## A.S. Engineering

### ADVANCE Program Milestones

1. Students must take SDV 100 or SDV 101 in the first semester at NOVA.
2. Students must begin Developmental coursework in the first semester in ADVANCE at NOVA.
3. Students must take first college-level MTH course and ENG 111 in the semester immediately following the completion of any MTT or ENF courses (excluding summer).
4. In the first 30 credits, students must:
   a. Complete ENG 111 and ENG 112 with a C or better.
   b. Complete the first college-level MTH course with a C or better.
   c. Engineering students must begin the calculus sequence and complete Calculus I and II with a B or better.
5. Students must complete at least six degree-applicable credits with a C or better each fall and spring semester.
6. Students must maintain a 2.5 cumulative GPA.
7. Students must apply for NOVA graduation and complete their Associate's degree.

<table>
<thead>
<tr>
<th>NOVA DEGREE REQUIREMENT</th>
<th>Credits</th>
<th>Courses</th>
<th>MASON TRANSFER EQUIVALENT</th>
<th>MASON CORE/DEGREE EQUIVALENT</th>
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<tbody>
<tr>
<td>1 SDV Course</td>
<td>1</td>
<td>SDV 100 College Success Skills OR SDV 101 Orientation to Engineering</td>
<td>UNIV 100</td>
<td>ELECTIVE</td>
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<tr>
<td>2 ENG 111</td>
<td>3</td>
<td>ENG 111 College Composition I</td>
<td>ENGH 101</td>
<td>Written Comm</td>
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<tr>
<td>3 Social/Behavioral Science #1</td>
<td>3</td>
<td>HIS 101 History of Western Civilization I OR HIS 102 History of Western Civilization II OR HIS 112 History of World Civilization II</td>
<td>HIST 101</td>
<td>HIST 102</td>
</tr>
<tr>
<td>4 MTH 263</td>
<td>4</td>
<td>MTH 263 Calculus I</td>
<td>MATH 113</td>
<td>Quantitative</td>
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<tr>
<td>5 EGR 121</td>
<td>2</td>
<td>EGR 121 Foundations of Engineering</td>
<td>ENGR 107</td>
<td>Major</td>
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<tr>
<td>6 CST Course</td>
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<td>CST 100 Principles of Public Speaking OR CST 110 Introduction to Communication</td>
<td>COMM 100</td>
<td>COMM 101</td>
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<tr>
<td>7 ENG 112</td>
<td>3</td>
<td>ENG 112 College Composition II</td>
<td>ENGH XXX</td>
<td>Elective</td>
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<tr>
<td>8 MTH 264</td>
<td>4</td>
<td>MTH 264 Calculus II</td>
<td>MATH 114</td>
<td>Major</td>
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<tr>
<td>9 PHY 231</td>
<td>5</td>
<td>PHY 231 General University Physics I</td>
<td>PHYS 160-161-266</td>
<td>Nat Science</td>
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<tr>
<td>10 Technical Elective #1</td>
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<td>ECE 101 Intro to Electrical and Computer Engineering</td>
<td>ECE 101</td>
<td>Major</td>
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<td>11 Social/Behavioral Sciences #2</td>
<td>3</td>
<td>ECO 202 Principles of Microeconomics</td>
<td>ECON 103</td>
<td>Soc/Behav</td>
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<td>12 MTH 265</td>
<td>4</td>
<td>MTH 265 Calculus III</td>
<td>MATH 213</td>
<td>Major</td>
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<tr>
<td>13 Technical Elective #2</td>
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<td>CSC 201 Computer Science I</td>
<td>CS 112</td>
<td>Info Tech</td>
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<tr>
<td>14 Humanities/Fine Arts #1</td>
<td>3</td>
<td>ART 100 Art Appreciation OR ART 101 History and Appreciation of Art I OR ART 102 History and Appreciation of Art II OR CST 130 Introduction to Theatre OR CST 151 Film Appreciation I OR MUS 121 Music Appreciation I</td>
<td>ARTH 101</td>
<td>ARTH 200</td>
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<tr>
<td>15 PHY 232</td>
<td>5</td>
<td>PHY 232 General University Physics II</td>
<td>PHYS 260-261-XXX</td>
<td>Nat Science</td>
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<tr>
<td>16 MTH 267</td>
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<td>MTH 267 Differential Equations</td>
<td>MATH 214</td>
<td>Major</td>
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<tr>
<td>17 Technical Elective #3</td>
<td>3</td>
<td>EGR 251 Basic Electric Circuits</td>
<td>See #21</td>
<td>Major</td>
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<tr>
<td>18 Humanities/Fine Arts #2</td>
<td>3</td>
<td>ENG 236 Introduction to the Short Story OR ENG 241 Survey of American Literature I OR ENG 242 Survey of American Literature II OR ENG 251 Survey of World Literature I OR ENG 252 Survey of World Literature II OR ENG 253 Survey of African-American Literature I</td>
<td>ENGH 202</td>
<td>Literature</td>
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<tr>
<td>Credits</td>
<td>Course</td>
<td>MASON CORE/DEGREE EQUIVALENT</td>
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<td><strong>19</strong></td>
<td>Technical Elective #4</td>
<td>EGR 252 Basic Electric Circuits II</td>
<td>See #21 Major</td>
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<tr>
<td><strong>20</strong></td>
<td>Technical Elective #5</td>
<td>ECE 201 Intro to Signal Analysis</td>
<td>ECE 201 Major</td>
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<tr>
<td><strong>21</strong></td>
<td>Technical Elective #6</td>
<td>EGR 255* Electric Circuits Laboratory</td>
<td>ECE 285 &amp; ECE 286 &amp; ECE XXX Major</td>
<td></td>
</tr>
</tbody>
</table>

