

**Mechanical Engineering, B.S.: 127 units**  
2019-2020 Academic Year

|               | Fall   |   | Units     | Spring   |   | Units     | Comments |
|---------------|--|---|-----------|--|---|-----------|----------|
|               | Courses  | Requirements/Comments   |           | Courses  | Requirements/Comments   |           |          |
| <b>Year 1</b> | ME 1001L Engineering Graphics and Visualization Laboratory | Prereq: ME major.   | 1         | MAT 1150 Calculus II (B4)                                | Prereq: MAT 1140, MAT 115B, MAT 1140C, AP Calc AB $\geq$ 3, or AP Calc BC $\geq$ 3.                       | 4         |          |
|               | MAT 1140 Calculus I (B4) (Success Marker)                  | Prereq: C or better in MAT 1050 and MAT 1060, or appropriate score on MDTP or ALEKS placement test.   | 4         | PHY 1510 Introduction to Newtonian Mechanics (B1)        | Prereq: C- or better in MAT 114, MAT 1140, MAT 1140C, MAT 115, MAT 116 or MAT 1150 .<br>Coreq: PHY 1510L. | 3         |          |
|               | CHM 1150 General Chemistry for Engineers                   | Prereq: C or better MAT 105, 106, 112, 114, 115, 116, 120, 125, 130, 191, 214, 216, 224, MAT 1050, MAT 1052, MAT 1060, MAT 1140, MAT 1150, MAT 1200, MAT 1250, MAT 1300, MAT 1310, MAT 1910, MAT 2140, MAT 2240, MAT 2250, STA120, STA 1200, SAT Math $\geq$ 550, or ACT Math | 3         | PHY 1510L Newtonian Mechanics Laboratory (B3)            | Coreq: PHY 1510.  | 1         |          |
|               | GE Area A1: Oral Communication                             |   | 3         | MFE 2010 Manufacturing Systems and Processes             | Coreq: MFE 2010L.   | 2         |          |
|               | GE Area E: Lifelong Learning and Self-Development          | Recommended EGR 1000/1000L  | 3         | MFE 2010L Manufacturing Systems and Processes Laboratory | Coreq: MFE 2010.  | 1         |          |
|               | GE Area C1: Visual and Performing Arts                     |   | 3         | ME 1101 Computer-Aided Computations                      | Prereq: ME major; and C- or better in MAT 114, MAT 1140, or MAT 1140C.<br>Coreq: ME 1101L.                | 1         |          |
|               |  |   | 0         | ME 1101L Computer-Aided Computations Laboratory          | Prereq: ME Majors; and C or better in MAT 114, MAT 1140, or MAT 1140C<br>Coreq: ME 1101.                  | 1         |          |
|               |  |   | 0         | GE Area A2: Written Communication (Success Marker)       |   | 3         |          |
|               |  | <b>Total Units</b>  | <b>17</b> |  | <b>Total Units</b>  | <b>16</b> |          |

