## MSBPD

**Master of Science in Building Performance & Diagnostics**

<table>
<thead>
<tr>
<th>1 Fall 1st Year (40 units)</th>
<th>2 Spring 1st Year (40 units)</th>
<th>3 Fall 2nd Year (39 units)</th>
<th>4 Spring 2nd Year (45 units)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prep:</strong></td>
<td><strong>Core:</strong></td>
<td><strong>Core:</strong></td>
<td><strong>Core:</strong></td>
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<tr>
<td>Pre-Requisite: (9 units)</td>
<td>(30 units)</td>
<td>(21 units)</td>
<td>(27 units)</td>
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<tr>
<td>48-315</td>
<td>ES 1: Climate &amp; Energy (9)</td>
<td>GIS/CAFM (9)</td>
<td>LEED, Green Design &amp; Building Rating in Global Context (9)</td>
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<tr>
<td><strong>Core:</strong> (18 units)</td>
<td>Performance of Advanced Building Systems (9)</td>
<td>Statistical Methods for Managers (12)</td>
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<tr>
<td>48-798</td>
<td>HVAC &amp; Power Supply for Low-Carbon Buildings (9~12)</td>
<td>Building Performance Modeling (12)</td>
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<tr>
<td><strong>Computing:</strong> (10 units)</td>
<td><strong>Computing:</strong> (10 units)</td>
<td><strong>Project:</strong> (18 units)</td>
<td><strong>Project:</strong> (18 units)</td>
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<tr>
<td>Principles of Computing (10)</td>
<td>Intro to Data Structures (10)</td>
<td>Masters Thesis Prep (18)</td>
<td>Masters Thesis (18)</td>
</tr>
<tr>
<td><strong>Selectives:</strong> (12 units)</td>
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<td>Refer to List Below</td>
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### Program Description:

The Master of Science in Building Performance & Diagnostics (MSBPD) is a two-year program intended for practitioners, researchers, and educators in architecture and the building industry who wish to be leaders in advanced building technologies and their performance. This is a research-based degree, designed as a stepping stone to PhD-level education.

Admitted students may apply for advanced standing based on previous coursework or professional experience, eliminating the first semester. Advanced standing is also available to qualified CMU students within the B.Arch program through the (Graduate) Accelerated Master's Program ((G)AMP).

### Program Requirements:

In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSBPD program must satisfy the following:

- Complete a minimum of 164 units of course work with a minimum residency of three (3) academic semesters at full-time status (36 units).
- For (G)AMP candidates this degree can be achieved more quickly by applying a maximum of forty-eight (48) units of course work from their concurrent SoA program with a minimum residency of three (3) academic semesters as a graduate student at full-time status (36 units).
- Core and computing course substitutions must be approved by the program Track Chair.

### Pre-Approved Selectives:

- Introduction to Ecological Design Thinking (F)
- Sustainable Buildings (F)
- Indoor Environmental Quality (F)
- Environmental Performance Simulation (F)
- Data Analytics for Design (F)
- Experimental Design for Behavioral & Social Sciences (F)
- Real Estate Design & Development (F)
- Systems Thinking for Environmental Policy & Planning (F)
- Zero Energy Housing (S)
- Urban Ecology (S)
- Computation for Context-Sensitive Urban Design (S)
- Planning by Design: Campuses to Cities (S)
- Environmental Life Cycle Assessment (S)
- Sustainable Energy - The Developing World (S)
- Energy Policy & Economics (S)
- Cities, Technology & the Environment (S)