

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.

!	Course Subject and Title	Credit Hours	Min. Grade <sup>1</sup>	Major GPA <sup>2</sup>	Code	Prerequisites	Notes
<b>Semester One (17 Credit Hours)</b>							
	ENGL 101 Critical Reading and Composition	3	C		CC-CMW		
!	MATH 141 Calculus 1 <sup>3</sup>	4	C		CC-ARP	C or better in MATH 112/115/116 or Math placement test score	
	CHEM 111 General Chemistry I	3	C		CC-SCI	C or better in MATH 111/115/122/141 or higher math or Math placement test; Coreq: CHEM 111L	
	CHEM 111L General Chemistry I Lab	1	C		CC-SCI	MATH 111 or 115; Prereq or Coreq: CHEM 111	
	AESP 101 Intro. to Aerospace Engineering (or ENCP 101) <i>fall only</i>	3		*	PR		
	Carolina Core AIU <sup>4</sup>	3			CC-AIU		
<b>Semester Two (18 Credit Hours)</b>							
	ENGL 102 Rhetoric and Composition	3			CC-CMW CC-INF	C or better in ENGL 101	
!	MATH 142 Calculus II	4	C		CC-ARP	C or better in MATH 141	
	CHEM 112 General Chemistry II	3			PR	C or better in CHEM 111, MATH 111/115/122/141 or higher math; Coreq: CHEM 112L	
	CHEM 112L General Chemistry II Lab	1			PR	C or better in CHEM 111/111L/141 Prereq or Coreq: CHEM 112	
!	PHYS 211 Essentials of Physics I	3	C		CC-SCI	C or better in MATH 141; Coreq: PHYS 211L	
!	PHYS 211L Essentials of Physics I Lab	1	C		CC-SCI	Prereq or Coreq: C or better in PHYS 211	
	EMCH 111 Intro. to Computer-Aided Design (or ENCP 102)	3		*	PR		
<b>Semester Three (15 Credit Hours)</b>							
!	EMCH 200 Statics	3	C	*	PR	C or better in MATH 141	
!	EMCH 201 Intro. to Applied Numerical Methods ( <i>cross-listed: ENCP 201, PHYS 311</i> )	3		*	PR	MATH 141; Prereq or Coreq: MATH 142	
	ELCT 220 Electrical Engr. For Non-Majors or ELCT 221 Circuits	3			PR	MATH 142; C or better in either ELCT 102 or AESP 265 or D or better in ELCT 220 ( <i>ELCT 221 only</i> )	
!	MATH 241 Vector Calculus	3	C		PR	C or better in MATH 142	
	Carolina Core GSS <sup>4</sup>	3			CC-GSS		
<b>Semester Four (15 Credit Hours)</b>							
	EMCH 290 Thermodynamics (or ENCP 290)	3		*	PR	C or better in PHYS 211 & MATH 142	
!	EMCH 260 Solid Mechanics (or ENCP 260)	3		*	PR	C or better in MATH 241 & EMCH 200 or ENCP 200	
!	MATH 242 Elem. Differential Equations	3	C		PR	C or better in MATH 142	
!	STAT 509 Statistics for Engineers	3			PR	MATH 142	
	Carolina Core GHS <sup>4</sup>	3			CC-GHS		
<b>Semester Five (15 Credit Hours)</b>							
!	AESP 265 Aerodynamics I Incompressible Flow <i>fall only</i>	3		*	MR	MATH 242 & EMCH 201	
!	EMCH 310 Dynamics (or ENCP 210)	3		*	MR	C or better in MATH 242 & EMCH 200 or ENCP 200	
!	EMCH 371 Materials	3		*	MR	D or better in EMCH 260 or ENCP 260	
	EMCH 308 Intro. To Finite Element Stress Analysis	3		*	MR	EMCH 260	
	MATH 344 Applied Linear Algebra	3			PR	C or better in MATH 142	
<b>Semester Six (15 Credit Hours)</b>							
!	AESP 361 Aerospace Laboratory I <i>spring only</i>	3		*	MR	STAT 509 & AESP 265; Prereq or Coreq: EMCH 371 & EMCH 310	
	AESP 365 Aerodynamics II Compressible Flow	3		*	MR	D or better in EMCH/ENCP 290 & AESP 265	
!	AESP 350 Aerospace Systems <i>spring only</i>	3		*	MR	D or better in AESP 101 or ENCP 101	
	EMCH 330 Mechanical Vibrations (or ENCP 330)	3		*	MR	MATH 242 & EMCH 310	
!	EMCH 577 Aerospace Structures I	3		*	MR	D or better in EMCH 260 & EMCH 310	
<b>Semester Seven (15 Credit Hours)</b>							
	AESP 314 Energy Power and Propulsion <i>fall only</i>	3		*	MR	EMCH 290	
	AESP 362 Aerospace Laboratory II <i>fall only</i>	3		*	MR	AESP 361	
	AESP 415 Aircraft Design	3		*	MR	AESP 265; Prereq or Coreq: AESP 350 & 314	
	AESP 420 Flight and Orbital Mechanics	3		*	MR	D or better in EMCH 310	
	Aerospace Engineering Elective <sup>5</sup>	3		*	PR	See Bulletin listing.	

