



Nuclear Engineering (NE)

Undergraduate Program Guidelines

Undergraduate Handbook

2024-2025

Effective from July 1 (Summer B), 2024

This Guide contains information that supplements 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 and Nuclear Engineering Program reserve 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 Nuclear Engineering Program is housed within the Department of Materials Science & Engineering (MSE), which is part of the Herbert Wertheim College of Engineering. The Program offers undergraduate students the opportunity of state-of-the-art instruction and laboratory experiences 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, course descriptions, and faculty members 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/wp-content/uploads/sites/5/2022/03/Undergraduate-Student-Handbok-1.pdf>.

The NE Undergraduate Handbook is provided to all NE 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. Program Education Mission

The Nuclear Engineering Program at the University of Florida is dedicated to developing innovative nuclear technologies, educating future generations of nuclear engineers, and cultivating leaders, by nurturing the integration of nuclear science and engineering with societal needs in a collaborative and dynamic educational and research environment.

1.2. Nuclear Engineering Undergraduate Program Educational Objectives

- Graduates will have successful careers in Nuclear Engineering or related disciplines.
- Graduates will pursue continuing education or advanced degrees.

1.3. Nuclear Engineering Undergraduate Student Outcomes

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

2. Faculty and Staff

2.1. Department and Program Administration

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2.2. NE Faculty

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

Among these faculty, the following are Core NE Faculty:

- Associate Professor Assel Aitkaliyeva
- Professor James Baciak
- Associate Professor Andreas Enqvist
- Instructional Assistant Professor Ira Harkness
- Assistant Professor Kyle Hartig
- Associate Professor Chris McDevitt
- Instructional Associate Professor DuWayne Schubring
- Professor Michael Tonks
- Professor of Practice Don Wall
- Professor Natalie Wall
- Associate Professor Justin Watson
- Associate Professor Yong Yang

In addition, the following are NE Faculty:

- Research Assistant Scientist Jyothier Nimmagadda

3. Undergraduate Programs

The University of Florida's Nuclear Engineering (NE) undergraduate program was significantly revised for Catalog Year 2022. It is intended that the first graduates under this new program will be in 2026.

UF students must complete the requirements as listed in their Catalog Year, which is usually determined by the date of their first enrollment at a public college or university in Florida. For example, students beginning in Summer B of 2021, Fall of 2021, Spring of 2022, or Summer A/C of 2022 are assigned to Catalog Year 2021.

Section 3.1 covers information for Catalog Year 2022 and after. Section 3.2 covers information for Catalog Years 2012-2021. Catalog Years prior to 2012 are no longer serviced; consult advising and/or the Undergraduate Coordinator to form a transition strategy to a more recent catalog. In addition to this handbook, please consult advising or the Undergraduate Coordinator for questions specific to your catalog year.

In general, students may move to a more recent catalog, but not to a previous one. On occasion, community college transfer students are assigned to the catalog year corresponding to their first enrollment at UF. If you are a community college transfer between Summer 2021 and Summer 2023 – please confirm your catalog year with advising to ensure you will not be adversely affected by this transition.

The University of Florida's Nuclear Engineering (NE) 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 Nuclear and Radiological Engineering.

Our NE undergraduate program couples our research strengths, including radiation detection, national security, and nuclear materials, with a more traditional sequence of nuclear power related courses. The faculty members teach a range of required and elective courses, conduct multi-disciplinary research with scientists across many departments and institutions, and serve as leaders in the American Nuclear Society and other professional organizations. This diversity of interests and experiences 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.

NE undergraduate students master a set of core concepts and principles critical to a fundamental understanding of the applications of the atom, but also have flexibility in selecting several electives relevant to their individual professional interests.

3.1. B.S. Degree Program and Requirements (2022-2024 Catalog Years)

Section 3.1.3 presents the Model Semester Plan for Catalog Years 2022-2024. Not all course numbers for this Catalog Year yet appear in the official catalog; they are included in this document.

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/>.

3.1.1. Curriculum Overview (2022-2024 Catalog Years)

Science and Math Core (11 courses). The NE 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 a 2 course sequence of Physics with Calculus and a 2 course sequence of General Chemistry.

Engineering Core (4 courses). The engineering core gives students a thorough understanding of how engineers approach problems. Secondly it serves to introduce the major engineering disciplines to the student so that she or he has background for the wide variety of problems to be encountered over a career.

