



# **Materials Science & Engineering (MSE)**

## **Undergraduate Program Guidelines**

**Undergraduate Handbook**

**2020-2021**

**Effective from 8/15/2020**

This Guide contains information that supplements the University's Undergraduate Catalog, which is the primary document governing all academic programs. Although every effort has been made to maintain accuracy, the Materials Science and Engineering Department reserves the right to correct errors when found, without further notice to students. The presence of errors will not affect the application of the rules and requirements applicable to all students.

## **Table of Contents**

<b>1. Introduction</b>	<b>2</b>
1.1. Department Education Mission	2
1.2. Materials Science & Engineering Undergraduate Program Objectives	2
<b>2. Faculty</b>	<b>3</b>
2.1. Department Administration	3
2.2. MSE Faculty	3
<b>3. Undergraduate Programs</b>	<b>4</b>
3.1. B.S. Degree Program and Requirements	4
3.1.1. Curriculum Overview	4
3.1.2. Course Requirements	5
3.1.3. Model Semester Plan	5
3.2. Combination B.S./M.S. Degree Program and Requirements	10
3.2.1. Admission Requirements for the Combination B.S./M.S. Program	10
3.2.2. Course Requirements	10
3.3. Minors	11
3.4. Certificates	11
3.5. Senior Research	11
3.6. Graduating with Honors	13
<b>4. Courses and Registration</b>	<b>13</b>
4.1. Registration Requirements	13
4.2. Grades	14
4.3. Transfer Credit	14
4.4. Add/Drop	14
4.5. Retaking Courses	15
4.6. ABET Accreditation	15
<b>5. Research</b>	<b>15</b>
5.1. Safety	15
5.2. Responsible Conduct in Research (RCR)	16
<b>6. General Information</b>	<b>16</b>
6.1. Undergraduate Coordinator	16
6.2. Academic Services Office	16
6.3. MSE Program Committees	16
6.4. Department Student Council	16
6.5. Graduation Guidelines and Catalog Year	17
6.6. Assistantships, Fellowships, Awards, and On-campus Jobs	17
6.7. Internships	11
<b>7. Academic Honesty</b>	<b>17</b>
<b>8. Satisfactory Progress and Scholarship</b>	<b>18</b>
<b>9. Correspondence and Forms</b>	<b>18</b>
<b>10. Preparation for Final Semester</b>	<b>18</b>
<b>11. Student Responsibility</b>	<b>18</b>

# 1. Introduction

The Department of Materials Science & Engineering (MSE) offers undergraduate students the opportunity of state-of-the-art instruction and laboratory experience under the supervision of faculty while pursuing a Bachelor of Science degree in the discipline. The UF Undergraduate Catalog is the University of Florida's official record of undergraduate policies, critical dates, deadlines, and course descriptions for faculty members and bachelor's degree students. It is the student's responsibility to know and understand these rules. The current academic catalog can be found at <http://catalog.ufl.edu/> and the Undergraduate Student Handbook of the Herbert-Wertheim College of Engineering at <https://www.eng.ufl.edu/students/resources/undergraduate-student-handbook/>.

The MSE Undergraduate Handbook is provided to all MSE undergraduate students to serve as a companion resource to the University of Florida Catalog. It is the responsibility of the student to be familiar with both publications and to adhere to the stated rules.

## 1.1. Department Education Mission

The mission of the MSE Program is to educate students with strong engineering and science backgrounds for Bachelor of Science, Master of Science, or Doctor of Philosophy degrees in Materials Science & Engineering so that they can productively apply their training to the solution of engineering problems in all materials related fields.

## 1.2. MSE Undergraduate Program Objectives

The objectives of the MSE Undergraduate Program are to:

- Provide students with a strong foundation of MSE knowledge, and the opportunity to focus their study in a core area such as Biomaterials, Ceramics, Electronic Materials, Metals, and Polymers.
- Provide students with the ability to apply fundamental engineering principles to identify, analyze, and solve scientific and engineering problems for the design and application of materials.
- Provide students with the ability to design and conduct scientific and engineering experiments, and to analyze and interpret the resulting data.
- Provide students with experience and understanding of design requirements and constraints in the science and engineering environment, including technology transfer.
- Provide students with the skills needed to communicate effectively, work collaboratively, and understand their professional and ethical responsibilities and the impact of significant engineering solutions in a societal and economic context.

The field of MSE is highly interdisciplinary and collaborative, with interactions with other engineering and science disciplines and with professional, engineering, and clinical practice. As such, the undergraduate program in MSE benefits from different departments and institutes in the Herbert Wertheim College of Engineering (HWCOE), College of Liberal Arts and Sciences (CLAS), College of Medicine (COM), and College of Dentistry (COD) acting as partners in the education of materials scientists and engineers.

## 2. Faculty

### 2.1. Department Administration

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Tanner Nestle and Tahara Franklin  
Academic Advisors  
Academic Services Office, 108 Rhines Hall  
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(352) 846-3312

### 2.2. MSE Faculty

The current tenure/tenure track faculty of the MSE department and their contact information are provided on the MSE website: <https://mse.ufl.edu/people/>.

### 3. Undergraduate Programs

The University of Florida's MSE undergraduate program offers students a world-class education in a cutting-edge research environment. We offer a Bachelor's (B.S.) degree, a combination of Bachelor and Master's (B.S./M.S.) degree, and a Minor in MSE.

Our MSE undergraduate program involves more than 39 faculty members who conduct multi-disciplinary research with scientists across many departments and institutions. This diversity provides our undergraduate students an exposure to a broad spectrum of concepts and skills, access to state-of-the-art research instrumentation, and the experience of a vibrant, collaborative culture.

