### BSE CHEMICAL ENGINEERING/BSE MECHANICAL ENGINEERING
#### Dual Degree Program

<table>
<thead>
<tr>
<th>Subjects required by all programs (53 hrs.)</th>
<th>Semester</th>
<th>F1</th>
<th>W1</th>
<th>F2</th>
<th>W2</th>
<th>F3</th>
<th>W3</th>
<th>F4</th>
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<th>F5</th>
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<tbody>
<tr>
<td>Mathematics 115+, 116+, 215+, 216 +</td>
<td>16</td>
<td>4</td>
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<td>Engineering 100+</td>
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<td>Engineering 101+</td>
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<td>Chemistry 130 +</td>
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<td>Physics 140 with Lab 141+; 240 with Lab 241+</td>
<td>10</td>
<td>5</td>
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<td>Intellectual Breadth (to include a course in micro or macro economics)</td>
<td>16</td>
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**Related Program Subjects (ME) (7 hrs.)**

- Advanced Mathematics (See list in ME Dept)                          | 3        |    |    |    |    |    |    |    |    |    |
- EECS 314, Circuit Analysis and Electronics                           | 4        |    |    |    |    |    |    |    |    |    |

**Related Technical Subjects and Advanced Chemistry (ChE) (15 hrs.)**

- Chemistry 210, 211. Structure and Reactivity and Lab I+              | 5        |    |    |    |    |    |    |    |    |    |
- Chemistry 215, 216, Structure and Reactivity and Lab II+            | 5        |    |    |    |    |    |    |    |    |    |
- Chemistry 261, Introduction to Quantum Chemistry *                 | 1        |    |    |    |    |    |    |    |    |    |
- Biology 172 or 174                                                  | 4        |    |    |    |    |    |    |    |    |    |
- Materials Elective (MSE 250 or 220) <see ME 382>                    |          |    |    |    |    |    |    |    |    |    |

**Program Subjects (69 hrs.)**

- ME 211, Intro. to Solid Mechanics +                                 |          |    |    |    |    |    |    |    |    |    |
- ME 235, Thermodynamics <see ChE 330>                                |          |    |    |    |    |    |    |    |    |    |
- ME 240, Intro. to Dynamics & Vibrations +                           |          |    |    |    |    |    |    |    |    |    |
- ME 250, Design & Manufacturing I+                                   |          |    |    |    |    |    |    |    |    |    |
- ME 320, Fluids I <see ChE 341>                                     |          |    |    |    |    |    |    |    |    |    |
- ME 335, Heat transfer <see ChE 342>                                 |          |    |    |    |    |    |    |    |    |    |
- ME 350, Design & Manufacturing II+                                  |          |    |    |    |    |    |    |    |    |    |
- ME 360, Model, Analysis & Control Dyn Systems +                    |          |    |    |    |    |    |    |    |    |    |
- ME 382, Mechanical Behavior of Materials +                          |          |    |    |    |    |    |    |    |    |    |
- ME 395, Laboratory I                                                |          |    |    |    |    |    |    |    |    |    |
- ME 450, Design & Manufacturing III                                  |          |    |    |    |    |    |    |    |    |    |
- ME495, Laboratory II <see ChE 460>                                 |          |    |    |    |    |    |    |    |    |    |
- At least one class from the following list:                         |          |    |    |    |    |    |    |    |    |    |
- ME 311, ME420, ME440, ME461, ME481 <NOT ME 336>                    |          |    |    |    |    |    |    |    |    |    |
- ChE 230, Material & Energy Balances +                               |          |    |    |    |    |    |    |    |    |    |
- ChE 330, Chem & Engin Thermodynamics +                             |          |    |    |    |    |    |    |    |    |    |
- ChE 341, Fluid Mechanics +                                          |          |    |    |    |    |    |    |    |    |    |
- ChE 342, Mass and Heat Transfer +                                   |          |    |    |    |    |    |    |    |    |    |
- ChE 343, Separation Processes +                                     |          |    |    |    |    |    |    |    |    |    |
- ChE 344, Reaction Engr and Design +                                |          |    |    |    |    |    |    |    |    |    |
- ChE 360, ChemE Laboratory I <see ME 395>                            |          |    |    |    |    |    |    |    |    |    |
- ChE 460, ChemE Laboratory II                                        |          |    |    |    |    |    |    |    |    |    |
- ChE 466, Process Control and Dynamics I <see ME 360>                |          |    |    |    |    |    |    |    |    |    |
- ChE 485, Chemical Engineering Process Econ. +                      |          |    |    |    |    |    |    |    |    |    |
- Elect 1 of the following 2 courses: (487 shown)                     |          |    |    |    |    |    |    |    |    |    |
- ChE 487, Chem Proc Sim and Design                                   |          |    |    |    |    |    |    |    |    |    |
- ChE 488,489, Chemical Product Design I and II                      |          | 5  |    | 17 | 17 | 17 | 15 | 15 | 17 | 14 |

**B.S. (ChE/ME) Total**

|                                 | 144      | 16 | 17 | 16 | 17 | 15 | 15 | 17 | 14 | 16 |

**Notes:**

- (+) Must earn at least a C- on these courses, or a C for technical Subjects Required Of All Program and ME core courses per ME rules.
- (*) Either Physics 390 or Materials Science 242 or Chemistry 370 can be taken to fulfill the Chemistry 261 requirement.

June 2021