



Materials Science & Engineering (MSE)

Undergraduate Program Guidelines

Undergraduate Handbook

2021-2022

Effective from June 28 (Summer B), 2021

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.

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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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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 many 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 (2021 Catalog Year)

The model semester plan below represents an example progression through the major for students on the 2021 Catalog Year. Actual courses and course order will differ depending on the student's Catalog Year, academic record and scheduling availability of courses. Prerequisites still apply. Please consult advising or the Undergraduate Coordinator for questions specific to your catalog year.

Table 1: Model semester plan is shown below (Critical tracking course marked with *, courses that fulfill the Gen Ed writing requirement are indicated.).

Semester 1 – Fall		Credits
ENC 1101	Expository and Argumentative Writing (if you don't place out)	
MAC 2311 *	Analytic Geometry and Calculus 1	4
Select one of the following chemistry classes and lab (Gen Ed Physical Sciences):		
CHM 2045 *	General Chemistry 1	3

CHM 2045L	General Chemistry 1 Laboratory	1
CHM 2095*	Chemistry for Engineers 1	3
CHM 2095L	Chemistry Laboratory 1 for Engineers	1
State Core Gen Ed Social and Behavioral Sciences		3
State Core Gen Ed Composition ; 6,000 words		3
Total credits		14
Semester 2 – Spring		
MAC 2312*	Analytic Geometry and Calculus 2 (State Core Gen Ed Math)	4
Select one of the following chemistry classes and lab (Gen Ed Physical Sciences):		
CHM 2046*	General Chemistry 2	3
CHM 2046L	General Chemistry 2 Laboratory	1
CHM 2096*	Chemistry for Engineers 2	3
CHM 2096L	Chemistry Laboratory 2 for Engineers	1
ENC 3246	Professional Communication for Engineers (General Ed Composition; 6,000 words); Minimum C Grade required	3
Quest 1 (Gen Ed Humanities)		3
Total credits		14
Semester 3 – Fall		
MAC 2313*	Analytic Geometry and Calculus 3 (Gen Ed Mathematics)	4
PHY 2048*	Physics with Calculus 1 (State Core Gen Ed Physical Sciences)	3
PHY 2048L	Laboratory for Physics with Calculus 1 (Gen Ed Physical Sciences)	1
EMA 3010*	Materials	3
COP 2271	Computer Programming for Engineers (python preferred)	2
Select one of the following courses		
EIN 3354	Engineering Economy	3
MAN 3025	Principles of Management	4
MAR 3023	Principles of Marketing	4
Total credits		16-17
Semester 4 – Spring		
MAP 2302*	Elementary Differential Equations	3
PHY 2049*	Physics with Calculus 2	3
PHY 2049L	Laboratory for Physics with Calculus 2	1
EGM 2511	Engineering Mechanics: Statics	3
EMA 3000L	Sophomore Materials Laboratory	1
EMA 3011	Fundamental Principles of Materials	3
EMA 3800	Error Analyses and Optimization Methodologies in Materials Research	3
Total credits		17
Semester 5 – Fall		

EEL 3003	Elements of Electrical Engineering	3
EGM 3520	Mechanics of Materials	3
EMA 3050	Introduction to Inorganic Materials	3
EMA 3066	Introduction to Organic Materials	3
EMA 3080C	Materials Laboratory 1 (4,000 Words)	2
EMA 4314	Thermodynamics of Materials	3
Total credits		17
Semester 6 – Spring		
EMA 3013C	Materials Laboratory 2 (2,000 Words)	2
EMA 3413	Electronic Properties of Materials	3
EMA 3513C	Analysis of the Structure of Materials	4
EMA 4125*	Kinetics of Materials	3
EMA 4223	Mechanical Behavior of Materials	3
Total credits		15
Semester 7 – Fall		
EMA 4324	Stability of Materials	3
EMA 4121	Interfacial Engineering	3
Select one of the following two courses		
EMA 4913	Research in Materials Science and Engineering 1	1
EMA 4915	Integrated Product and Process Design Program 1	3
Select two Technical Elective Courses ¹		6
Select one Senior Materials Laboratory (Fall or Spring) ²		1 or 0
Gen Ed Social and Behavioral Sciences; 6,000 words; with International or Diversity		3
Total credits		16-19
Semester 8 – Spring		
EMA 4714	Materials Selection and Failure Analysis	3
Select one of the following two courses		
EMA 4914	Research in Materials Science and Engineering 2	3
EMA 4916	Integrated Product and Process Design Program 2	3
Select two Technical Elective Courses ¹		6
Select one Senior Materials Laboratory (Fall or Spring) ²		0 or 1
State Core Gen Ed Humanities with International or Diversity		3
Total credits		15-16
MSE Program Total credits		125-129

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

²Senior Materials Lab Electives (all 1 credit): 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.