MSE undergraduate students master a set of core concepts and principles critical to a fundamental understanding of MSE, but also have flexibility in designing a specific sequence of coursework and participating in research opportunities.

#### 3.1. B.S. Degree Program and Requirements

##### 3.1.1. Curriculum Overview

*Science and Math Core (8 courses).* The MSE curriculum builds on a solid foundation in mathematics, physics, and chemistry. The mathematical foundation is provided by the four mathematics courses Calculus 1, 2, 3, and Differential Equations. The physics and chemistry foundation is covered by the 2 course sequences of Physics with Calculus and General Chemistry.

*Engineering Core (5 courses).* The engineering core gives students a thorough understanding of how engineers approach problems. It also serves to introduce the major engineering disciplines to the student so that they have the needed background for the wide variety of problems to be encountered over a career.

*MSE Core (12 courses).* The MSE core provides the student with basic understanding of prominent problems and methodologies used in the materials science and engineering profession. This set of courses includes two introductory materials courses, error analysis and, organic and inorganic materials, thermodynamics and kinetics of materials, electronic and mechanical properties.

*Engineering Design (8 courses).* The engineering design training is provided throughout the curriculum. In the sophomore year this includes one introductory design course and lab focusing on the materials tetrahedron and sustainable engineering design. In the junior year, characterization techniques are taught in a two-lab sequence supporting design thinking and applications, and a course is taught on reverse engineering that utilizes the characterization skills from the lab experience. In the senior year, the students apply their design and materials skills in senior research and design courses.

*Technical Electives (5 courses).* Technical electives are designed to build upon the materials science and engineering foundation courses and allow students to explore emerging and specialization areas in MSE. The students can complete a certificate by selecting a particular sequence of technical elective courses.

*General Education (3 courses).* The MSE program includes standard general education according to UF requirements: technical writing, diversity, humanities, international and social science. These are essential elements of a well-rounded education.

Total UG Credit hours required: 125.

### 3.1.2. Course Requirements

The MSE Department offers a Bachelor of Science (B.S.) degree in MSE, which requires 125 credit hours of course work. Students can also obtain certificates along with the B.S. degree. Certificates can be obtained in Advanced Engineering Ceramics, Metallurgical Engineering, Semiconductor Materials, Polymer Science and Engineering, and Biomaterials. Each of these certificates require 10 credit hours in specialized course work.

*Critical Tracking Criteria.* There are 9 critical tracking courses required by the university that must be successfully completed with a minimum grade of C for each course (based on a maximum of two attempts, including withdrawals). Students may repeat a maximum of three critical tracking courses. A minimum 2.5 critical-tracking GPA, and an overall GPA of 2.0, is required for students to continue to the upper-division MSE program courses. Students are expected to complete all critical tracking courses by the fifth semester. The critical tracking courses are indicated by an asterisk (\*) in Table 1.

*International and Diversity Requirement.* Students must complete the general education International (GE-N) and Diversity (GE-D) requirements. This is often done concurrently with another general education requirement, typically Humanities or Social and Behavioral Sciences. More information can be found here: <https://catalog.ufl.edu/UGRD/academic-programs/general-education/#text>.

*Writing Requirement.* The University of Florida requires all students to complete a writing requirement. AICE, AP, CLEP, and IB examination credit, as well as dual enrollment or transfer credit, may count toward this requirement. To graduate, students must complete courses that involve substantial writing for a total of 24,000 words.

The required junior lab courses EMA 3080C and EMA3013C fulfill 4000 and 2000 words, respectively, of the writing requirement.

*Civic Literacy Requirement.* The University of Florida requires all incoming students for the 2018-2019 academic year and beyond, to meet the Civic Literacy requirement. UF students can meet this State requirement in a number of ways. More information can be found here: <http://undergrad.aa.ufl.edu/for-students/civic-literacy-requirement/>.

### 3.1.3. Model Semester Plan

The model semester plan below represents an example progression through the major. Actual courses and course order may differ depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.

Table 1: Model semester plan is shown below (Critical tracking course marked with \*).

<b>Semester 1 – Fall</b>		<b>Credits</b>
<a href="#"><u>MAC 2311*</u></a>	Analytic Geometry and Calculus 1	4
Select one of the following two chemistry classes and the corresponding lab:		
<a href="#"><u>CHM 2045*</u></a>	General Chemistry 1	3
<a href="#"><u>CHM 2045L</u></a>	General Chemistry 1 Laboratory	1
<a href="#"><u>CHM 2095*</u></a>	Chemistry for Engineers 1	3
<a href="#"><u>CHM 2095L</u></a>	Chemistry Laboratory 1 for Engineers	1
<a href="#"><u>ENC 1101</u></a> or <a href="#"><u>ENC 1102</u></a>	Expository and Argumentative Writing or Argument and Persuasion (Fulfills State Core General Education Composition and 6,000 Words)	3
<a href="#"><u>State Core General Education Social and Behavioral Sciences</u></a> (select one course)		3
<a href="#"><u>State Core General Education Humanities</u></a> (select one course)		3
<b>Total credits</b>		<b>17</b>
<b>Semester 2 – Spring</b>		
<a href="#"><u>MAC 2312*</u></a>	Analytic Geometry and Calculus 2	4
Select one of the following two chemistry classes and the corresponding lab:		
<a href="#"><u>CHM 2046*</u></a>	General Chemistry 2	3
<a href="#"><u>CHM 2046L</u></a>	General Chemistry 2 Laboratory	1
<a href="#"><u>CHM 2096*</u></a>	Chemistry for Engineers 2	3
<a href="#"><u>CHM 2096L</u></a>	Chemistry Laboratory 2 for Engineers	1
<a href="#"><u>ENC 3246</u></a>	Professional Communication for Engineers (Fulfills State Core General Education Composition and 6,000 words) Minimum Grade of C required	3
<a href="#"><u>IDS 1161</u></a>	What is the Good Life (Fulfills General Education Humanities)	3
<a href="#"><u>State Core General Education Social and Behavioral Sciences</u></a> (select one course)		3
<b>Total credits</b>		<b>17</b>
<b>Semester 3 – Fall</b>		
<a href="#"><u>MAC 2313*</u></a>	Analytic Geometry and Calculus 3	4
<a href="#"><u>PHY 2048*</u></a>	Physics with Calculus 1	3
<a href="#"><u>PHY 2048L</u></a>	Laboratory for Physics with Calculus 1	1
<a href="#"><u>EMA 3010*</u></a>	Materials	3
<a href="#"><u>COP 2271</u></a>	Computer Programming for Engineers (or see advisor for approved list of alternative courses)	2
Select one of the following courses		
<a href="#"><u>EIN 3354</u></a>	Engineering Economy	3
<a href="#"><u>MAN 3025</u></a>	Principles of Management	4
<a href="#"><u>MAR 3023</u></a>	Principles of Marketing	4
<b>Total credits</b>		<b>16-17</b>
<b>Semester 4 – Spring</b>		
<a href="#"><u>MAP 2302*</u></a>	Elementary Differential Equations	3

