This course plan is a recommended sequence for this major. Courses designated as critical (!) may have a deadline for completion and/or affect time to graduation. Please see the Program Notes section for details regarding “critical courses” for this particular Program of Study.

<table>
<thead>
<tr>
<th>Critical</th>
<th>Course Subject and Title</th>
<th>Credit Hours</th>
<th>Min. Grade</th>
<th>Major GPA</th>
<th>Code</th>
<th>Prerequisites</th>
<th>Notes</th>
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<tr>
<td></td>
<td>ENGL 101 Critical Reading and Composition</td>
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<td></td>
<td>MATH 141 Calculus I</td>
<td>4</td>
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<td>CC-ARP</td>
<td>Math 112/115/116 or Math placement test score</td>
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<td>CHEM 111 &amp; CHEM 111L – General Chemistry</td>
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<td>MATH 111, 115 or Math placement test score</td>
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<td></td>
<td>PHYS 199 Measurement &amp; Analysis in Physics (offered only)</td>
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<td>C or better in MATH 115 or higher</td>
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<td>UNIV 101 The Student in the University</td>
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<tr>
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<td>MATH 141</td>
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<td>PHYS 211 Essentials of Physics I</td>
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<td>MATH 141</td>
<td>Carolina Core Requirement</td>
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<td>History</td>
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<td>CC-GFL</td>
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<td>MATH 142</td>
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<td>CSCE 145 Algorithmic Design I</td>
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<td>Carolina Core Requirement</td>
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<td>EMCH 200 Statics</td>
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<td>MATH 141; Prereq or Coreq: EMCH 201 or ENCP 201</td>
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<td>MATH 242 Elementary Differential Equations</td>
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<td>MATH 142 (MATH 242); C or better in MATH 344 or 544</td>
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<td>PHYS 311 Intro. to Modern Physics (offered only)</td>
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<td>C or better in PHYS 112 &amp; MATH 241</td>
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<td>PHYS 311 Intro. to Applied Numerical Methods (cross-listed: EMCH 201, ENCP 201)</td>
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<tr>
<td>!</td>
<td>EMCH 200 Statics</td>
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<td>C</td>
<td>MR</td>
<td>MATH 141; Prereq or Coreq: EMCH 201 or ENCP 201</td>
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<td>MATH 300 Transition to Adv. Mathematics</td>
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<td>C</td>
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<td>C or better in MATH 142 (MATH 300 and 344)</td>
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<td>PHYS 307 Principles of Physics III (offered only)</td>
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<td>PHYS 207 or 212 &amp; MATH 142; Prereq or Coreq: MATH 241</td>
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<td>EMCH 260 Introduction to the Mechanics of Solids</td>
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<td>C or better in EMCH 200 &amp; Math 241; EMCH 111 or ENCP 102</td>
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<td>!</td>
<td>PHYS 501 Quantum Physics I (offered only)</td>
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<td>PHYS 307 &amp; MATH 242</td>
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<td>!</td>
<td>STAT 509 Statistics for Engineers or STAT 515 Statistical Methods</td>
<td>3</td>
<td>C</td>
<td>CR</td>
<td>MATH 142 or equiv. (STAT 509); C or better in MATH 122 or 141, or both MATH 111 or higher &amp; any stat. class</td>
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<td>CC-GFL</td>
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<td>!</td>
<td>MATH course (500-level or above)</td>
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<tr>
<td>!</td>
<td>PHYS 310 Intermediate Experimental Physics</td>
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<td>C</td>
<td>MR</td>
<td>C or better in PHYS 212</td>
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<tr>
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<td>Engineering Physics Concentration course</td>
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<td>EMCH Elective (300-level or above)</td>
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<td>C</td>
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Semester Seven (17 Credit Hours)

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Pathway</th>
<th>Major Requirement</th>
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<tbody>
<tr>
<td>PHYS 503</td>
<td>Mechanics (offered fall only)</td>
<td>4</td>
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<tr>
<td>EMCH 290</td>
<td>Thermodynamic Fundamentals</td>
<td>3</td>
<td>C</td>
<td>MR</td>
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<tr>
<td>EMCH Elective (300-level or above)</td>
<td></td>
<td>3</td>
<td>C</td>
<td>MR</td>
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<tr>
<td>PHYS 541</td>
<td>Advanced Experimental Physics I</td>
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<tr>
<td>Humanities or Fine Arts</td>
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Semester Eight (13-14 Credit Hours)

