BS MECHANICAL ENGINEERING

2015-2017 *updated 10.04.16* **Units Required 196-202**

NOTE: This document can be used as a compact display of courses and other curricular requirements at the time of publication of the 2015-2017 catalog. The Degree Progress Report must be used to track students' progress in all degree requirements, throughout their Cal Poly career.

Note: No major, support, or concentration courses may be selected as credit/no credit.

MAJOR COURSES (80-82)	*Units*
ME 128 Intro to Mechanical Engineering I [1]	1
ME 129 Intro to Mechanical Engineering II [1]	1
ME 130 Intro to Mechanical Engineering III [1]	1
ME 163 Freshmen Orientation to ME [1]	1
ME 211 Engineering Statics	3
ME 212 Engineering Dynamics	3
ME 234 Philosophy of Design	3
ME 236 Measurement & Data Analysis	3
ME 251 Intro to Solid Modeling	2
ME 302 Thermodynamics I	3
ME 303 Thermodynamics II	3
ME 318 Mechanical Vibrations	4
ME 326 Intermediate Dynamics	4
ME 328 Introduction to Design	4
ME 329 Intermediate Design	4
ME 341 Fluid Mechanics I	3
ME 347 Fluid Mechanics II	4
ME 350 Heat Transfer	4
ME 420 Thermal System Design	4
ME 422 Mechanical Control Systems	4
Concentration *(see list on reverse)*	21-23

SUPPORT COURSES (76-80)

BIO 213 ***and***	2
BMED 213 (B2)[2]	2
CE 204 Mechanics of Materials I	3
CE 207 Mechanics of Materials II	2
CHEM 124 General Chem for Engineering I (B3/B4)[2]	4
CHEM 125 General Chem for Engineering II	4
CSC 231 ***or*** CSC 234	2/3
EE 201 Electric Circuit Theory	3
EE 251 Electric Circuits Laboratory	1
EE 321 Electronics	3
EE 361 Electronics Laboratory	1
ENGL 149 Technical Writing for Engineers (A3)[2]	4
IME 142 Manufacturing Processes: Materials Joining	2
IME 143 Manufacturing Processes: Material Removal	2
MATE 210 Materials Engineering	3
MATE 215 Materials Laboratory I	1
MATH 141 Calculus I (B1)[2]	4
MATH 142 Calculus II (B1)[2]	4
MATH 143 Calculus III (Add'l Area B)[2]	4
MATH 241 Calculus IV	4
MATH 244 Linear Analysis I	4
MATH 344 Linear Analysis II (B6) [2]	4
PHYS 131 or 141 General Physics (Add'l Area B) [2]	4
PHYS 132 General Physics II	4
PHYS 133 General Physics III	4
Manufacturing Processes Elective *Select from:* IME 141 ***or*** IT 341	1-4

GENERAL EDUCATION (GE) **40**

72 units required, *32 of which are specified in Support*

Refer to current schedule or http://www.ge.calpoly.edu to choose GE courses.
You will not receive credit for courses not on the approved lists.

Minimum of 8 units required at the 300 level.

Area A Communication	**8**
A1 Expository Writing	4
A2 Oral Communication	4
A3 Reasoning, Argu & Writing (4 units in Support) [2]	
Area B Science and Mathematics (no add'l units req'd)	
28 units are listed in Support	
Area C Arts and Humanities	**16**
C1 Literature	4
C2 Philosophy	4
C3 Fine/Performing Arts	4
C4 Upper-division elective	4
Area D/E Society and the Individual	**16**
D1 The American Exp (40404)	4
D2 Political Economy	4
D3 Comp Social Institutions	4
D4 Self Dev (CSU Area E)	4

FREE ELECTIVES **0**

[1] ME 228 and ME 229 are required in lieu of ME 128, ME 129, ME 130, and ME 163 for transfer students.

[2] Required in Support; also satisfies GE

OTHER DEGREE REQUIREMENTS:

- **Cal Poly, Higher Ed, and Major GPA must all be at least 2.00**
- **For students admitted Fall 2016 and after, a grade of C- or higher is required in GE A1, A2, A3, and one GE B1 course**

All students must complete:

- **United States Cultural Pluralism Requirement**
- **Graduation Writing Requirement**
- **60 units Upper Division (any 300-400 level classes)**
- **Upper Division units in the Major: 27**
- **Residency Requirements: See Degree Progress Report for details**

CONCENTRATIONS (select one)

General (21-22)

ME 428 Senior Design Project I	3
ME 429 Senior Design Project II	2
ME 430 Senior Design Project III	1
EE 255 Energy Conversion Electromagnetics	3
EE 295 Energy Conversion Electromagnetics Laboratory	1
Technical Electives [1,2,3] *Select from the following:* Select at least 8 units from the following ME courses: ME 305, 359, 401, 402, 405, 410, 412, 415, 416, 423, 431, 432, 434, 435, 436, 441, 442, 443, 444, 450, 456, 457, 458, 488, 506, 507, 517, 518, 540, 541, 542, 552, 553, 554, 556, 579; ME/CE 404; ME 501/CE 511; ME 503/CE 513; ME/CE 504 Select 3 to 4 units of non-ME courses from: Any upper division or graduate level course in the College of Engineering with the exception of GE Area F, senior project, thesis, special problems, and coop courses.	11-12

Heating, Ventilating, Air-Conditioning and Refrigerating (21)

ME 359 Fundamentals of HVAC Systems	4
ME 456 HVAC Air and Water Distribution System Design	4
ME 457 Refrigeration Principles and Design	4
ME 458 Building Heating and Cooling Loads	4
ME 459 HVAC Senior Design Project I	3
ME 460 HVAC Senior Design Project II	2

Mechatronics (21-22)

ME 305 Introduction to Mechatronics	4
ME 405 Mechatronics	4
ME 423 Robotics: Fundamentals and Applications	4
ME 428 Senior Design Project I	3
ME 429 Senior Design Project II	2
ME 430 Senior Design Project III	1
Select from[5]: IME 356, 416; ME 506, 507	3-4

Manufacturing (21-23)

IME 327 Test Design and Analysis in MFGE	4
Choose one of the following emphasis areas: **Mechanical Manufacturing** IME 330 Fundamentals of MFGE IME 450 Manufacturing Process and Tool Engr **Electronics Manufacturing** IME/MATE 458 Microelectronics/Electronics Packaging MATE 430 Micro/Nano Fabrication MATE 435 Microfabrication Lab	8-9
Design and Manufacturing Elective *Select from the following:* IME 330[4], 335, 356, 416, 418, 427, 428, 430, 457; IME/MATE 458[4], 543; MATE 430 & 435[4], 440 & 445; ME 305, 412	3-4
ME 428 Senior Design Project I	3
ME 429 Senior Design Project II	2
ME 430 Senior Design Project III	1

[1] 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.

[2] ME 470, ME 471, ME 570 and ME 571 are variable topics courses and may or may not count as ME electives. Please contact instructor for additional information. A course substitution form is required.

[3] ME 400 and ME 500 are independent study classes and may be acceptable for technical elective credit. A course substitution form is required.

[4] If not taken as part of the emphasis area. Courses cannot be double counted.

[5] Elective based on interests of students.