

2017-2018 B.S. in Materials Engineering Curriculum

Materials Engineering Option Curriculum

FRESHMAN YEAR	UNITS
1st Quarter	
Chemistry and Biochemistry 20A—Chemical Structure ¹	4
English Composition 3—English Composition, Rhetoric, and Language	5
Materials Science and Engineering 10—Freshman Seminar: New Materials ²	1
Mathematics 31A—Differential and Integral Calculus ¹	4
2nd Quarter	
Chemistry and Biochemistry 20B/20L—Chemical Energetics and Change/General Chemistry Laboratory ¹	7
Mathematics 31B—Integration and Infinite Series ¹	4
Physics 1A—Mechanics ¹	5
3rd Quarter	
Mathematics 32A—Calculus of Several Variables ¹	4
Physics 1B—Oscillations, Waves, Electric and Magnetic Fields ¹	5
HSSEAS GE Elective ³	5
SOPHOMORE YEAR	
1st Quarter	
Civil and Environmental Engineering 101 (Statics) or Mechanical and Aerospace Engineering 101 (Statics and Strength of Materials) ²	4
Materials Science and Engineering 104—Science of Engineering Materials ²	4
Mathematics 32B—Calculus of Several Variables ¹	4
2nd Quarter	
Materials Science and Engineering 90L—Physical Measurement in Materials Engineering ²	2
Mathematics 33A—Linear Algebra and Applications ¹	4
Physics 1C—Electrodynamics, Optics, and Special Relativity ¹	5
HSSEAS GE Elective ³	5
3rd Quarter	
Civil and Environmental Engineering M20 (Introduction to Computer Programming with MATLAB) or Computer Science 31 (Introduction to Computer Science I) ²	4
Mathematics 33B (Differential Equations) or Mechanical and Aerospace Engineering 82 (Mathematics of Engineering) ¹	4
HSSEAS Ethics Course	4
Technical Breadth Course ³	4
JUNIOR YEAR	
1st Quarter	
Materials Science and Engineering 110/110L—Introduction to Materials Characterization A/Laboratory ²	6
Materials Science and Engineering 130—Phase Relations in Solids ²	4
Technical Breadth Course ³	4
2nd Quarter	
Materials Science and Engineering 120—Physics of Materials ²	4
Materials Science and Engineering 131/131L—Diffusion and Diffusion-Controlled Reactions/Laboratory ²	6

Materials Science and Engineering 143A—Mechanical Behavior of Materials ²	4
Materials Engineering Elective ^{2,4}	4
3rd Quarter	
Civil and Environmental Engineering 108—Introduction to Mechanics of Deformable Solids ²	4
Materials Science and Engineering 132—Structures and Properties of Metallic Alloys ²	4
HSSEAS GE Elective ³	5
SENIOR YEAR	
1st Quarter	
Electrical and Computer Engineering 100—Electrical and Electronic Circuits ²	4
Materials Science and Engineering 160—Introduction to Ceramics and Glasses ²	4
Upper-Division Mathematics Course ^{1,5}	4
Materials Engineering Elective ^{2,4}	4
2nd Quarter	
Materials Science and Engineering 150—Introduction to Polymers ²	4
Materials Engineering Elective ^{2,4}	4
Materials Engineering Laboratory Course ^{2,4}	2
HSSEAS GE Elective ³	5
3rd Quarter	
Materials Science and Engineering 140—Materials Selection and Engineering Design ²	4
Materials Engineering Laboratory Course ^{2,4}	2
HSSEAS GE Elective ³	4
Technical Breadth Course ³	4
Additional coursework to meet 180 unit requirement ⁶	2
TOTAL	180

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1. Counts as Mathematics and Basic Sciences for ABET, total units Mathematics and Basic Sciences = 54.
 2. Counts as Engineering Concepts for ABET, total units Engineering Concepts = 79.
 3. Students should contact the Office of Academic and Student Affairs for approved lists in the categories of technical breadth and HSSEAS GE (see page 22 for details).
 4. See counselor in 6426 Boelter Hall for details.
 5. See page 97 for list of approved mathematics courses.
 6. Any excess or available units not already applied to another degree requirement will satisfy these units.