

B.S. IN MECHANICAL ENGINEERING

CATALOG YEAR 2019-20

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

The official degree requirements and prerequisites can be 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 | Concurrent enrollment or completion of MATH 122B or 125 |
| Tier I General Education | 3 | |
| 2ND SEMESTER | | |
| MATH 129 Calculus II | 3 | MATH 122B or 125 with C or better |
| AME 105 Introduction to MATLAB I | 1 | Concurrent enrollment or completion of MATH 122B or 125 |
| ECE 175 Computer Programming for Engineering Applications | 3 | Concurrent enrollment or completion of 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 |
| Tier I General Education | 3 | |
| 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 |
| AME 211 Computer-Aided Drafting and Manufacturing | 3 | MATH 122B |
| Tier I General Education | 3 | |
| 4TH SEMESTER | | |
| 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 |
| 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 | |
| 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 or CE 215 Mechanics of Solids | 3 |
| AME 331 Introduction to Fluid Mechanics or BME 331 Introduction to Fluid Mechanics | 3 |
| AME 352 Dynamics of Machines | 3 |
| Tier II General Education | 3 |

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 313 Machine Shop | 1 |
| Tier II General Education | 3 |

7TH SEMESTER

| | |
|---|---|
| ENGR 498A Cross-disciplinary Design (Fall Only) – Senior Status | 3 |
| AME 432 Heat Transfer | 3 |
| AME 495S Senior Colloquium | 1 |
| AME 400 Senior Mechanical Laboratory | 2 |
| AME 324L Mechanics of Materials Laboratory | 1 |
| Technical Elective | 3 |
| Technical Elective | 3 |

8TH SEMESTER

| | |
|---|---|
| ENGR 498B Cross-disciplinary Design (Spring Only) – Senior Status | 3 |
| AME 455 Control System Design | 3 |
| Technical Elective | 3 |
| Technical Elective | 3 |
| **Technical Elective/Math Intensive Elective | 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.

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