NE Core (19 courses). The NE core provides the student with basic understanding of prominent problems and methodologies used in the nuclear engineering profession. This set of courses includes two introductory courses (one each in the first and third semester), nuclear engineering mathematics, radiation sciences, reactor physics, reactor thermal engineering, nuclear materials, radiation shielding, risk assessment and economics, and two laboratory experiences. Engineering design is integrated throughout the NE core, with particular emphasis in the Senior Design (also called Capstone Design) sequence, ENU 4191 and ENU 4192.

Technical Electives (4 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 materials science and engineering.

General Education and Composition (6 courses). The NE 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: 127.

3.1.2. Course Requirements (2022-2024 Catalog Years)

The NE Program Department offers a Bachelor of Science (B.S.) degree in NE, which requires 127 credit hours of course work.

Critical Tracking Criteria. There are 11 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, for each course). 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 NE program courses. Students are required to complete the 8 non-ENU critical tracking courses (math, physics, and chemistry/biology) by the fifth semester. If students don't meet critical tracking requirements by their fifth semester, students will be monitored by the University and will be considered off-track. A hold will be placed on their account that will prevent them from registering until they meet with an academic advisor to discuss plans for completing critical tracking requirements. If a student continues to be off-track for more than two consecutive terms, they can no longer pursue the major.

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.

3.1.3. Model Semester Plan (2022-2024 Catalog Years)

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

Table 1: Model semester plan for Catalog Years 2022-2023 (Critical tracking course marked with *).

| Semester 1 – Fall | | Credits |
|---|--|----------------|
| Quest 1 (Gen Ed Humanities, Writing Requirement, 2,000 words, with International or Diversity) | | 3 |
| Select one of the following two Chemistry courses: | | |
| CHM 2045* | General Chemistry 1 | 3 |
| CHM 2095* | Chemistry for Engineers 1 | 3 |
| CHM 2045L | General Chemistry 1 Laboratory | 1 |
| ENU 1000 | Introduction to Nuclear Engineering | 1 |
| MAC 2311* | Analytic Geometry and Calculus 1 | 4 |
| State Core General Education Composition (6,000 words) | | 3 |
| Total credits | | 15 |
| Semester 2 – Spring | | |
| Quest 2 (Gen Ed Social/Behavioral Science, Writing Requirement, 2,000 words, with International or Diversity) | | 3 |
| Select one of the following two classes: | | |
| CHM 2046* | General Chemistry 2 | 3 |
| CHM 2096* | Chemistry for Engineers 2 | 3 |
| ENC 3246 | Professional Communication for Engineers (Fulfills State Core General Education Composition and 6,000 words) | 3 |
| MAC 2312* | Analytic Geometry and Calculus 2 | 4 |
| PHY 2048* | Physics with Calculus 1 | 3 |
| PHY 2048L | Laboratory for Physics with Calculus 1 | 1 |
| Total credits | | 17 |
| Semester 3 – Fall | | |
| EGM 2511 | Engineering Mechanics: Statics | 3 |
| ENU 2002 | Fundamentals of Nuclear Engineering | 2 |
| MAC 2313* | Analytic Geometry and Calculus 3 | 4 |
| PHY 2049* | Physics with Calculus 2 | 3 |
| PHY 2049L | Laboratory for Physics with Calculus 2 | 1 |

