Date Submitted: 01/21/26 7:26 pm

Viewing: BS-AE : Bachelor of Science in Aerospace Engineering

Last approved: 07/01/22 11:20 am

Last edit: 01/21/26 7:26 pm

Changes proposed by: vural

Catalog Pages Using this Program
Bachelor of Science in Aerospace Engineering

Program Status	Active		
Requestor	Name	Murat Vural ~~Patty Johnson Winston~~	E-mail vural@iit.edu
Origination Date	2026-1-21 ~~2022-7-1~~		
Is this an interdisciplinary program?	No		
Is this stem-eligible?	Yes		
Available for direct application?	Yes		
Academic Unit College	Mechl, Materials & Arspc Engrg Armour College of Engineering		
Program Title	Bachelor of Science in Aerospace Engineering		
Effective Academic Year	2026 ~~2022~~ - 2027 ~~2023~~	Effective Term	Summer 2026
Academic Level	Undergraduate		

In Workflow

1. MMAE Chair
2. Academic Affairs
3. Undergraduate Academic Affairs
4. AC Dean
5. Undergraduate Studies Committee Chair
6. Faculty Council Chair
7. Academic Affairs

Approval Path

1. 01/22/26 7:56 am Matthew Spenko (mspenko): Approved for MMAE Chair
2. 01/27/26 3:30 pm Ayesha Qamer (aqamer): Approved for Academic Affairs
3. 01/28/26 12:15 pm Joseph Gorzkowski (jgorzkow): Approved for Undergraduate Academic Affairs
4. 01/28/26 12:18 pm Louis Cattafesta III (lcattafestaiii): Approved for AC Dean

History

1. Oct 18, 2017 by clmig-jwehrheim
2. Nov 3, 2017 by Sarah Pariseau (sparisea)

3. Feb 28, 2018 by Sarah Pariseau (sparisea)
4. Apr 27, 2018 by Sarah Pariseau (sparisea)
5. Sep 14, 2020 by Patty Johnson Winston (winston)
6. Dec 18, 2021 by Murat Vural (vural)
7. Jul 1, 2022 by Patty Johnson Winston (winston)
8. Jul 1, 2022 by Patty Johnson Winston (winston)

If all courses in a subject in your department are required, please enter each subject followed by the number ranges in the "Quick Add" field in the pop up box when you click the green plus button below. For example: ARCH 100-499.

What courses will factor the major GPA?

Program Type Degree

Degree Type Bachelor of Science (BS)

CIP Code
14.0201 - Aerospace, Aeronautical, and Astronautical/Space Engineering, General.

Is there more than one Academic Unit proposer?

No

Program Code BS-AE

Program Attribute

Total Program Credit Hours 126 ~~127~~

Rationale for change in program credit hours.
CHEM 124 (4 ch) requirement in the BS-AE program have been replaced with CHEM 122 (3 ch). This has been approved by full MMAE faculty in December 2025 faculty retreat. Historical reason behind CHEM 124 requirement for our programs was that it was preferred particularly

for our old BS-MSE program, which no longer exists. Therefore, we are replacing it with CHEM 122, which effectively decreases the total credit our requirement for this program from 127 to 126. This will also help us streamline our curriculums with the new BS-ME degree program we are launching in China in partnership with BISTU (Beijing Information Science and Technology University).

Please provide a summary and rationale for the requested program revision.

CHEM 124 (4 ch) requirement in the BS-AE program have been replaced with CHEM 122 (3 ch). This has been approved by full MMAE faculty in December 2025 faculty retreat. Historical reason behind CHEM 124 requirement for our programs was that it was preferred particularly for our old BS-MSE program, which no longer exists. Therefore, we are replacing it with CHEM 122, which effectively decreases the total credit our requirement for this program from 127 to 126. This will also help us streamline our curriculums with the new BS-ME degree program we are launching in China in partnership with BISTU (Beijing Information Science and Technology University). ~~See the attached document entitled "Minor Curriculum Changes in the MMAE Department.pdf".07/01/2022, PJW:Corrected bulletin spacing issues in source code.07/01/2022, PJW:Deleted "page break" source code to resolve bulletin spacing issues.~~

Program Narrative and Justification

Narrative description of how the institution determined the need for the program. For example, describe what need this program will address and how the institution became aware of that need. If the program is replacing a current program(s), identify the current program(s) that is being replaced by the new program(s) and provide details describing the benefits of the new program(s). If the program will be offered in connection with, or in response to, an initative by a governmental entity, provide details of that initiative.

Narrative description of how the program was designed to meet local market needs, or for an online program, regional or national market needs. For example, indicate if Bureau of Labor Statistics data or State labor data systems information was used, and/or if State, regional, or local workforce agencies were consulted. Include how the course content, program length, academic level, admission requirements, and prerequisites were decided; including information received from potential employers about course content; and information regarding the target students and employers.

Narrative description of any wage analysis the institution may have performed, including any consideration of Bureau of Labor Statistics wage data related to the new program.

Narrative description of how the program was reviewed or approved by, or developed in conjunction with, one or more of the following: a) business advisory committees; b) program integrity boards; c) public or private oversight or regulatory agencies (not including the state licensing/authorization agency and accrediting agency); and d) businesses that would likely employ graduates of the program. For example, describe the steps taken to develop the program, identify when and with whom discussions were held, provide relevant details of any proposals or correspondence generated, and/or describe any process used to evaluate the program.

Admission Entry Details

What are the enrollment estimates?

Year 1	Year 2	Year 3

Attach Additional Program Justification Document(s): Minor Curriculum Changes in the MMAE Department.pdf

Academic Information

Advising

Since quality advising is a key component of good retention, graduation, and career placement, how will students be mentored? What student professional organizations will be formed? How will the department work with the Career Services office to develop industry connections?

Program Resources

Which program resources are necessary to offer this program?

Proposed Catalog Entry

Admission Requirements

Course Requirements

Required Courses

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		(3)
~~CHEM 124~~	~~Principles of Chemistry I with Laboratory~~	~~4~~
CHEM 122	Principles of Chemistry I	3
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		126

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.

Sample Curriculum/Program Requirements

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
CHEM 122	3	CS 104	2
Humanities 200-level Course	3	Social Sciences Elective	3
	14		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: 126

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Specialization Requirements

Program Outcomes and Assessment Process

What are your learning objectives in this program? Please list each learning objective in the boxes below:

Note: These should be the same as described in your assessment plan at the bottom of this form.

Upload your assessment plan here:

Undergraduate Program Requirements

What courses will factor the major GPA?

Undergraduate Degree Requirements

Minimum credit hours: 126 ~~127~~

Specialization required?
No

Minor required?
No

Proposed General Curriculum

List Major Course Requirements

List Mathematics Requirements

List Science Requirements

List Computer Science Requirements

List Humanities and Social Sciences Requirements

List Interprofessional Project (IPRO) Requirements

List Technical Elective Course Options

List Free Elective Credit Hours (if applicable)

Semester-by-semester plan of study for the degree program

Report to Faculty Council

Reviewer Comments

Key: 15