

# B.S. IN AEROSPACE ENGINEERING

## CATALOG YEAR 2020-2021

Below is the advised sequence of courses for this degree program and prerequisites as of 12/18/19.

The official degree requirements and prerequisites found in the University General Catalog and the prerequisites are subject to change.

UA COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
<b>1<sup>ST</sup> SEMESTER</b>		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry 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 or 120R & CHEM 151; Concurrent enrollment or completion of MATH 122B or 125
Tier I General Education	3	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
AME 105 Introduction to MATLAB I	1	MATH 120R or MATH 122B or 125
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
ECE 175 Computer Programming for Engineering Applications	3	Concurrent enrollment or completion of MATH 122B or MATH 125
Tier I General Education	3	
<b>3<sup>RD</sup> SEMESTER</b>		
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 205 Introduction to MATLAB II	1	AME 105
AME 211 Computer Aided Drafting and Manufacturing	3	MATH 122B
Tier I General Education	3	
<b>4<sup>TH</sup> SEMESTER</b>		
AME 230 Thermodynamics	3	PHYS 141
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
Tier I General Education	3	

COURSE NUMBER AND TITLE	UNITS
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**CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG**

**ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)**

**5<sup>TH</sup> 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

**6<sup>TH</sup> 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
Tier II General Education	3

**7<sup>TH</sup> 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

**8<sup>TH</sup> 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
Tier II General Education	3

\*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.