**Aerospace**

**Master of Engineering: 30 Credits / 10 Courses**

Some core courses in the Aerospace Master of Engineering program may be replaced by the technical electives listed below and by other approved technical courses that meet the student's professional interests. Technical electives must be approved by the academic advisor. There is no research or thesis required for this degree.

### Aerospace Core Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Offered Per</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENAE601</td>
<td>Astrodynamics</td>
<td>(every fall)</td>
</tr>
<tr>
<td>ENAE602</td>
<td>Spacecraft Attitude Dynamics and Control</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE641</td>
<td>Linear System Dynamics</td>
<td>(every fall)</td>
</tr>
<tr>
<td>ENAE642</td>
<td>Atmospheric Flight Control</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE651</td>
<td>Smart Structures</td>
<td>(every fall)</td>
</tr>
<tr>
<td>ENAE652</td>
<td>Computational Structural Mechanics</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE654</td>
<td>Mechanics of Composite Structures</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE655</td>
<td>Structural Dynamics</td>
<td>(every fall)</td>
</tr>
<tr>
<td>ENAE684</td>
<td>Computational Fluid Dynamics I</td>
<td>(every fall)</td>
</tr>
<tr>
<td>ENAE696</td>
<td>Spacecraft Thermal Design</td>
<td>(every other fall)</td>
</tr>
<tr>
<td>ENAE741</td>
<td>Interplanetary Navigation and Guidance</td>
<td>(every other fall)</td>
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### Aerospace Pre-approved Technical Electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Offered Per</th>
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</thead>
<tbody>
<tr>
<td>ENPM652</td>
<td>Applied Finite Element Methods</td>
<td>(every summer)</td>
</tr>
<tr>
<td>ENPM671</td>
<td>Advanced Mechanics of Materials</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE631</td>
<td>Helicopter Aerodynamics I</td>
<td>(every fall)</td>
</tr>
<tr>
<td>ENAE632</td>
<td>Helicopter Aerodynamics II</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE633</td>
<td>Helicopter Dynamics</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE634</td>
<td>Helicopter Design</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE635</td>
<td>Helicopter Stability and Control</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE636</td>
<td>Nonlinear Finite Element Analysis of Continua</td>
<td>(every other fall)</td>
</tr>
<tr>
<td>ENAE656</td>
<td>Aeroelasticity</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE663</td>
<td>Intro. to Plasmas for Space Propulsion and Power</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE665</td>
<td>Advanced Airbreathing Propulsion</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE667</td>
<td>Advanced Space Propulsion and Power</td>
<td>(every other fall)</td>
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<tr>
<td>ENAE672</td>
<td>Low Reynolds Number Aerodynamics</td>
<td>(every fall)</td>
</tr>
<tr>
<td>ENAE674</td>
<td>Aerodynamics of Compressible Fluids</td>
<td>(every other spring)</td>
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<tr>
<td>ENAE676</td>
<td>Turbulence</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE681</td>
<td>Engineering Optimization</td>
<td>(every other fall)</td>
</tr>
<tr>
<td>ENAE682</td>
<td>Hypersonic Aerodynamics</td>
<td>(every other fall)</td>
</tr>
<tr>
<td>ENAE683</td>
<td>High Temperature Gas Dynamics</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE685</td>
<td>Computational Fluid Dynamics II</td>
<td>(every spring)</td>
</tr>
<tr>
<td>ENAE691</td>
<td>Satellite Design</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE692</td>
<td>Introduction to Space Robotics</td>
<td>(every other fall)</td>
</tr>
<tr>
<td>ENAE694</td>
<td>Spacecraft Communications</td>
<td>(every other fall)</td>
</tr>
<tr>
<td>ENAE697</td>
<td>Space Human Factors and Life Support</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE743</td>
<td>Applied Nonlinear Control of Aerospace Vehicles</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE757</td>
<td>Advanced Structural Dynamics</td>
<td>(every other spring)</td>
</tr>
<tr>
<td>ENAE791</td>
<td>Launch and Entry Vehicle Design</td>
<td>(every other spring)</td>
</tr>
</tbody>
</table>

**NOTE:** Any courses not listed above must be approved by the Senior Academic Advisor PRIOR to registration.