PERCENT OF TEST:

2% Drafting Safety Knowledge

20% Fundamentals of Drafting and Design

8% Conventional Drafting Techniques & Skills

20% Computer Aided Drafting and Design

15% Mechanical Drafting and Design

13% Architectural Drafting and Design

2% Sustainability

20% Drafting Related Mathematics

THE INTENT OF THIS EXAM IS TO ASSESS YOUR ABILITY TO TEACH THE SKILLS FOUND IN THE MASSACHUSETTS VOCATIONAL TECHNICAL EDUCATION DRAFTING FRAMEWORK. ALL EXAMS ARE ALIGNED WITH THE MATCHING FRAMEWORK.

SOME QUESTIONS REQUIRE A SYNTHESIS OF KNOWLEDGE BASED ON EXPERIENCE IN THE FIELD AND MAY NOT BE FOUND IN ANY BOOK. HOWEVER, CANDIDATES ARE ENCOURAGED TO STUDY FOR THEIR EXAMS BY REVIEWING CURRENT TEXTBOOKS AND REFERENCE MATERIAL WHICH CAN USUALLY BE FOUND IN THE LIBRARIES OF MOST VOCATIONAL TECHNICAL SCHOOLS AND SCHOOLS WHICH OFFER CHAPTER 74 PROGRAMS. YOU MAY ALSO BE ABLE TO OBTAIN LISTED REFERENCE MATERIALS ONLINE.

You may refer to [http://www.doe.mass.edu/cte/frameworks](http://www.doe.mass.edu/cte/frameworks) for the Massachusetts Vocational Technical Educator Frameworks.
THE FOLLOWING LIST OF REFERENCE MATERIALS WAS DEVELOPED AS A GUIDE FOR WRITTEN EXAM CANDIDATES:

ENGINEERING DRAWING & DESIGN, by Madsen, Shuamaker, Turpin & Strak, Delmar (ISBN # 0-8273-6720-1)

MECHANICAL DRAWING, by French, McGraw-Hill Book Co.

APPLYING AUTOCAD, by Wohlers, Glencoe

TECHNICAL DRAWING, by Goetech, Nelson and Chalki Delmar (ISBN # 0-7668-0531-X)

AUTOCAD 20xx A PROBLEM SOLVING APPROACH, by Sham Tickoo Autodesk Press (ISBN # 0-7668-3853-6)

ARCHITECTURAL GRAPHIC STANDARDS, by Ramsey/Sleeper Wiley & Sons (ISBN # 0-471-34816-3)

The written exam consists of 100 multiple choice questions. Each question consists of one incomplete sentence or a question followed by four choices. Listed below are several sample items:

Which of the following sheet sizes accommodates Mech. “C” and Arch. “C” sheet sizes?

a. 36” x 24”, 34” x 22”
* b. 24” x 18”, 22” x 17”
 c. 11” x 8 1/2 “, 17” x 11”
d. 17” x 11”, 18” x 12”

In what dimension form should all dimension text appear horizontal?

a. X, Y
b. Aligned
c. Associative
* d. Uni-Directional

* indicates correct answer

THE TEACHER TESTING PROGRAM WILL PROVIDE NON-PROGRAMMABLE CALCULATORS FOR USE IN COMPLETING THE WRITTEN EXAM. DOCUMENTATION REGARDING THESE CALCULATORS WILL BE INCLUDED IN YOUR ADMISSION PACKAGE.

UPDATED: 8-2017
MASSACHUSETTS VOCATIONAL TECHNICAL TEACHER TESTING PROGRAM

SCOPE OF TEST CODE #13 – DRAFTING

PERFORMANCE EXAM
TIME ALLOWED: 4 HOURS

**CANDIDATES HAVE THE OPTION OF TAKING TEST #1 OR TEST #2. CANDIDATES ARE NOT REQUIRED TO TAKE BOTH TESTS. YOU MUST CONTACT LISA BOYD AT (978) 441-4946 OR LBOYD@GLTECH.ORG NO LATER THAN 2 WEEKS PRIOR TO YOUR EXAM DATE TO INDICATE WHICH TEST YOU WILL BE TAKING.**

TEST #1 – MECHANICAL COMPONENT

Candidates will be required to prepare two sheets.

