2025-2026
PROGRAM OF STUDY GUIDES

Electrical Engineering
Mechanical Engineering
Process Engineering

Computer Science, Engineering & Mathematics

Computer Science, Engineering & Mathematics

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.

Bachelor of Science in Electrical Engineering

Computer Science, Engineering & Mathematics

First Year

1st Semester (17 hrs)

Course	Title	hrs
ELCT A101	Introduction to Elect Engr I	3
ENGL A101	Composition	3
CHEM A111	General Chemistry I & Lab	4
MATH A141	Calculus I	4
CSCI A125	Intro to Computer Science	3

2nd Semester (17 hrs)

Course	Title	hrs
ELCT A102	Introduction to Elect Engr II	3
MATH A344	Linear Algebra for CS & Engr	3
ENGL A102	Composition and Literature	3
MATH A142	Calculus II	4
ENCP A300	Engineering Seminar	1
GEN ED	Humanities	3

Second Year

1st Semester (17 hrs)

Course	Title	hrs
ENCP A220	Mechanical Engr Fundamentals	3
ELCT A221	Electrical Circuits I	3
MATH A241	Vector Calculus	4
PHYS A211^	Essentials of Physics I & Lab	4
COMM A241	Public Speaking	3

2nd Semester (15 hrs)

Course	Title	hrs
ELCT A244	Electrical Circuits II	3
ELCT A244L	Electrical Circuits II Lab	1
MATH A242	Elem. Differential Equations	4
PHYS A212*	Essentials of Physics II & Lab	4
STAT A509*	Statistics for Engineers	3

Third Year

1st Semester (16 hrs)

Course	Title	hrs
ENCP A368^	Mechatronics	3
ELCT A320	Electronic Devices	3
ELCT A302L	Electronic Devices Lab	1
ELCT A348	Electromagnetic Fields	3
MATH A174	Discrete Mathematics	3
GEN ED	Global Cultures	3

2nd Semester (17 hrs)

Course	Title	hrs
ELCT A342	Signals and Systems	3
ELCT A310	Digital Logic Design	3
ELCT A329	Microprocessors/Controllers	3
ELCT A329L	Microprocessors/Controllers Lab	1
ELCT A346	Electrical Power Systems	3
ENGL A462	Technical Writing	3
ENCP A300*	Engineering Seminar	1

Fourth Year

1st Semester (15 hrs)

Course	Title	hrs
ELCT A498^	Senior Capstone I	3
ELCT A434	Power Electronics	3
ELCT A412	Communication Systems	3
TECH ELEC	Technical Elective	3
GEN ED	ECON A221 or A222	3

2nd Semester (15 hrs)

Course	Title	hrs
ELCT A499*	Senior Capstone II	3
TECH ELEC	Technical Elective	3
GEN ED	Humanities	3
GEN ED API	POLI A201, HIST A201/A202	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 Sciences[3]	
CHEM A111	4
Social/Behavioral Sciences	
ECON A221/A222	3
Global Cultures	
HIST A101 or A102	3
Two Humanities Courses[2] (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
Mathematics[3]	
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

[1]Students 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.

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

[3]Must 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

Bachelor of Science in Mechanical Engineering

Computer Science, Engineering & Mathematics

First Year

1st Semester (17 hrs)

Course	Title	hrs
ENCP A101^	Introduction to Engineering I	3
CHEM A111	General Chemistry I & Lab	4
ENGL A101	Composition	3
MATH A141	Calculus I	4
GEN ED	Humanities	3

2nd Semester (17 hrs)

Course	Title	hrs
ENGL A102	Composition and Literature	3
ENCP A102*	Introduction to Engineering II	3
CSCI A125	Introduction to Computer Science	3
MATH A142	Calculus II	4
ENCP A301*	Intro to Numerical Methods	3
ENCP A300	Engineering Seminar	1

Second Year

1st Semester (17 hrs)

Course	Title	hrs
ENCP A200^	Statics	3
MATH A344	Linear Algebra for CS & Engr	3
MATH A241	Vector Calculus	4
PHYS A211	Essentials of Physics I & Lab	4
COMM A241	Public Speaking	3

2nd Semester (17 hrs)

Course	Title	hrs
ENCP A290*	Thermodynamics Fund.	3
ENCP A260*	Intro to Mechanics of Solids	3
MATH A242	Elem. Differential Equations	4
PHYS A212	Essentials of Physics II & Lab	4
ENGL A462	Technical Writing	3

Third Year

1st Semester (16 hrs)

