



2025-2026

PROGRAM OF STUDY GUIDES

Electrical Engineering
Mechanical Engineering
Process Engineering



**Computer Science, Engineering
and Mathematics**

University of South Carolina Aiken



Mission Statement

The Department of Computer Science, Engineering, and Mathematics is dedicated to providing a comprehensive and rigorous education to students in the critical fields of mathematics, computer science, and engineering. The department strives to equip students with a deep theoretical understanding as well as practical skills in these disciplines, preparing them for successful careers in industry, research, or academia. Through a diverse offering of courses, the department aims to develop students' analytical problem-solving abilities, logical reasoning, and effective communication of complex ideas. Recognizing the fundamental role mathematics plays across all scientific and engineering domains, the department delivers foundational mathematical training to students throughout the university. For students specializing in computer science, engineering, and mathematics, the department offers in-depth programs that explore the intricacies of these fields, from abstract mathematical concepts to the design of sophisticated software systems to the development of innovative solutions to real-world engineering challenges. With a faculty of accomplished researchers and dedicated educators, the department cultivates a stimulating learning environment that encourages intellectual curiosity, collaborative study, and independent exploration. Beyond the classroom, the department is committed to outreach and promoting mathematical and computational thinking in the wider community, engaging with local schools and organizations to inspire the next generation of mathematicians, computer scientists, and engineers.

Academic Advising

Advisors help students understand their program of study, institutional policies, and requirements.

Students can find their academic advisor by logging into Self-Service Aiken and selecting the student tab. The advisor will appear in the top block of the degree audit, directly under the student's classification.

An advising registration hold is placed on student accounts each semester. Students are required to communicate with their academic advisor prior to each registration period to discuss their course plan. The hold will prevent registration and will not be lifted until a student has discussed their plan with their advisor.

Students should contact their advisor prior to the beginning of Advisement Month to set an appointment during Advisement Month. Failure to do so will delay the release of the advising hold and late registration could result in courses no longer being available.

October 1: Advising month begins for the spring semester.

March 1: Advising month begins for the fall and summer semesters.

Students are encouraged to register the day their registration opens so that they may have the best opportunity to secure courses necessary to their program of study sequence and maintain their anticipated graduation timeline. It is important to note that some courses are not offered every semester and may be on a fall-only or spring-only rotation.



First Year

1st Semester (17 hrs)			2nd Semester (17 hrs)		
Course	Title	hrs	Course	Title	hrs
ELCT A101	Introduction to Elect Engr I	3	ELCT A102	Introduction to Elect Engr II	3
ENGL A101	Composition	3	MATH A344	Linear Algebra for CS & Engr	3
CHEM A111	General Chemistry I & Lab	4	ENGL A102	Composition and Literature	3
MATH A141	Calculus I	4	MATH A142	Calculus II	4
CSCI A125	Intro to Computer Science	3	ENCP A300	Engineering Seminar	1
			GEN ED	Humanities	3

Second Year

1st Semester (17 hrs)			2nd Semester (15 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A220	Mechanical Engr Fundamentals	3	ELCT A244	Electrical Circuits II	3
ELCT A221	Electrical Circuits I	3	ELCT A244L	Electrical Circuits II Lab	1
MATH A241	Vector Calculus	4	MATH A242	Elem. Differential Equations	4
PHYS A211	Essentials of Physics I & Lab	4	PHYS A212	Essentials of Physics II & Lab	4
COMM A241	Public Speaking	3	STAT A509*	Statistics for Engineers	3

Third Year

1st Semester (16 hrs)			2nd Semester (17 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A368^	Mechatronics	3	ELCT A342	Signals and Systems	3
ELCT A320	Electronic Devices	3	ELCT A310	Digital Logic Design	3
ELCT A302L	Electronic Devices Lab	1	ELCT A329	Microprocessors/Controllers	3
ELCT A348	Electromagnetic Fields	3	ELCT A329L	Microprocessors/Controllers Lab	1
MATH A174	Discrete Mathematics	3	ELCT A346	Electrical Power Systems	3
GEN ED	Global Cultures	3	ENGL A462	Technical Writing	3
			ENCP A300	Engineering Seminar	1

