

B.S. IN MECHANICAL ENGINEERING

CATALOG YEAR 2021-2022

Below is the *advised sequence* of courses for this degree program and prerequisites as of 12/18/20.

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

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
1ST SEMESTER		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry 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> : Concurrently enrolled or completion of MATH 122B or 125; FR & SOPH Status
Tier I General Education	3	
Semester Total		18/16
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
AME 105 Introduction to MATLAB I	1	MATH 120R or 122B or 125
ECE 175 Computer Programming for Engineering Applications	3	Concurrent enrollment or completion of MATH 122B or MATH 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
Tier I General Education	3	
Semester Total		17
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 211 Computer-Aided Drafting and Manufacturing	3	MATH 122B
Tier I General Education	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	3	PHYS 241 or 261H
AME 205 Introduction to MATLAB II	1	AME 105
Tier I General Education	3	
Semester Total		16
COURSE NUMBER AND TITLE	UNITS	

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)

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
Tier II General Education	3
Semester Total	16

6TH SEMESTER

AME 324B Engineering Component Design	3
AME 300 Instrumentation Laboratory	3
AME 302 Numerical Methods	3
MSE 331R Fundamentals of Materials for Engineers	3
AME 324L Mechanics of Materials Laboratory	1
Tier II General Education	3
Semester Total	16

7TH SEMESTER

ENGR 498A Cross-disciplinary Design (Fall Only) – Senior Status	3
AME 432 Heat Transfer	3
AME 495S Senior Colloquium	1
AME 400A Senior Mechanical Laboratory – Prior to Fall 2022 Consult Advisor	1
Technical Elective	3
Technical Elective	3
Semester Total	14

8TH SEMESTER

ENGR 498B Cross-disciplinary Design (Spring Only) – Senior Status	3
AME 455 Control System Design	3
AME 400B Dynamics and Controls Laboratory – Prior to Fall 2022 Consult Advisor	1
Technical Elective	3
Technical Elective	3
**Technical Elective/Math Intensive Elective	3
Semester Total	16

*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.

**Course taken may satisfy both requirements, see academic advisor.