| Year 2   | Fall  |   | Units   | Spring  |   | Units | Comments |
|--|---|---|---|---|---|-------|----------|
|  | Courses   | Requirements/Comments   |   | Courses   | Requirements/Comments   |       |          |
|  | ME 2141 Vector Statics and Strength of Materials  | Prereq: ME major; C or better in MAT 1140, MAT 1140C, or MAT 114; C- or better in PHY 1510 or PHY 131; and C- or better in PHY 1510L or PHY 131L. | 3   | ME 2150 Vector Dynamics   | Prereq: C- or better in ME 2141 or ME 214, or C or better in ARO 2041 or CE 2041; and C or better in MAT 1150, MAT 1150C, or MAT 116. | 3     |          |
| MAT 2140 Calculus III  | Prereq: MAT 116, MAT 214, MAT 1150, or MAT 1150C.   | 4   | ME 2191 Mechanics of Materials  | Prereq: ME major; and C- or better in ME 2141 or ME 214.  | 3   |       |          |
| PHY 1520 Introduction to Electromagnetism and Circuits             | Prereq: C- or better in MAT 115 or MAT 1150; and C- or better in PHY 132, PHY 132B, PHY 1510B or PHY 1510.<br>Coreq: PHY 1520L. | 3   | ME 2331 Introduction to Design  | Prereq: ME major; C- or better in ME 1001L, or MFE 126 and MFE 126L; and C- or better in ME 2141 or ME 214.<br>Coreq: ME 2331L. | 2   |       |          |
| PHY 1520L Introductory Laboratory on Electromagnetism and Circuits | Coreq: PHY 1520.  | 1   | ME 2331L Introduction to Design Laboratory                            | Prereq: ME major; C- or better in ME 1001L, or MFE 126 and MFE 126L; and C- or better in ME 2141 or ME 214.<br>Coreq: ME 2331.  | 1   |       |          |
| GE Area B2: Life Sciences  | Recommended BIO 1110  | 2   | MAT 2240 Elementary Linear Algebra and Differential Equations         | Prereq: MAT 116, MAT 1150, or MAT 1150C.  | 3   |       |          |
| GE Area D1: U.S. History American Ideals                           |   | 3   | EC 2201 Principles of Microeconomics (D3)                             | or EC 2202 Principles of Macroeconomics (D3)  | 3   |       |          |
|  |   | 0   | GE Area C2: Literature, Modern Languages, Philosophy and Civilization |   | 3   |       |          |
|  |   | 0   |   |   | 0   |       |          |
| <b>Semester Total Units</b>  |   | <b>16</b>   | <b>Semester Total Units</b>   |   | <b>18</b>   |       |          |

|                             | Fall   |   | Units                       | Spring  |  | Units | Comments  |
|-----------------------------|--|---|-----------------------------|---|--|-------|---|
|                             | Courses  | Requirements/Comments   |                             | Courses   | Requirements/Comments  |       |   |
| <b>Year 3</b>               | ME 3011<br>Thermodynamics  | Prereq: ME major, and C- or better in ME 2141 or ME 214.  | 3                           | ME 3121 Intermediate<br>Thermal-Fluids<br>Engineering         | Prereq: ME major; C- or better in ME 3011 or ME 301; and C- or better in ME 3111, or ME 311 and ME 312.  | 3     | <i>Graduation Writing Test must be taken before completion of 75 units.</i> |
|                             | ME 3111 Fluid<br>Mechanics   | Prereq: ME major, C or better in MAT 2140 or MAT 214, and C- or better in ME 2150 or ME 215.  | 3                           | ME 3131L Thermal-<br>Fluids Laboratory                        | Prereq: ME major and C- or better in GE Area A2.<br>Coreq: ME 3121 or ME 312.  | 1     |   |
|                             | ME 3150 Engineering<br>Materials   | Prereq: ME major; CHM 1150, CHM 1210, or CHM 121; and C- or better in ME 2191 or ME 218.  | 3                           | ME 3250 Machine<br>Design                                     | Prereq: ME major, MFE 2010 or MFE 201, MFE 2010L or MFE 201L, C- or better in ME 2150 or ME 215, and C- or better in ME 3190 or ME 319.<br>Coreq: ME 3250L.  | 2     |   |
|                             | ME 3190 Stress<br>Analysis   | Prereq: ME major, C- or better in ME 2191 or ME 219, C- or better in ME 2331 or ME 233, and C- or better in ME 2331L or ME 233L.<br>Coreq: ME 3150.       | 3                           | ME 3250L Machine<br>Design Laboratory                         | Prereq: ME major, MFE 2010 or MFE 201, MFE 2010L or MFE 201L, C- or better in ME 2150 or ME 215, and C- or better in ME 3190 or ME 319.<br>Coreq: ME 3250.   | 1     |   |
|                             | ME 3401 System<br>Dynamics   | Prereq: ME major; C- or better in MAT 2240, MAT 216, or MAT 224; C- or better in ME 1101, and ME 1101L or ME 232A; and C- or better in ME 2150 or ME 215. | 3                           | ME 3451 Mechatronic<br>Systems                                | Prereq: ME major, C- or better in PHY 1520 or PHY 133, C- or better in PHY 1520L or PHY 133L, C- or better in ME 3011 or ME 301, C- or better in ME 3111 or ME 311, and C- or better in ME 3401 or ME 340.<br>Coreq: ME 3451L. | 2     |   |
|                             | ME 3501L Mechanics,<br>Behavior and Selection<br>of Materials Laboratory | Prereq: ME major; C- or better in GE Area A2; and Graduate Writing Assessment Requirement passed.<br>Coreq: ME 3150 or ME 315.                            | 1                           | ME 3451L<br>Mechatronic Systems<br>Laboratory                 | Prereq: ME major, C- or better in PHY 1520 or PHY 133, C- or better in PHY 1520L or PHY 133L, C- or better in ME 3011 or ME 301, C- or better in ME 3111 or ME 311, and C- or better in ME 3401 or ME 340.<br>Coreq: ME 3451.  | 1     |   |
|                             |  |   | 0                           | GE Area D2: U.S.<br>Constitution and<br>California Government |  | 3     |   |
|                             |  |   | 0                           | GE Area C1 or GE<br>Area C2                                   | Select either C1: Visual and Performing Arts or C2: Literature, Modern Languages, Philosophy and Civilization course   | 3     |   |
|                             | <i>Take the Graduation Writing Test</i>                                  |   |                             |   |  |       |   |
| <b>Semester Total Units</b> |  | <b>16</b>   | <b>Semester Total Units</b> |   | <b>16</b>  |       |   |

