

General Engineering B.S. with Robotics Minor

For students entering Fall 2024

First Year - Fall Semester

Course	Title	Credits
CHEM 121/L CORE course 9	General Chemistry I / CORE 9 NatSci	4
MATH 121 CORE course 8	Calculus I / CORE 8 Quant	3
ENGR 101 CORE course 1	Engineering CORE 1 (Foundations)	3
CORE course 5	History	3
CORE course 3	WRIT 102, Research Writing	3
ENGR192	Freshman Engineering Seminar	0
Total		16

First Year - Spring Semester

Course	Title	Credits
CHEM122	General Chemistry II	4
MATH122	Calculus II	3
PHYS121	General Physics I	4
ENGR102	Introduction to Engineering II	1
CORE course 7	Literature	3
CORE course 2	FTAE 105, Intro to Franciscan Theology	3
ENGR193	Freshman Engineering Seminar	0
Total		18

Second Year - Fall Semester

Course	Title	Credits
MATH221	Calculus III	3
PHYS122/L	General Physics II	4
ENGR210/L	Programming for Eng (1 hr lec, 2 hr lab)	2
ENGR201	Engineering Statics	3
ENGR250	Solid Modeling and CAD	3
ECON 101 CORE course 4	Economics / CORE II, Civic responsibility	3
ENGR292	Sophomore Engineering Seminar	0
Total		18

Second Year - Spring Semester

Course	Title	Credits
MATH306	Differential Equations I	3
ENGR202	Engineering Dynamics	3
ENGR315/L	Mechanics of Materials	3
ENGR325/L	Fundamentals of Electrical Eng (2hr L)	4
ENGR279	Sophomore Engr. Design for Service	2
CORE course 11	Religion or Philosophy	3
ENGR293	Sophomore Engineering Seminar	0
Total		18

Third Year - Fall Semester

Course	Title	Credits
MATH322	Linear Algebra	3
ENGR301/L	Fluid Mechanics	4
ENGR321	Applied Engr. Thermodynamics	3
ENGR350	Materials Science	3
CORE course 6	Social Science (Human Geography if approved)	3
ENGR392	Junior Engineering Seminar	0
Total		16

Third Year - Spring Semester

Course	Title	Credits
ENGR335	Engineering Instrumentation (1 lect 1 lab)	1
ENGR375	Heat Transfer	3
ENGR379	Junior Engr. Design for Service	3
ENGR435/L	Control Theory	4
ENGR366	Unmanned Vehicles	3
ENGR497	Capstone Design Proposal	1
ENGR393	Junior Engineering Seminar	1
Total		16

Senior Year - Fall Semester

Course	Title	Credits
ENGR427	Power/Thermal Systems Lab	1
ENGR415	Senior Lab	3
CORE course 12	Fine Arts	3
ENGR445	Mechanisms, Linkages, and Design of Machine Elements	3
CPSC450	Autonomous Systems	3
CORE course 13	Ethics	3
ENGR492	Senior Engineering Seminar	0
Total		16

Senior Year - Spring Semester

Course	Title	Credits
ENGR498 CORE course 15	Capstone Design / CORE 15 (needs approval)	3
ENGR407 CORE course 14	Sustainability in Engineering Design / CORE III / CORE 14	3
ENGR455	Robotics	4
CORE course 10	Language / Culture	3
ENGR493	Senior Engineering Seminar	0
Total		13

Courses for CORE curriculum

17 Courses for the minor

Total credits

131

Robotics Minor (17)

The Robotics Minor prepares the General Engineer interested in robotics or autonomous systems (like self-driving cars) through dedicated courses in robotics, unmanned vehicles, robotic control, and autonomous systems. Advanced topics in the areas of artificial intelligence and machine learning for robotics systems will be explored.

- [CPSC 450 - Autonomous Systems](#), 3
- [ENGR 366 - Unmanned Vehicles](#), 3
- [ENGR 435 - Control Theory](#), 4
- [ENGR 445 - Mechanisms, Linkages and Design of Machine Elements](#), 3
- [ENGR 455 - Robotics](#), 4

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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