2009-11 Cal Poly Catalog

Biomedical & General Engineering Department

BS GENERAL ENGINEERING  Flowchart

☐ 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

CE 204 Mechanics of Materials I ........................................... 3
CSC 234/CSC 101 ......................................................... 3
EE 201 Electric Circuit Theory ........................................... 3

1 ENGR 110,111,112 Engineering Science I,II,III  3,3,3
IME 314 Engineering Economics ........................................ 3
MATE 210 Materials Engineering and
MATE 215 Materials Laboratory I .................................. 3,1
ME 211 Engineering Statics .............................................. 3
ME 212 Engineering Dynamics ......................................... 3
ME 302 Thermodynamics I .............................................. 3
ME 341 Fluid Mechanics I ............................................. 3
ME 343 Heat Transfer .................................................. 4

ENG 481 (2) and 482 (2) Sr. Project Design Lab
I, II or ENGR 462 (4) or Sr. Project-appropriate engineering discipline (1/16/15) .... 4

2 Concentration or individual course of study ............................. 46

SUPPORT COURSES

BIO 213 and ENGR/BRAE 213 (B2)* ...................................... 2,2
CHEM 124 Gen Chem for Engrg I (B3/B4)* and
CHEM 125 Gen Chem for Engrg II (Add'l Area B)* or CHEM 127, 128 Gen Chem I, II ............. 4,4
ENGL 149 Technical Writing for Engineers (A3)* .......................... 4
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

Select one of the following: MATH 344; STAT 312, 321, 350 (B6)* ............................................ 4

PHYS 141 General Physics I .............................................. 4

PHYS 132, 133 General Physics ......................................... 4,4

Physical science electives ............................................. 4,4

60

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 units in Support .................................................. 0

Area B Science and Mathematics (no add'l units req’d)

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 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

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

191

CONCENTRATIONS OR INDIVIDUALIZED COURSE OF STUDY (select one)

Bioengineering Concentration

CSC 341 Numerical Engineering Analysis ..................... 4
ENG 450 451 Special Topics in Bioengineering ................ 4
IME 144 Introduction to Design and Manufacturing ........ 4
MATH 344 Linear Analysis II ......................................... 4

ME 326 Intermediate Dynamics .................................... 4

Select 12 units from the following: ............................. 12

BIO 361, 432, 442; CHEM 305, 371; CSC 471;
EE 336, 419; ENVE 304, 331, 421, 443; MATE 330;
ME 328, 329, 401, 428, 445; STAT 312, 321, 350

Advisor approved electives ........................................... 14

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Corrected (10-31-11)

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1 BMED 212 may be substituted for ENGR 112.

2 A minimum of 35 units at 300-400 level must be completed, in a concentration, individual course of study or free electives, in addition to those required in Major, Support and General Education, for a total of 60 upper division units.
Biomedical Engineering Concentration
CHEM 312 Survey of Organic Chemistry .................. 4
CHEM 313 Survey of Biochemistry and Biotechnology 5
ENGR 450 451 Special Topics in Bioengineering ....... 4
IME 144 Introduction to Design and Manufacturing 4
MATE 425 Corrosion Engineering .......................... 4
Select 12 units from the following:......................... 12
  BIO 361, 432; BOT 426; CHEM 305, 306, 371, 473, 475, CSC 473, 474; ENVE 304, 331; MATE 446; MATH 344; IME 319, 437; ME 326, 401, 422, 423, 445; PHYS 315, 323; STAT 312, 321, 350
Advisor approved electives ..................................... 13

Individualized Course of Study ............................... 46
  Technical electives. A minimum of 35 units must be at 300-400 level.

Corrected (10-31-11)