Course	Title	hrs
ENCP A361^	Instrumentation, Meas, Stats	3
ENCP A361L^	Instrumentation, Meas, Stats	1
ENCP A371^	Engineering Materials Lab	3
ENCP A360^	Fluids	3
ELCT A221	Circuits	3
GEN ED	Global Cultures	3

2nd Semester (14 hrs)

Course	Title	hrs
ENCP A327*	Design of Mech. Elements	3
ENCP A377*	Manufacturing Processes	3
ENCP A310*	Dynamics	3
ENCP A354*	Heat Transfer	3
ENCP A354L*	Heat Transfer Lab	1
ENCP A300	Engineering Seminar	1

Fourth Year

1st Semester (15 hrs)

Course	Title	hrs
ENCP A498^	Senior Capstone I	3
ENCP A368^	Mechatronics	3
ENCP A332^	Kinematics	3
TECH ELEC	Technical Elective	3
GEN ED	Social and Behavioral Sciences	3

2nd Semester (15 hrs)

Course	Title	hrs
ENCP A499*	Senior Capstone II	3
TECH ELEC	Technical Elective	3
GEN ED	Humanities	3
GEN ED API	POLI A201, HIST A201/A202	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 Sciences[3]	
CHEM A111	4
Social/Behavioral Sciences[2]	
	3
Global Cultures	
HIST A101 or A102	3
Two Humanities Courses[2] (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
Mathematics[3]	
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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[2]See the Academic Bulletin for qualifying courses for listed categories and for information on ICE events.

[3]Must earn a grade of C or better

ACADEMIC BULLETIN
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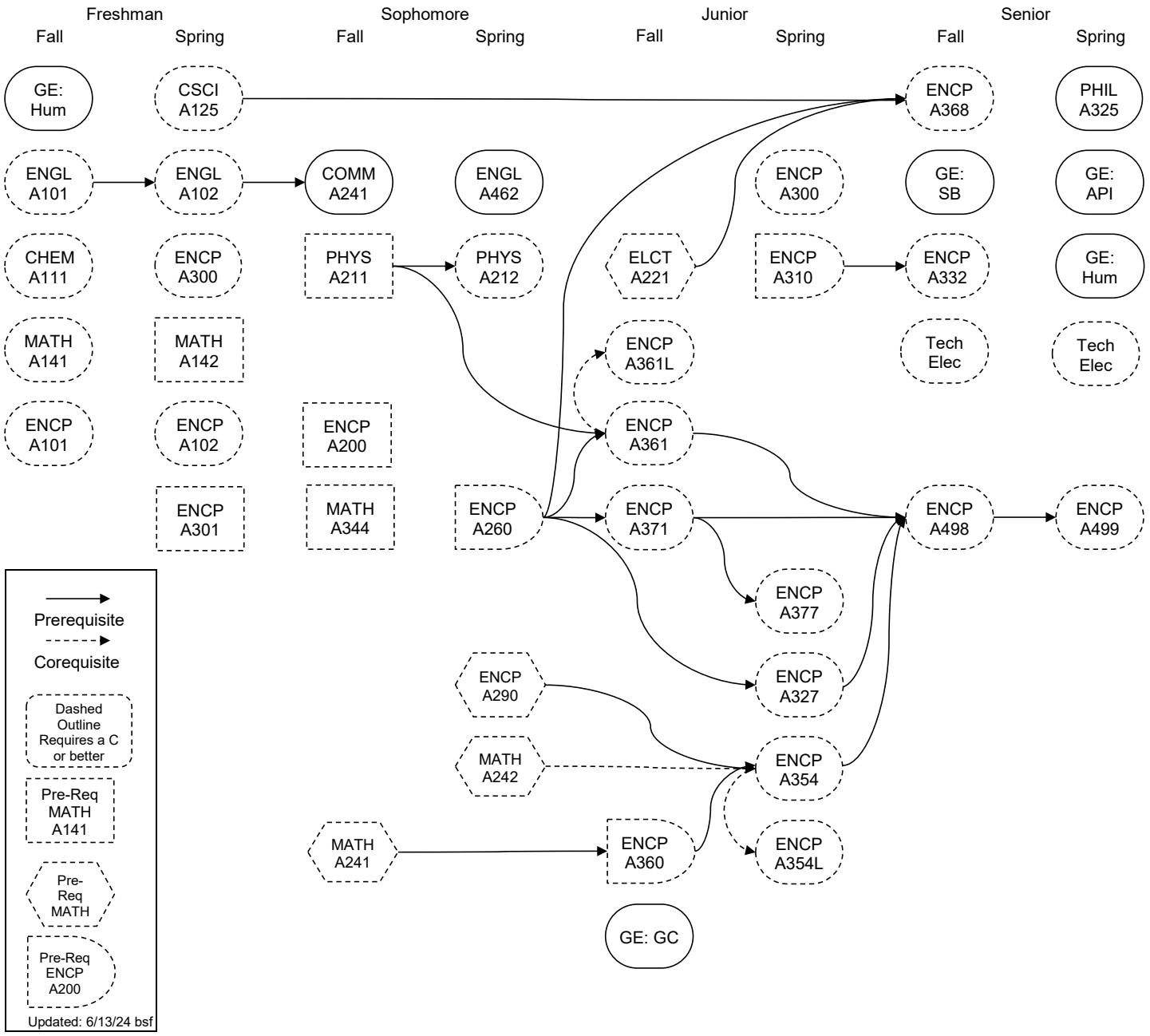
PROGRAM REQUIREMENTS[3]	
CORE COURSES (69)	
Course	**Credits**
ENCP A101	3
ENCP A102	3
ENCP A200	3
ENCP A260	3
ENCP A290	3
ENCP A300 (x2)	2
ENCP A301	3
ENCP A310	3
ENCP A327	3
ENCP A332	3
ENCP A354	3
ENCP A354L	1
ENCP A360	3
ENCP A361	3
ENCP A361L	1
ENCP A368	3
ENCP A371	3
ENCP A377	3
ELCT A221	3
CSCI 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

