MECHANICAL ENGINEERING, POST-BACCALAUREATE CERTIFICATE (P.B.C.)

12 credits required

All Graduate Certificate in Engineering Programs consist of 4 courses/12 credits. All students are expected to complete a preliminary course plan for their intended degree program. Degree planning worksheets can be found here: https://advancedengineering.umd.edu/degree-planning-sheets

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
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<td>Select one of the following four course sequences, or select any four of the following courses:</td>
<td>12</td>
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**Energy and The Environment:**

Option 1:
- ENPM621  Heat Pump and Refrigeration Systems Design Analysis
- ENPM622  Energy Conversion I - Stationary Power
- ENPM624  Renewable Energy Applications
- ENPM625  Heating, Ventilation and Air Conditioning of Buildings

Option 2:
- ENPM622  Energy Conversion I - Stationary Power
- ENPM623  Control of Combustion Generated Air Pollution
- ENPM624  Renewable Energy Applications
- ENPM627  Environmental Risk Analysis

**General Mechanical Engineering:**

Option 1:
- ENME631  Advanced Conduction and Radiation Heat Transfer
- ENME632  Advanced Convection Heat Transfer
- ENME633  Molecular Thermodynamics
- ENME640  Fundamentals of Fluid Mechanics

Option 2:
- ENME600  Engineering Design Methods
- ENME610  Engineering Optimization
- ENPM671  Advanced Mechanics of Materials
- ENPM652  Applied Finite Element Methods

Total Credits 12