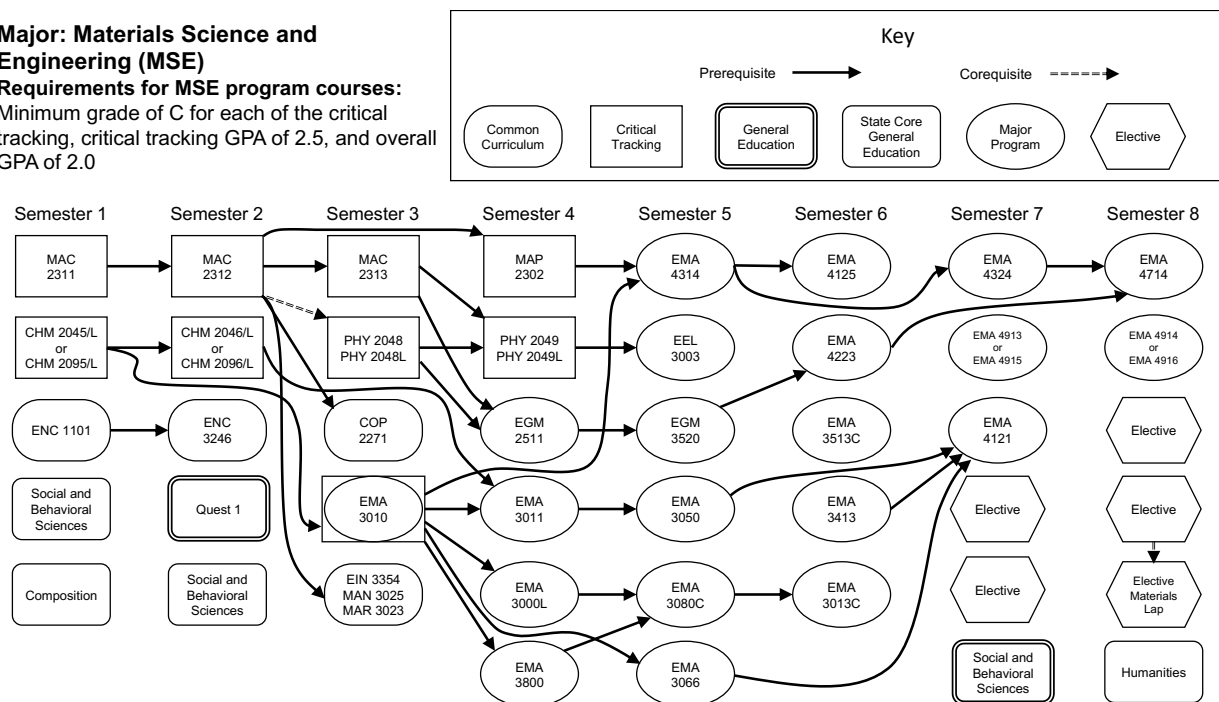
Laboratory Elective	Corequisite
EMA 4041L Advanced Ceramics Lab 1 – Offered in Spring only	EMA 4645
EMA 4020L Metallurgy Lab – Offered in Spring only	EMA 4623
EMA 4161L Polymers Lab – Offered in Fall Only	EMA 4161
EMA 4061L Biomaterials Lab – Offered in Fall Only	EMA 4061
EMA 4414L Electronic Materials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

3.1.4. Flowchart of Courses and Dependencies

Major: Materials Science and Engineering (MSE)

Requirements for MSE program courses:

Minimum grade of C for each of the critical tracking, critical tracking GPA of 2.5, and overall GPA of 2.0



3.1.5. Out-of-Department Courses for MSE Technical Electives

Three credits (1 course) of technical electives can be taken from courses from other Departments at the University of Florida. In general, these courses should primarily cover new material that the student has not already learned in their required courses. For example, the student couldn't take BME 3101: Biomedical Materials, since the majority of the course covers topics already covered in other MSE courses. Also, the courses should primarily be 4000 or 5000 level, though some 3000 level courses are acceptable.

Some out-of-department courses have already been approved as technical electives. If the student wishes to use any courses that have not already been approved, they must submit an academic petition before registering for the course.