<a href="#">PHY 2049*</a>	Physics with Calculus 2	3
<a href="#">PHY 2049L</a>	Laboratory for Physics with Calculus 2	1
<a href="#">EGM 2511</a>	Engineering Mechanics: Statics	3
<a href="#">EMA 3000L</a>	Sophomore Materials Laboratory	1
<a href="#">EMA 3011</a>	Fundamental Principles of Materials	3
<a href="#">EMA 3800</a>	Error Analyses and Optimization Methodologies in Materials Research	3
<b>Total credits</b>		<b>17</b>
<b>Semester 5 – Fall</b>		
<a href="#">EEL 3003</a>	Elements of Electrical Engineering	3
<a href="#">EGM 3520</a>	Mechanics of Materials	3
<a href="#">EMA 3050</a>	Introduction to Inorganic Materials	3
<a href="#">EMA 3066</a>	Introduction to Organic Materials	3
<a href="#">EMA 3080C</a>	Materials Laboratory 1 (4,000 Words)	2
<a href="#">EMA 4314</a>	Thermodynamics of Materials	3
<b>Total credits</b>		<b>17</b>
<b>Semester 6 – Spring</b>		
<a href="#">EMA 3013C</a>	Materials Laboratory 2 (2,000 Words)	2
<a href="#">EMA 3413</a>	Electronic Properties of Materials	3
<a href="#">EMA 3513C</a>	Analysis of the Structure of Materials	4
<a href="#">EMA 4125</a>	Kinetics of Materials	3
<a href="#">EMA 4223</a>	Mechanical Behavior of Materials	3
<b>Total credits</b>		<b>15</b>
<b>Semester 7 – Fall</b>		
<a href="#">EMA 4324</a>	Stability of Materials	3
<a href="#">EMA 4121</a>	Interfacial Engineering	3
Select one of the following two courses		
<a href="#">EMA 4913</a>	Research in Materials Science and Engineering 1	1
<a href="#">EMA 4915</a>	Integrated Product and Process Design Program 1	3
Select Two Technical Elective Courses <sup>1</sup>		6
Select one Senior Materials Laboratories (Fall or Spring) <sup>2</sup>		1
<b>Total credits</b>		<b>14-17</b>
<b>Semester 8 – Spring</b>		
<a href="#">EMA 4714</a>	Materials Selection and Failure Analysis	3
Select one of the following two courses		
<a href="#">EMA 4914</a>	Research in Materials Science and Engineering 2	3
<a href="#">EMA 4916</a>	Integrated Product and Process Design Program 2	3
Select Two Technical Elective Courses <sup>1</sup>		6
Select one Senior Materials Laboratories (Fall or Spring) <sup>2</sup>		1
<b>Total credits</b>		<b>12-13</b>
<b>MSE Program Total credits</b>		<b>125-129</b>



