

This roadmap is a **suggested** semester-by-semester planning guide for this major. It is a model four-year plan, not a guaranteed sequence or contract. Course availability may vary from semester to semester. Roadmaps are not meant to cover every possibility. They are intended to provide guidance in planning your academic path. **Roadmaps should be reviewed in consultation with your advisor.**

KEY

Course Subject and Number:	Lists the course subject and number (ex. MATH 111; ARTH 101).		
Credit Hrs:	Lists how many credit hours the course is worth. Courses listed with a range of credit hours depend on course selection.		
Min. Grade:	Lists if the major has a minimum grade requirement for this course.		
Critical:	TIME = Timing. This course must be completed in the semester listed to ensure a timely graduation.		
GenEd	Indicates whether or not this major course can also fulfill a general education requirement.		
	WRIT: GenEd First Year Writing	HUMS: GenEd Humanities	SOSCI: GenEd Social Science
	FLANG: GenEd Foreign Language	MATH: GenEd Math	
	HIST: GenEd History	NATSCI: GenEd Natural Science	
Course Notes:	Lists important information about the course or the timing of the course.		

General Education Requirement

First-Year Writing: Complete English (ENGL) 110, Introduction to Academic Writing, or one of the approved course credit combinations satisfying the first-year writing general education requirement.	Math/Logic: Completion of MATH 120 or HONS 115 or transfer credit for any one of MATH 220, MATH 221, MATH 323 (any of which requires the comprehension of the content of MATH 120/HONS 115); or 6 credit hours from the remaining list of approved courses satisfying the math/logic general education requirement.
Foreign Language: Complete the 202-level or its equivalent or demonstrate proficiency at that level of an approved course satisfying the foreign language general education requirement.	Natural Science: Complete 8 credit hours of an introductory or higher sequence (of which 2 credit hours must be earned in the accompanying laboratories) from the list of approved course sequences satisfying the natural science general education requirement.
History: Complete one course in pre-modern history and one course in modern history from the list of approved courses satisfying the history general education requirement (6 credit hours). The two courses do not have to be taken from the same department or in sequence.	Social Sciences: Complete 6 credit hours from the list of approved courses satisfying the social science general education requirement.
Humanities: Complete 12 credit hours from the list of approved courses satisfying the humanities general education requirement with no more than 6 credit hours with the same acronym.	General Education Resources: Approved course listings for each requirement can be found in the Undergraduate Catalog (http://catalog.cofc.edu/).

Degree Requirements

Minimum GPA		Minimum Credit Hours
Major	Cumulative	122 credit hours
2.00	2.00	Additional hours are required for earning more than one degree. Consult your academic catalog

For additional information on course descriptions, pre-requisites and degree requirements for this major, please consult your [Undergraduate Catalog](#).

First Year

Semester One

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
ENGR 103 Fundamentals of Engineering	3		TIME		Learning Community
PHYS 111/111L General Physics	4		TIME	NATSCI	Must take early! (this is a pre-requisite)
MATH 120 Calculus I	4		TIME	MATH	Must take early! (this is a pre-requisite)
General Education Requirement	3-4			WRIT	
General Education Requirement	3-4			HIST	

Semester Two

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
ENGR 110 Engineering Graphics	3				
PHYS 112/112L General Physics 2	4		TIME	NATSCI	Must take early! (this is a pre-requisite)
MATH 220 Calculus 2	4		TIME	MATH	Must take early! (this is a pre-requisite)
MATH 207 Discrete Structures I	3		TIME		Must take early! (this is a pre-requisite)
General Education Requirement	3-4			HUMS	

First Year Notes

Note 1: The General Education First-Year Writing requirement should be completed within the first or second semester.

Note 2: First-Year Experience Requirement: All entering students with less than one year of college experience are required to complete a [First-Year Experience](#) (First-Year Seminar (FYSM), a Learning Community (LC), or an Honors College First-Year Experience course) within their first three consecutive academic terms.

Note 3: It is very important to complete the calculus and physics sequence during your first year. Use the summer if need to get caught up.

