Date Submitted: 01/21/26 7:23 pm

Viewing: BS-ME : Bachelor of Science in Mechanical Engineering

Last approved: 02/10/25 5:01 pm

Last edit: 01/21/26 7:23 pm

Changes proposed by: vural

Catalog Pages Using this Program
Bachelor of Science in Mechanical Engineering

Program Status	Active			
Requestor vural@iit.edu	Name	Murat Vural	E-mail	
Origination Date	2026-1-21 ~~2024-11-21~~			
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 Mechanical Engineering			
Effective Academic Year	2026 ~~2025~~ - 2027 ~~2026~~		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 3:35 pm Ayesha Qamer (aqamer): Approved for Academic Affairs
3. 01/28/26 12:16 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 8, 2017 by Sarah Pariseau (sparisea)

3. Apr 27, 2018 by Sarah Pariseau (sparisea)
4. Dec 18, 2021 by Murat Vural (vural)
5. Feb 10, 2025 by Murat Vural (vural)

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
14.1901 - Mechanical Engineering.

Is there more than one Academic Unit proposer?

No

Program Code BS-ME

Program Attribute

Total Program Credit Hours 126 ~~127~~

Rationale for change in program credit hours.

CHEM 124 (4 ch) requirement in the BS-ME 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 curriculum 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 ~~Thermal sciences course requirements~~ in the BS-ME program have been replaced ~~reduced from 4 courses to 3 courses by replacing the MMAE 321 (Applied Thermodynamics)~~ with CHEM 122 (3 ch). ~~a technical elective requirement.~~ This has been approved by full MMAE faculty ~~after reviewing the BS-ME program requirements~~ in December 2025 faculty retreat. ~~peer institutions (which is typically two courses) to create more flexibility for our students through technical electives.~~ 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 curriculum with the new BS-ME degree program we are launching in China in partnership with BISTU (Beijing Information Science and Technology University).

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)

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

Mechanical Engineering Requirements		(47)
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 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		**(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
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		**(12)**

Select twelve credit hours [1]	12
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, INTM 438 and INTM 439 are permitted. Any substitutions require written approval by the department.

Sample Curriculum/Program Requirements

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
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 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 323	3
MMAE 313	3	MMAE 332	3
MMAE 320	3	Technical Elective[1]	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	IPRO Elective II	3
IPRO Elective I	3	Free Elective	3
	16		15

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, INTM 438 and INTM 439 are permitted. Any substitutions require written approval by the department.

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)	6
Semester-by-semester plan of study for the degree program	

Report to Faculty Council	
Reviewer Comments	

Key: 17