

B.S. in Mechanical Engineering

Catalog Year 2024-25

Below is the *advised sequence* of courses for this degree program as of 10/15/23.

Official degree requirements and course prerequisites are in the University General Catalog; prerequisites are subject to change.

Course Number and Title	Units	Prerequisites/Enrollment Requirements
1ST SEMESTER		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
*CHEM 151 Chemical Thinking I or CHEM 105A/ 106A	4	Appropriate Math Placement
ENGL 101 or 107 or 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering or ENGR 102	3	<u>ENGR102A</u> : MATH 112 <u>ENGR102B</u> : Pre- or Co-requisite of MATH 112 or higher; First-Year Status; College of Engineering Major
UNIV 101 Intro to the General Education Experience	1	
Semester Total		16/14
2nd Semester		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
ENGL 102 or 108 First-Year Composition	3	ENGL 101 or ENGL 107
*PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122B or 125 or Appropriate Math Placement Level
General Education: Exploring Perspectives (Humanist)	3	
General Education: Exploring Perspectives (Artist)	3	
Semester Total		16
3rd Semester		
CE 214 Statics	3	PHYS 141 or 161H; MATH 129
MATH 223 Vector Calculus	4	MATH 129 with C or better
PHYS 241 Introductory Electricity and Magnetism or PHYS 261H	4	<u>PHYS 241 or 261H</u> : PHYS 141 or 140 or 161H; MATH 129 or Appropriate Math Placement Level
AME 209 Computer Programming in AME	3	MATH 122B or 125
General Education: Exploring Perspectives (Social Scientist)	3	
Semester Total		17
4th Semester		
AME 230 Thermodynamics	3	PHYS 141 or 161H
AME 250 Dynamics	3	CE 214; Concurrent enrollment or Completion of MATH 254
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 or 223 with C or better
ECE 207 Elements of Electrical Engineering or ECE 220	3/5	<u>ECE 207 & ECE 220</u> : PHYS 241 or 261H; <u>ECE 220</u> : MATH 129
AME 211 Computer-Aided Drafting and Manufacturing	3	MATH 122B
General Education: Building Connections	3	
Semester Total		18/20

*Each of the following foundational science courses satisfies the requirements for General Education: Exploring Perspectives (Natural Scientist): CHEM 151 or 152 or 161 or 162; or PHYS 141 or 161H.

Advanced Standing is required for 300- and 400-level engineering courses (see your academic advisor for details).

Course Number and Title	Units	Comments
5th Semester		
AME 301 Engineering Analysis	3	
AME 324A Mechanical Behavior of Engr. Materials	3	
AME 331 Introduction to Fluid Mechanics or BME 331 Introduction to Fluid Mechanics	3	
AME 352 Dynamics of Machines	3	
AME 313 Aerospace/Mechanical Engineering Laboratory	1	
†General Education: Building Connections	3	
Semester Total	16	
6th Semester		
AME 324B Engineering Component Design	3	
AME 300 Instrumentation Laboratory	3	
AME 302 Numerical Methods	3	
AME 325 Fundamentals of Materials for Aerospace and Mechanical Engineers	3	
AME 324L Mechanics of Materials Laboratory	1	
†General Education: Building Connections	3	
Semester Total	16	
7th Semester		
ENGR 498A Interdisciplinary Capstone	3	Senior Status
AME 432 Heat Transfer	3	
AME 495S Senior Colloquium	1	
AME 400A Senior Mechanical Laboratory (Fall Only)	1	
Technical Elective	3	
Technical Elective	3	
Semester Total	14	
8th Semester		
ENGR 498B Interdisciplinary Capstone	3	Senior Status
AME 455 Control System Design	3	
AME 400B Dynamics & Controls Laboratory (Spring Only)	1	
Technical Elective	3	
Technical Elective	3	
Technical Elective	3	
UNIV 301 General Education Portfolio	1	
Semester Total	17	

†Students should work closely with their academic advisor to select General Education: Building Connections courses; some course work in the major, such as some Technical Elective courses, may also fulfill General Education: Building Connections requirements.