

**Department of Materials Science and Engineering  
Four Year Plan (2011-12 Catalog)**

FIRST YEAR	FALL SEMESTER		SPRING SEMESTER	
	ENGL 101 Introduction to College Writing	3	ENGL 102 College Writing and Research	3
	CHEM 111, 111L General Chemistry I with Lab	4	CHEM 112, 112L General Chemistry II with Lab	4
	MATH 170 Calculus I	4	MATH 175 Calculus II	4
	ENGR 120 Introduction to Engineering	3	PHYS 211, 211L Physics I with Calculus and Lab	5
	Computer science elective	2-4		
	SEMESTER TOTAL	16+	SEMESTER TOTAL	16

SECOND YEAR	FALL SEMESTER		SPRING SEMESTER	
	MATH 275 Multivariable and Vector Calculus	4	MATH 333 Differential Equations	4
	PHYS 212, 212L Physics II with Calculus and Lab	5	PHYS 309, 310 Modern Physics with Lab	4
	ENGR 245, 245L Introduction to MSE and Lab	4	MSE 215 Materials Processing	3
	COMM 101 Fundamentals of Speech Communication	3	ENGR 210 Statics	3
			ENGL 202 Technical Communication	3
	SEMESTER TOTAL	16	SEMESTER TOTAL	17

THIRD YEAR	FALL SEMESTER		SPRING SEMESTER	
	MSE 305 Bonding, Crystallography, and Crystal Defects	3	ENGR 240 or ECE 210 Electrical Circuits	3
	MSE 308 Thermodynamics of Materials	3	MSE 418 Phase Transformations and Kinetics	3
	MSE 498 Materials Science Seminar	1	MSE 312 Mechanical Behavior of Materials	3
	ENGR 102 Ethical Dimensions of Technology	3	MSE 380 Materials Science and Engineering Lab	2
	MATH 360 or 361 Statistics	3	Technical or engineering elective	3
	Technical or engineering elective	3	Area I or II core course	3
	SEMESTER TOTAL	16	SEMESTER TOTAL	18

FOURTH YEAR	FALL SEMESTER		SPRING SEMESTER	
	PHYS 423 Materials Characterization	3	MSE 482 Senior Project II	3
	MSE 404L Materials Analysis Lab	1	Technical or engineering elective	3
	MSE 310 Electrical Properties of Materials	3	Technical or engineering elective	3
	MSE 480 Senior Project	3	Area I or II core course	3
	Technical or engineering elective	3	Area I or II core course	3
	Area I or II core course	3		
SEMESTER TOTAL	16	SEMESTER TOTAL	15	