|                             | Fall   |   | Units     | Spring   |   | Units              | Comments   |
|-----------------------------|--|---|-----------|--|---|--------------------|------------|
|                             | Courses  | Requirements/Comments   |           | Courses  | Requirements/Comments   |                    |            |
| Year 4                      | ME 4060 Finite Element Analysis                                      | Prereq: ME major, C- or better in ME 3401 or ME 340, and C- or better in ME 3190 or ME 319.<br>Coreq: ME 4060A.                           | 2         | ME 4271 Thermal Systems Design                                     | Prereq: ME major, C- or better in ME 3121 or ME 312, and C- or better in ME 4150 or ME 415.             | 3                  |            |
|                             | ME 4060A Finite Element Analysis Activity                            | Prereq: ME major, C- or better in ME 3401 or ME 340, and C- or better in ME 3190 or ME 319.<br>Coreq: ME 4060.                            | 1         | ME 4622 Undergraduate Seminar                                      | Prereq: ME major; C- or better in ME 3190 or ME 319; and C- or better in ME 3121, or ME 302 and ME 312. | 1                  |            |
|                             | ME 4150 Heat Transfer  | Prereq: ME major; C or better in MAT 2240, MAT 216, or MAT 224; C- or better in ME 3011 or ME 301; and C- or better in ME 3111 or ME 311. | 3         | Major Elective   | Select from Curriculum Sheet  | 3                  |            |
|                             | ME 4391 Control of Mechanical Systems                                | Prereq: ME major, and C- or better in ME 3401 or ME 340.<br>Coreq: ME 4391L.  | 2         | Major Elective   | Select from Curriculum Sheet  | 3                  |            |
|                             | ME 4391L Control of Mechanical Systems Laboratory                    | Prereq: ME major, and C- or better in ME 3401 or ME 340.<br>Coreq: ME 4391.   | 1         | IME 4030 Fiscal Implications in Technical Decision Making (B5, D4) |   | 3                  |            |
|                             | EGR 4810 Project Design Principles and Applications (B5)             |   | 1         | EGR 4830 Project Design Principles and Applications (B5)           |   | 1                  |            |
|                             | EGR 4820 Project Design Principles and Applications (B5)             |   | 1         |  |   | 0                  |            |
|                             | IME 4020 Ethical Concepts in Technology and Applied Science (B5, C3) |   | 3         |  |   | 0                  |            |
|                             | <i>File an application to graduate</i>                               |   |           |  |   |                    |            |
| <b>Semester Total Units</b> |  |   | <b>14</b> | <b>Semester Total Units</b>  |   | <b>14</b>          |            |
|                             |  |   |           |  |   | <b>Total Units</b> | <b>127</b> |