

General Engineering B.S. with Mechanical Engineering Minor

For students entering Fall 2024

First Year - Fall Semester			First Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
CHEM 121/L CORE course 9	General Chemistry I / CORE 9 NatSci	4	CHEM122	General Chemistry II	4
MATH 121 CORE course 8	Calculus I / CORE 8 Quant	3	MATH122	Calculus II	3
ENGR 101 CORE course 1	Engineering CORE 1 (Foundations)	3	PHYS121	General Physics I	4
CORE course 5	History	3	ENGR102	Introduction to Engineering II	1
CORE course 3	WRIT 102, Research Writing	3	CORE course 7	Literature	3
ENGR192	Freshman Engineering Seminar	0	CORE course 2	FTAE 105, Intro to Franciscan Theology	3
CORE 103	Community Enrichment Series	0	ENGR193	Freshman Engineering Seminar	0
			CORE 104	Community Enrichment Series	0
	Total	16		Total	18
Second Year - Fall Semester			Second Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
MATH221	Calculus III	3	MATH306	Differential Equations I	3
PHYS122/L	General Physics II	4	ENGR202	Engineering Dynamics	3
ENGR210/L	Programming for Eng (1 hr lec, 2 hr lab)	2	ENGR315/L	Mechanics of Materials (3 hr L)	3
ENGR201	Engineering Statics	3	ENGR325/L	Fundamentals of Electrical Eng (2hr L)	4
ENGR250	Solid Modeling and CAD	3	ENGR279	Sophomore Engr. Design for Service	2
ECON 101 CORE course 4	Economics / CORE II, Civic responsibility	3	CORE course 11	Religion or Philosophy	3
ENGR292	Sophomore Engineering Seminar	0	ENGR293	Sophomore Engineering Seminar	0
	Total	18		Total	18
Third Year - Fall Semester			Third Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
MATH322	Linear Algebra	3	ENGR335	Engineering Instrumentation (1 lect 1 lab)	1
ENGR301/L	Fluid Mechanics	4	ENGR375	Heat Transfer	3
ENGR321	Applied Engr. Thermodynamics	3	ENGR379	Junior Engr. Design for Service	3
ENGR350	Materials Science	3	ENGR435/L	Control Theory (3 hr L)	4
CORE course 6	Social Science (Human Geography if approved)	3	ENVE421 or 422	Energy conversion I or II	3
ENGR392	Junior Engineering Seminar	0	ENGR497	Capstone Design Proposal	1
			ENGR393	Junior Engineering Seminar	1
	Total	16		Total	16
Senior Year - Fall Semester			Senior Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
ENGR427	Power/Thermal Systems Lab	1	ENGR498 CORE course 15	Capstone Design / CORE 15 (needs approval)	3
ENGR415	Senior Lab	3	ENGR407 CORE course 14	Sustainability in Engineering Design / CORE III / CORE 14	3
CORE course 12	Fine Arts	3	ENGR410	Applied Finite Element and Volume Modeling	4
ENGR445	Mechanisms, Linkages, and Design of Machine Elements	3	ENGR425	Advanced Thermal and Fluid Systems	3
CORE course 13	Ethics	3	ENGR493	Senior Engineering Seminar	0
CORE course 10	Language / Culture	3			
ENGR492	Senior Engineering Seminar	0			
	Total	16		Total	13
	Courses for CORE curriculum		Total credits		131
17	Courses for the minor				

Mechanical Engineering Minor (17)

The Mechanical Engineering Minor prepares the General Engineer for a career or graduate school in areas more closely related to a traditional Mechanical Engineering major. Here the student will receive preparation and exposure to advanced topics in heat transfer and fluid mechanics, machine component design, and control theory. Students will gain experience in industry-standard finite-element and finite-volume computational methods used to simulate the behavior of structures and materials.

- [ENGR 410 - Applied Finite Element and Volume Modeling](#), 4
- [ENGR 425 - Advanced Heat Transfer and Fluid Mechanics](#), 3
- [ENGR 435 - Control Theory](#), 4
- [ENGR 445 - Mechanisms, Linkages and Design of Machine Elements](#), 3
- [ENVE 421 - Energy Conversion Engineering I: Mechanical and Nuclear Methods](#), 3
Or [ENVE 422 - Energy Conversion Engineering II: Electro-Chemical Methods](#)

Credits in the General engineering central requirements =	87
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Credits in the CORE curriculum	
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Credits in the Minor = 17	
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Total credits =	131
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In the major, outside the minor

ENGR credits	53
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Collateral credits	34
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