Note 4: If you did not place into MATH 120 for your first semester, it will be difficult to complete this degree program in 4 years. Consult with you advisor.

Second Year

Semester Three (Best Time to Study Aboard – See articulated programs in UK)

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
CSCI 218/L Engineering Programming	4		TIME		Must take early! (this is a pre-requisite)
ENGR 200 Intro Electrical/Mechanical	3		TIME		Must take early! (this is a pre-requisite)
MATH 221 Calculus III	4		TIME		Must take early! (this is a pre-requisite)
MATH 250 Statistical Methods	3		TIME		Must take early! (this is a pre-requisite)
ECON 200 Microeconomics	3		TIME	SOCSCI	Must take early! (this is a pre-requisite)

Semester Four (Best Time to Study Aboard – See articulated programs in UK)

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
CSCI 221 Computer Programming II	3		TIME		Must take early! (this is a pre-requisite)
CSCI 250/L Comp Org / Microcontroller	4		TIME		Must take early! (this is a pre-requisite)
PHYS 272 Methods of Physics	3		TIME		Must take early! (this is a pre-requisite)
ECON 201 Macroeconomics	3		TIME	SOCSCI	Must take early! (this is a pre-requisite)
General Education Requirement	3			HIST	

Second Year Notes

NOTE 1: This is the best year to do a Study Aboard. For Systems Engineering, we have articulated Study Abroad opportunities for the National University of Ireland Maynooth, and Heriot-Watt in Edinburgh, Scotland. Contact the Center for International Education and/or your advisor for more information.

Third Year

Semester Five

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
ENGR 321 Human Factors Engineering	3				
MGMT 301 Management/Org Behavior	3				
ENGR 386 Systems Eng Design/Dev	3		TIME		Must take early! (this is a pre-requisite)
ENGR Engineering Restricted Elective	3-4				
Foreign Language 1 of 4	3		TIME	FLANG	Must take early! (this is a pre-requisite)
General Education Requirements	3			HUMS	

Semester Six

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
DSCI 304 Production/Operations Mana	3		TIME		Must take early! (this is a pre-requisite)
MATH 452 Operations Research	3				
ENGR 486 Applied Systems Design	3				
Foreign Language 2 of 4	3		TIME	FLANG	Must take early! (this is a pre-requisite)
ENGR Engineering Restricted Elective	3-4				

Third Year Notes

NOTE 1: During this year, or the summer after it, is the perfect for an internship.

* **Engineering Restricted Elective Pool:** CSCI 230 Data Structures (3), CSCI 334 Data Mining (3), CSCI 345 Computer and Network Security (3), ENGR 360 Electrical Instrumentation and Measurement (3), ENGR 381 Internship (1-3), ENGR 387 Systems Engineering: Advanced Design and Development (3), ENGR 390 Engineering Research (1-3), ENGR 399 Tutorial (1-3), ENGR 417 Intelligent Systems (3), ENGR 490 Special Topics in Engineering (1-3), ENGR 499 Bachelor's Essay (6), PHYS 320 Intro to Electronics (4), PHYS 340 Photonics (4), PHYS 350 Energy Production (4), PHYS 408 Introduction to Solid State Physics (3)

Fourth Year

Semester Seven

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
ENGR 470 Capstone Design Project I	3		TIME		Must take prior to last semester! (this is a pre-requisite)
SCIM 373 Supply Chain Management	3				
CEM 111/111L Chemistry 1	4				Or another natural science.
Foreign Language 3 of 4	3			FLANG	Must be taken prior to last semester! (this a pre-requisite)
General Education Requirement	3-4			HUMS	

Semester Eight

Course Subject and Number	Credit Hrs.	Min. Grade	Critical	GenEd	Course Notes
ENGR 471 Capstone Design Project II	3				
ENGR 455 Discrete Modeling/Simulate	3				
SCIM 366 Lean and Six Sigma	3				
Foreign Language 4 of 4	3			FLANG	
General Education Requirement	3			HUMS	

Fourth Year Notes

Note: Don't forget to apply to graduate in MyCharleston!