**B.S. Electrical Engineering**

**Concentrations:** Bioengineering, Communications and Signal Processing, Computer Engineering, Control Systems, Electronics, Power and Energy Systems. Concentration requirements may also meet some or all of the Advanced Engineering Lab and Technical Elective requirements.

- **Mathematics and Statistics:** MATH 203 Linear Algebra  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Computer Science:** CS 222 Computer Programming for Engineers  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Gen Ed: Global Understanding:** Approved Global Understanding course**  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Global

- **Electrical Engineering:** ECE 231 Digital System Design AND ECE 232 Digital Electrical and Logic Design Lab  
  **Credits:** 4  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 321 Continuous Time-Signal and Systems I  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Gen Ed: Written Communication (UL):** ENGH 302 Advanced Composition (Natural Science Section)  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Written Comm

- **Electrical Engineering:** ECE 421 Classical Systems and Control Theory  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 333 Linear Electronics I AND ECE 334 Linear Electronics Lab I  
  **Credits:** 4  
  **MASON CORE/DEGREE EQUIVALENT:** Writing Intensive

- **Mathematics and Statistics:** STAT 346 Probability for Engineers  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 350 Embedded Systems and Hardware Interfaces  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 433 Linear Electronics II  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 445 Computer Organization  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 460 Communication and Information Theory  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Advanced Engineering Labs:** Advanced Engineering Lab***  
  **Credits:** 1  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Technical Electives:** Technical Elective***  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 305 Electromagnetic Theory  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Electrical Engineering:** ECE 491 Engineering Seminar  
  **Credits:** 1  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Gen Ed: Synthesis/Electrical Engineering:** ECE 492 Senior Advanced Design Project I  
  **Credits:** 1  
  **MASON CORE/DEGREE EQUIVALENT:** Synthesis

- **Advanced Engineering Labs:** Advanced Engineering Lab**  
  **Credits:** 1  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Technical Electives:** Technical Elective***  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Technical Electives:** Technical Elective***  
  **Credits:** 3  
  **MASON CORE/DEGREE EQUIVALENT:** Major

- **Gen Ed: Synthesis/Electrical Engineering:** ECE 493 Senior Design Project II  
  **Credits:** 2  
  **MASON CORE/DEGREE EQUIVALENT:** Synthesis

- **Physics:** PHYS 262 University Physics III AND PHYS 263 University Physics III Lab  
  **Credits:** 4  
  **MASON CORE/DEGREE EQUIVALENT:** Major

**For academic policies and procedures, please see Mason catalog - https://catalog.gmu.edu/policies/**
Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.