BACHELOR OF SCIENCE IN AEROSPACE ENGINEERING

Aerospace engineering explores both the design and manufacture of aircraft, as well as the design and flight of vehicles beyond the earth's atmosphere. Knowledge of aerodynamics, structures and materials, propulsion systems, and flight mechanics and controls are important to this field.

Aerospace engineers are primarily employed in civil aeronautics, the defense industry, and the space program. However, applications of aerospace technology are also found in related areas such as ground and undersea transportation systems, pollution control, wind power and the effects of wind on structures, and the development and use of advanced materials.

Required Courses

Code	Title	Credit Hours
Aerospace Engineering Requirements		**(56)**
MMAE 100	Introduction to the Profession	3
MMAE 202	Mechanics of Solids	3
MMAE 304	Mechanics of Aerostructures	3
MMAE 305	Dynamics	3
MMAE 311	Compressible Flow	3
MMAE 312	Aerodynamics of Aerospace Vehicles	3
MMAE 313	Fluid Mechanics	3
MMAE 315	Aerospace Laboratory I	4
MMAE 320	Thermodynamics	3
MMAE 350	Computational Mechanics	3
MMAE 352	Aerospace Propulsion	3
MMAE 372	Aerospace Materials Lab	3
MMAE 410	Aircraft Flight Mechanics	3
MMAE 411	Spacecraft Dynamics	3
MMAE 412	Spacecraft Design I	3
MMAE 414	Aircraft Design I	3
MMAE 415	Aerospace Laboratory II	4
MMAE 443	Systems Analysis and Control	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
Interprofessional Project (IPRO)		**(6)**
See Illinois Tech Core Curriculum, section E		6
Humanities and Social Sciences Requirements		**(21)**
See Illinois Tech Core Curriculum, sections B and C		21
Technical Electives		**(3)**
Select three credit hours [1]		3
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 Aerospace 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 313	3
MATH 251	4	MMAE 320	3
PHYS 221	4	MATH 252	4
Humanities or Social Sciences Elective	3	Free Elective	3
Humanities Elective (300+)	3	Social Sciences Elective (300+)	3
	17		**16**

			Year 3
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
MMAE 311	3	MMAE 304	3
MMAE 312	3	MMAE 305	3
MMAE 315	4	MMAE 352	3
MMAE 350	3	MMAE 372	3
Free Elective	3	Humanities Elective (300+)	3
	16		**15**

			Year 4
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
MMAE 410	3	MMAE 412	3
MMAE 411	3	MMAE 415	4
MMAE 414	3	IPRO Elective II	3
MMAE 443	3	Technical Elective[1]	3
IPRO Elective I	3	Social Sciences Elective (300+)	3
	15		**16**

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).