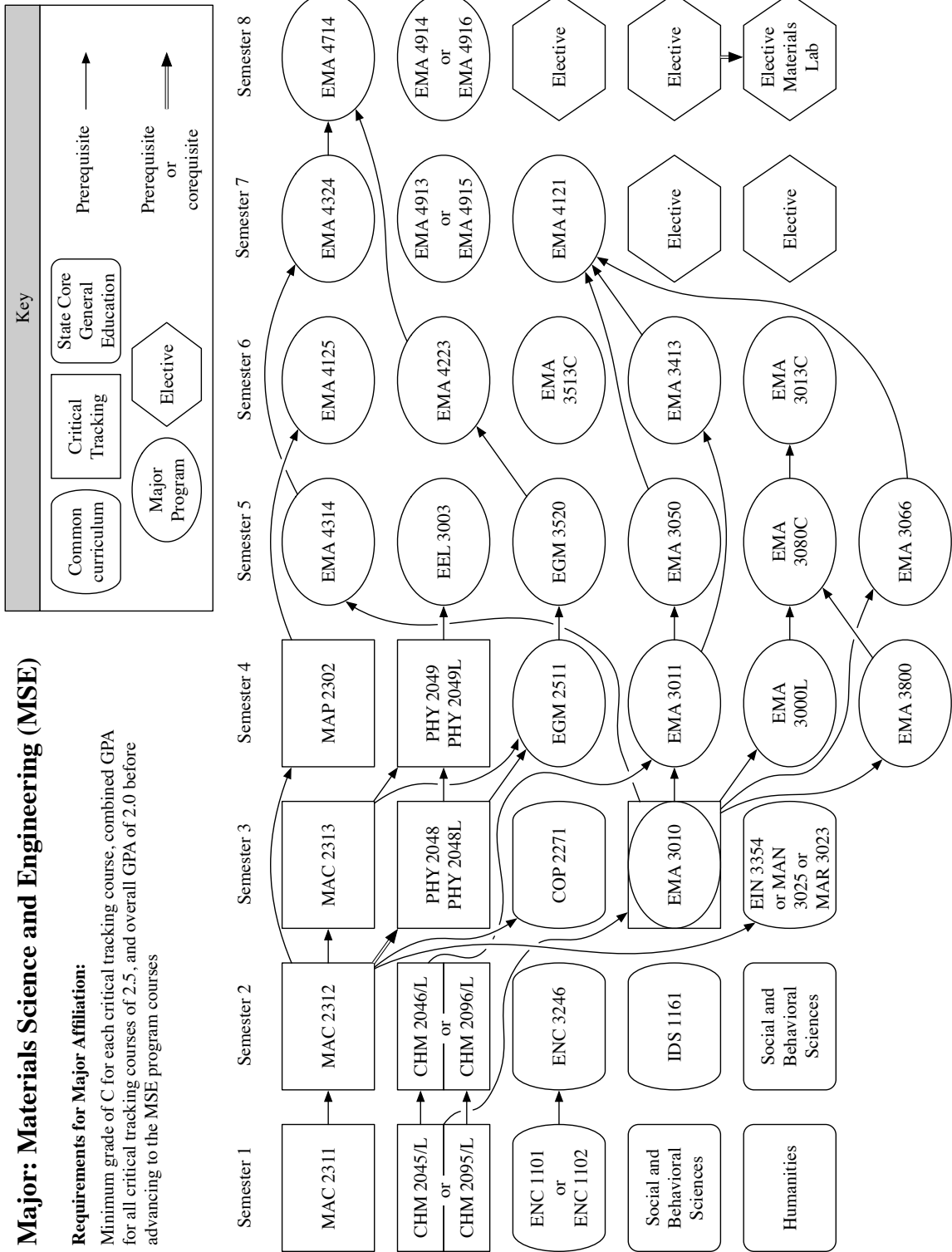
<sup>1</sup>Senior Materials Technical Electives: Students must take 4 technical electives to meet their degree requirements. Students can choose to specialize in a specific area of materials by earning a certificate.

Technical Electives Offered in the Fall	Technical Electives Offered in the Spring
EMA 4061 Biomaterials: Structure & Properties (3)	EMA 4062 Biopolymers: Manufacture, Stability and Biocompatibility (3)
EMA 4120 Physical Metallurgy 1 (3)	EMA 4145 Physical Ceramics 2 (3)
EMA 4144 Physical Ceramics 1 (3)	EMA 4224 Physical Metallurgy 2 (3)
EMA 4161 Physical Properties of Polymers (3)	EMA 4462 Polymer Characterization (3)
EMA 4614 Production of Electronic Materials (3)	EMA 4615 Compound Semiconductors (3)
	EMA 4623 Process Metallurgy (3)
	EMA 4645 Processing of Ceramics (3)
	EMA 4666 Processing of Polymers (3)
	ENU 4800 Nuclear materials (3)

<sup>2</sup>Senior Materials Lab Electives: The Polymers and Biomaterials Labs are only offered in the Fall. The Ceramics, Metals, and Semiconductors labs are only offered in the Spring. Students can elect to take a lab in the Fall or Spring depending on their interests and/or specialization. Only 1 senior materials lab is required to complete the degree.

Laboratory Elective	Corequisite
EMA 4041L Advanced Ceramics Lab 1 (1) – Offered in Spring only	EMA 4645
EMA 4020L Metallurgy Lab (1) – Offered in Spring only	EMA 4623
EMA 4161L Polymers Lab (1) – Offered in Fall Only	EMA 4161
EMA 4061L Biomaterials Lab (1) – Offered in Fall Only	EMA 4061
EMA 4414L Electronic Materials Lab (1) – Offered in Spring Only	EMA 4614

### 3.1.4. Flowchart of Courses and Dependencies



## 3.2. Combination B.S./M.S. Degree Program and Requirements

The MSE Department offers a combination B.S./M.S. degree program. The combination B.S./M.S. degree program allows qualified students to apply for graduate admissions to pursue both a Bachelor's degree in MSE and a Master's degree in MSE concurrently.

### 3.2.1. Admission Requirements for the Combination B.S./M.S. Program

Students need to satisfy both [MSE admission requirements](#) and [Graduate School admissions requirements](#) for admission to the combination M.S./B.S. degree program. Applicants to the graduate program must have completed a minimum of 18 credit hours of EMA courses and have an overall GPA of at least 3.0.

### 3.2.2. Course Requirements

Admitted students begin M.S. degree course work while working towards their B.S. degree and double-count up to 12 credit hours of specific graduate courses for both their undergraduate and graduate degree requirements. The list of these courses is provided in Table 2. All graduate coursework taken during the B.S. degree program must be completed with grades of B or better to transfer into the M.S. program. The M.S. degree is designed to be completed within two to three semesters after completing the B.S. requirements. All M.S. degree requirements must be satisfied as described in the graduate handbook.