Semester Eight (15 Credit Hours)						
AESP 428 Design I <i>spring only</i>	3		*	MR	AESP 350 & EMCH 577; Prereq or Coreq: AESP 314 & EMCH 377	
AESP 466 Flight Dynamics and Control <i>spring only</i>	3		*	MR	EMCH 330 or ENCP 330 and AESP 420	
Aerospace Engineering Elective <sup>5</sup>	3		*	PR	See Bulletin listing.	
Aerospace Engineering Elective <sup>5</sup>	3		*	PR	See Bulletin listing.	
Carolina Core VSR <sup>4</sup>	3			CC-VSR		
Take during any semester (0-9 Credit Hours)						
Carolina Core CMS <sup>4</sup>	0-3			CC-CMS		
Carolina Core GFL <sup>4</sup>	0-6			CC-GFL		

### Graduation Requirements Summary

Minimum Total Hours	Minimum Major Requirements Hours	College & Program Requirements Hours	Minimum Carolina Core Hours	Minimum Institutional GPA
125	45	46	34	2.00

- Regardless of individual course grades, students must maintain a minimum 2.00 cumulative GPA.
- Some colleges require a minimum GPA for major courses. Courses indicated in this column are included in the program GPA of 2.00 for this program.
- Students who place into MATH 115 will be required to successfully complete it before taking MATH 141.
- The [Carolina Core](#) provides the common core of knowledge, skill and academic experience for all Carolina undergraduate students. Students in the College of Engineering and Computing are required to demonstrate proficiency in one foreign language equivalent to the 121 course by 1) a score of two or better on the foreign language placement test; or 2) completion of the 109 and 110 courses in FREN, GERM, LATN, or SPAN or completion of the 121 course in another foreign language. Students who do not place out of the GFL requirement may need to take additional hours to meet this requirement.
- Aerospace Engineering Electives** (9 hours): **AESP** 460, 543; **ELCT** 221, 222, 321, 331, 361, 371, 531, 562, 564, 572; **EMCH** 332, 354, 377, 516, 530, 532, 535, 544, 554, 560, 578, 585, 592.

### Program Notes:

- Courses identified as "critical" must be completed in the semester in which they are listed in order to ensure a timely graduation due to prerequisite requirements for subsequent required courses.
- All undergraduate students must take a 3-credit course or its equivalent with a passing grade that covers the founding documents. This course may fulfill any requirement in the program of study. Courses that meet this requirement are listed in the academic bulletin.
- A student cannot repeat courses from the College of Engineering and Computing in which they earned a grade of C or better. In addition, a student cannot repeat any course from the College a second time. No more than four courses from the College of Engineering and Computing may be repeated in order to satisfy the requirements for any degree from the College, regardless of satisfactory work. For this purpose, withdrawal from a course with a grade of **W** is not regarded as enrollment in that course. A student that does not satisfactorily complete a degree-required College course within two attempts must change major or transfer out of the College of Engineering and Computing.
- The last 25% of a student's degree must be completed in residence at the University, and at least half of the hours in the student's major courses and in the student's minor courses (if applicable) must be taken at the University.
- Disclaimer: Prerequisites on courses are subject to change. Please refer to the Bulletin.

**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.

Codes:			
<b>CC</b>	Carolina Core	<b>CC-INF</b>	Carolina Core – Information Literacy
<b>CC-AIU</b>	Carolina Core-Aesthetic and Interpretive Understanding	<b>CC-INT</b>	Carolina Core – Integrative Course
<b>CC-ARP</b>	Carolina Core-Analytical Reasoning and Problem-Solving	<b>CC-SCI</b>	Carolina Core – Scientific Literacy
<b>CC-CMS</b>	Carolina Core-Effective, Engaged, and Persuasive Communication: Spoken Component	<b>CC-VSR</b>	Carolina Core – Values, Ethics, and Social Responsibility
<b>CC-CMW</b>	Effective, Engaged, and Persuasive Communication: Written Component	<b>CR</b>	College Requirement
<b>CC-GFL</b>	Carolina Core-Global Citizenship and Multicultural Understanding: Foreign Language	<b>MR</b>	Major Requirement
<b>CC-GHS</b>	Carolina Core – Historical Thinking	<b>PR</b>	Program Requirement
<b>CC-GSS</b>	Carolina Core – Social Sciences		

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.