

BACHELOR OF SCIENCE IN ENGINEERING - ROBOTICS SYSTEMS

Robotics Systems is a multidisciplinary engineering program that combines narrow, focused depth in several fields: electrical and computer engineering with some mechanical and industrial engineering. First, students complete a core set of engineering courses to provide a solid foundation in computer, electrical, industrial, and mechanical engineering principles. Then, Robotics Systems students complete a set of twelve upper-level concentration courses. Ten required concentration courses provide depth in embedded systems and robotics with computer and industrial engineering and add depth in electronics with electrical engineering. Students customize their program's depth by selecting two concentration electives from those same fields.

The plan of study shown below incorporates nine of the required Robotics Systems courses into the BSE's general plan of study. The three courses labeled "CONCENTRATION ELECTIVE COURSE" refer to the two selections from the "Select Two of the Following" category shown on the Engineering's Curriculum page and the required course IME-408. Due to IME-408's schedule, it will only be available in one of the three slots shown and must be taken that semester.

Course	Title	Credit Hours
Freshman I		
CILE-101	First Year Foundations	1
COMM-101	Rhetoric & Writing	4
CHEM-135	Principles of Chemistry	3
CHEM-136	Principles of Chemistry Lab	1
MATH-101	Calculus I	4
IME-100 or ECE-100	Interdisciplinary Design and Manufacturing or Principles of Electrical and Computer Engineering	4
Credit Hours		17
Freshman II		
LA-201	Sophomore Seminar: Exploring the Human Condition	4
MATH-102	Calculus II	4
PHYS-114	Newtonian Mechanics	3
PHYS-115	Newtonian Mechanics Laboratory	1
IME-100 or ECE-100	Interdisciplinary Design and Manufacturing or Principles of Electrical and Computer Engineering	4
Credit Hours		16
Sophomore I		
ECON-201	Economic Principles	4
MATH-203	Multivariate Calculus	4
PHYS-224	Electricity and Magnetism	3
PHYS-225	Electricity and Magnetism Laboratory	1
ECE-101	MATLAB and C Programming	4
Credit Hours		16

Sophomore II		
EE-210	Circuits I	3
EE-211	Circuits I Lab	1
IME-200	Introduction to Industrial Engineering	4
MATH-204	Differential Equations & Laplace Transforms	4
MECH-210	Statics	4
Credit Hours		16

Junior I		
CE-210	Intro to Digital Systems Design	4
EE-320	Electronics I	3
EE-321	Electronics I Laboratory	1
MATH-258	Probability and Statistics	4
MECH-310	Dynamics	4
Advanced Humanities or Social Science Elective		4
Credit Hours		20

Junior II		
CE-320	Intro to Microcomputers	4
EE-338	Discrete-Time Signals and Systems	4
IME-351	Engineering Economics	4
MATH-305	Numerical Methods and Matrices	4
Advanced Humanities or Social Science Elective		4
Credit Hours		20

Senior I		
CE-420	Microcomputer Systems	4
CONCENTRATION ELECTIVE COURSE		4
Math/Science Elective		4
Free Elective		4
Advanced Humanities or Social Science Elective		4
Credit Hours		20

Senior II		
CE-426	Real-Time Embedded Systems	4
CE-442	Mobile Robotics	4
LA-489	Sr. Seminar: Leadership, Ethics	4
CONCENTRATION ELECTIVE COURSE		4
Credit Hours		16

Senior III		
ENGR-490	Senior Multidisciplinary Engineering Design Project	4
CONCENTRATION ELECTIVE COURSE ¹		4
Advanced Humanities or Social Science Elective		4
Free Elective		4
Credit Hours		16

Any Term		
CILE-400 & CILE-401	Undergraduate Thesis Initiation and Undergraduate Thesis Completion	4
Credit Hours		4
Total Credit Hours		161

¹ IME-408 is offered in Winter of even years and Summer of odd years.