BS MANUFACTURING ENGINEERING

**Flowchart**

**MAJOR COURSES**
- 60 units upper division
- 2.0 GPA
- 2.0 GPA
- USCP

* = Required in Support; also satisfies GE

**Note**: No major or support courses may be taken as credit/no credit.

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**Industrial & Manufacturing Engineering Department**

**MAJOR COURSES**

- **IME 101 Intro Industrial and Manufacturing Engr.** 1
- **IME 140 Graphics Communication and Modeling** 2
- **IME 141 Manufacturing Processes: Net Shape** 1
- **IME 142 Manufacturing Processes: Mats Joining** 2
- **IME 144 Intro Design and Manufacturing** 4
- **IME 157 Electronics Manufacturing** 4
- **IME 223 Process Improvement Fundamentals** 4
- **IME 241 Process Design I** 4
- **IME 314 Engineering Economics** 3
- **IME 326 Engineering Test Design and Analysis** 4
- **IME 336 Manufacturing Automation** 4
- **IME 352 Manufacturing Process Design II** 4
- **IME 342 Manufacturing Systems Integration** 4
- **IME 355 Manufacturing Automation** 4
- **IME 341 Tool Engineering I** 4
- **IME 326 Engineering Test Design and Analysis** 4
- **IME 481, 482 Senior Project Design Lab I, II** 2,3

**Select 12 units from the following. All but 4 units must be upper level (300-level or above) engineering courses (AERO, BMED, CE, EE, IME, MATE, ME):**

- AERO 300, 301, 302, 303, 304, 306, 320, 331, 401
- BMED 212, 310, 410, 420, 425, 440
- BUS 310, 311, 346, 488
- BUS/AG/HUM/EDES/ENGR/SCM/UNIV 350; CE 207
- EE 361
- IME/MATE/HNRS 322
- IME/MATE 458/CPE 488
- IME/AERO 510, 511
- MATE 310, 320, 330, 340, 350, 355, 360, 430, 435, 440, 445, 450, 460
- MATH 344, 350
- ME 305, 318, 326, 328, 329, 341, 343, 405, 406, 410, 412, 415, 416, 422, 423, 430, 431, 441, 446

**SUPPORT COURSES**

- **BIO 213 and ENGR/BRAE 213 (B2)** 2,2
- **CE 204 Mechanics of Materials I** 3
- **CHEM 124 Gen Chem for Engineering (B3/B4)** 4
- **CHEM 125 Gen Chem for Engineering** 4
- **CSC 232 Computer Programming for Scientists and Engineers** 3
- **EE 201 Electric Circuits Theory** 3
- **EE 251 Electric Circuits Lab** 1
- **EE 321 Electronics** 3
- **ENGL 149 Technical Writing for Engineers (A3)** 4
- **MATE 210 Materials Engineering** 3
- **MATE 215 Materials Laboratory I** 1
- **MATH 141, 142 Calculus I, II (B1)** 4,4
- **MATH 143 Calculus III (Add’l Area B)** 4
- **MATH 241 Calculus IV** 4
- **MATH 244 Linear Analysis I** 4
- **ME 211 Engineering Statics** 3
- **ME 212 Engineering Dynamics** 3
- **ME 302 Thermodynamics I** 3
- **PHYS 141 General Physics I (Add’l Area B)** 4
- **PHYS 132, 133 General Physics I, II** 4,4
- **STAT 321 Prob/Stats for Engrs/Scientists (B6)** 4

**GENERAL EDUCATION (GE)**

- 72 units required, 32 of which are specified in Support.
- See page 50 for complete GE course listing.
- Minimum of 8 units required at the 300 level.

**Area A Communication (8 units)**

- **A1 Expository Writing** 4
- **A2 Oral Communication** 4
- **A3 Reasoning, Argumentation, and Writing** 4

**Area B Science and Mathematics (no add’l units required)**

- **B1 Mathematics/Statistics** 8 units in Support 0
- **B2 Life Science** 4 units in Support 0
- **B3 Physical Science** 4 units in Support 0
- **B4 One lab taken with either a B2 or B3 course**
- **B5 (requirement for Liberal Arts students only)**
- **B6 Upper-division Area B** 4 units in Support 0
- **Additional area units** 8 units in Support 0

**Area C Arts and Humanities (16 units)**

- **C1 Literature** 4
- **C2 Philosophy** 4
- **C3 Fine/Performing Arts** 4
- **C4 Upper-division elective** 4

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1. **IME 400 and IME 500 require a course substitution form and no more than 4 total units are allowed.**

2. **The courses selected to satisfy this requirement may not be used to satisfy other major, support, or general education requirements (no double counting of coursework).**

3. **Consultation with advisor is recommended prior to selecting technical electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.**

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Area D/E  Society and the Individual (16 units)
D1 The American Experience (40404) .............  4
D2 Political Economy ....................................  4
D3 Comparative Social Institutions ...............  4
D4 Self Development (CSU Area E) ..............  4

40

FREE ELECTIVES ........................................  0

196