Table 2: Graduate courses counting for undergraduate course requirements as part of the combination B.S./M.S. degree program.

Undergraduate Requirement		Graduate Course	
<a href="#">EMA 3800</a>	Error Analyses and Optimization Methodologies in Materials Research	<a href="#">EMA 6808</a>	Error Analyses and Optimization Methodologies in Materials Research
<a href="#">EMA 3413</a>	Electronic Prop. of Materials	<a href="#">EMA 6114</a>	Functional Prop. of Materials
<a href="#">EMA 4314</a>	Thermodynamics of Materials	<a href="#">EMA 6316</a>	Materials Thermodynamics
<a href="#">EMA 4125</a>	Kinetics of Materials	<a href="#">EMA 6136</a>	Diffusion, Kinetics and Transport Phenomena
<a href="#">EMA 4061</a>	Biomaterials: Structure and Properties	<a href="#">EMA 6580</a>	Science of Biomaterials
<a href="#">EMA 4062</a>	Biopolymers: Manufacture, Stability and Biocompatibility	<a href="#">EMA 6581</a>	Polymeric Biomaterials
<a href="#">EMA 4161</a>	Physical Properties of Polymers	<a href="#">EMA 6165</a>	Polymer Physical Science
<a href="#">EMA 4462</a>	Polymer Characterization	<a href="#">EMA 6461</a>	Polymer Characterization
<a href="#">EMA 4614</a>	Production of Electronic Materials	<a href="#">EMA 6616</a>	Advanced Electronic Materials Processing
<a href="#">EMA 4615</a>	Compound Semiconductor Materials	<a href="#">EMA 6412</a>	Synthesis and Characterization of Electronic Materials
<a href="#">EMA 4645</a>	Processing of Ceramic Materials	<a href="#">EMA 6448</a>	Ceramic Processing
<a href="#">EMA 4623</a>	Process Metallurgy	<a href="#">EMA 6625</a>	Advanced Materials Processing

### 3.3. Minors

The MSE Program offers a minor in Materials Science and Engineering. Students from other B.S. programs can apply for this minor. They must have at least 45 credit hours completed and cannot be on college probation. The MSE minor requires EMA 3010 and 12 credits of EMA courses, all with a C or better and a minimum overall GPA of 2.0.

### 3.4. Certificates

Students majoring in materials science have an option to get a certificate. This provides students with the opportunity to gain specialized knowledge in a specialized area of materials science and engineering that is related to future academic or job goals. Certificates are earned by taking specific senior technical and lab electives and are available for: Advanced Engineering Ceramics, Metallurgical Engineering, Semiconductor Materials, Polymer Science and Engineering, and Biomaterials. Certificate requirements are usually completed in the senior year, and so certificate specialization should be decided at the end of the junior year. The specific requirements can be found here: [https://catalog.ufl.edu/UGRD/programs/#filter=.filter\\_24&.filter\\_97](https://catalog.ufl.edu/UGRD/programs/#filter=.filter_24&.filter_97).

### 3.5. Internships

As part of the undergraduate MSE program, Students can take an internship, e.g. in industry or national laboratories over the summer, and receive course credit for EMA 4949. To receive this credit, the student needs to notify the Academic Services Office ([advising@mse.ufl.edu](mailto:advising@mse.ufl.edu)). If the student is being funded, they need to inform Human Resources ([mse-hr@eng.ufl.edu](mailto:mse-hr@eng.ufl.edu)) about any internship they plan to accept. Students may register for internship credits by completing and submitting the internship form at <http://www.mse.ufl.edu/onpremforms/>. The offer letter from the company should be attached. The student needs to have permission from the Undergraduate Coordinator ([mse-ugradcoordinator@mse.ufl.edu](mailto:mse-ugradcoordinator@mse.ufl.edu)). The Academic Services Office will review the form and notify the student via email if the registration is approved or not. If approved the Academic Services Office will register the student for EMA 4949.

Once registered for EMA 4949, the following two forms need to be submitted to the Academic Services Office electronically no later than a week before classes end for the term registered to receive a grade:

- EMA 4949 Employer's Student Evaluation Form,
- EMA 4949 Student's Evaluation of Employer.

These forms are available at <http://www.mse.ufl.edu/onpremforms/>.

### 3.6. Senior Research

Senior undergraduate students are expected to either register for two semesters of senior research (EMA 4913/14) or Integrated Product and Process Design (EMA 4915/16). In special cases, an internship may substitute for EMA 4914.

**EMA 4913/14 Requirements/Alternatives.** The requirements for EMA 4913/14 consist of the MSE student working with a research or design mentor in a scientific or engineering field. The research should lead to a technical report prepared by the end of the second semester. The report should follow accepted technical journal format in a recognized journal of the field in which you are doing research. **Work on the project should be performed in both semesters.** There is a

class component in the first semester. However, it does not supersede the work for the project. The specific project depends on the student and the professor with whom the student will work with mutual consent between the two. There is a form that needs to be completed on the MSE website to verify the assigned work. If you want to perform research with someone outside the MSE Program, the EMA 4913/14 research project needs to be approved by the EMA 4913 instructor. EMA 4913 is one credit and it has one hour of lecture a week. The expectation is that students will spend a minimum of 5 hours per week doing supervised research. EMA 4914 is three credits and has no class, so students are expected to spend a minimum of 10 hours a week on research. The specific guidelines for research expectations and grading are provided in the syllabi for EMA 4913/14.

**Integrated Product and Processing Design (IPPD).** The first of a two-course sequence in which multidisciplinary teams of engineering and business students partner with industry sponsors to design and build authentic products and processes-on time and within budget. Working closely with industry liaison engineers and a faculty coach, students gain practical experience in teamwork and communication, problem solving and engineering design, and develop leadership, management and people skills.

