# B.S. IN AEROSPACE ENGINEERING

**CATALOG YEAR 2021-2022**

Below is the advised sequence of courses for this degree program and prerequisites as of 12/18/20.

The official degree requirements and prerequisites found in the University General Catalog and the prerequisites are subject to change.

<table>
<thead>
<tr>
<th>UA COURSE NUMBER AND TITLE</th>
<th>UNITS</th>
<th>PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1ST SEMESTER</strong></td>
<td></td>
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<tr>
<td>MATH 122A/B or MATH 125 Calculus I with Applications</td>
<td>5/3</td>
<td>Appropriate Math Placement</td>
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<tr>
<td>CHEM 151 General Chemistry I or CHEM 161/163</td>
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<td>Appropriate Math Placement</td>
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<tr>
<td>ENGL 101 or 107 or 109H First-Year Composition</td>
<td>3</td>
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<tr>
<td>ENGR 102A/B Introduction to Engineering or ENGR 102</td>
<td>3</td>
<td>ENGR102A: MATH 112; ENGR102B: Concurrently enrolled or completion of MATH 122B or 125; FR &amp; SOPH Status</td>
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<tr>
<td><strong>2ND SEMESTER</strong></td>
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<tr>
<td>MATH 129 Calculus II</td>
<td>3</td>
<td>MATH 122B or 125 with C or better</td>
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<tr>
<td>AME 105 Introduction to MATLAB I</td>
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<td>MATH 120R or 122B or 125</td>
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<tr>
<td>PHYS 141 Introductory Mechanics or PHYS 161H</td>
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<td>MATH 122B or 125 or appropriate Math Placement Level</td>
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<tr>
<td>ENGL 102 or 108 First-Year Composition</td>
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<td>ENGL 101 or ENGL 107</td>
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<tr>
<td>ECE 175 Computer Programming for Engineering Applications</td>
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<td>Concurrent Enrollment or Completion of MATH 122B or 125</td>
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<tr>
<td><strong>3RD SEMESTER</strong></td>
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<tr>
<td>CE 214 Statics</td>
<td>3</td>
<td>PHYS 141 or 161H; MATH 129</td>
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<tr>
<td>MATH 223 Vector Calculus</td>
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<td>MATH 129 with C or better</td>
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<tr>
<td>PHYS 241 Introductory Electricity and Magnetism or PHYS 261H</td>
<td>4</td>
<td>For PHYS 241 or 261H: PHYS 141 or 161H; MATH 129 or appropriate Math Placement Level</td>
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<tr>
<td>AME 205 Introduction to MATLAB II</td>
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<td>AME 105</td>
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<tr>
<td>AME 211 Computer Aided Drafting and Manufacturing</td>
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<td>MATH 122B</td>
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<td><strong>4TH SEMESTER</strong></td>
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<tr>
<td>AME 230 Thermodynamics</td>
<td>3</td>
<td>PHYS 141 or 161H</td>
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<tr>
<td>AME 250 Dynamics</td>
<td>3</td>
<td>CE 214; Concurrent Enrollment or Completion of MATH 254</td>
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<tr>
<td>MATH 254 Intro to Ordinary Differential Equations</td>
<td>3</td>
<td>MATH 129 or 223 with C or better</td>
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<tr>
<td>AME 220 Introduction to Aerospace Engineering</td>
<td>3</td>
<td>MATH 223; PHYS 141; Concurrent Enrollment or Completion of MATH 254</td>
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<tr>
<td><strong>Semester Total</strong></td>
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CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG

ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)

<table>
<thead>
<tr>
<th>5th SEMESTER</th>
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<tbody>
<tr>
<td>AME 320 Aerodynamics</td>
<td>3</td>
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<tr>
<td>AME 324A Mechanical Behavior of Engineering Materials</td>
<td>3</td>
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<tr>
<td>AME 301 Engineering Analysis</td>
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<tr>
<td>AME 300 Instrumentation Laboratory</td>
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<td>MSE 331R Fundamentals of Materials for Engineers</td>
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<tr>
<td>AME 324L Mechanics of Materials Laboratory</td>
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<th>6th SEMESTER</th>
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<tbody>
<tr>
<td>AME 324C Aerospace Structures</td>
<td>3</td>
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<tr>
<td>AME 321 Aircraft Performance</td>
<td>3</td>
</tr>
<tr>
<td>AME 323 Gasdynamics</td>
<td>3</td>
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<tr>
<td>AME 302 Numerical Methods</td>
<td>3</td>
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<tr>
<td>AME 313 Aerospace/Mechanical Engineering Laboratory</td>
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<table>
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<th>7th SEMESTER</th>
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<tbody>
<tr>
<td>AME 401 Senior Aerospace Laboratory</td>
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<tr>
<td>AME 420 Aerospace Conceptual Design</td>
<td>3</td>
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<tr>
<td>AME 425 Aerospace Propulsion</td>
<td>3</td>
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<tr>
<td>AME 427 Stability and Control of Aerospace Vehicles</td>
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<tr>
<td>AME 457 Orbital Mechanics and Space Flight</td>
<td>3</td>
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<tr>
<td>AME 495S Senior Colloquium</td>
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<table>
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<th>8th SEMESTER</th>
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<tbody>
<tr>
<td>AME 422 Aerospace Engineering Design</td>
<td>3</td>
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<tr>
<td>AME 463 Finite Element Analysis with ANSYS or AME 431 Numerical Methods in Fluid Mechanics and Heat Transfer</td>
<td>3</td>
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<tr>
<td>Technical Elective</td>
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<tr>
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*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.*