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



Bachelor of Science in Process Engineering

Computer Science, Engineering & Mathematics

First Year

1st Semester (17 hrs)

Course	Title	hrs
ENGL A101	Composition	3
ENCP A101^	Introduction to Engineering I	3
CHEM A111	General Chemistry I & Lab	4
MATH A141	Calculus I	4
GEN ED	Humanities	3

2nd Semester (17 hrs)

Course	Title	hrs
ENGL A102	Composition and Literature	3
ENCP A102*	Introduction to Engineering II	3
CHEM A112	General Chemistry II & Lab	4
MATH A142	Calculus II	4
ECON A221/A222	Micro/Macro Economics	3

Second Year

1st Semester (17 hrs)

Course	Title	hrs
ENCP A200^	Statics	3
ELCT A221	Circuits	3
MATH A241	Vector Calculus	4
PHYS A211^	Essentials of Physics I & Lab	4
COMM A241/A201	Public Speaking or Interpersonal Comm	3

2nd Semester (17 hrs)

Course	Title	hrs
ENCP A290*	Thermodynamics Fund.	3
ENCP A260*	Intro to Mechanics of Solids	3
MATH A242	Elem. Differential Equations	4
PHYS A212*	Essentials of Physics II & Lab	4
STAT A509*	Statistics for Engineers	3

Third Year

1st Semester (16 hrs)

Course	Title	hrs
ENCP A361^	Instrumentation, Meas, Stats	3
ENCP A361L^	Instrumentation, Meas, Stats Lab	1
ENCP A371^	Engineering Materials Lab	3
ENCP A360^	Fluids	3
ENCP A316^ +	Control Systems	3
BADM A371	Principles of Management	3

2nd Semester (15 hrs)

Course	Title	hrs
ENCP A334*	Quality Control & Planning	3
ENCP A327*	Design of Mech. Elements	3
ENCP A310*	Dynamics	3
MGSC A494	Project Management	3
GEN ED	Humanities	3

Fourth Year

1st Semester (15 hrs)

Course	Title	hrs
ENCP A380^	Systems Engineering	3
ENCP A498^	Senior Capstone I	3
TECH ELEC	Technical Elective	3
GEN ED	Global Cultures	3
GEN ED API	POLI A201, HIST A201/A202	3

2nd Semester (12 hrs)

Course	Title	hrs
ENCP A421*	Engineering Economics	3
ENCP A499*	Senior Capstone II	3
PHIL A325*	Engineering Ethics	3
TECH ELEC	Technical Elective	3

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

+ Currently, should be replaced with ENCP A368 Mechatronics. Contact BethanyF@usca.edu with questions.

Bachelor of Science in Process Engineering Guidesheet

GENERAL EDUCATION REQUIREMENTS	
A. Human Culture, Physical/Nat World (16)	
Course	**Credits**
Natural Sciences[3]	
CHEM A111	4
Social/Behavioral Sciences[2]	
ECON A221 or A222	3
Global Cultures	
HIST A101 or A102	3
Two Humanities Courses[2] (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
Mathematics[3]	
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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[2]See the Academic Bulletin for qualifying courses for listed categories and for information on ICE events.

