**FBPTA Core Competency Area**

- Often Aligned with Facility Management roles (24/43 Core Competencies)
- Often Aligned with Building Operations Professional roles (6/43 Core Competencies)
- Often Aligned with Energy Management Role (2/43 Core Competencies)
- Often Aligned with more than one role (6/43 Core Competencies)

1. Please complete the following for each training course submitted for consideration:

   - **Training provider**: BOMI International
   - **Provider address information**: One Park Place Suite 475, Annapolis, MD 21401
   - **Provider’s primary point of contact**: Ron Bishop, (410) 974-1410 x1259, rbishop@bomi.org
   - **Title of this training resource**: Boilers, Heating Systems, and Applied Mathematics
   - **Type of training course**: Property and Facilities Management
   - **Does this course provide CEUs**: Yes, 24 CE hours towards LEED Credential Maintenance Program.
   - **Learning objective(s)**: Understand the different boiler types, their components and control systems, and their operation and maintenance, Recognize, set up, and maintain a reliable and effective heating system, Calculate ratios, proportions, and percentages, Convert units of measure.

   **Delivery method and learning methods** (delivery methods may include online instruction, classroom instruction, or other means, and learning methods could include lecture, group work, essay work, quizzes, or other learning activities): Instructor Led Online, Self-Study, Live Classroom/Accelerated Review. Learning Methods, lecture, group work, quizzes, practice exam, 3rd Party proctored final exam.

   **Length of training (in hours)**: 24 Hours

   **URL link to information about the training course, content, and/or syllabus**:


2. Review the course objective(s) that have been submitted as being aligned with required FBPTA performance criteria. Review the learning methods in the course that will support that learning objective(s).

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<td>1.1.1. Demonstrate familiarity with Building Systems.</td>
<td>Partial. Based on the review of the learning objectives and the skills/materials covered, this course only covers boiler systems which is a Mechanical and HVAC sub-system.</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td>Based on the review of the learning objectives and the skills/materials covered, this course is limited to familiarity with boiler systems and does not necessarily address the broader knowledge of Building Systems as required by the performance criteria. Please confirm if the course includes information about non-boiler HVAC systems, electrical (and standby generators), lighting, mechanical/plumbing, fire protection, vertical transportation, structural, roofing and/or building envelope systems. These topics are covered in other BOMI courses, including Design I, Design II, Air Handling, Electrical Systems, Energy Management, Refrigeration, and Building Design and Maintenance.</td>
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<td>1.1.6. Demonstrate ability to monitor and evaluate how well building systems perform.</td>
<td>Partial. Based on the review of the learning objectives and the skills/materials covered, this course addresses the ability to monitor and evaluate how boiler systems perform.</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td>Based on the review of the learning objectives and the skills/materials covered, this course is limited to familiarity with boiler systems. Is a broader knowledge of other building systems monitoring and evaluation addressed as required by the performance criteria? Other building systems are covered in other BOMI courses, including Design I and Design II, Energy Management and Controls, and Refrigeration.</td>
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<td>1.1.7. Demonstrate ability to manage corrective, preventive and predictive maintenance.</td>
<td>Partial. Based on the review of the learning objectives and the skills/materials covered, this course addresses the ability to manage corrective, preventive and predictive maintenance for boiler systems.</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td>It is not clear that the course addresses the management of various types of maintenance. Is preventive maintenance methodologies addressed? Is a full range of corrective and preventive maintenance techniques covered along with those that are boiler-specific? Please clarify if the course addresses all maintenance strategies, corrective, preventive, and predictive maintenance. Also please clarify if these are addressed only as it relates to boilers. The course addresses boiler maintenance, not maintenance of other building systems. Corrective maintenance covered. Preventive maintenance is covered. In most BOMI courses, the elements of predictive maintenance are included in our discussion of preventive maintenance.</td>
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<td>2.1.1. Demonstrate ability to collect Operating Data on HVAC Systems.</td>
<td>Partial. This course received credit because the course provides specific knowledge for the ability to collect operating data on boiler systems.</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td>It is not clear that the course addresses the collection of Operating Data on HVAC Systems other than boiler-specific systems. Is the use of computer systems addressed? In operating data collection provided on a full range of HVAC System types covered along with those that are boiler-specific? The course covers boiler-specific systems. Collection of operating data for other systems are addressed in other BOMI courses: Refrigeration Systems and Accessories, Air Handling, Water Treatment, and Plumbing Systems; Electrical Systems and Illumination; Energy Management and Controls; Building Design and Maintenance.</td>
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<td>2.1.6. Demonstrate knowledge and ability to identify drains and backflow preventers.</td>
<td>Partial. This course received credit because the course provides specific knowledge and ability about boiler system related drains and backflow preventers.</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td>Based on the review of the learning objectives and the skills/materials covered, this course is limited to the identification of boiler system drain and backflow preventer piping. Is a broader knowledge of other drainage and backflow prevention systems addressed as required by the performance criteria? The course is limited to drains and backflow preventers as they pertain to boilers. Refrigeration Systems and Accessories and Air Handling, Water Treatment, and Plumbing Systems provide learning on other appropriate systems.</td>
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<td>2.1.7. Demonstrate knowledge and ability to maintain pressure-reducing valves.</td>
<td>Partial. This course received credit because the course provides general knowledge of pressure-reducing valves however, as the performance criteria is intended primarily for building operators, it does not sufficiently provide the information about the ability to maintain the pressure reducing valves.</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td>Based on the review of the learning objectives and the skills/materials covered, this course is limited to the identification of low pressure boiler system pressure-reducing valves. Is a broader knowledge of high pressure boilers and other pressure-reducing valve systems addressed as required by the performance criteria? Students are advised that they need to be aware of valve systems prescribed for their specific boiler.</td>
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**System types covered along with those that are boiler-specific?**

