**B.S. in Mechanical Engineering Curriculum**

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| **FRESHMAN YEAR** | **Units** |
| **1st Quarter** |  |
| Chemistry and Biochemistry 20A—Chemical Structure1 | 4 |
| English Composition 3—English Composition, Rhetoric, and Language | 5 |
| Mathematics 31A—Differential and Integral Calculus1 | 4 |
| **2nd Quarter** |  |
| Chemistry and Biochemistry 20B/20L—Chemical Energetics and Change/General Chemistry Laboratory1 | 7 |
| Mathematics 31B—Integration and Infinite Series1 | 4 |
| Physics 1A—Mechanics1 | 5 |
| **3rd Quarter** |  |
| Mathematics 32A—Calculus of Several Variables1 | 4 |
| Physics 1B/4AL—Oscillations, Waves, Electric and Magnetic Fields/Mechanics Laboratory1 | 7 |
| HSSEAS GE Elective3 | 5 |
| **SOPHOMORE YEAR** |  |
| **1st Quarter** |  |
| Mathematics 32B—Calculus of Several Variables1 | 4 |
| Mechanical and Aerospace Engineering 94—Introduction to Computer-Aided Design and Drafting2 | 4 |
| Physics 1C/4BL—Electrodynamics, Optics, and Special Relativity/Electricity and Magnetism Laboratory1 | 7 |
| **2nd Quarter** |  |
| Materials Science and Engineering 104—Science of Engineering Materials2 | 4 |
| Mathematics 33A—Linear Algebra and Applications1 | 4 |
| Mechanical and Aerospace Engineering 96—Statics and Strength of Materials2 | 4 |
| Mechanical and Aerospace Engineering 105A—Introduction to Engineering Thermodynamics2 | 4 |
| **3rd Quarter** |  |
| Mechanical and Aerospace Engineering M20 (Introduction to Computer Programming with MATLAB) or Computer Science 31 (Introduction to Computer Science I)2 | 4 |
| Mechanical and Aerospace Engineering 82—Mathematics of Engineering2 | 4 |
| Mechanical and Aerospace Engineering 102—Dynamics of Particles and Rigid Bodies2 | 4 |
| Mechanical and Aerospace Engineering 103—Elementary Fluid Mechanics2 | 4 |
| **JUNIOR YEAR** |  |
| **1st Quarter** |  |
| Electrical Engineering 100—Electrical and Electronic Circuits2 | 4 |
| Mechanical and Aerospace Engineering 105D—Transport Phenomena2 | 4 |
| Mechanical and Aerospace Engineering 183A (Introduction to Manufacturing Processes) or M183B (Introduction to Microscale and Nanoscale Manufacturing)2 | 4 |
| HSSEAS Ethics Course | 4 |
| **2nd Quarter** |  |
| Mechanical and Aerospace Engineering 107—Introduction to Modeling and Analysis of Dynamic Systems2 | 4 |
| HSSEAS GE Elective3 | 5 |
| Technical Breadth Course3 | 4 |
| **3rd Quarter** |  |
| Mechanical and Aerospace Engineering 131A (Intermediate Heat Transfer) or 133A (Engineering Thermodynamics)2 | 4 |
| Mechanical and Aerospace Engineering 157—Basic Mechanical and Aerospace Engineering Laboratory2 | 4 |
| Mechanical and Aerospace Engineering 162A—Introduction to Mechanisms and Mechanical Systems2 | 4 |
| Technical Breadth Course3 | 4 |
| **SENIOR YEAR** |  |
| **1st Quarter** |  |
| Electrical Engineering 110L—Circuit Measurements Laboratory2 | 2 |
| Mechanical and Aerospace Engineering 156A—Advanced Strength of Materials2 | 4 |
| Mechanical and Aerospace Engineering 171A—Introduction to Feedback and Control Systems2 | 4 |
| Technical Breadth Course3 | 4 |
| **2nd Quarter** |  |
| Mechanical and Aerospace Engineering 162D—Mechanical Engineering Design I2 | 4 |
| HSSEAS GE Electives (2)3 | 10 |
| Mechanical Engineering Elective2 | 4 |
| **3rd Quarter** |  |
| Mechanical and Aerospace Engineering 162E—Mechanical Engineering Design II2 | 4 |
| HSSEAS GE Elective3 | 5 |
| Mechanical Engineering Elective2 | 4 |
| **TOTAL**   1. Counts as Mathematics and Basic Sciences for ABET, total units Mathematics and Basic Sciences = 50. 2. Counts as Engineering Concepts for ABET, total units Engineering Concepts = 86. 3. Students should contact the Office of Academic and Student Affairs for approved lists in the categories of technical breadth and HSSEAS GE (see page 21 for details). | **182** |