**Procedure for Internship/Research Substitute for EMA 4914.** A student can count an Internship for EMA 4914. The student will be required to follow the guidelines for EMA 4949. In addition, the student will be required to submit a technical paper to the [Undergraduate Coordinator](#) and the [Academic Services Office](#) at the end of the internship. The technical paper should be a subject related to the internship following the guidelines of an acceptable journal in the field, e.g., Physical Review Materials, Metallurgical Transactions, J. American Ceramic Society or J. Polymer Science.

To substitute an internship for EMA 4914, students need to:

1. Send notification of internship to the Undergraduate Coordinator and the Academic Services Office.
2. Outline duties during internship. This should be materials related. Please send this to the Undergraduate Coordinator and the Academic Services Office.
3. List the expectations for your development during the internship. Please send this to the Undergraduate Coordinator and the Academic Services Office.
4. Register for EMA 4914 (3 credits).
5. In order to have “Internship” appear on your transcript you will also have to register for EMA 4949 for zero or one credits.
6. After the internship, write a technical report (~ 10 pages) on a subject addressed during the internship. Try to relate the content to course(s) taken or will be taken in the MSE Department. Please send this to the Undergraduate Coordinator and the Academic Services Office no later than two weeks after your internship ends.
7. Write a brief description of how the internship met or did not meet your expectations. Please send this to the Undergraduate Coordinator and the Academic Services Office no later than two weeks after your internship ends.
8. Fill out the required one-page forms for internship.

9. Register for EMA 4913 (1 credit) in Fall semester.

To substitute summer research such as participating in an REU program for EMA 4914:

1. Send request for external research to the Undergraduate Coordinator and the Academic Services Office. In the request list the expected research to be completed during the tenure of the research.
2. Register for EMA 4914 (3 credits)
3. At completion of the research, submit a technical report to the Undergraduate Coordinator and the Academic Services Office no later than two weeks after your research ends. The report shall follow accepted technical journal format in a recognized journal of the field in which you are doing research.
4. Register for EMA 4913 (1 credit) in Fall semester.

The substitution for the EMA 4914 requires an Internship or REU technical report. The report is similar to the report written for senior research. It should be about 8 to 10 pages in length and include a description of what you did this summer. It should address questions such as: What type of work did you do? What type of materials did you work on? What were the results? You need to make sure that you are not presenting anything that is proprietary, so discuss the report with your employer and follow any internal procedures they may have for the public release of internal information. You should include tables, figures, equations, and reference.

### **3.7. Graduating with Honors**

Students can graduate *cum laude* (with honors) if they have a major GPA of 3.30.

Students can graduate *magna cum laude* (with high honors) or *summa cum laude* (with highest honors) if they fulfill the following two requirements: (1) They must have an exceptional upper division GPA of 3.50 or higher for magna cum laude and 3.80 or higher for summa cum laude. (2) They need to complete and defend a thesis, research project, or other approved body of original work, which is submitted for evaluation according to the rules of the UF Honors Office, the Herbert Wertheim College of Engineering, and the student's major department. The upper division GPA is calculating from the grades in the semesters after which you have earned 60 college credits from any mechanism, including AP, IB, etc. Thus, grades count that are earned from the first semester shown as "3EG" on the transcript.

For more detail, please see: <https://www.eng.ufl.edu/students/resources/undergraduate-student-handbook/graduating-with-honors/>

## **4. Courses and Registration**

### **4.1. Registration Requirements**

When deciding on courses, students should follow the model semester plan described in Sec. 3.1.3 and the flowchart in Sec. 3.1.4 to ensure all pre-requisites are met and the degree is obtained in four years.

Full-time registration is a minimum of 12 credits. The recommended number of credits varies between 14 and 19.

Students can register for courses on the registrar's website, <https://one.ufl.edu>. Students are required to see advisors to remove registration holds prior to being able to register and should seek advice from academic advising or the Undergraduate Coordinator before registration. Guidance will be provided for the registration in the form of the required courses and suggested electives. Students need to register on time to avoid unnecessary late registration fees. Registration and payment deadlines for each semester can be found at <https://catalog.ufl.edu/UGRD/dates-deadlines/>. Students need to pay any fees by the fee payment deadline. Registration may be restricted. To check for record holds, registration holds, and late registration fees, go to Student Self Service (<https://www.student.ufl.edu>).

To review the anticipated schedule of courses for an upcoming semester, students should go to <https://one.ufl.edu/soc/>. Students have access to their degree audit online at [www.student.ufl.edu](http://www.student.ufl.edu). *Students are ultimately responsible* for ensuring they are on track to finish their degrees.

A Tuition and Fee Calculator is provided by UF <https://npc.collegeboard.org/app/ufl>.

## **4.2. Grades**

The passing grades for students are A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and S. Grades of E and U are not passing grades. All letter-graded courses are used in calculating the cumulative grade point average. Grade points are not designated for S and U grades and are not used in calculating the grade point average. A grade of I (incomplete) will convert to a grade of E and 0.0 grade point if not changed within 1 semester. There is an overall GPA, an MSE major GPA, an upper division GPA (see Sec. 3.6), and, if elected, a minor GPA.

A student is considered in good academic standing if a student's overall, major, and minor GPA is above 2.0 (truncated). If any of these GPA's drops below these limits the student is in academic probation, which triggers limitations in course selection for registration and students cannot graduate.