The following out-of-department courses have already been approved:

- BCH 4024: Introduction to Biochemistry and Molecular Biology
- CHM 4272: The Organic Chemistry of Polymers
- EAS 4240: Aerospace Structural Composites 1
- EGM 4592: Bio-Solid Mechanics
- EML 4507: Finite Element Analysis and Design
- EML 4930: Introduction to Biophysics for Mechanical Engineers
- BME 4160: Magnetic biomaterials

- BME 4648: Biomaterials for drug delivery
- EEL 3008: Physics of Electrical Engineering
- EGM 3344: Introduction to Numerical Methods of Engineering Analysis
- EGS 4038: Engineering Leadership
- EGN 4643: Engineering Innovation
- EGN 4641: Engineering Entrepreneurship
- EGN 4932 Special Topics: Artificial Intelligence Fundamentals
- MAS 4105: Linear Algebra
- PHZ 4710: Introduction to Biological Physics
- PKG 4011: Packaging Production & Processing
- PHY4523: Statistical Physics
- PHY4604: Introductory Quantum Mechanics 1
- EEE4773: Fundamentals of Machine Learning
- PHZ 4404: Introduction to Solid State Physics

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

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). If the student is being funded, they need to inform Human Resources (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). 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 the research portion of EMA 4913 and EMA 4914.

EMA 4913/14 Requirements/Alternatives. The requirements for EMA 4913/14 consist of the MSE student working with a faculty advisor at UF in a scientific or engineering field. The research will result in a progress report at the end of EMA 4913 and a final technical report at the end of EMA 4914. **You will generally work on the same project both semesters.** There is a class component in EMA 4913 but not in EMA 4914. 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 will be filled out at the beginning of EMA 4913 to verify the planned 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 3 hours per week doing supervised research. EMA 4914 is three credits and has no class, so students are expected to spend a minimum of 9 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 the research portion of EMA 4913/4914.

A student can count an internship the summer before their Senior year that is related to materials for the research portion of EMA 4913/1914. 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 or summer research at another institution (such as an REU program) for the research portion of EMA 4913/4914, students need to:

1. Get approval from the Undergraduate Coordinator during the Spring semester of their Junior year prior to starting the internship. To get approval, send notification of your internship and an outline of your duties during your internship to the Undergraduate Coordinator and the Academic Services Office. The undergraduate coordinator will let you know if the internship is approved to cover the research portion of EMA 4913/4914.
2. Decide whether they will register for EMA 4914 in the summer term, while they are completing the internship or in the Spring semester of their Senior year.
3. Register for EMA 4913 in the Fall semester of their Senior year.
4. Register for EMA 4949 for zero or one credit IF they desire to have “Internship” appear on their transcript.
5. Write an 8- to 10-page technical report summarizing the work that they did for the co-op, with a focus on the technical achievements and objectives. They will need to submit a first draft of the report to the Undergraduate Coordinator in the first week of the Fall semester. They will submit the final draft halfway through the Fall semester, once technical writing has been discussed in EMA 4913.
6. Write a paragraph summarizing how the co-op experience compared with your expectations
7. Submit a paragraph evaluation from your supervisor discussing your performance.

The technical report is similar to the report written for senior research. 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 references.

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 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 MSE department.

The upper division GPA is calculated 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 the Senior thesis, a student will need to complete a research project with a faculty mentor, typically from the MSE department. This is often their Senior Research project. The student will need to write a thesis and pass a thesis defense with their undergraduate thesis committee. The committee is selected with the help of the faculty mentor and the Appointment of Supervisory

Committee Form must be completed and submitted to the Academic Services Office. The committee is required to have at least three members, one of whom must be from outside the MSE department. If the faculty mentor is not from the MSE department, a co-chair must be selected who is from the MSE department.

The thesis defense should be scheduled at least a week in advance and the thesis document should be given to the committee members at least three business days before the defense. The thesis document should summarize the objective of the project, the approach used to achieve the objective, the results obtained by the research, and to what extent the results achieved the objective. The student should work with their faculty mentor on the document before submitting it to the rest of the committee. The student will give a presentation summarizing their research to the committee at the defense. The presentation should be no more than 30 minutes long. The entire defense typically takes no longer than 1 hour. Note that the thesis defense must occur by the last day of classes (i.e.; before reading days) in the term in which the student graduates.

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. *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 EGN 4912: Engineering Undergraduate Research or on a paid OPS 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/safety/>). Sustaining a culture of excellent laboratory safety starts with rigorous training. The Department is committed to providing a safe working environment, ensuring adequate safety training of their personnel, and maintaining appropriate safety records for the labs. Also, given the highly specific research conducted and often process-specific risks that will be encountered in the work, lab-specific training will be provided by the Supervisory Chair, Lab Safety Manager, or a senior member of the research group. Most required training that is provided by UF Environmental Health and Safety (EHS) is annual, so it must be updated if a student is working in a lab for more than one calendar year. To further promote a culture of safety, our department has an MSE Student Safety Council (SSC), which is comprised of graduate and undergraduate students, faculty, and the MSE Laboratory and Safety Manager; 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 the Supervisory Chair, the MSE Lab and Safety Manager, the HWCOE Director of Laboratory Safety, the SSC, 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), 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.

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. More information and the application form for awards can be obtained from the MSE website: <https://mse.ufl.edu/academics/funding-and-awards/>.

Students can find on-campus jobs: <https://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) 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.