

# Massachusetts Technical Teacher Testing Program Marine Service Technology Content Outline

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## 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

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<b>5%</b>	<b><i>ARC, MIG, and TIG Welding</i></b>
<b>5%</b>	<b><i>Boatbuilding and Repair</i></b>
<b>18%</b>	<b><i>Fuel Systems in Marine Services</i></b>
<b>10%</b>	<b><i>Health and Safety</i></b>
<b>10%</b>	<b><i>Fundamentals of Hand Tools, Power Tools, Fasteners, and Measuring Procedures</i></b>
<b>20%</b>	<b><i>Fundamentals of Marine Service Maintenance Areas</i></b>
<b>22%</b>	<b><i>Fundamentals of Overhaul of Four and Two Stroke Engines</i></b>
<b>10%</b>	<b><i>Fundamentals of Shop Practices to Industry Standards</i></b>

## Written Exam Reference Materials (Reference Current Edition)

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- **Audel Welder's Guide** by Frank D. Graham
- **John Deere Tool Book**
- **Evinrude Maintenance Manual**
- **American Boat and Yacht Council Manual**

## Materials Needed for the Written Exam

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- 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

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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 (\*).

Marine conductors shall be supported throughout their length or shall be secured at least:

- \*a. every 18 inches.
- b. at the fuel tank.
- c. every 5 feet.
- d. over the engine.

A fresh supply of the fuel-air mixture is provided in almost all outboard motors by:

- a. compression increasers.
- b. supercharging.
- \*c. crankcase scavenging.
- d. air pumps.

## Performance Exam

- Administration Time: 4 hours and 15 minutes
- Administration Method: Onsite at an approved Teacher Testing Location

## Performance Exam Content Coverage

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**19% Marine Gasoline Engine Tune-Up**

**19% Diesel Engine Repair**

- Valve Adjustment

**16% Fuel Filter Change**

- Primary and Secondary

**16% Troubleshoot Marine Starter System**

- Identify
- Components
- Test Battery
- Troubleshoot

**12% Outboard Lower Unit Oil Change**

**12% Use of Measurement Tools**

- Micrometer
- Vernier Caliper
- TPI Gauge

**6% Safety**

- Use Appropriate PPE
- Demonstrate Safety Practices Throughout Procedures
- Safely Use Tools According to Manufacturer's Specifications
- Use and Dispose of Chemicals and Biohazardous Materials
- Leave Work Area Clean and According to Industry and OSHA Standards
- Demonstrate Safe Body Mechanics According to Industry Standards

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**Materials Required for the Performance Exam (Candidate Must Supply)**

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- Face mask (cotton face covering or respirator which fully cover the nose and mouth)
- Eye Protection
- Industry-Approved Work Clothes and Boots/Shoes

Candidates will be evaluated on the following criteria:

- Ability to follow task procedures to manufacturer's specifications
- Correct selection of tools and equipment
- Demonstration of work habits to trade standards
- Results of completed tasks
- Safety

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

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**Onsite Performance Exam Requirements**

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- 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)

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- **Safety Orientation** by NCCER (Pearson Prentice Hall) [www.crafttraining.com](http://www.crafttraining.com)
- **OSHA Regulations** [www.osha.gov](http://www.osha.gov)
  - [1910.1200 - Hazard Communication](#)
  - [1910 Subpart I - Personal Protective Equipment](#)