

BACHELOR OF SCIENCE IN ENGINEERING - MANUFACTURING SYSTEMS

Manufacturing Systems

Manufacturing Systems is a multidisciplinary engineering program that combines narrow, focused depth in several fields: industrial engineering and mechanical engineering with a little 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, Manufacturing Systems students complete a set of twelve upper-level concentration courses. Seven required concentration courses provide depth in mechanical engineering, industrial engineering, and math. Students customize their program's depth with a selection of five concentration electives from a range of computer engineering, computer science, industrial engineering, and mechanical engineering.

The plan of study shown below incorporates the seven required Manufacturing Systems courses into the BSE's general plan of study. The five courses labeled "CONCENTRATION ELECTIVE COURSE" refer to the selections from the "Select Two of the Following" and "Select Three of the Following" categories 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		
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
200-level Liberal Arts Elective		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

MECH-210	Statics	4
EE-210	Engineering Circuit Analysis 1	4
IME-200	Introduction to Industrial Engineering	4
MATH-204	Differential Equations & Laplace Transforms	4

Credit Hours 16

Junior I

IME-300	Manufacturing Processes	4
MATH-258	Probability and Statistics	4
MECH-211	Circuits and Mechatronics	4
MECH-310	Dynamics	4
200-level Liberal Arts Elective		4

Credit Hours 20

Junior II

IME-351	Engineering Economics	4
MECH-212	Mechanics of Materials	4
MATH-305	Numerical Methods and Matrices	4
CONCENTRATION ELECTIVE COURSE		4
Advanced Humanities or Social Science Elective		4

Credit Hours 20

Senior I

MECH-307	Materials Engineering	4
CONCENTRATION ELECTIVE COURSE		4
CONCENTRATION ELECTIVE COURSE		4
Advanced Humanities or Social Science Elective		4
Free Elective		4

Credit Hours 20

Senior II

LA-489	Senior Seminar: Leadership, Ethics, and Contemporary Issues	4
MECH-300	Computer Aided Engineering	4
CONCENTRATION ELECTIVE COURSE		4
Math/Science Elective		4

Credit Hours 16

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
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Credit Hours 4

Total Credit Hours 161