

2011-13 Cal Poly Catalog
Mechanical Engineering Department
General Concentration

BS MECHANICAL ENGINEERING

- ☐ 60 units upper division ☐ GWR
 - ☐ 2.0 GPA ☐ USCP
- * = Required in Support; also satisfies GE

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

MAJOR COURSES

ME 134 Introduction to Mechanical Engineering....	1
ME 151 Engineering Design Communication I.....	2
ME 152 Engineering Design Communication II.....	2
ME 211 Engineering Statics	3
ME 212 Engineering Dynamics	3
ME 234 Philosophy of Design.....	3
ME 236 Thermal Measurements.....	3
³ ME 251 Intermediate Solid Modeling.....	1
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 343 Heat Transfer	4
ME 346 Thermal Science Laboratory.....	1
ME 347 Fluid Mechanics II	4
ME 422 Mechanical Control Systems.....	4
ME 440 Thermal System Design <i>or</i> ME 420 (9/4/15)	4
Concentration (see below).....	<u>21/22</u>
	81/82

SUPPORT COURSES

BIO 213 Life Science for Engineers <i>and</i> ENGR/ BRAE 213 Bioengineering Fundamentals (B2)*	4
CE 204 Mechanics of Materials I	3
⁴ CE 207 Mechanics of Materials II	2-3
CHEM 124 Gen Chem for Engineering I (B3/B4)*	4
CHEM 125 Gen Chem for Engineering II.....	4
CSC 231 <i>or</i> CSC 234 <i>or</i> CPE/CSC 101	2
EE 201, 251 Electric Circuit Theory and Lab.....	3,1
EE 321, 361 Electronics and Lab.....	3,1
ENGL 149 Technical Writing for Engineers (A3)*	4
IME 142 Mfg Processes: Materials Joining.....	2
IME 143 Mfg Processes: Material Removal.....	2
MATE 210 Materials Engineering <i>and</i> MATE 215 Materials Laboratory I.....	3,1
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
MATH 344 Linear Analysis II (B6)*	4
PHYS 131 General Physics (Add'l Area B)* <i>or</i> PHYS 141 (11/7/13)	4

PHYS 132, 133 General Physics II, III	4,4
Manufacturing Processes elective	1
(IME 141 or IT 341)	
	<u>77</u>

GENERAL EDUCATION (GE)

72 units required, 32 of which are specified in Support.
 →See page 39 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 units in Support	0

Area B Science and Mathematics (no add'l units reqd)

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 (not required for Engineering students)	
B6 Upper-division Area B * 4 units in Support	0
Additional Area B 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

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
	<u>40</u>

FREE ELECTIVES	<u>0</u>
	197 198-199

CONCENTRATIONS (select one)

General Concentration

ME 428, 429, 430 Sr. Design Project I, II, III	3,2,1
EE 255, 295 Energy Conversion Electromagnetics & Lab ...	3,1
^{1,2} Technical electives selected from emphasis area....	12
<i>Select at least 8 units of ME courses from:</i> ME 305, 359, 401, 402, 405, 410, 412, 415,	

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 Notes:
 a) ME 470, 471, 570 and 571 are variable topics courses and may or may not count as ME electives. Please contact instructor for additional information.
 b) ME 400 and ME 500 are independent study classes and may be acceptable for technical elective credit. A course substitution form is required.
 c) Exceptions to this policy are possible through consultation with the department chair.

³ ME 271 (Intermediate Solid Modeling) may substitute. (7/23/13)

⁴ If CE 207 is taken for 2 units the department waives the third unit. (7/27/15)

416, 423, 424, 431, 432, 434, 435, 436, 441,
 443, 444, 445, 446, 450, 456, 457, 458, 488,
 506, 507, 517, 518, 531, 540, 541, 542, 551,
 552, 553, 554, 579;
 ME/CE 404, ME 501/CE 511, ME 503/CE 513,
 ME/CE 504, ME/CE 505;
 ME/MATE 555

Select up 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, ENGR 301, senior project, thesis,
 special problems, and coop courses. (4/18/16)

Total units for General Concentration: 22

**Heating, Ventilating, Air-Conditioning and
 Refrigerating Concentration (HVAC&R)**

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, 460 HVAC Senior Design Project I, II.....	3,2
	21

Mechatronics Concentration

ME 305 Introduction to Mechatronics	4
ME 405 Mechatronics.....	4
ME 423 Robotics: Fundamentals and Applications	4
ME 428, 429, 430 Sr. Design Project I, II, III	3,2,1
¹ CPE 336/IME 356/ME 506.....	4
	22

¹ Elective based on interests of students.