

NAME: _____

MATERIALS SCIENCE AND ENGINEERING

UID: _____ __ A.A. __ A.S. __ Post-Bac

GENERAL EDUCATION REQUIREMENTS**Fundamental Studies**

Academic Writing (AW)	ENGL 101		3
Professional Writing (PW)	ENGL 39X		3
Oral Communication (OC)			3

Distributive Studies

History/Social Sciences (HS*)			3
History/Social Sciences (HS*)			3
Humanities (HU*)			3
Humanities (HU*)			3
Scholarship in Practice (SP*) out of major			3

I-Series Courses

I-Series (IS*)			0/3
I-Series (IS*)			0/3

Diversity

Understanding Plural Societies (UP*)			0/3
Understanding Plural Societies (UP*) OR Cultural Competency (CC*)			0/3

MAJOR REQUIREMENTS**Basic Sciences**

CHEM 135-Chem Engr or 131 & 134 -Fund & Prin			3/3&1
CHEM 136 - Chemistry Lab for Eng			1
PHYS 161 - General Physics I (NS)			3
PHYS 260 and 261 - Gen Physics II & Lab (NL)			3 & 1
PHYS 270 and 271 - Gen Physics III & Lab			3 & 1
MATH 140 - Calculus I (MA/AR)			4
MATH 141 - Calculus II			4
MATH 241 - Calculus III			4
MATH 246 - Differential Equations			3

Engineering Sciences

ENES 100 - Intro to Eng Design (SP)			3
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* May satisfy more than one requirement. See www.gened.umd.edu
 **Students should design a course program under the guidance of their advisor.
 Check the website to see examples of potential specialization electives for each option.

For Degree Clearance Only

Degree: B.S. ENMA Advisor: _____
 Date: _____ Credits/GPA: _____

MAJOR REQUIREMENTS

ENES200 or ENEE200 - Tech & Consequences (HU/I-Series)			3
ENMA 165 - Intro Programming - Python			3
ENMA 180 - MSE: The Field and the Future			1
ENMA 300 - Intro to Materials Engineering			3
ENMA 301 - Materials Emerging Tech			3
ENMA 312 - Experimental Methods in MSE			3
ENMA 362 - Mechanical Properties			3
ENMA 441 - Characterization of Materials			3
ENMA 460 - Physics of Materials			3
ENMA 461 - Thermodynamics of Materials			3
ENMA 465 - Microprocessing Materials			3
ENMA 470 - Materials Selection for Engr Design			3
ENMA 471 - Kinetics			3
ENMA 487- Capstone Preparation			1
ENMA 490 - Materials Design			3

Technical Requirements

CHEM 231 & 232-Org Chem I or CHEM 481			3&1OR3
TECH 4XX - Tech. Elective**			3
TECH 4XX - Tech. Elective**			3
ENMA 4XX - Spec. Elective**			3
ENMA 4XX - Spec. Elective**			3
ENMA 4XX - Spec. Elective**			3
ENMA 4XX - Spec. Elective**			3
ENMA 4XX - Spec. Elective**			3
SCI ELEC - Upper level Science Elective			3

Requirements for Graduation:

- Final 30 credits must be earned at UMD
- 15 of the final 30 credits must be earned at the 300-400 level
- 12 of the final 30 credits must be upper level major coursework
- A minimum 2.00 cumulative UM GPA and satisfactory completion of all degree requirements are required for graduation
- Students matriculating after Fall 2012 must have a 2.0 minimum GPA for all degree requirements, minor requirements, and undergraduate certificate requirements
(Major courses are defined as: departmental courses basic sciences, engineering sciences, specified degree tracks, technical requirements/ technical electives and Professional Writing (PW))
- A minimum of 120 credits is required to earn the degree

Materials Science and Engineering Four Year Academic Plan

Name: _____

UID: _____

Year 1	Fall		
https://lep.umd.edu/	Course	Credit	Grade
	ENES 100 (SP)	3	
	MATH 140 (AR)	4	
	CHEM 135	3	
	CHEM 136	1	
	ENGL 101 (AW)	3	
	ENMA 180	1	
	Total	15	

Spring		
Course	Credit	Grade
ENMA 165	3	
MATH 141	4	
PHYS 161	3	
Hist & Social Sciences (HS)*	3	
ORAL COMM (OC)	3	
Total	16	

Year 2	Fall		
	Course	Credit	Grade
	MATH 241	4	
	PHYS 260 and PHYS 261 (NL)	3 & 1	
	ENMA 300	3	
	ENES/ENEE 200 (HU/I-Series)	3	
	Total	14	

Spring		
Course	Credit	Grade
MATH 246	3	
PHYS 270 and PHYS 271 (NL)	3 & 1	
ENMA 301	3	
CHEM 231 & 232 OR 481	3 & 1 OR 3	
Hist & Social Sciences (HS)*	3	
Total	16 or 17	

Year 3	Fall		
	Course	Credit	Grade
	ENMA 312 OR Upper Level Science Elective	3	
	ENMA 362	3	
	ENMA 460	3	
	Specialization Elective	3	
	Scholarship in Practice (SP)*	3	
	Total	15	

Spring		
Course	Credit	Grade
ENMA 312 OR Upper Level Science Elective	3	
ENMA 461	3	
ENMA 465	3	
ENMA 470	3	
Specialization Elective	3	
Total	15	

Year 4	Fall		
	Course	Credit	Grade
	ENMA 441	3	
	ENMA 471	3	
	ENMA487	1	
	Specialization Elective	3	
	Technical Elective	3	
	Professional Writing (PW)	3	
	Total	16	

Spring		
Course	Credit	Grade
ENMA 490	3	
Specialization Elective	3	
Specialization Elective	3	
Technical Elective	3	
Humanities (HU)*	3	
Total	15	

*All students must complete two Distributive Studies courses that are approved for I-series courses. The Understanding Plural Societies (UP) and Cultural Competence (CC) courses may also fulfill Distributive Studies categories.