[3]Must earn a grade of C or better

ACADEMIC BULLETIN
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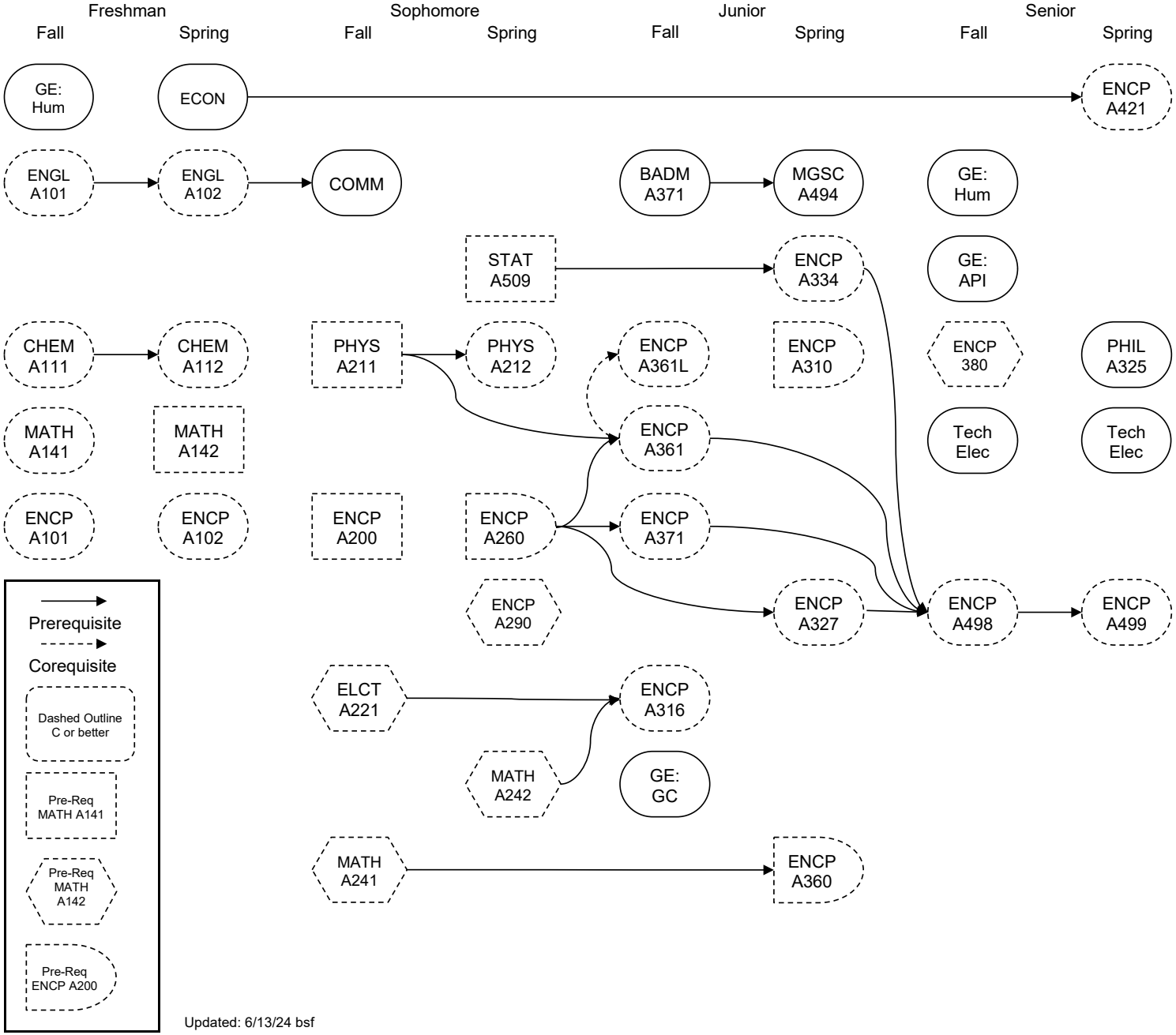
PROGRAM REQUIREMENTS	
CORE COURSES[3] (61)	
Course	**Credits**
CHEM A112	4
ELCT A221	3
ENCP A101	3
ENCP A102	3
ENCP A200	3
ENCP A260	3
ENCP A290	3
ENCP A310	3
ENCP A316	3
ENCP A327	3
ENCP A334	3
ENCP A360	3
ENCP A361	3
ENCP A361L	1
ENCP A371	3
ENCP A380	3
ENCP A421	3
MATH A241	4
MATH A242	4
STAT A509	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

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



Updated: 6/13/24 bsf