## **4.3. Transfer Credit**

It is the department's policy to admit the best-qualified transfer applicants as demonstrated by academic achievement. Transfer students can apply once 6 of 8 Critical Tracking courses have been completed (not including EMA 3010). Application must include up-to-date transcripts that show "in progress" for the final two Critical Tracking courses. All Critical Tracking courses must be completed prior to enrollment at UF, and students applying from State of Florida Universities must have earned AA degree prior to enrolling at UF or the conditional terms of admission will not be considered met.

A detailed description of the transfer process and requirements can be found at:

- <https://mse.ufl.edu/admissions/undergraduate/transfer-students/>
- <https://registrar.ufl.edu/registration/transferecredit>.

## **4.4. Add/Drop**

Courses may be dropped or added during the drop/add period without penalty. This period typically lasts five UF calendar days, or two days for summer sessions, beginning with the first day of the semester (exact dates available on <https://student.ufl.edu>). Classes that meet for the first time after the drop/add period may be dropped without academic penalty or fee liability by the end

of the next business day after the first meeting of the class. Note, this does not apply to laboratory sections. If a course is dropped after the add/drop period, and a W will appear on the transcript and the student remains financially liable for the course tuition and an additional fee may apply. If a course is added after the add/drop period, an additional fee applies. For details, see <https://catalog.ufl.edu/UGRD/academic-regulations/dropping-courses-withdrawals/>.

#### **4.5. Retaking Courses**

Students may only repeat a course once in which they earn a failing grade. Grade points from both the initial failed attempt and the second attempt are included in computing the grade point average. The student receives credit for the satisfactory attempt only.

#### **4.6. ABET Accreditation**

The MSE program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. ABET Accreditation supports your entry to a technical profession through licensure, registration and certification—all of which often require graduation from an ABET-accredited program as a minimum qualification. Details about the ABET Accreditation of the MSE program can be found at <https://mse.ufl.edu/academics/accreditation/mse-program-accreditation/>.

### **5. Research**

All students conducting research in a laboratory must be registered for research credits or on a paid appointment. All researchers must follow appropriate MSE policies for laboratory access (see your Research Mentor for guidance).

Safety and Responsible Conduct in Research training is required *prior* to enrollment in research credit (see Sections 6.1 and 6.2 for details). This is *enforced* for students supported by NSF, NIH, and USDA awards.

#### **5.1. Safety**

The MSE Department, in collaboration with the Herbert Wertheim College of Engineering, is committed to providing a safe and healthy working and learning environment for all of its students (<https://www.eng.ufl.edu/labsafety/>). Sustaining a culture of excellent laboratory safety starts with rigorous training. To facilitate appropriate training of safety concerns, all MSE students are required to complete a laboratory checklist prior to gaining access to the laboratory: <https://www.eng.ufl.edu/labsafety/resources/engineering-laboratory-safety-guidelines-and-training-checklist/>.

This checklist outlines required general safety training needed for general work in the building. Additional training will be needed, given the specific research conducted and risk encountered in your work. Guidance on the lab-specific training needed will be provided by your Supervisory Chair, as all Chairs are required to provide a safe working environment, ensure adequate safety training of their personnel, and maintain appropriate safety records for their own labs. Remember that most training is annual, so it must be updated. To further promote a culture of safety, our department has a MSE Student Safety Council (SSC), which is comprised of graduate and undergraduate students, faculty, and the MSE Director of Undergraduate Laboratories; an



Engineering Safety Steering Committee serves at the college level. Students are strongly encouraged to join these councils. Any concerns regarding safety or training should be directed to your Supervisory Chair, the SSC, the HWCOE Director of Laboratory Safety, or UF Environmental Health and Safety (<http://www.ehs.ufl.edu/>).

## **5.2. Responsible Conduct in Research (RCR)**

Responsible conduct in research (RCR) is expected for all University of Florida students. Students conducting research will be expected to follow ethical standards when conducting research, from identification of potential conflicts of interest to responsible authorship and publication. To assist in supporting this endeavor, all students enrolled in research credits and students funded by NSF, NIH, or USDA awards must complete the general RCR training:

<http://research.ufl.edu/faculty-and-staff/research-compliance/responsible-conduct-in-research-rcr-training/navigation-to-citi-for-rcr-responsible-conduct-of-research-training.html>.

## **6. General Information**

### **6.1. Undergraduate Coordinator**

The [Undergraduate Coordinator](#) is the advisor to all admitted and present UF MSE undergraduate students in the MSE Department. The Undergraduate Coordinator helps in planning the courses, advises on certificates, minors, and majors and guides the students in addition to the rules provided by the university and the department. They also assist in processing transfer credits. The Undergraduate Coordinator is not able to assist applicants or non-admitted students. The Undergraduate Coordinator is assisted by the Academic Services Office.

### **6.2. Academic Services Office**

The [Academic Services Office](#) serves as the advising and administration unit and is administered by the Associate Chair of MSE. The Academic Services Office assists students in admission, deadlines, course requirements, registration, and routine administrative issues. Inquiries regarding the undergraduate program should first be made to the Academic Services Office ([advising@mse.ufl.edu](mailto:advising@mse.ufl.edu)), which can then be forwarded to the Undergraduate Coordinator and Associate Chair, if needed. The staff of the Academic Services Office is available to meet with any student during office hours or by appointment, which can be scheduled by email to [advising@mse.ufl.edu](mailto:advising@mse.ufl.edu).

### **6.3. MSE Program Committees**

The Associate Chair of MSE oversees the operation of the MSE Academic Program and is responsible for academic program administration and policy directions, ensuring policy compliance with both MSE and the University. The Curriculum Committee suggests academic policy changes. The Petitions Committee reviews student petitions. A student may petition regarding academic issues by submitting a formal request via the [MSE website](#) with the Academic Services Office. Petitions must be formally approved or disapproved by the petitions committee.