| | |
|--|------------|
| State Core General Education Humanities, Writing Requirement 4,000 words or more) | 3 |
| Total credits | 16 |
| Semester 4 – Spring | |
| EGM 3520 Mechanics of Materials | 3 |
| ENU 4001* Nuclear Engineering Analysis 1 | 4 |
| MAP 2302* Elementary Differential Equations | 3 |
| State Core General Education Social and Behavioral Sciences, 4000 words | 3 |
| Technical Elective(s) | 3 |
| Total credits | 16 |
| Semester 5 – Fall | |
| EEL 3003 Elements of Electrical Engineering | 3 |
| EGS 4034 Engineering Ethics and Professionalism | 1 |
| ENU 3132 Reactor Thermal Engineering 1 | 4 |
| ENU 4003* Nuclear Engineering Analysis 2 | 4 |
| ENU 4605* Radiation Interaction and Sources 1 | 4 |
| Total credits | 16 |
| Semester 6 – Spring | |
| ENU 4133 Reactor Thermal Engineering 2 | 4 |
| ENU 4103 Reactor Analysis and Computation 1: Statics | 4 |
| ENU 4800 Introduction to Nuclear Reactor Materials | 3 |
| Technical Elective(s) | 6 |
| Total credits | 17 |
| Semester 7 – Fall | |
| ENU 4134 Reactor Thermal Hydraulics | 4 |
| ENU 4191 Elements of Nuclear and Radiological Engineering Design | 1 |
| ENU 4612 Nuclear Radiation Detection and Instrumentation | 3 |
| ENU 4612L Nuclear Radiation Detection and Instrumentation Laboratory | 1 |
| ENU 4630 Fundamental Aspects of Radiation Shielding | 3 |
| ENU 4104 Reactor Analysis and Computation 2 | 3 |
| Total credits | 15 |
| Semester 8 – Spring | |
| ENU 4180 Introduction to the Nuclear Fuel Cycle | 3 |
| ENU 4145 Risk Assessment for Radiation Systems | 3 |
| ENU 4192 Nuclear and Radiological Engineering Design | 3 |
| ENU 4505L Nuclear and Radiological Engineering Laboratory 1 (Writing Requirement: 4,000 words) | 3 |
| Technical Elective(s) | 3 |
| Total credits | 15 |
| NE Program Total credits | 127 |

3.1.4. Elective Policy (2022-2024 Catalog Years)

1. In-program technical electives. Of the 12 elective credits, 9 must be nuclear

For the purposes of this rule, BME 4531, GMS 6084, PHY 3063, PHY 3101, and ENU courses numbered 3000 and above shall be taken as nuclear courses. BME 4931: Patient Dosimetry also shall be taken as a nuclear course. (BME 4931 is the “Special Topics” course in that department. Other sections of BME 4931 will not count, except by petition.) Exceptions: ENU 4934 Fundamentals of Nuclear and Radiological Engineering and ENU 5005 Introduction to Nuclear Engineering may not be used by students in the 2022-2024 Catalog Years to fulfill any requirements. See #5, below, for how Integrated Product and Process Design (IPPD) is handled.

2. ENU 4930 policy: this course number is used for special topics courses, many of which are later given an official course number. Students may not use both the ENU 4930 version and the version with the final course number as electives – credit may be earned only once for what is essentially the same class. ENU 4930/Fuel Cycles is deemed redundant with ENU 4180. ENU 4930/Radiochemistry is deemed redundant with ENU 4300. ENU 4930/Plasma or 4930/Fusion (or similar) are deemed redundant with ENU 4710. ENU 4930/Power Plant simulation is deemed redundant with ENU 4110. For future new courses, the Undergraduate Coordinator, in consultation with the course instructor(s) and NE Program Director, will determine which run(s) of ENU 4930 are redundant with which new course(s).

3. Breadth technical electives. Students are encouraged to complete the remaining 3 credits from courses, numbered 3000 and above, offered by the College of Engineering (including nuclear courses; EML 2023 is allowed) or the Departments of Chemistry (CHM 2210 is allowed), Mathematics, Physics, or Statistics.

Students may also obtain these 3 credits via courses numbered 3000 and above offered by the following STEM departments:

- Astronomy
- Behavioral Science & Community Health
- Biology-Biological Sciences (BSC 2011 is allowed)
- Biology-Botany
- Biology-Zoology
- Design Construction and Planning
- Economics
- Entomology & Nematology
- Food Science & Human Nutrition (FOS prefixes, only)
- Geological Sciences
- Geomatics
- Horticultural Sciences
- Information Systems & Operations Management

