

2014-2015 Catalogue

ENGINEERING B.S.E.

All students must meet the University Requirements .

The College of Engineering and Mathematical Sciences offers instruction leading to the Bachelor of Science in Engineering degree. This degree is designed for those students desiring a program with a strong engineering science base in preparation for an interdisciplinary engineering specialty. Each student will be expected to declare a concentration before completing the first four semesters of study. At that time, the student and advisor will plan an integrated series of courses directed towards the concentration. Among the possible engineering concentrations are: aeronautical engineering, bioengineering, chemical engineering, computer engineering, power engineering, traffic engineering, geological engineering, etc. Other concentrations may be approved upon application to the College of Engineering and Mathematical Sciences Studies Committee.

Candidates for this degree must fulfill the following requirements, which include the core program, and present a total of at least 122 credits. Any substitutions in the engineering core program require the approval of the College’s Studies Committee.

PLAN OF STUDY

THE CURRICULUM FOR THE B.S. IN ENGINEERING

First Year	Credits	
	Fall	Spring
CHEM 031 General Chemistry 1	4	
CE 003 Intro to Civil & Envir Engr or ENGR 002 Graphical Communication	2	
ENGS 001 Written Expression	3	
MATH 021 Calculus I	4	
HSS Electives ¹	3	3
CS 020 Programming for Engineers		3
MATH 022 Calculus II		4
ME 001 First-Year Design Experience or EE 001 First-year Design Experience or ENGR 002 Graphical Communication		2
PHYS 030 Physics Problem Solving I (Optional)		0-1
PHYS 031 Physics for Engineers I		4
Year Total:	16	16-17

Sophomore	Credits	
	Fall	Spring
EE 003 Linear Circuit Analysis I ² or EE 100 Electrical Engr Concepts	3-4	
MATH 121 Calculus III	4	
PHYS 123 Physics Problem Solving II (Optional)	0-1	
PHYS 125 Physics for Engineers II	3	
HSS Elective ¹	3	
Free Electives	3	3
CE 001 Statics ²		3
MATH 271 Adv Engineering Mathematics		3
ME 040 Thermodynamics ²		3
STAT 143 Statistics for Engineering or STAT 151 Applied Probability		3
Year Total:	16-18	15

Junior	Credits	
	Fall	Spring
Technical Elective ⁴	3	
Choose three Engineering Science courses ³	9	9
HSS Electives ¹	3	3
Free Elective		3
Year Total:	15	15

Senior	Credits	
	Fall	Spring
Senior Design (ME/EE focus) or Free Elective (CE/ EENV focus) ⁵	3	
Choose two Technical Electives ⁴	6	
Choose two Engineering Science courses ³	6	6
Senior Design ⁵		2-3
Technical Elective ⁴		3
Free Elective		3
Year Total:	15	14-15

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Total Credits in Sequence:	122-126

- ¹ Required Humanities and Social Science (HSS): fifteen credits of approved HSS electives, including three credits of D1 and three credits of D1 or D2. Six HSS credits must be from the same offering department (e.g. ANTH or GEOG).
- ² Pre-Engineering Technical (PET) requirements: MATH 021 and MATH 022, CHEM 031, PHYS 031 and CS 020. All PET courses must be completed with C- or better before any sophomore engineering courses may be taken.
- ³ Engineering Science: All CE, EE, ME and ENGR courses (except ENGR 010). Must include a minimum of 9 credits at the 200-level.
- ⁴ Technical Electives: Any 100-level or higher course in CEMS or BSAD; natural or physical sciences courses with advisor approval.
- ⁵ Senior Design credits vary depending upon program.