

College of Engineering | Michigan State University
 Technical Electives for the Materials Science and Engineering Undergraduate Major

Approved technical electives for MSE majors (updated 3/09)

*ANTR 350, Human Gross Anatomy & Structural Biology	3
ANTR 480, Special Problems in Anatomy	1-5
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	1
*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
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
ECE 477, Microelectronic Fabrication	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 424, Computational Mechanics	3
ME 425, Experimental Mechanics	3
ME 481, Mechanical Engineering Design Projects	3
*ME 495, Tissue Mechanics	3
MMG 301, Introductory Microbiology	3
MMG 461, Molecular Pathogenesis	3
*MSE 425, Biomaterials & Biocompatibility	3
MSE 426, Introduction to Composite Materials	3
MSE 454, Ceramics and Refractory Materials	3
MSE 465, Design & Application of Engineering Materials	3
MSE 451, Microscopic and Diffraction Analysis of Materials	3
MSE 476, Physical Metallurgy of Ferrous and Aluminum Alloys	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
MTH 443, Boundary Value Problems for Engineers	3

(over)

PHM 350, Introductory Human Pharmacology	3
PHY 215, Thermodynamics and Modern Physics	3
PHY 321, Classical Mechanics I	3
PHY 480, Computational Physics	3
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
STT 471, Statistics for Quality & Productivity	3
*ZOL 341, Fundamental Genetics	4
*ZOL 425, Cells and Development	4

***Asterisk signifies courses that cannot be used as technical electives if student is completing the Biomedical Materials Concentration.**