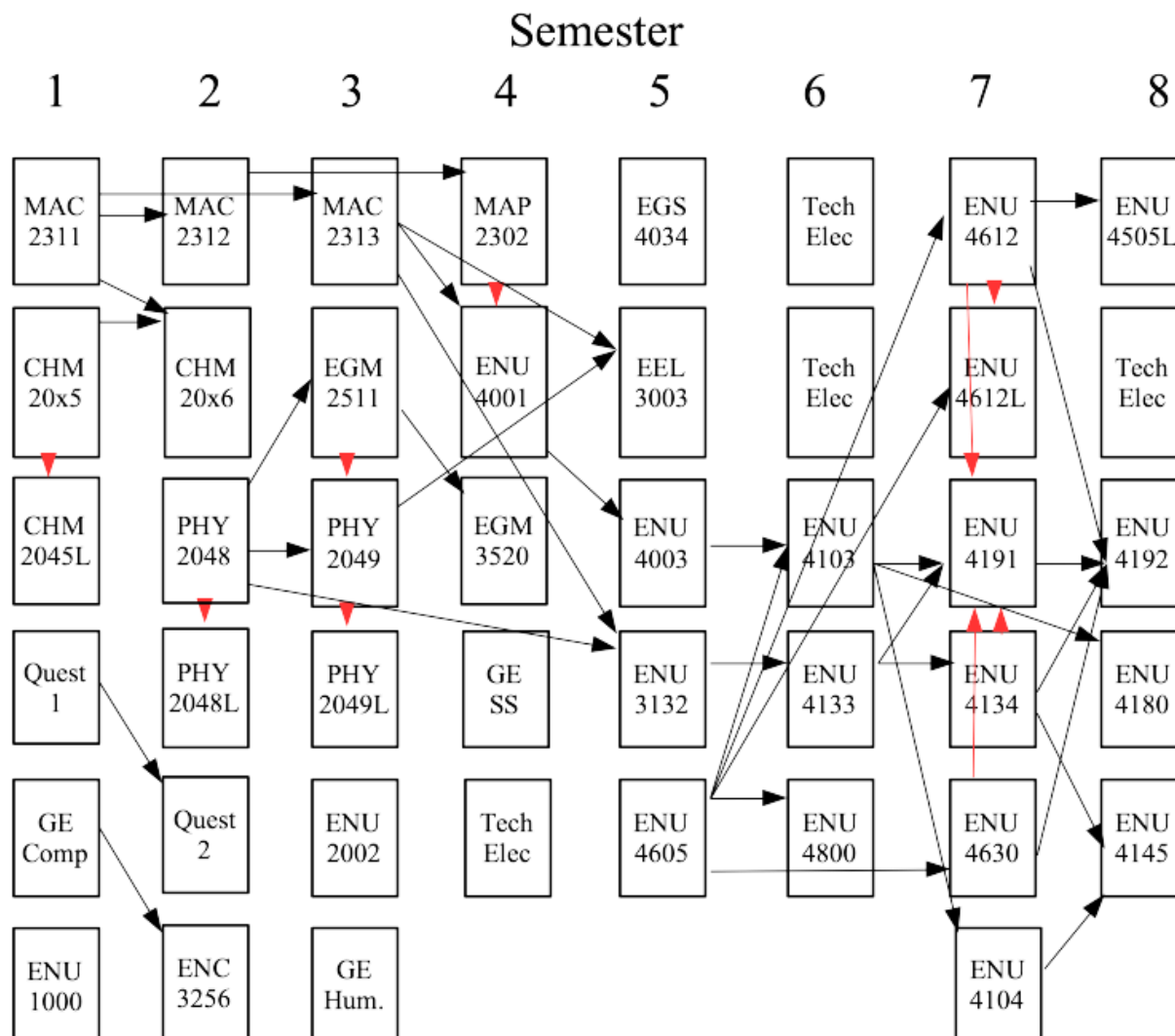
- Medicine-Radiation Oncology
- Medicine-Radiology
- Microbiology & Cell Science
- Natural Resources & Environment
- Public Health
- Soil and Water Science
- Wildlife Ecology & Conservation

4. Individual work. A maximum of 3 credits, combined, may come from individual work and co-op credits: ENU 4905 and ENU 4949. A combination of EGN 4912 (0 credits) and ENU 4905 (3 credits) may be used for a research experience led by a member of the nuclear faculty or approved by the NE Undergraduate Coordinator as relevant to nuclear engineering.

5. Students who complete the 2-course, 6-credit Integrated Product and Process Design (IPPD) may apply these credits as technical electives. Three of the credits will be considered as nuclear technical elective credits and three as breadth technical elective credits.

3.1.5. Pre-requisite Flowchart (2022-2024 Catalog Years)

In this figure, black lines indicate pre-requisites and red lines co-requisites.



3.1.6. Recommendations (2022-2024 Catalog Years)

The following are *recommendations* based on the experiences of students in the NE program in the last 5-10 years. They are not programmatic requirements but may be useful as you launch your professional career.