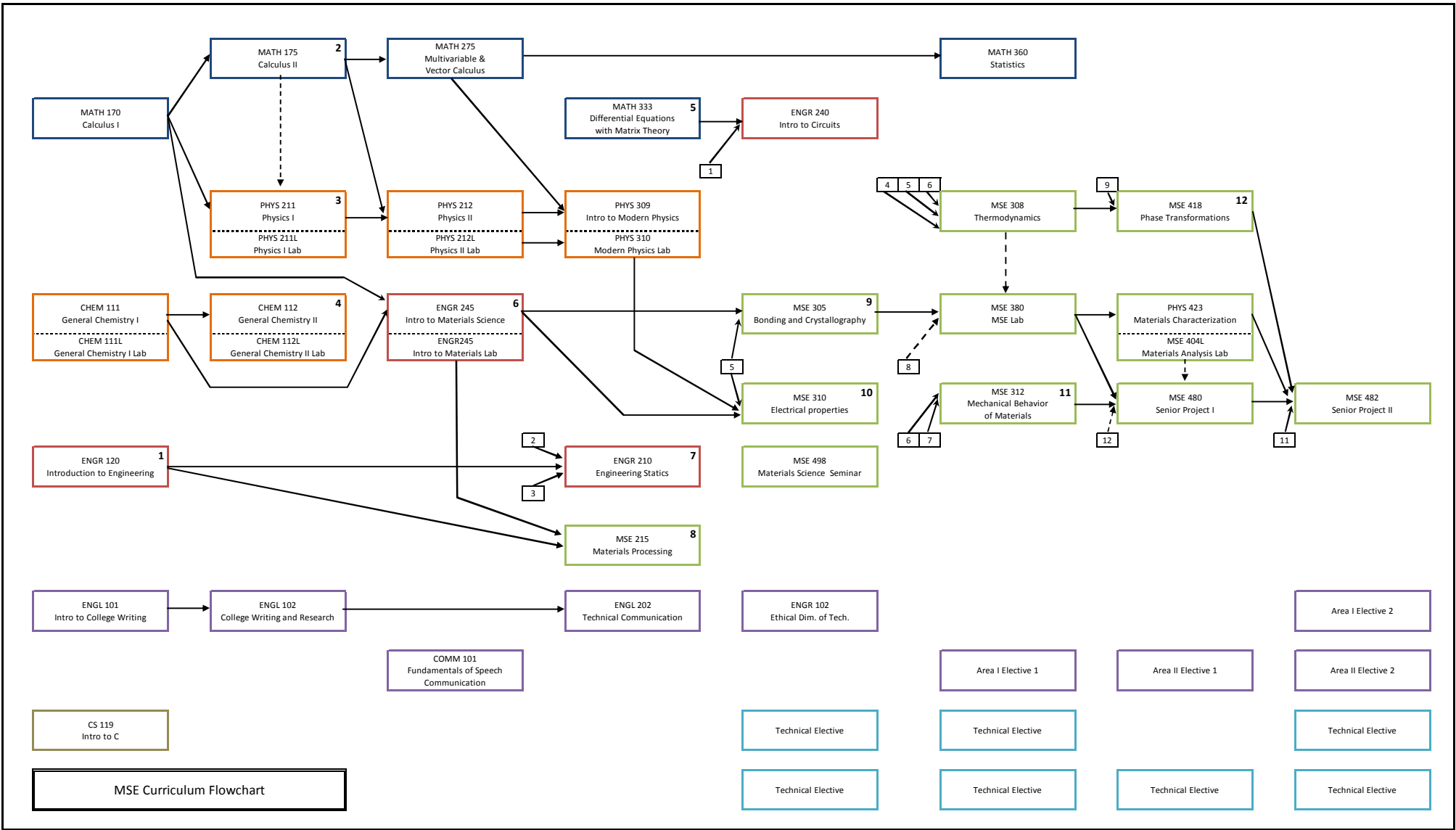
**HIGHLIGHTED COURSES** are offered only in the semester in which they are listed.

**COMPSCI ELECTIVE:** The following courses fulfill the computer science elective requirement – CS 115 (Intro to C), CS 117 (Intro to C++), CS 119 (Intro to Java), CS 120 (Intro to Programming Concepts), and CS 125 (Intro to Computer Science)

**CORE COURSES:** In addition to ENGR 102 (Area I) and COMM 101 (Area II), students need to take two more Area I (Arts and Humanities) and two more Area II (Social Sciences) courses. At least two different disciplines need to be represented in Area I and Area II.

**TECHNICAL + ENGINEERING ELECTIVES:** Students must complete 15 credits of technical and engineering electives. Six of these credits need to be in engineering disciplines (ENGR, MSE, ECE, CE, or MBE). The other nine can come from engineering, math or science disciplines. Of the 15 credits, 6 must be upper division (300- or 400-level). All technical and engineering electives must be approved by the student's advisor.

# Materials Science and Engineering Curriculum



- KEY:**
- |            |            |            |
|------------|------------|------------|
| 1 ENGR 120 | 5 MATH 333 | 9 MSE 305  |
| 2 MATH 175 | 6 ENGR 245 | 10 MSE 310 |
| 3 PHYS 211 | 7 ENGR 210 | 11 MSE 312 |
| 4 CHEM 112 | 8 MSE 215  | 12 MSE 418 |

- Prerequisite  
 Corequisite
- |  |                   |
|--|-------------------|
|  | - To be completed |
|  | - In Progress     |
|  | - Done            |

**Notes:** You may not write on this sheet