### **6.4. Department Student Council**

The purpose of Department Student Council (DSC) is to 1) provide an agency for the coordination of MSE student activities to promote common goals and interests of the MSE student body, 2) advance and enrich the academic and educational experience of students in the UF MSE Department, and 3) seek to improve MSE student education through active communication and representation between MSE students, faculty, and other governing bodies at the University of Florida such as the UF Student Government. All MSE students are welcome to attend DSC meetings and are encouraged to become involved in this organization. See the website for more information: <http://www.mse.ufl.edu/about/societies/>.

## **6.5. Graduation Guidelines and Catalog Year**

The catalog year determines the set of academic requirements that must be fulfilled for graduation from the program. Students graduate under the catalog in effect when they begin enrollment for that degree at UF, provided they maintain continuous enrollment. A catalog year runs from Summer B of one year to Summer A of the next year. Students who are unregistered for 2 or more consecutive semesters must reapply for admission and will be assigned the catalog in effect when enrollment is resumed. If a catalog change occurs during the program of a student, the student has the choice to select the current catalog year requirements or remain under the original catalog requirements.

## **6.6. Assistantships, Fellowships, Awards, and On-campus Jobs**

The Department of MSE offers a number of awards for students in good academic standing. Interested students should contact the Academic Services Office regarding the availability of awards and the procedure for applying. The application form for awards can be obtained from the MSE website: <https://mse.ufl.edu/onpremforms/>.

Students can find on-campus jobs through [www.jobs.ufl.edu](http://www.jobs.ufl.edu). Students cannot volunteer to work in the department; they must either be compensated for their work in a laboratory or be registered for research under the faculty member's supervision.

## **7. Academic Honesty**

All enrolled UF students have signed a statement of academic honesty upon enrollment, which commits the student to holding themselves and their peers accountable for maintaining the highest standard of honor (see <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>). This standard is essential to maintain the integrity of the program. Students are expected to work independently on coursework and program examinations, unless specifically authorized by the instructor or supervisor. It is always better to clarify permitted degrees of collaboration than to assume and be incorrect. Plagiarism of any form, from course assignments to doctoral dissertations, is a serious offense and will never be tolerated. Students are responsible for seeking and utilizing resources to understand the definition of plagiarism, see for example: <https://mediasite.video.ufl.edu/Mediasite/Play/adaa44500eaf460a84f238e6b9a558f9>, <http://usingsources.fas.harvard.edu/icb/icb.do?keyword=k70847&pageid=icb.page342057>.

Further, students can register for iThenticate, TurnItIn, or other plagiarism detection software to help screen their documents to avoid inadvertent plagiarism. Failure to comply with the honor code will result in disciplinary action that can span from grade penalties up to dismissal from the program.

## 8. Satisfactory Progress and Scholarship

Every student is expected to make satisfactory progress toward graduation each semester. This includes maintaining a grade point average (GPA) of C (2.0) or greater both cumulatively and in their major (and in the minor, if a minor is declared) and the timely completion of academic milestones, e.g. obeying the Honor Code. Students with a GPA of less than 2.0 may not hold an assistantship or fellowship.

Students who fail to make satisfactory progress may be required to seek advisement and fulfill specific conditions in order to continue in the program, or may be denied registration for courses. Students who fail to maintain the minimum 2.0 GPA in either the cumulative or departmental courses are placed on Academic Probation.

## 9. Correspondence and Forms

Students must correspond and comply with outlined policies via electronic or hardcopy means. For electronic communications, all students are provided with a University of Florida email account (ufl.edu) upon entrance to the program. The [Academic Services Office](#) will use this UF account for all official communications. *Students are responsible for promptly and thoroughly reading emails from their UF account, are expected to use this email account for all academic correspondence, and should communicate in a professional manner.* For hardcopy correspondence, all documents, including forms, should be fully completed and submitted directly to the Academic Services Office. To minimize paperwork burden, the Academic Services Office encourages electronic submissions (email to [advising@mse.ufl.edu](mailto:advising@mse.ufl.edu)) and accepts electronic signatures, unless specifically stated otherwise. Submission of forms may require the student to comply with deadlines. Otherwise financial penalties may occur, e.g. for late registration.

## 10. Preparation for Final Semester

*It is a student's responsibility to ascertain that all requirements have been met and that every deadline is observed.* Deadline dates are set forth by the registrar's office (<https://one.ufl.edu>) and the MSE department.

Prior to the semester of graduation, students should meet with Academic Services Office staff to conduct a graduation check. Students must notify the Academic Services Office of graduation plans no later than the University registration deadline for their program. At the beginning of the final semester, students must also file a degree application online through Student Self Service (<https://student.ufl.edu>) and must meet minimum registration requirements. Students must register for the appropriate credits for their degree.

If this is a terminal degree, then student must complete the Departmental Employment Questionnaire and Exit Interview Checklist and return them to Academic Services Office no later than the last day of classes for the term. These forms can be found on the Student-Forms page of the MSE website <https://mse.ufl.edu/forms>.

It is solely the student's responsibility to ensure that all required forms are submitted in accordance with the Department and University deadlines.

## 11. Student Responsibility

The student is responsible for becoming informed and observing all program regulations and procedures. The student must be familiar with the general Undergraduate Catalog regulations and requirements, specific degree program requirements, and offerings and requirements of the major academic unit. *Rules are not waived for ignorance.* Student's must check their UF email on a regular basis. Failure to do so will not be a valid excuse for missing deadlines.