- It can be easier to obtain a job or place in graduate school immediately following a Spring or Summer graduation. If you find yourself off-cycle (tracking for a December graduation), you are encouraged to consider a minor or certificate program. The appropriate program depends on your career goals and area(s) of technical interest; the academic services office and undergraduate coordinator (in addition to other NE program faculty) are available to discuss options.

- ENU 4191 (Fall) and ENU 4192 (Spring) form the senior design sequence and projects are carried over between the terms. To the extent possible, students are assigned a project and technical area relevant to their interests. Separating the two courses by a calendar year is strongly discouraged and usually results in students being assigned to fill out a group's roster rather than based on their individual interests.

3.1.7. Approved Blanket Petitions (2022-2024 Catalog Years)

- Students who started at a Florida Community College or State College not later than Fall 2021, completing BSC 2010 not later than Spring 2022, completing all critical tracking courses required for transfer not later than Spring 2023, may apply BSC 2010 in lieu of CHM 20x6 for Catalog Years 2022-2023
- Students may substitute ENU 1000 according to the following criteria. These are particularly useful for transfer students and those students who move into the NE major later than their first semester at UF.
 1. All students may substitute EGS 1006 for ENU 1000.
 2. ENU 4905 (Special Problems in Nuclear and Radiological Engineering) or ENU 4949 (Co-op Work Experience) may also be used to fulfill this requirement. Use of 1 ENU 4905 or ENU 4949 in lieu of ENU 1000 does not count against the 3-credit individual work limit for technical electives.
 3. Transfer students may also complete 1 additional credit of technical elective to replace ENU 1000. This may come from courses, numbered 1000 and above, offered by the College of Engineering (including nuclear courses) or any of the following departments. Exceptions: ENU 4934 Fundamentals of Nuclear and Radiological Engineering and ENU 5005 Introduction to Nuclear Engineering may not be used by students in the 2022-2023 Catalog Years to fulfill any requirements. For courses that are accepted for UF transfer credit that have no direct UF equivalent (i.e.; no UF course has the same prefix and final three digits of the course number), determination of their applicability under this rule will be made by the NE Undergraduate Coordinator.
 - Astronomy
 - Behavioral Science & Community Health
 - Biology-Biological Sciences
 - Biology-Botany
 - Biology-Zoology
 - Chemistry
 - Design Construction and Planning
 - Economics
 - Entomology & Nematology
 - Food Science & Human Nutrition (FOS prefixes, only)
 - Geological Sciences

- Geomatics
 - Horticultural Sciences
 - Information Systems & Operations Management
 - Mathematics
 - Medicine-Radiation Oncology
 - Medicine-Radiology
 - Microbiology & Cell Science
 - Natural Resources & Environment
 - Physics
 - Public Health
 - Soil and Water Science
 - Statistics
 - Wildlife Ecology & Conservation
4. Student may also substitute any Introduction to Engineering course for ENU 1000, subject to advisor approval of the specific course as representing an introduction to engineering.

3.2. B.S. Degree Program and Requirements (Catalog Years 2012-2021)

Section 3.2.3 presents the Model Semester Plan for Catalog Year 2021.

For students with Catalog Years 2015-2020, the requirements to meet State Core General Education (Composition, Social and Behavioral Science, and Humanities) requirements, as well as UF requirements in these areas, represent the primary changes. Please consult an advisor to select appropriate General Education courses to minimize duplication of your effort, excess-credit fees, and potential delays to graduation.

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/>.

In addition to these differences, students in the 2013-2014 Catalog Years have 3 additional credits of Humanities required (with 3 fewer credits of NE technical electives). Students in the 2012 catalog year have all the differences that apply to 2013 and 2014, with the blanket petition that ENU 4612 and ENU 4612L (both courses required) will be used to fill the ENU 4612C requirement in that catalog year.

3.2.1. Curriculum Overview (Catalog Years 2012-2021)

Science and Math Core (8 courses). The NE 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 a 2 course sequence of Physics with Calculus and a 2 course sequence of General Chemistry. (Students also have the option to switch one General Chemistry course with a course in Biology.)

Engineering Core (9 courses). The engineering core gives students a thorough understanding of how engineers approach problems. Secondly it serves to introduce the major engineering disciplines to the student so that she or he has background for the wide variety of problems to be encountered over a career.

