

Materials Engineering — ABM

Accelerated Bachelor's/Master's Curriculum for Materials Engineering

The Materials Engineering Accelerated Bachelor's/Master's Program (ABM) provides an opportunity for highly motivated undergraduate students to gain a depth of understanding and experience of materials engineering beyond that of typical bachelor's level graduates. The Bachelor of Materials Engineering undergraduate major can lead to a Master of Science in Materials Engineering (thesis or non-thesis) in the ABM track. Please see the Materials Engineering website for additional information.

Below is a chart of all the approved courses that can be taken in the ABM program and what course that replaces at the undergraduate level.

Code	Title	Hours
MATL 6200	Materials Characterization (Replaces MATL 5200 Materials Characterization)	2
MATL 6201	Materials Characterization Laboratory (Replaces MATL 5201 Materials Characterization Laboratory)	1
MATL 6400	Physics of Solids (Replaces MATL 5400 Physics of Solids)	3
MATL 6500	Numerical Simulation of Materials Processing (MATL 5500 Numerical Simulation of Materials Processing)	3

Junior/Senior Year for Students in ABM Program - Materials Engineering

Courses marked with an asterisk are those used by students enrolled in the ABM program to meet nine undergraduate hours during their junior and senior year and nine graduate hours to be used toward their graduate degree.

Junior

Fall	Hours	Spring	Hours
MATH 2660 Topics in Linear Algebra		3 ENGR 2200 Introduction To Thermodynamics, Fluids And Heat Transfer	3
PHIL 1020 Introduction to Ethics		3 MECH 2220 Computer-Aided Engineering	3
MATL 3100 Engineering Materials - Metals		3 MATL 3200 Engineering Materials Polymers	3
MATL 3101 Metallography Laboratory		1 MATL 3201 Polymer and Composites Laboratory	1
*MATL 6200 Materials Characterization		2 MATL 3300 Engineering Materials - Ceramics	3
*MATL 6201 Materials Characterization Laboratory		1 Technical Elective II	3
Technical Elective I		3	

Senior

Fall	Hours	Spring	Hours
Core Literature		3 Core Fine Arts	3
MATL 4100 Thermodynamics and Kinetics of Materials		3 Core Social Science	3
MATL 4500 Materials Properties and Selection		4 MATL 4980 Senior Design Project	3
*MATL 6400 Physics of Solids		3 *MATL 6500 Numerical Simulation of Materials Processing	3
Technical Elective III		3 UNIV 4AA0 Achieve the Creed	0

Accelerated Master of Science in Materials Engineering Curriculum Model (non-thesis)

Fifth Year

Fall	Hours	Spring	Hours
MATL 6100 Thermodynamics of Materials Systems		3 MATL 6300 Phase Transformations in Material Processing	3
MATL 6xxx-7xxx		3 MATL 7050 Deformation and Failure of Engineering Materials	3
6xxx-7xxx Electives		6 6xxx-7xxx Electives	3
		MATL 7980 Master Materials Engineering Project	1-3
		12	12

Total Hours: 24