Fourth Year

1st Semester (15 hrs)			2nd Semester (15 hrs)		
Course	Title	hrs	Course	Title	hrs
ELCT A498^	Senior Capstone I	3	ELCT A499*	Senior Capstone II	3
ELCT A434	Power Electronics	3	TECH ELEC	Technical Elective	3
ELCT A412	Communication Systems	3	GEN ED	Humanities	3
TECH ELEC	Technical Elective	3	GEN ED API	POLI A201, HIST A201/A202	3
GEN ED	ECON A221 or A222	3	PHIL A325	Engineering Ethics	3

^Fall only *Spring only

Course frequency notes are subject change and do not include courses managed by other departments

Bachelor of Science in Electrical Engineering Guidesheet

GENERAL EDUCATION REQUIREMENTS	
A. Human Culture, Physical/Nat World (16)	
Course	Credits
Natural Sciences³	
CHEM A111	4
Social/Behavioral Sciences	
ECON A221/A222	3
Global Cultures	
HIST A101 or A102	3
Two Humanities Courses² (at least 2 areas)	
	3
	3
At least 3 credit hours must be in Non-Western World Studies. ²	
List Course:	
B. Intellectual and Practical Skills (13)	
ENGL A101 ³	3
ENGL A102 ³	3
COMM A241	3
Mathematics³	
MATH A141	4
Writing Intensive Courses	
ELCT A320, A498, A499	
C. Personal and Social Responsibility (3)	
Americal Political Institutions (API)	
POLI A201, HIST A201/A202	3
Inter-Curricular Enrichment Program (ICE)	
Two approved events in each semester of enrollment	
For more information, see ICE Program requirements	
COLLEGE REQUIREMENTS ¹ (15)	
PHYS A211 ³	4
PHYS A212 ³	4
PHIL A325	3
MATH A142 ³	4

¹Students in the College of Sciences and Engineering will complete a minimum of 15 total credit hours from three or more categories: Humanities, Fine Arts, Math/Stats/Logic, Natural Science, Social/Behavioral Science, and Foreign Languages.

²See the Academic Bulletin for qualifying courses for listed categories and for information on ICE events.

³Must earn a grade of C or better

ACADEMIC BULLETIN

Scan or click QR code for Academic Bulletins.

PROGRAM REQUIREMENTS ³	
CORE COURSES (70)	
Course	Credits
ELCT A101	3
ELCT A102	3
ELCT A221	3
ELCT A224	3
ELCT A224L	1
ELCT A310	3
ELCT A320	3
ELCT A320L	1
ELCT A329	3
ELCT A329L	1
ELCT A342	3
ELCT A346	3
ELCT A348	3
ELCT A412	3
ELCT A434	3
CSCI A125	3
ENCP A220	3
ENCP A300 (x2)	2
ENCP A368	3
ENGL A462	3
MATH A174	3
MATH A241	4
MATH A242	4
MATH A344	3
STAT A509	3
TECHNICAL ELECTIVES ³ (6)	
	3
	3
Any ENCP/ELCT course (A300 or higher not required by major), any CSCI course (A145 or higher not required by major), any MATH course (A300 or higher not required by major), or any department approved course.	
CAPSTONE ³ (6)	
ELCT A498	3
ELCT A499	3

COURSE CATALOG

Scan or click QR code for course descriptions.



First Year

1st Semester (17 hrs)			2nd Semester (17 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A101^	Introduction to Engineering I	3	ENGL A102	Composition and Literature	3
CHEM A111	General Chemistry I & Lab	4	ENCP A102*	Introduction to Engineering II	3
ENGL A101	Composition	3	CSCI A125	Introduction to Computer Science	3
MATH A141	Calculus I	4	MATH A142	Calculus II	4
GEN ED	Humanities	3	ENCP A301*	Intro to Numerical Methods	3
			ENCP A300	Engineering Seminar	1

Second Year

1st Semester (17 hrs)			2nd Semester (17 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A200^	Statics	3	ENCP A290*	Thermodynamics Fund.	3
MATH A344	Linear Algebra for CS & Engr	3	ENCP A260*	Intro to Mechanics of Solids	3
MATH A241	Vector Calculus	4	MATH A242	Elem. Differential Equations	4
PHYS A211	Essentials of Physics I & Lab	4	PHYS A212	Essentials of Physics II & Lab	4
COMM A241	Public Speaking	3	ENGL A462	Technical Writing	3