NE Core (16 courses). The NE core provides the student with basic understanding of prominent problems and methodologies used in the nuclear engineering profession. This set of courses includes two introductory courses (one each in the first and third semester), nuclear engineering mathematics, radiation sciences, reactor engineering, nuclear materials, radiation shielding and protection, risk assessment, and two laboratory experiences. Engineering design is integrated throughout the NE core, with particular emphasis in the Senior Design (also called Capstone Design) sequence, ENU 4191 and ENU 4192.

Technical Electives (3 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 materials science and engineering.

General Education and Composition (5 courses). The NE 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: 127.

3.2.2. Course Requirements (Catalog Years 2012-2021)

The NE Program Department offers a Bachelor of Science (B.S.) degree in NE, which requires 127 credit hours of course work.

Critical Tracking Criteria. There are 10 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, for each course). 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 NE program courses. Students are required to complete the 8 non-ENU critical tracking courses (math, physics, and chemistry/biology) by the fifth semester. If students don't meet critical tracking requirements by their fifth semester, students will be monitored by the University and will be considered off-track. A hold will be placed on their account that will prevent them from registering until they meet with an academic advisor to discuss plans for completing critical tracking requirements. If a student continues to be off-track for two consecutive terms, they can no longer pursue the major.

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 senior courses ENU 4505L and ENU 4641C fulfill 4,000 and 2,000 words, respectively, of the writing requirement.

3.2.3. Model Semester Plan (2021 Catalog Year)

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

Table 2: Model semester plan for Catalog Year 2021 (Critical tracking course marked with *).

| Semester 1 – Fall | | Credits |
|---|--|----------------|
| Quest 1 (Gen Ed Humanities, Writing Requirement, 2,000 words, with International or Diversity) | | 3 |
| Select one of the following two Chemistry courses: | | |
| CHM 2045* | General Chemistry 1 | 3 |
| CHM 2095* | Chemistry for Engineers 1 | 3 |
| CHM 2045L | General Chemistry 1 Laboratory | 1 |
| ENU 1000 | Introduction to Nuclear Engineering | 1 |
| MAC 2311* | Analytic Geometry and Calculus 1 | 4 |
| State Core General Education Composition (6,000 words) | | 3 |
| Total credits | | 15 |
| Semester 2 – Spring | | |
| Quest 2 (Gen Ed Social/Behavioral Science, Writing Requirement, 2,000 words, with International or Diversity) | | 3 |
| ENC 3246 | Professional Communication for Engineers (Fulfills State Core General Education Composition and 6,000 words) | 3 |
| MAC 2312* | Analytic Geometry and Calculus 2 | 4 |
| PHY 2048* | Physics with Calculus 1 | 3 |
| PHY 2048L | Laboratory for Physics with Calculus 1 | 1 |
| Total credits | | 14 |
| Semester 3 – Fall | | |
| ENU 4934 | Fundamentals of Nuclear and Radiological Engineering | 1 |
| MAC 2313* | Analytic Geometry and Calculus 3 | 4 |
| PHY 2049* | Physics with Calculus 2 | 3 |
| PHY 2049L | Laboratory for Physics with Calculus 2 | 1 |
| STA 3032 | Engineering Statistics | 3 |
| State Core General Education Humanities, Writing Requirement 2,000 words or more) | | 3 |
| Total credits | | 15 |
| Semester 4 – Spring | | |

