

# B.S. IN MATERIALS SCIENCE & ENGINEERING

## CATALOG YEAR 2016-2017

Below is the *advised sequence* of courses for this degree program and prerequisites as of 2/10/16. 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
<b>1<sup>ST</sup> SEMESTER</b>		
MATH 122 A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I <b>OR</b> CHEM 105A/106A	4	
ENGL 101 <b>OR</b> 107 <b>OR</b> 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering <b>OR</b> ENGR 102	3	Concurrent enrollment or completion of MATH 122B or MATH 125
Tier I General Education	3	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
MSE 110 Solid State Chemistry	4	CHEM 151 or CHEM 105A/106A
PHYS 141 Introductory Mechanics <b>OR</b> PHYS 161H	4	MATH 122B or MATH 125; concurrent enrollment or completion of MATH 129
ENGL 102 <b>OR</b> 108 <b>OR</b> 109H First-Year Composition	3	ENGL 101, ENGL 107
Tier I General Education	3	
<b>3<sup>RD</sup> SEMESTER</b>		
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 <b>OR</b> PHYS 261H	4	PHYS 141 or PHYS 161H; MATH 129
MSE 345 Thermodynamics	4	MATH 129; CHEM 151
<b>4<sup>TH</sup> SEMESTER</b>		
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 or 223 with C or better
Tier I General Education	3	

COURSE NUMBER AND TITLE	UNITS
<b>CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG</b>	
<b>ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)</b>	
<b>5<sup>TH</sup> SEMESTER</b>	
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
<b>6<sup>TH</sup> SEMESTER</b>	
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
<b>7<sup>TH</sup> SEMESTER</b>	
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
<b>8<sup>TH</sup> SEMESTER</b>	
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.