B.S. in Aerospace Engineering

Catalog Year 2023-24

Below is the *advised sequence* of courses for this degree program as of 7/12/2022.

Official degree requirements and course prerequisites are found 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 161/163	4	Appropriate Math Placement
ENGL 101 or 107 or 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering or ENGR 102	3	ENGR102A: MATH 112; ENGR102B: Concurrently enrolled or completion of MATH 122B or 125; FR & SOPH Status
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
*PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122B or 125 or Appropriate Math Placement Level
ENGL 102 or 108 First-Year Composition	3	ENGL 101 or ENGL 107
General Education: Exploring Perspectives (Artist)	3	
General Education: Exploring Perspectives (Humanist)	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	For PHYS 241 or 261H: PHYS 141 or 161H; MATH 129 or Appropriate Math Placement Level
AME 209 Computer Programming in Aerospace and Mechanical Engineering	3	MATH 122B or MATH 125
General Education: Exploring Perspectives (Social Scientist)	3	MATH 122B
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
AME 220 Introduction to Aerospace Engineering	3	MATH 223; PHYS 141; Concurrent Enrollment or Completion of MATH 254
AME 211 Computer Aided Drafting and Manufacturing	3	MATH 122B
General Education: Building Connections	3	
Semester Total	**18**	

*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 320 Aerodynamics	3	
AME 324A Mechanical Behavior of Engineering Materials	3	
AME 301 Engineering Analysis	3	
AME 300 Instrumentation Laboratory	3	
MSE 331R Fundamentals of Materials for Engineers	3	
AME 324L Mechanics of Materials Laboratory	1	
Semester Total	**16**	
6th Semester		
AME 324C Aerospace Structures	3	
AME 321 Aircraft Performance	3	
AME 323 Gasdynamics	3	
AME 302 Numerical Methods	3	
AME 313 Aerospace/Mechanical Engineering Laboratory	1	
†General Education: Building Connections	3	
Semester Total	**16**	
7th Semester		
AME 401 Senior Aerospace Laboratory	2	
AME 420 Aerospace Conceptual Design	3	
AME 425 Aerospace Propulsion	3	
AME 427 Stability and Control of Aerospace Vehicles	3	
AME 457 Orbital Mechanics and Space Flight	3	
AME 495S Senior Colloquium	1	
Semester Total	**15**	
8th Semester		
AME 422 Aerospace Engineering Design	3	
AME 463 Finite Element Analysis with ANSYS or AME 431 Numerical Methods in Fluid Mechanics and Heat Transfer	3	
Technical Elective	3	
Technical Elective	3	
†General Education: Building Connections	3	
UNIV 301 General Education Portfolio	1	
Semester Total	**16**	

†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.