Michigan State University | College of Engineering
Engineering Building, 428 S. Shaw Lane, East Lansing MI 48824

Technical Electives for Materials Science and Engineering (MSE)

Updated May 2016

It is possible that other courses can be approved that are not on the list with review by the MSE Curriculum Committee.

*ANTR 350, Human Gross Anatomy & Structural Biology	3
BMB 401, Basic Biochemistry	4
BMB 461, Biochemistry I	3
BMB 462, Biochemistry II	3
BMB 471, Biochemistry Laboratory	3
*CEM 251, Organic Chemistry I	3
CEM 252, Organic Chemistry II	3
CEM 255, Organic Chemistry Laboratory	2
*CEM 351, Organic Chemistry I	3
CEM 352, Organic Chemistry II	3
CEM 355, Organic Chemistry Laboratory	2
CHE 201, Material and Energy Balances	3
CHE 311, Fluid Flow and Heat Transfer	3
CHE 472, Composite Materials Processing	3
CHE 473, Chemical Engineering Principles in Polymers and Materials Systems	3
CEM 411, Inorganic Chemistry	3
CEM 484, Molecular Thermodynamics (formerly CEM 391)	3
CSE 231, Introduction to Programming I	4
CSE 232, Introduction to Programming II	4
CSE 260, Discrete Structures Computer Science	4
EC 251H, Microeconomics & Public Policy	4
EC 252H, Macroeconomics & Public Policy	3
ECE 201, Circuits and Systems I	3
ECE 202, Circuits and Systems II	3
ECE 302, Electronic Circuits	3
ECE 303, Electronics Laboratory	1
ECE 474, Principles of Electronic Devices	3
ENE 280, Principles of Environmental Engineering and Science	3
ENE 481, Environmental Chemistry: Equilibrium Concepts	3
GBL 323, Introduction to Business Law	3
ME 201, Thermodynamics	3
ME 280, Graphic Communications (formerly ME 180)	2
ME 423, Intermediate Mechanics of Deformable Solids	3
ME 425, Experimental Mechanics	3
ME 481, Mechanical Engineering Design Projects	3
*ME 495, Tissue Mechanics	3

MMG 301, Introductory Microbiology	3
*MSE 425, Biomaterials & Biocompatibility	3
ME/MSE 426, Introduction to Composite Materials	3
MSE 474, Ceramics and Refractory Materials	3
MSE 465, Design & Application of Engineering Materials	3
MSE 481, Microscopic and Diffraction Analysis of Materials	3
MSE 476, Physical Metallurgy of Ferrous and Aluminum Alloy	3
MSE 490, Independent Study	var
MSE 491, Selected Topics	var
MSE 499, Senior Research & Design Project (W)	var
MTH 309, Linear Algebra I	3
MTH 314, Matrix Algebra with Applications	3
MTH 320, Analysis I	3
MTH 414, Linear Algebra II	3
PHM 350, Introductory to Human Pharmacology	3
PHY 215, Thermodynamics and Modern Physics	3
PHY 321, Classical Mechanics I	3
PHY 480, Computational Physics	3
PSL 250, Introductory Physiology	4
PSL 431, Human Physiology I	3
PSL 432, Human Physiology II	3
PSL 425, Physiological Biophysics	3
STT 441, Probability and Statistics I: Probability	3
STT 442, Probability and Statistics II: Statistics	3
STT 466, Spatial Data Analysis	3
*IBIO, 341, Fundamental Genetics	4
*IBIO, 425, Cells and Development	4

***Asterisk signifies courses that <u>CANNOT</u> be used as technical electives if student is completing the Biomedical Materials Concentration.**