B.S. in Materials Engineering Curriculum

FRESHMAN YEAR	UNITS
1st Quarter	
Chemistry and Biochemistry 20A — Chemical Structure	4
English Composition 3 — English Composition, Rhetoric, and Language	5
Materials Science and Engineering 10 — Freshman Seminar: New Materials	1
Mathematics 31A — Differential and Integral Calculus	4
2nd Quarter	
Chemistry and Biochemistry 20B/20L — Chemical Energetics and Change/General Chemistry Laboratory	7
Mathematics 31B — Integration and Infinite Series	4
Physics 1A — Mechanics	5
3rd Quarter	
Mathematics 32A — Calculus of Several Variables	4
Physics 1B — Oscillations, Waves, Electric and Magnetic Fields	5
HSSEAS GE Elective*	5
SOPHOMORE YEAR	
1st Quarter	
Civil and Environmental Engineering 101 (Statics) or Mechanical and Aerospace Engineering 96 (Statics and Strength of Materials)	4
Mathematics 32B — Calculus of Several Variables	4
Materials Science and Engineering 104 — Science of Engineering Materials	4
2nd Quarter	
Materials Science and Engineering 90L — Physical Measurement in Materials Engineering	2
Physics 1C — Electrodynamics, Optics, and Special Relativity	5
Mathematics 33A — Linear Algebra and Applications	4
HSSEAS GE Elective*	5
3rd Quarter	
Civil and Environmental Engineering M20 (Introduction to Computer Programming with MATLAB) or Computer Science 31 (Introduction to	4
Mathematics 33B — Differential Equations	4
HSSEAS Ethics Course	4
Technical Breadth Course*	4
JUNIOR YEAR	
1st Quarter	
Technical Breadth Course*	4
Materials Science and Engineering 110/110L — Introduction to Materials Characterization A/Laboratory	6
Materials Science and Engineering 130 — Phase Relations in Solids	4
2nd Quarter	
Materials Science and Engineering 120 — Physics of Materials	4
Materials Science and Engineering 131/131L — Diffusion and Diffusion-Controlled Reactions/Laboratory	6
Materials Science and Engineering 143A — Mechanical Behavior of Materials	4
Materials Engineering Elective†	4
3rd Quarter	
Materials Science and Engineering 132 — Structure and Properties of Metallic Alloys	4
HSSEAS GE Elective*	5
Civil and Environmental Engineering 108 — Introduction to Mechanics of Deformable Solids	4
SENIOR YEAR	
1st Quarter	
Electrical Engineering 100 — Electrical and Electronic Circuits	4
Materials Science and Engineering 160 — Introduction to Ceramics and Glasses	4
Mechanical and Aerospace Engineering 181A (Complex Analysis and Integral Transforms) or 82 (Mathematics of Engineering)	4
Materials Engineering Elective†	4
2nd Quarter	
Materials Science and Engineering 150 — Introduction to Polymers	4
HSSEAS GE Elective*	5
Materials Engineering Elective†	4
Materials Engineering Laboratory Course†	2
3rd Quarter	
Materials Science and Engineering 140 — Materials Selection and Engineering Design	4
HSSEAS GE Elective*	5
Materials Engineering Laboratory Course†	2
Technical Breadth Course*	4
TOTAL	**179**

* Students should contact the Office of Academic and Student Affairs for approved lists in the categories of technical breadth and HSSEAS GE (see page 21 for details).

† See counselor in 6426 Boelter Hall for details.

Make note some Life Science GE's can be worth 4 units.

Make sure to complete 180 units