

Materials Science and Engineering Four Year Academic Plan

Name: _____

UID: _____

Year 1	Fall		
Gateway requirements include: ENGL 101, CHEM 135, MATH 141, PHYS 161 and an approved Distributive Studies course. (Directly admitted freshman must successfully complete these courses and ENES 100 by 45 UM credits.)	Course	Credit	Grade
	ENES 102	3	
	MATH 140 (AR)	4	
	CHEM 135	3	
	CHEM 136	1	
	ENGL 101 (AW)	3	
	Total	14	

Spring		
Course	Credit	Grade
ENES 100 (SP)	3	
MATH 141	4	
PHYS 161	3	
Hist & Social Sciences (HS)*	3	
Humanities (HU)*	3	
Total	16	

Year 2	Fall		
	Course	Credit	Grade
	MATH 241	4	
	PHYS 260 and PHYS 261 (NL)	3 & 1	
	ENMA 300	3	
	ORAL COMM (OC)	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	
Total	14 or 13	

Year 3	Fall		
	Course	Credit	Grade
	ENMA 310	3	
	ENMA 362	4	
	ENMA 460	3	
	Specialization Elective	3	
	Hist & Social Sciences (HS)*	3	
	Total	16	

Spring		
Course	Credit	Grade
ENMA 311	3	
ENMA 461	3	
ENMA 465	3	
Specialization Elective	3	
Scholarship in Practice (SP)*	3	
Total	15	

Year 4	Fall		
	Course	Credit	Grade
	ENMA 463	3	
	ENMA 471	3	
	Specialization Elective	3	
	Technical Elective	3	
	Upper Level Science Elec.	3	
	ENGL 393 (PW)	3	
Total	18		

Spring		
Course	Credit	Grade
ENMA 426	3	
ENMA 490	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.

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 393		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*)			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 for Eng			3
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 206 - Intro to MATLAB			1
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
ENES 102 - Mechanics I			3

* 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: _____ GPA/Credits: _____

MAJOR REQUIREMENTS

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			3
ENMA 465 - Micro-processing			3
ENMA 470 - Materials Selection for Engr Design			3
ENMA 471 - Kinetics			3
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 ENGL 393)
- A minimum of 120 credits is required to earn the degree