

B.S. in Materials Science and Engineering

Four-Year Plan

Catalog Year 2014-2015

Below is the *advised sequence* of courses for this degree program.

The official degree requirements can be found in the University General Catalog.

Course Number and Title	Units	Prerequisites
1ST SEMESTER		
MATH 122 A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I	4	
ENGL 101 First-Year Composition	3	
ENGR 102 Introduction to Engineering or ENGR 102A and ENGR102B	3	Concurrent enrollment or completion of MATH 122B or MATH 125
Tier I General Education	3	
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
MSE 110 - Solid State Chemistry	4	CHEM 151
PHYS 141 Introductory Mechanics	4	MATH 122B or MATH 125; Concurrent enrollment in MATH 129
ENGL 102 First-Year Composition	3	ENGL 101
Tier I General Education	3	
3RD SEMESTER		
MSE 222 - Introduction to Materials Science I	3	MSE 110 or MATH 129; CHEM 151
MATH 223 Vector Calculus	4	MATH 129 with C or better
PHYS 241 Introductory Electricity and Magnetism	4	PHYS 141
MSE 345 - Thermodynamics	4	MATH 129; CHEM 151
4TH SEMESTER		
MSE 223R - Introduction to Materials Science and Engineering II	3	MSE 222
MSE 223L - Materials Processing Laboratory	2	
MSE 365 - Structure and Properties of Materials I	4	MSE 222
MATH 254 - Intro to Ordinary Differential Equations	3	MATH 129 with C or better
Tier I General Education	3	

Course Number and Title	Units	Prerequisites
Advanced Standing is required for 3xx and 4xx courses (See advisor for requirements)		
5TH SEMESTER		
MSE Technical Elective – See Advisor for Course Approval	3	
Math Elective – See Advisor for Course Approval	3	
MSE 350 - Numerical Methods in MSE	3	MATH 223; MATH 254
ECE 207 - Elements of Electrical Engineering	3	PHYS 241; Completion or concurrent enrollment in MATH 254
Tier I General Education	3	
6TH SEMESTER		
MSE 360L - Materials Lab	1	
MSE Technical Elective – See Advisor for Course Approval	3	
MSE 480 - Exp. Methods in Microstructural Analysis	3	
MSE 415 - Transport/Kinetics	4	MSE 222 or MSE 331R; MSE 345, MATH 254
Advanced Basic Science Elective - See Advisor for Course Approval	3	
7TH SEMESTER		
ENGR 498a - Cross Discipline Design	3	Senior Status
MSE Technical Elective - See Advisor for Course Approval	3	
Technical Elective - See Advisor for Course Approval	3	
Technical Elective - See Advisor for Course Approval	3	
Tier II General Education	3	
8TH SEMESTER		
ENGR 498b - Cross Discipline Design	3	Senior Status
MSE Technical Elective - See Advisor for Course Approval	3	
Technical Elective - See Advisor for Course Approval	3	
Technical Elective - See Advisor for Course Approval	3	
Tier II General Education	3	

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.