B.S. IN MATERIALS SCIENCE & ENGINEERING

CATALOG YEAR 2015-2016

Below is the *advised sequence* of courses for this degree program and prerequisites as of 4/30/15. The official degree requirements and prerequisites can be found in the University General Catalog and the prerequisites are subject to change.

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 **OR** CHEM 105A/106A	4	
ENGL 101 **OR** 107 **OR** 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering **OR** ENGR 102	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 or CHEM 105A/106B
PHYS 141 Introductory Mechanics **OR** PHYS 161H	4	MATH 122B or MATH 125; concurrent enrollment or completion of MATH 129
ENGL 102 **OR** 108 **OR** 109H First-Year Composition	3	ENGL 101, ENGL 107
Tier I General Education	3	
3RD SEMESTER		
MSE 222 Introduction to Materials Science I	3	MSE 110 or CHEM 152, MATH 129
MATH 223 Vector Calculus	4	MATH 129 with C or better
PHYS 241 Introductory Electricity and Magnetism **OR** PHYS 261H	4	PHYS 141 or PHYS 161H; MATH 129
MSE 345 Thermodynamics	4	MATH 129; CHEM 151
4TH SEMESTER		
MSE 223R Introduction to Materials Science and Engineering II	3	MSE 222 or MSE 331R
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	
CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG		
ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)		
5TH SEMESTER		
MSE Technical Elective – See major advisor for course approval	3	
Math Elective – See major advisor for course approval	3	
MSE 350 Numerical Methods in MSE	3	
ECE 207 Elements of Electrical Engineering	3	
Tier I General Education	3	
6TH SEMESTER		
MSE 360L Materials Lab	1	
MSE Technical Elective – See major advisor for course approval	3	
MSE 480 Experimental Methods in Microstructural Analysis	3	
MSE 415 Transport/Kinetics	4	
Advanced Science Elective – See major advisor for course approval	3	
7TH SEMESTER		
ENGR 498A Cross-disciplinary Design	3	
MSE Technical Elective – See major advisor for course approval	3	
Technical Elective – See major advisor for course approval	3	
Technical Elective – See major advisor for course approval	3	
Tier II General Education	3	
8TH SEMESTER		
ENGR 498B Cross-disciplinary Design	3	
MSE Technical Elective – See Advisor for Course Approval	3	
Technical Elective – See major advisor for course approval	3	
Technical Elective – See major 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.