Administration Method: Onsite at an approved Teacher Testing Location

Performance Exam Content Coverage

- 7%** **Power Tools**
- 11%** **Steering and Suspension**
- 11%** **Electronic Fuel System**
- 21%** **Starting Systems**
- 15%** **Precise Measuring Equipment**
- 7%** **Fuel System (Mechanical)**
- 21%** **Hydraulic Brakes**
- 7%** **Safety**

Materials Required for the Performance Exam (Candidate Must Supply)

- Face mask (cotton face covering or respirator which fully cover the nose and mouth)
- Eye protection
- Disposable gloves
- Industry Approved Working Attire and Shoes (Long Hair Must be Restrained)
- Common Hand Tools

Note: No books or notes will be allowed. Cell phones are prohibited during the exam administration.

Onsite Performance Exam Requirements

- Candidate must practice social distancing and wear the appropriate face covering that covers the nose and mouth while at the exam site.
- Testing sites may have individual requirements based on location and the current guidance from the Center for Disease Control and Prevention (CDC).

Performance Exam Reference Materials (Reference Current Edition)

- S/P2 Automotive Service – S/P2 Safety & Pollution Prevention (<https://sp2.org/automotive-schools/>)
- **Safety Orientation** by NCCER (Pearson Prentice Hall) www.crafttraining.com
- **OSHA Regulations** www.osha.gov
 - [1910.1200 - Hazard Communication](#)
 - [1910 Subpart I - Personal Protective Equipment](#)