BACHELOR OF SCIENCE IN ENGINEERING-MECHATRONICS SYSTEMS

Mechatronics Systems

Mechatronics Systems is a multidisciplinary engineering program that combines narrow, focused depth in several fields: mechanical, electrical, and computer engineering. First, students complete a core set of engineering courses to provide a solid foundation in computer, electrical, industrial, and mechanical engineering principles. Then, Mechatronics Systems students complete a set of twelve upper-level concentration courses. Nine required concentration courses provide depth in math, electrical engineering, computer engineering, and mechanical engineering. Students customize their program's depth with a selection of two concentration electives from a range of computer, electrical, and mechanical engineering courses.

The plan of study shown below incorporates the nine required Mechatronics Systems courses into the BSE's general plan of study. The three courses labeled "Concentration Elective Course" refer to the selections from the "Select Three of the Following" category shown on the Engineering's Curriculum page.

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		
ENGR-101	Computational Thinking	4
IME-100 or ECE-100	Interdisciplinary Design and Manufacturing or Principles of Electrical and Computer Engineering	4
MATH-102	Calculus II	4
MATH-158	Foundations of Probability & Statistics	4
	Credit Hours	**16**
Sophomore I		
ECON-201	Economic Principles	4
MATH-203	Multivariate Calculus	4
MECH-207	Materials Engineering	4
PHYS-114	Newtonian Mechanics	3
PHYS-115	Newtonian Mechanics Laboratory	1
	Credit Hours	**16**
Sophomore II		
EE-210	Engineering Circuit Analysis I	4
MATH-204	Differential Equations & Laplace Transforms	4
PHYS-224	Electricity and Magnetism	3
PHYS-225	Electricity and Magnetism Laboratory	1
200-Level Liberal Arts Elective		4
	Credit Hours	**16**
Junior I		
CE-210	Intro to Digital Systems Design	4
EE-320	Introduction to Microelectronic Devices and Circuits	4
MATH-305	Numerical Methods and Matrices	4
MECH-210	Statics	4
200-Level Liberal Arts Elective		4
	Credit Hours	**20**
Junior II		
CE-320	Intro to Microcomputers	4
IME-200	Introduction to Industrial Engineering	4
IME-351	Engineering Economics	4
MECH-310	Dynamics	4
Advanced Humanities or Social Science Elective		4
	Credit Hours	**20**
Senior I		
MECH-311	Mechatronics Systems Design	4
MECH-330	Dynamic Systems with Vibrations	3
MECH-331	Dynamic Sys w Vibrations Lab	1
Concentration Elective Course		4
Free Elective		4
	Credit Hours	**16**
Senior II		
EE-338	Discrete-Time Signals and Systems	4
LA-489	Senior Seminar: Leadership, Ethics, and Contemporary Issues	4
MECH-430	Dynamic Systems with Controls	3
MECH-431	Dynamic Systems with Controls Lab	1
Concentration Elective Course		4
Math/Science Elective		4
	Credit Hours	**20**
Senior III		
ENGR-490	Senior Multidisciplinary Engineering Design Project	4
Concentration Elective Course		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**