Third Year

1st Semester (16 hrs)			2nd Semester (14 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A361^	Instrumentation, Meas, Stats	3	ENCP A327*	Design of Mech. Elements	3
ENCP A361L^	Instrumentation, Meas, Stats	1	ENCP A377*	Manufacturing Processes	3
ENCP A371^	Engineering Materials Lab	3	ENCP A310*	Dynamics	3
ENCP A360^	Fluids	3	ENCP A354*	Heat Transfer	3
ELCT A221	Circuits	3	ENCP A354L*	Heat Transfer Lab	1
GEN ED	Global Cultures	3	ENCP A300	Engineering Seminar	1

Fourth Year

1st Semester (15 hrs)			2nd Semester (15 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A498^	Senior Capstone I	3	ENCP A499*	Senior Capstone II	3
ENCP A368^	Mechatronics	3	TECH ELEC	Technical Elective	3
ENCP A332^	Kinematics	3	GEN ED	Humanities	3
TECH ELEC	Technical Elective	3	GEN ED API	POLI A201, HIST A201/A202	3
GEN ED	Social and Behavioral Sciences	3	PHIL A325	Engineering Ethics	3

^Fall only *Spring only Course frequency notes are subject change and do not include courses managed by other departments

Bachelor of Science in Mechanical Engineering Guidesheet

GENERAL EDUCATION REQUIREMENTS	
A. Human Culture, Physical/Nat World (16)	
Course	Credits
Natural Sciences³	
CHEM A111	4
Social/Behavioral Sciences²	
	3
Global Cultures	
HIST A101 or A102	3
Two Humanities Courses² (at least 2 areas)	
	3
	3
At least 3 credit hours must be in Non-Western World Studies.²	
List Course:	
B. Intellectual and Practical Skills (13)	
ENGL A101 ³	3
ENGL A102 ³	3
COMM A241	3
Mathematics³	
MATH A141	4
Writing Intensive Courses	
ENCP A361, A498, A499	
C. Personal and Social Responsibility (3)	
Americal Political Institutions (API)	
POLI A201, HIST A201/A202	3
Inter-Curricular Enrichment Program (ICE)	
Two approved events in each semester of enrollment	
For more information, see ICE Program requirements	
COLLEGE REQUIREMENTS ¹ (15)	
PHYS A211 ³	4
PHYS A212 ³	4
PHIL A325	3
MATH A142 ³	4

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²See the Academic Bulletin for qualifying courses for listed categories and for information on ICE events.

³Must earn a grade of C or better

PROGRAM REQUIREMENTS ³	
CORE COURSES (69)	
Course	Credits
ENCP A101	3
ENCP A102	3
ENCP A200	3
ENCP A260	3
ENCP A290	3
ENCP A300 (x2)	2
ENCP A301	3
ENCP A310	3
ENCP A327	3
ENCP A332	3
ENCP A354	3
ENCP A354L	1
ENCP A360	3
ENCP A361	3
ENCP A361L	1
ENCP A368	3
ENCP A371	3
ENCP A377	3
ELCT A221	3
CSCI A125	3
MATH A241	4
MATH A242	4
MATH A344	3
ENGL A462	3
TECHNICAL ELECTIVES ³ (6)	
	3
	3
Any ENCP course (A300 or higher not required by major), any CSCI course (A145 or higher not required by major), any MATH course (A300 or higher not required by major), STAT A509, or any department approved course.	
CAPSTONE ³ (6)	
ENCP A498	3
ENCP A499	3

ACADEMIC BULLETIN



Scan or click QR code for Academic Bulletins.

COURSE CATALOG



Scan or click QR code for course descriptions.

Legend:

- Prerequisite:** Solid arrow
- Corequisite:** Dashed arrow
- Dashed Outline:** Requires a C or better
- Pre-Req MATH A141:** Dashed box
- Pre-Req MATH:** Dashed hexagon
- Pre-Req ENCP A200:** Dashed oval

Updated: 6/13/24 bsf



First Year

1st Semester (17 hrs)			2nd Semester (17 hrs)		
Course	Title	hrs	Course	Title	hrs
ENGL A101	Composition	3	ENGL A102	Composition and Literature	3
ENCP A101	Introduction to Engineering I	3	ENCP A102	Introduction to Engineering II	3
CHEM A111	General Chemistry I & Lab	4	CHEM A112	General Chemistry II & Lab	4
MATH A141	Calculus I	4	MATH A142	Calculus II	4
GEN ED	Humanities	3	ECON A221/A222	Micro/Macro Economics	3

