Building Energy Systems Minor

The students seeking Minor in Building Energy Systems must satisfy the degree requirements for an ME, MET, CE, CET, EE or Arch degree plus the following courses to obtain a Minor in Building Energy Systems. Montana State University, Bozeman, proposes to offer a non-teaching minor in building energy systems called the Building Energy Systems Minor. This minor provides a suite of courses from a wide variety of disciplines, which are relevant to the built environment.

The Building Energy Systems Minor requires a minimum of 22 credits, 8 credits of required core coursework and 14 credits of elective coursework chosen from each of the 5 categories.

### Core Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EGEN 324</td>
<td>Applied Thermodynamics</td>
<td>7</td>
</tr>
<tr>
<td>or EMEC 321</td>
<td>Thermodynamics II</td>
<td></td>
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<tr>
<td>ETME 321</td>
<td>Applied Heat Transfer</td>
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<tr>
<td>or EMEC 326</td>
<td>Fundamentals of Heat Transfer</td>
<td></td>
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<tr>
<td>ETME 424</td>
<td>Thermal Processes Lab</td>
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### Integrated Building Design

Choose one from the following:

- ETME 423 Principles of HVAC II
- ARCH 431 Sustainability in Architecture

### Power Systems

Choose one from the following:

- EELE 250 Circuits, Devices and Motors
- EELE 354 Electric Power Applications
- EELE 355 Energy Conversion Devices
- EELE 408 Photovoltaic Systems
- EELE 454 Power Systems Analysis and Design
- EELE 455 Alternative Energy Power Gen

### Environmental Controls/HVAC

Choose one from the following:

- ARCH 331 Environmental Controls I
- ETME 422 Principles of HVAC I
- ETME 425 Building Systems

### Building Construction/Design

Choose one from the following:

- ARCH 241 Building Construction I
- ECIV 308 Construction Practice
- ECIV 320 Geotechnical Engineering

### Building System Electives

Choose multiple courses totaling at least 3 credits:

- ARCH 363 Architectural Graphics III
- ECIV 309 Building Information Modeling in Construction
- ETME 309 Building Information Modeling in MEP
- ETME 327 Commercial Building Energy Assessment Lab

Total credits for Building Energy Systems Minor 22 (min. credits)