1. A Mechanical exploded assembly with balloons and a bill of materials on Sheet #1.

2. All detail drawings of the parts on Sheet #2. The details will include all required views, dimensioning per ANSI standards, calculations and applying class of fits and geometric tolerancing.

GRADING CRITERIA:

<table>
<thead>
<tr>
<th>Subtest 1: Fundamentals of Drafting and Design</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtest 2: Computer Aided Drafting</td>
<td>35%</td>
</tr>
<tr>
<td>Subtest 3: Mechanical Drafting and Design</td>
<td>35%</td>
</tr>
</tbody>
</table>

** Machinery’s Handbook will be available for use during the exam.

TEST #2 – ARCHITECTURAL COMPONENT

Candidates will be required to prepare three sheets. An Architectural “floor plan” of a single story residence (Ranch), with attached garage on Sheet #1. The floor plan will be fully dimensioned, including room, door and window tags, following standard architectural practices.

2. An exterior elevation of the “FRONT” of the same structure on Sheet #2. The elevation will call out all necessary construction materials, including door and window tags, and dimensions following standard architectural practices.

3. A full building section of the same structure on Sheet #3. The building section will call out all necessary construction materials, including room, door and window tags and dimensions following standard architectural practices.

GRADING CRITERIA:

<table>
<thead>
<tr>
<th>Subtest 1: Computer Aided Drafting</th>
<th>29%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtest 2: Architectural Drafting and Design and Drawing</td>
<td></td>
</tr>
<tr>
<td>A. Floor Plan</td>
<td></td>
</tr>
<tr>
<td>B. Exterior Elevation</td>
<td>71%</td>
</tr>
<tr>
<td>C. Building Section</td>
<td></td>
</tr>
</tbody>
</table>
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PERFORMANCE EXAM CANDIDATES WILL BE ASSESSED ON THEIR COMPLETION OF THE EXAM TASKS AND THEIR DEMONSTRATION OF INDUSTRY AND OSHA RECOMMENDED SAFETY PROCEDURES.

Most exam tasks require a synthesis of knowledge based on vocational technical work experience. As a result we highly recommend that Performance Exam Candidates possess the required years of related work experience as well as the appropriate industry recognized credentials as outlined as requirements for preliminary vocational technical educator licensure. Candidates are also encouraged to prepare for their exams by reviewing current textbooks and reference material which can usually be found in the libraries of most Vocational Technical Schools and Schools which offer Chapter 74 Programs. You may also be able to obtain listed reference materials online.

The following software is available for your use. Please notify Lisa Boyd (contact information is previous page) regarding your preference, at least two weeks prior to your test day:

- AutoDesk
  - AutoCAD
  - Inventor
  - Revit

- Dassault Systems
  - Solid Works

If you would like to use different software, the following conditions must be met:

1. Notify Lisa Boyd what software you would be using. This must be done at least two weeks prior to your test day
2. You must supply your own lap top with a legal copy of the software loaded.
3. Proof that the software is legal.
4. Receive clearance from exam administrator.
5. The examiner will remove all exam files from your personal laptop.
THE FOLLOWING LIST OF REFERENCE MATERIALS WAS DEVELOPED AS A GUIDE FOR PERFORMANCE EXAM CANDIDATES:

**MECHANICAL**

Technical Drawings, Giesecke, Mitchell, Spencer, & Hill
Machinery’s Handbook, Industrial Press

**ARCHITECTURAL**

Architectural Graphic Standards, Ramsey/Sleeper
ANSI Standards - Drafting

www.OSHA.gov Go to Regulations, select sections
   1910.1200 - Hazard Communication
   1910 Subpart I – Personal Protective Equipment

You may refer to [http://www.doe.mass.edu/cte/frameworks](http://www.doe.mass.edu/cte/frameworks) for the Massachusetts Vocational Technical Educator Frameworks.