

# Massachusetts CTE Teacher Testing Program Building & Property Maintenance Content Outline

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## Written and Performance Exam General Overview

- The intent of this exam is to assess the candidate's ability to teach the skills found in the Massachusetts Technical Education Framework.
- The written exam is a state-developed exam aligned to the frameworks which can be accessed [here](#). The performance exam is a NOCTI-developed teacher test and has been determined by DESE to align to the state frameworks.
- Many questions and tasks require a synthesis of knowledge based on experience in the field and may not be found in any book.
- Use this exam outline and the Massachusetts Technical Education Framework to focus your preparation for the exams.
- Candidates are encouraged to prepare for their written exam by reviewing textbooks and reference material which have been listed as part of this exam outline. These resources can be found using online search tools, online vendors, and websites.

## Written Exam

- Number of Questions: 100
- Administration Time: 3 hours
- Passing Score: 70.0%
- Administration Method: Remote Proctoring Online Testing Session

## Written Exam Content Coverage

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<b>9%</b>	<b><i>Building Alteration, Preparatory Painting and Repair of Wood Plaster, Concrete, or Brick</i></b>
<b>12%</b>	<b><i>Building Maintenance</i></b>
<b>11%</b>	<b><i>Building Repair Materials</i></b>
<b>5%</b>	<b><i>Energy Efficiency and Green Building Technology</i></b>
<b>10%</b>	<b><i>Heating, Ventilation, and Air Conditioning Troubleshooting</i></b>
<b>16%</b>	<b><i>Landscaping and Grounds Maintenance</i></b>
<b>6%</b>	<b><i>Building and Property Maintenance-Related Mathematics</i></b>
<b>5%</b>	<b><i>Painting and Finishing</i></b>
<b>3%</b>	<b><i>Record Keeping</i></b>
<b>7%</b>	<b><i>Safety</i></b>

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**5%      *Technical Drawings and Blueprints***

**11%    *Tool and Equipment Use***

### Written Exam Reference Materials (Reference Current Edition)

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- **Home Repair and Maintenance** by Jack M. Landers (Goodheart-Willcox)
- **Modern Carpentry** by Willis H. Wagner (Goodheart-Willcox Co)
- **Masonry Skills** by R. T. Kreh, Sr. (Delmar Publishers)
- **Basic Construction Blueprint Reading** by Mark W. Huth (Delmar Publishers)
- **Fundamentals Of Carpentry Tools, Materials And Practices** by Walter Durbahn and Robert Putnam (Sterling Publication Company)
- **Low Pressure Boilers** by Frederick Steingross (American Technical Publishing)
- **New Garden Book** (Better Homes and Gardens)
- **Horticulture Gardner's Desk Reference** by Anne Moyer Halpin (John Wiley & Sons Inc)
- **Garden Doctor** (Better Homes and Gardens)
- **Scotts Lawns: Your Guide To A Beautiful Yard** by Nick Christmas and Ashton Ritchie (Meredith Books)
- **American Horticultural Society Gardening Manual** by American Horticulture Society (DK Publishing)
- **Landscape Design, Construction and Maintenance** by Ronald J. Biondo and Charles B. Schroeder (Pearson)
- **Construction and Building Technology** by Keith Blankenbaker (Goodheart-Willcox)

### 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 (\*).

The size of a portable drill is determined by:

- a. horsepower of the motor.
- b. highest rpm capability.
- c. length of the drill body.
- d. capacity of the chuck. (\*)

The three numbers on a bag of fertilizer always represents:

- a. nitrogen, phosphate and potash in that order. (\*)
- b. nitrogen, lime and potash in that order.
- c. nitrogen, potash and phosphate in that order.

- d. potash, lime and nitrogen in that order.

## NOCTI Performance Exam

- Administration Time: 3 hours
- NOCTI Criterion-Referenced Cut Score/Passing Score: 70.0%
- Administration Method: Onsite at a DESE approved Massachusetts Area Testing Center (MATC) location. Candidates must register and schedule their exam session through NOCTI.

### Performance Exam Content Coverage

#### **22% Outdoor Power Equipment Basic Repairs**

*The candidate will demonstrate knowledge and ability to perform basic small engine maintenance. Sharpen a mower blade. Identify components of a small engine.*

#### **24% Building Maintenance Skills**

*The candidate will sharpen a drill bit that has been dulled. Drill a hole in a steel plate with the sharpened drill. Solder section of fin radiator to maintain a heating system. Troubleshoot a problem in a HVAC system using a multimeter and schematic.*

#### **48% Building Repair and Alteration**

*The candidate will construct a picture frame according to the print provided. Simulate fitting a door and jamb. Apply hinges according to print. Repair and apply compound to drywall.*

#### **6% Safety**

*The candidate will demonstrate safety knowledge and follow all procedures according to industry and OSHA Standards.*

### Performance Exam Requirements

#### Candidate Supplied

Candidates must bring all appropriate Personal Protective Equipment (PPE), attire/uniform, and any other safety items as is routinely expected to be used by an employee in the related industry. If the candidate does not bring what is needed to safely complete all jobs on the exam as required in the workplace, the testing session will need to be rescheduled at the candidate's expense.

- Watch or clock with second hand
- Candidates are permitted to use their own equipment

#### Site Supplied

Additional equipment and supplies needed to complete the jobs on the performance test will be provided by the testing site.

### Performance Exam Site Requirements

Testing sites may have individual requirements based on location and any relevant and current guidance from the Center for Disease Control and Prevention (CDC).