

General Engineering B.S. with Robotics Minor

For students entering Fall 2023

First Year - Fall Semester

Course	Title	Credits
CHEM121	General Chemistry I	4
MATH121	Calculus I	3
ENGR101	Introduction to Engineering I	1
ECON 101	Economics (EPPS)	3
WRIT102	Research Writing	3
CORE 113	Freshman Academic Seminar	3
CORE103	Community Enrichment Series	0
ENGR192	Freshman Engineering Seminar	0
Total		17

First Year - Spring Semester

Course	Title	Credits
CHEM122	General Chemistry II	4
MATH122	Calculus II	3
PHYS122	General Physics I	3
ENGR102	Introduction to Engineering II	1
LIT104	LIT103, 201, 202, 207, 270	3
RLST105	Religious Studies	3
CORE104	Community Enrichment Series	0
ENGR193	Freshman Engineering Seminar	0
Total		17

Second Year - Fall Semester

Course	Title	Credits
MATH221	Calculus III	3
PHYS122/L	General Physics I	4
ENGR210/L	Programming for Engineers	2
ENGR201	Engineering Statics	3
ENGR250	Solid Modeling and CAD	3
HIST1/200	History Elective	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 Engineering	3
ENGR279	Sophomore Engr. Design for Service	1
PHIL 205	Philosophy and Reasoning	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
EPPS	Social science elective (1/2)	3
EXAM301	Writing Competency Exam	0
ENGR392	Junior Engineering Seminar	0
Total		16

Third Year - Spring Semester

Course	Title	Credits
ENGR335	Engineering Instrumentation	3
ENGR375	Heat Transfer	3
ENGR435/L	Control Theory	3
ENGR366	Unmanned Vehicles	3
FNAR	Fine Arts	3
ENGR379	Junior Engr. Design for Service	1
ENGR393	Junior Engineering Seminar	0
Total		16

Senior Year - Fall Semester

Course	Title	Credits
ENGR427	Power/Thermal Systems Lab	1
ENGR415	Senior Lab	3
ENGR497	Capstone Design Proposal	1
ENGR445	Mechanisms, Linkages, and Design of Machine Eler	3
CPSC450	Autonomous Systems	3
DIVER	Diversity requirement	3
PHIL/RLST	Philosophy/Religious Studies Elect.	3
ENGR492	Senior Engineering Seminar	0
Total		17

Senior Year - Spring Semester

Course	Title	Credits
ENGR498	Capstone Design	3
CORE407	Keystone Seminar	3
ENGR455	Robotics	3
EPPS	Social science elective (2/2)	3
EPPS	Language requirement	3
ENGR493	Senior Engineering Seminar	0
Total		18

Courses for CORE curriculum

17 Courses for the minor

Total credits

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 = 82

Credits in the CORE curriculum 39

Credits in the Minor = 15

Total credits = 138

Credits

4
3
4
1
3
3
0
0
18

Credits

3
3
3
4
2
3
0
18

Credits

1
3
4
3
3
3
1
18

Credits

3
3
4
3
3
0
16

138