CAL POLY
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B.S. in MATERIALS ENGINEERING
Suggested 4-Year Academic Flowchart

2015-2017 Catalog

Updated 5/3/2017

FRESHMAN			SOPHOMORE			JUNIOR			SENIOR		
Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring
Introduction to Materials Engineering Design I **MATE 110 (1)**	*Introduction to Materials Engineering Design II* **MATE 120 (1)** (MATE 110)	*Introduction to Materials Engineering Design III* **MATE 130 (1)** (MATE 120)	*Materials Engineering* **MATE 210 (3)** (CHEM 111, 124, or 127. Recom: MATE 215 concur.)	*Materials, Ethics, and Society* **MATE 232 (4)** (MATE 210)	*Materials Selection Life Cycle* **MATE 222 (4)** (MATE 210)	*Metallurgical Materials Systems* **MATE 360 (4)** (MATE 232 & 235, IME 144)	*Electronic Materials Systems* **MATE 340 (4)** (MATE 210, PHYS 133)	*Noncrystalline Material Systems* **MATE 310 (4)** (MATE 210 & 340, STAT 312. Concur: MATE 350)	*Senior Project I* **MATE 482 (1)** (Sr. Standing)	*Senior Project II* **MATE 483 (2)** (MATE 482)	*Senior Project III* **MATE 484 (2)** (MATE 483)
Introduction to Design & Manufacturing **IME 144 (4)** (Recom: IME 140, ME 129/151)		*Programming for Engineering Students* **CSC 231 (2)** (MATH 142; PHYS 121, 131, or 141)	*Materials Laboratory I* **MATE 215 (1)** (MATE 210†)	*Materials Laboratory II* **MATE 225 (1)** (MATE 215. Concur: MATE 232)	*Materials Laboratory III* **MATE 235 (1)** (MATE 225. Concur: MATE 222)	*Thermodynamics & Physical Chemistry* **MATE 380 (4)** (CHEM 125, PHYS 133, MATH 143, MATE 210 & 215)	*Kinetics of Materials & Process Design* **MATE 370 (4)** (MATE 310 & 380)	*Structural Materials Systems* **MATE 350 (4)** (MATE 360, CE 204, Concur: MATE 310)	*Composite Materials Systems* **MATE 330 (4)** (MATE 350)	Technical Elective **(4)[2]**	Technical Elective **(4)[2]**
Calculus I **MATH 141 (4)** * [B1]	*Calculus II* **MATH 142 (4)** (MATH 141 w/min C-) [B1]	*Calculus III* **MATH 143 (4)** (MATH 142 w/min C-) [Add'l Area B]	*Calculus IV* **MATH 241 (4)** (MATH 143)	*Linear Analysis I* **MATH 244 (4)** (MATH 143)	*Mechanics of Materials I* **CE 204 (3)** (ME 211)	*Electric Circuit Theory & Lab* **EE 201 (3) & EE 251 (1)** (MATH 244, PHYS 133)		*Engr. Economics* **IME 314 (3)[1]** (MATH 241) **OR** *Engineering Test Design & Analysis* **IME 326 (4)** (STAT 321 w/min C-)	Technical Elective **(4)[2]**	Approved Elective/ Technical Breadth Elective **(4)[2]**	Approved Elective/ Technical Breadth Elective **(4)[2]**
General Chemistry for Physical Science & Engineering I **CHEM 124 (4)** * [B3/B4]	*General Chemistry for Physical Science & Engineering II* **CHEM 125 (4)** (CHEM 124)	*General Physics IA* **PHYS 141 (4)** * [Add'l Area B]	*General Physics II* **PHYS 132 (4)** (PHYS 131, HNRS 131, or PHYS 141)	*General Physics III* **PHYS 133 (4)** (PHYS 131, 141, or HNRS 131; MATH 142. Recom: MATH 241)	*Statistical Methods for Engineers* **STAT 312 (4)** (MATH 142) [B6]				**Select 3-4 units:** **ME 350 (4)*** **OR** **MATE 325 (1)[1]*** **&** **MATE 326 (1)[1]*** **&** **MATE 327 (1)[1]***		
	GE (4) **		**GE (4)** **	*Engineering Statics* **ME 211 (3)** (MATH 241†, PHYS 131 or 141)	**GE (4)** **	**GE (4)** **	**GE (4)** **	**GE (4)** **	**GE (4)** **	**GE (4)** **	**GE (4)** **
Expository Writing **ENGL 133 or 134 (4)**** [A1] Can be taken anytime during Freshman Year											
Oral Communication **COMS 101 or 102 (4)**** [A2] Can be taken anytime during Freshman Year											
	Technical Writing for Engineers **ENGL 149 (4)** [A3] (Completion of GE A1 with a C- or better, Recommended: Completion of GE A2) Can be taken anytime between Winter of Freshman and Winter of Sophomore Years					**Graduation Writing Requirement GWR*** (Students can attempt to fulfill the requirement after 90 earned units; students should complete the requirement before senior year)					
17	17	15	16	16	16	16	16	15-16	12-13	14	14

TOTAL: 184-186

Notes:

MOST GENERAL EDUCATION COURSES CAN BE TAKEN IN ANY ORDER AS LONG AS PREREQUISITES ARE MET

* Refer to current catalog for prerequisites.

** One course from each of the following GE areas must be completed: A1, A2, B2, C1, C2, C3, C4, D1, D2, D3, D4. C4 should be taken only after Junior standing is reached (90 units).

Refer to online catalog for GE course selection, United States Cultural Pluralism (USCP) and Graduation Writing Requirement (GWR).

USCP requirement can be satisfied by some (but not all) courses within GE categories: C3, C4, D1, D3, or D4.

† Course can be taken previously or concurrently.

[1] If support requirements are met with IME 314 and MATE 325, 326, 327 (for a total of 6 units), at least one unit of upper division should be selected in Approved Electives/Breadth, to meet the required 60 units of upper division.

[2] Refer to current catalog for course selection and guidelines.

Legend:

Course Title
Course # (Units)
(Prerequisite)
[GE Area]

Major (70)

Support (70-72)

General Ed. (44)