Second Year

1st Semester (17 hrs)			2nd Semester (17 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A200	Statics	3	ENCP A290*	Thermodynamics Fund.	3
ELCT A221	Circuits	3	ENCP A260*	Intro to Mechanics of Solids	3
MATH A241	Vector Calculus	4	MATH A242	Elem. Differential Equations	4
PHYS A211	Essentials of Physics I & Lab	4	PHYS A212	Essentials of Physics II & Lab	4
COMM A241/A201	Public Speaking or Interpersonal Comm	3	STAT A509*	Statistics for Engineers	3

Third Year

1st Semester (16 hrs)			2nd Semester (15 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A361^	Instrumentation, Meas, Stats	3	ENCP A334	Quality Control & Planning	3
ENCP A361L^	Instrumentation, Meas, Stats	1	ENCP A327*	Design of Mech. Elements	3
ENCP A371^	Engineering Materials Lab	3	ENCP A310*	Dynamics	3
ENCP A360^	Fluids	3	MGSC A494	Project Management	3
ENCP A316	Control Systems	3	GEN ED	Humanities	3
BADM A371	Principles of Management	3			

Fourth Year

1st Semester (15 hrs)			2nd Semester (12 hrs)		
Course	Title	hrs	Course	Title	hrs
ENCP A380^	Systems Engineering	3	ENCP A421*	Engineering Economics	3
ENCP A498^	Senior Capstone I	3	ENCP A499*	Senior Capstone II	3
TECH ELEC	Technical Elective	3	PHIL A325	Engineering Ethics	3
GEN ED	Global Cultures	3	TECH ELEC	Technical Elective	3
GEN ED API	POLI A201, HIST A201/A202	3			

^Fall only *Spring only

Course frequency notes are subject change and do not include courses managed by other departments

Bachelor of Science in Process Engineering Guidesheet

GENERAL EDUCATION REQUIREMENTS	
A. Human Culture, Physical/Nat World (16)	
Course	Credits
Natural Sciences³	
CHEM A111	4
Social/Behavioral Sciences²	
ECON A221 or A222	3
Global Cultures	
HIST A101 or A102	3
Two Humanities Courses² (at least 2 areas)	
	3
	3
At least 3 credit hours must be in Non-Western World Studies. ²	
List Course:	
B. Intellectual and Practical Skills (13)	
ENGL A101 ³	3
ENGL A102 ³	3
COMM A201 or A241	3
Mathematics³	
MATH A141	4
Writing Intensive Courses	
ENCP A361, A498, A499	
C. Personal and Social Responsibility (3)	
Americal Political Institutions (API)	
POLI A201, HIST A201/A202	3
Inter-Curricular Enrichment Program (ICE)	
Two approved events in each semester of enrollment	
For more information, see ICE Program requirements	
COLLEGE REQUIREMENTS ¹ (15)	
PHYS A211 ³	4
PHYS A212 ³	4
PHIL A325	3
MATH A142 ³	4

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³Must earn a grade of C or better

PROGRAM REQUIREMENTS	
CORE COURSES ³ (61)	
Course	Credits
CHEM A112	4
ELCT A221	3
ENCP A101	3
ENCP A102	3
ENCP A200	3
ENCP A260	3
ENCP A290	3
ENCP A310	3
ENCP A316	3
ENCP A327	3
ENCP A334	3
ENCP A360	3
ENCP A361	3
ENCP A361L	1
ENCP A371	3
ENCP A380	3
ENCP A421	3
MATH A241	4
MATH A242	4
STAT A509	3
BUSINESS COMPONENT (6)	
BADM A371	3
MGSC A494	3
TECHNICAL ELECTIVES (6)	
	3
	3
Any ENCP ³ course (A300 or higher not required by major), any CSCI ³ course (A125 or higher not required by major), any MATH ³ course (A300 or higher not required by major), any MGMT course (A300 or higher not required by major), any BADM course (A300 or higher not required by major), any CHEM ³ course (A300 or higher not required by major), or any department approved course.	
CAPSTONE ³ (6)	
ENCP A498	3
ENCP A499	3

ACADEMIC BULLETIN



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COURSE CATALOG



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Bachelor of Science in Process Engineering Curriculum Academic Year 2025-2026 Pre-/Co-Requisite Flowchart

