2011-13 Cal Poly Catalog

Materials Engineering Department

BS MATERIALS ENGINEERING

☐ 60 units upper division  ☐ GWR
☐ 2.0 GPA  ☐ USCP

* = Required in Support; also satisfies GE

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

MAJOR COURSES

MATE 110 Intro to Materials Engrg Design I ........... 1
MATE 120 Intro to Materials Engrg Design II ....... 1
MATE 130 Intro to Materials Engrg Design III ...... 1
MATE 210 Materials Engineering and MATE 215 Materials Laboratory I ................................... 3,1
MATE 222 Materials Selection for the Life Cycle... 4
MATE 225 Materials Laboratory II ...................... 1
MATE 232 Materials, Ethics, and Society ............ 4
MATE 235 Materials Laboratory III .................... 1
MATE 310 Noncrystalline Materials Systems ....... 4
MATE 330 Hybrid Materials Systems .................. 4
MATE 340 Electronic Materials Systems ............ 4
MATE 350 Structural Materials Systems .............. 4
MATE 360 Metallurgical Materials Systems ......... 4
MATE 370 Process Design ................................ 4

MATE 481 Corporate Culture ................................ 1
MATE 482, 483, 484 Senior Project I, II, III .... 1,2,2

1 Technical electives ........................................ 12

Select at least 3 courses from the following:

ENVE 470 (Environmental Nanotechnology);
MATE 400, 401, 406, 425, 430, 435, 440, 445,
450, 460, 470, 471, 500, 501, 504, 510, 520,
522, 525, 540, 545; BMED 531/MATE 550 or
BMED 432; 560, 565, 570, 571, 580, 580;
MATE/CHEM 446, MATE/IME 458/CPE 488,
MATE/BMED 530, MATE/ME 555;
PHYS 412, 413, CHEM 444 (3/25/15)(10/26/15)/2/12/16

1,2 Approved electives/Technical Breadth electives ..... 13

Select 13 units from the following:

AERO/HNRS 310;
BMED 310, 550; BMED/MATE 530;
BRAE 239;
BUS 207, 212, 488;
CD/PSY 254;
CE 207;
CHEM 216, 217, 218, 312, 316, 317, 318, 319,
444, 447, 466; (7/5/12)(3/4/16)
CHEM/MATE 446;
CPE 488/IME/MATE 458;
CSC/CPE 235;
EE/PHYS 422;
ECON 221;
ENGR 451, 470, 471; ENGR 322/SCM 302;
ERSC/GEOG 250;
GEOL 201;
HIST 410, 417;
IME 223, 303, 421; IME/HNRS/MATE 322;
IT 341;

MATE 400, 401, 406, 410, 425, 430, 435, 440,
445, 450, 460, 470, 471, 500, 504, 510, 540,
550, 570, 571, 580; MATE 550 or BMED 432;
(10/26/15)/4/19/16
ME 212, 341;
NR/RPTA 203, NR 434; (10/5/12)
PHYS 211, 412, 413;
PSY 256, 305, 419;
UNIV/HNRS 392, 424, 492;
ZOO 331

Total units for Major Courses: 72

SUPPORT COURSES

CE 204 Mechanics of Materials I ..................... 3
CHEM 124 Gen Chem for Engrg I (B3/B4)* ........ 4
CHEM 125 Gen Chem for Engineering II ........... 4

3 CHEM 305 Physical Chemistry ....................... 4
CSC 231 Programming for Engineering Students or
CSC 234 C and Unix .................................. 4
EE 201, 251 Electric Circuits Theory and Lab ...... 3,1
ENGL 149 Technical Writing for Engineers (A3)* 4
IME 314 Engineering Economics (or IME 326) .... 3
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 343 Heat Transfer or ME 302 Thermodyn. I .. 3
PHYS 141 General Physics IA (Add’l Area B)* .... 4
PHYS 132, 133 General Physics II, III ............... 4,4
STAT 312 Statistical Methods for Engineers (B6)* 4
IME 144 Intro to Design and Manufacturing ...... 4

GENERAL EDUCATION (GE)

72 units required, 28 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 (4 units)

B1 Mathematics/Statistics * 8 units in Support ... 0
B2 Life Science .......................................... 4
B3 Physical Science * 4 units in Support .......... 0
B4 One lab taken with either a B2 or B3 course

1 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).

2 Consultation with advisor is recommended prior to selecting approved

electives; bear in mind your selections may impact pursuit of post-
baccalaureate studies and/or goals.

3 MATE 470 with the topic “Thermodynamics of Materials” for 4 units

may substitute. (8/30/12)

4 1 additional unit of an upper-division technical elective or an approved

technical breadth elective may substitute. (7/15/13)
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)**  
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>C1 Literature</td>
<td>4</td>
</tr>
<tr>
<td>C2 Philosophy</td>
<td>4</td>
</tr>
<tr>
<td>C3 Fine/Performing Arts</td>
<td>4</td>
</tr>
<tr>
<td>C4 Upper-division elective</td>
<td>4</td>
</tr>
</tbody>
</table>

**Area D/E  Society and the Individual (16 units)**  
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1 The American Experience (40404)</td>
<td>4</td>
</tr>
<tr>
<td>D2 Political Economy</td>
<td>4</td>
</tr>
<tr>
<td>D3 Comparative Social Institutions</td>
<td>4</td>
</tr>
<tr>
<td>D4 Self Development (CSU Area E)</td>
<td>4</td>
</tr>
</tbody>
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**FREE ELECTIVES** ........................................... 0  
**Total** ................................................................ 190