- Refrigeration Systems and Accessories
- Air Handling, Water Treatment, and Plumbing Systems
- Electrical Systems and Illumination
- Energy Management and Controls
- Building Design and Maintenance

**These topics are covered in other BOMI courses, including: Design I, Design II, Electrical Systems, Energy Management, Refrigeration, and Building Design and Maintenance.**

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**Components: Mechanical and HVAC sub-system.**

- Lighting
- Mechanical/plumbing
- Fire protection
- Vertical transportation
- Structural
- Roofing
- Building envelope

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**Components: Building Design and Maintenance.**

- Mechanical and HVAC sub-system.
- Lighting
- Mechanical/plumbing
- Fire protection
- Vertical transportation
- Structural
- Roofing
- Building envelope
| 4.1.1 Demonstrate knowledge of building systems and how they affect energy use | Partial | Based on the review of the learning objectives and the skills/materials covered, this course addresses boiler systems and how they affect energy use only. The course does not address knowledge of other building systems and how they affect energy use. The course is limited to boiler systems which is a Mechanical and HVAC sub-system. | Yes | Yes | Yes | Yes | Yes | Based on the review of the learning objectives and the skills/materials covered, this course is limited to heating systems and possibly some electrical systems. Please confirm if the course includes information about how non-heating systems, motors and drives, lighting, building envelope and fuel systems affect energy use. | The effect that specific systems have on energy use are addressed in Energy Management and Controls. |
| 5.2.3 Demonstrate knowledge of ventilation systems and prevention of contaminant introduction and cross-contamination. | No | Based on the review of the learning objectives and the skills/materials covered, this course does not address knowledge of ventilation systems or the prevention of contaminant introduction and cross-contamination. | Yes | Yes | Yes | Yes | Yes | No | |
| 6.2.1 Demonstrate knowledge and understanding of the design basis of all applicable Architectural and Engineering Systems. | Partial | Based on the review of the learning objectives and the skills/materials covered, this course is limited to familiarity with boiler systems and does not necessarily address the broader knowledge of other Architectural and Engineering Systems as required by the performance criteria. Please confirm if the course includes information about: | Yes | Yes | Yes | Yes | Yes | Yes | This course is specific to boilers and other heating systems. For a broader course covering all building systems, refer to The Design, Operation, and Maintenance of Building Systems, Part I and Part 2, and Building Design and Maintenance. |