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Pathway</th>
<th>Major Requirement</th>
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</thead>
<tbody>
<tr>
<td>PHYS 504</td>
<td>Electromagnetic Theory (offered spring only)</td>
<td>4</td>
<td>C</td>
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<tr>
<td>EMCH Elective (300-level or above)</td>
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<td>3</td>
<td>C</td>
<td>MR</td>
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<tr>
<td>EMCH Elective (300-level or above)</td>
<td></td>
<td>3</td>
<td>C</td>
<td>MR</td>
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<tr>
<td>Engineering Physics Concentration course</td>
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<td>3-4</td>
<td>C</td>
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</table>

Graduation Requirements Summary

<table>
<thead>
<tr>
<th>Minimum Total Hours</th>
<th>Minimum Major Requirements Hours</th>
<th>College &amp; Program Requirements Hours</th>
<th>Carolina Core Hours</th>
<th>Minimum Institutional GPA</th>
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<tbody>
<tr>
<td>122</td>
<td>52</td>
<td>40-46</td>
<td>33-39</td>
<td>2.000</td>
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</table>

1. Regardless of individual course grades, students must maintain a minimum 2.000 cumulative GPA.
2. Some colleges require a minimum GPA for major courses. Courses indicated in this column are included in the major GPA for this program of study.
3. Students who do not place into MATH 141 will be required to successfully complete MATH 112, 115, or 116 before taking MATH 141.
4. The Carolina Core provides the common core of knowledge, skill, and academic experience for all Carolina undergraduate students.
5. Students in the College of Arts and Sciences are required to demonstrate proficiency in one foreign language equivalent to the 122 course through course credit or the corresponding foreign language placement score.
6. The College of Arts and Sciences requires one U.S. History and one non-U.S. History course, both of which must be chosen from the approved Carolina Core GHS courses. Whichever is not fulfilled through the Carolina Core GHS requirement must be fulfilled through this college requirement.
7. Engineering Physics Concentration courses (6-8 hours):

Choose two from the following:

- PHYS 502 Quantum Physics II (3)
- PHYS 509 Solid State Electronics (4)
- PHYS 511 Nuclear Physics (4)

PHYS 512 Solid State Physics (4)
PHYS 514 Optics, Theory, & Applications (4)
PHYS 521 Biophysics (4)
PHYS 542 Advanced Experimental Physics II (4)

Program Notes:
- ENGL 101 and ENGL 102 must be completed in the student’s first 60 semester hours of work in order for these courses to be credited toward graduation. Other courses designated as critical are prerequisites for subsequent courses, and a delay in completion of these courses may affect time to graduation.
- The last 30 credit hours toward your degree must be earned in residence at the University of South Carolina-Columbia.

University Requirements: Bachelor’s degree-seeking students must meet Carolina Core (general education) requirements. For more information regarding these requirements, please visit the Carolina Core page on the University website.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>CC</td>
<td>Carolina Core</td>
</tr>
<tr>
<td>CC-AIU</td>
<td>Carolina Core-Aesthetic and Interpretive Understanding</td>
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<tr>
<td>CC-ARP</td>
<td>Carolina Core-Analytical Reasoning and Problem-Solving</td>
</tr>
<tr>
<td>CC-CMS</td>
<td>Carolina Core-Effective, Engaged, and Persuasive Communication: Spoken Component</td>
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<tr>
<td>CC-CMW</td>
<td>Effective, Engaged, and Persuasive Communication: Written Component</td>
</tr>
<tr>
<td>CC-GFL</td>
<td>Carolina Core-Global Citizenship and Multicultural Understanding: Foreign Language</td>
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<tr>
<td>CC-GHS</td>
<td>Carolina Core – Historical Thinking</td>
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<tr>
<td>CC-GSS</td>
<td>Carolina Core – Social Sciences</td>
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<tr>
<td>CC-INF</td>
<td>Carolina Core – Information Literacy</td>
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<tr>
<td>CC-INT</td>
<td>Carolina Core – Integrative Course</td>
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<tr>
<td>CC-SCI</td>
<td>Carolina Core – Scientific Literacy</td>
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<tr>
<td>CC-VSR</td>
<td>Carolina Core – Values, Ethics, and Social Responsibility</td>
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<td>CR</td>
<td>College Requirement</td>
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<td>MR</td>
<td>Major Requirement</td>
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<td>PR</td>
<td>Program Requirement</td>
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Disclaimer: Major maps are only a suggested or recommended sequence of courses required in a program of study. Please contact your academic advisor for assistance in the application of specific coursework to a program of study and course selection and planning for upcoming semesters.