

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Mechanical engineering is an essential part of most industries and modern technologies, and includes the analysis, design, and development of machines and structures that involve motion. Mechanical engineers are employed in areas such as the design and control of machinery; the development of means of transportation including automobiles, aircraft, space and marine vehicles, and railroads; computer-aided design and manufacture of products, consumer goods, devices, and industrial equipment; medical technology utilizing mechanical and electromechanical devices; the generation of energy from fossil and nuclear fuels; and the utilization, storage, and distribution of alternative energy sources.

Required Courses

Code	Title	Credit Hours
Mechanical Engineering Requirements		(50)
MMAE 100	Introduction to the Profession	3
MMAE 202	Mechanics of Solids	3
MMAE 232	Design for Innovation	3
MMAE 302	Advanced Mechanics of Solids	3
MMAE 305	Dynamics	3
MMAE 313	Fluid Mechanics	3
MMAE 319	Mechanical Laboratory I	4
MMAE 320	Thermodynamics	3
MMAE 321	Applied Thermodynamics	3
MMAE 323	Heat and Mass Transfer	3
MMAE 332	Design of Machine Elements	3
MMAE 350	Computational Mechanics	3
MMAE 419	Mechanical Laboratory II	4
MMAE 432	Design of Mechanical Systems	3
or MMAE 433	Design of Thermal Systems	
MMAE 443	Systems Analysis and Control	3
MMAE 485	Manufacturing Processes	3
Materials Science Requirement		(3)
MS 201	Materials Science	3
Mathematics Requirements		(18)
MATH 151	Calculus I	5
MATH 152	Calculus II	5
MATH 251	Multivariate and Vector Calculus	4
MATH 252	Introduction to Differential Equations	4
Physics Requirements		(8)
PHYS 123	General Physics I: Mechanics	4
PHYS 221	General Physics II: Electricity and Magnetism	4
Chemistry Requirement		(4)
CHEM 124	Principles of Chemistry I with Laboratory	4
Computer Science Requirement		(2)
CS 104	Introduction to Computer Programming for Engineers	2
Humanities and Social Science Requirements		(21)
See Illinois Tech Core Curriculum, sections B and C		21
Interprofessional Projects (IPRO)		(6)
See Illinois Tech Core Curriculum, section E		6
Technical Elective		(9)
Select nine credit hours ¹		9
Free Electives		(6)

Select six credit hours

6

Total Credit Hours

127

¹ A technical elective is a 300- or higher-level course in any engineering discipline (other than required MMAE courses or their equivalent) or in mathematics, chemistry, physics, or computer science. However, not all such courses are acceptable as technical electives. Students should consult their faculty adviser for a determination of which courses are acceptable. In addition, ECE 218, ECON 423, INTM 437 and INTM 438 are permitted. Any substitutions require written approval by the department.

Bachelor of Science in Mechanical Engineering Curriculum

		Year 1	
Semester 1	Credit Hours	Semester 2	Credit Hours
MMAE 100	3	MS 201	3
MATH 151	5	MATH 152	5
CHEM 124	4	PHYS 123	4
Humanities 200-level Course	3	CS 104	2
		Social Sciences Elective	3
	15		17
		Year 2	
Semester 1	Credit Hours	Semester 2	Credit Hours
MMAE 202	3	MMAE 350	3
MMAE 232	3	MATH 252	4
MATH 251	4	Free Elective	3
PHYS 221	4	Humanities Elective (300+)	3
Humanities or Social Science Elective	3	Social Sciences Elective (300+)	3
	17		16
		Year 3	
Semester 1	Credit Hours	Semester 2	Credit Hours
MMAE 302	3	MMAE 319	4
MMAE 305	3	MMAE 321	3
MMAE 313	3	MMAE 323	3
MMAE 320	3	MMAE 332	3
Humanities Elective (300+)	3	Social Sciences Elective (300+)	3
	15		16
		Year 4	
Semester 1	Credit Hours	Semester 2	Credit Hours
MMAE 419	4	MMAE 432 or 433	3
MMAE 443	3	Technical Elective ¹	3
MMAE 485	3	Technical Elective ¹	3
Technical Elective ¹	3	I PRO Elective II	3
I PRO Elective I	3	Free Elective	3
	16		15

Total Credit Hours: 127

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This program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).