| | | |
|---|--|-----------|
| Select one of the following three classes: | | |
| CHM 2046* | General Chemistry 2 | 3 |
| CHM 2096* | Chemistry for Engineers 2 | 3 |
| BSC 2010* | Integrated Principles of Biology 1 | 3 |
| COP 2271 | Computer Programming for Engineers (MATLAB or C++ sections only) | 2 |
| EGM 2511 | Engineering Mechanics: Statics | 3 |
| EML 3100 | Thermodynamics | 3 |
| MAP 2302* | Elementary Differential Equations | 3 |
| Total credits | | 14 |
| Semester 5 – Summer | | |
| EGM 3520 | Mechanics of Materials | 3 |
| EMA 3010 | Materials | 3 |
| State Core General Education Social and Behavioral Sciences | | 3 |
| Total credits | | 9 |
| Semester 6 – Fall | | |
| EEL 3003 | Elements of Electrical Engineering | 3 |
| EGN 3353C | Fluid Mechanics | 3 |
| EGS 4034 | Engineering Ethics and Professionalism | 3 |
| ENU 4001* | Nuclear Engineering Analysis 1 | 4 |
| ENU 4605* | Radiation Interaction and Sources 1 | 4 |
| Total credits | | 15 |
| Semester 7 – Spring | | |
| EML 4140 | Heat Transfer | 3 |
| ENU 4103 | Reactor Analysis and Computation 1: Statics | 4 |
| ENU 4144 | Nuclear Power Plant Reactor Systems 1 | 4 |
| ENU 4800 | Introduction to Nuclear Reactor Materials | 4 |
| Technical Elective(s) | | 3 |
| Total credits | | 16 |
| Semester 8 – Fall | | |
| ENU 4134 | Reactor Thermal Hydraulics | 4 |
| ENU 4191 | Elements of Nuclear and Radiological Engineering Design | 1 |
| ENU 4612 | Nuclear Radiation Detection and Instrumentation | 3 |
| ENU 4612L | Nuclear Radiation Detection and Instrumentation Laboratory | 1 |
| ENU 4630 | Fundamental Aspects of Radiation Shielding | 3 |
| Technical Elective(s) | | 3 |
| Total credits | | 15 |
| Semester 9 – Spring | | |
| ENU 4145 | Risk Assessment for Radiation Systems | 3 |
| ENU 4192 | Nuclear and Radiological Engineering Design | 3 |
| ENU 4505L | Nuclear and Radiological Engineering Laboratory 1 (Writing Requirement: 4,000 words) | 3 |

| | | |
|---------------------------------|---|------------|
| ENU 4641C | Applied Radiation Protection (Writing Requirement: 2,000 words) | 2 |
| Technical Elective(s) | | 3 |
| Total credits | | 14 |
| NE Program Total credits | | 127 |

3.2.4. Elective Policy (2012-2021 Catalog Years)

1. In-program technical electives. The total number of technical elective credits, less 3 shall be from the nuclear program. (For 2012-2014: 3 credits out of 6 total must be nuclear. For 2015-present: 6 credits out of 9 total must be nuclear.)

For the purposes of this rule, BME 4531, GMS 6084, PHY 3063, PHY 3101, and ENU courses numbered 3000 and above shall be taken as nuclear courses. BME 4931: Patient Dosimetry also shall be taken as a nuclear course. (BME 4931 is the “Special Topics” course in that department. Other sections of BME 4931 will not count, except by petition.) Exceptions: ENU 2002 Fundamentals of Nuclear Engineering may not be used as an elective. ENU 5005 Introduction to Nuclear Engineering may not be used by students in the 2012-2021 Catalog Years to fulfill any requirements. See #5, below, for how Integrated Product and Process Design (IPPD) is handled.

2. ENU 4930 policy: this course number is used for special topics courses, many of which are later given an official course number. Students may not use both the ENU 4930 version and the version with the final course number as electives – credit may be earned only once for what is essentially the same class. ENU 4930/Fuel Cycles is deemed redundant with ENU 4180. ENU 4930/Radiochemistry is deemed redundant with ENU 4300. ENU 4930/Plasma or 4930/Fusion (or similar) are deemed redundant with ENU 4710. ENU 4930/Power Plant simulation is deemed redundant with ENU 4110. For future new courses, the Undergraduate Coordinator, in consultation with the course instructor(s) and NE Program Director, will determine which run(s) of ENU 4930 are redundant with which new course(s).

3. Breadth technical electives. Students are encouraged to complete the remaining 3 credits from courses, numbered 3000 and above, offered by the College of Engineering (including nuclear courses; EML 2023 is allowed) or the Departments of Chemistry (CHM 2210 is allowed), Mathematics, Physics, or Statistics.

Students may also obtain these 3 credits via courses numbered 3000 and above offered by the following STEM departments:

- Astronomy
- Behavioral Science & Community Health
- Biology-Biological Sciences (BSC 2011 is allowed)
- Biology-Botany
- Biology-Zoology
- Design Construction and Planning
- Economics
- Entomology & Nematology
- Food Science & Human Nutrition (FOS prefixes, only)
- Geological Sciences
- Geomatics

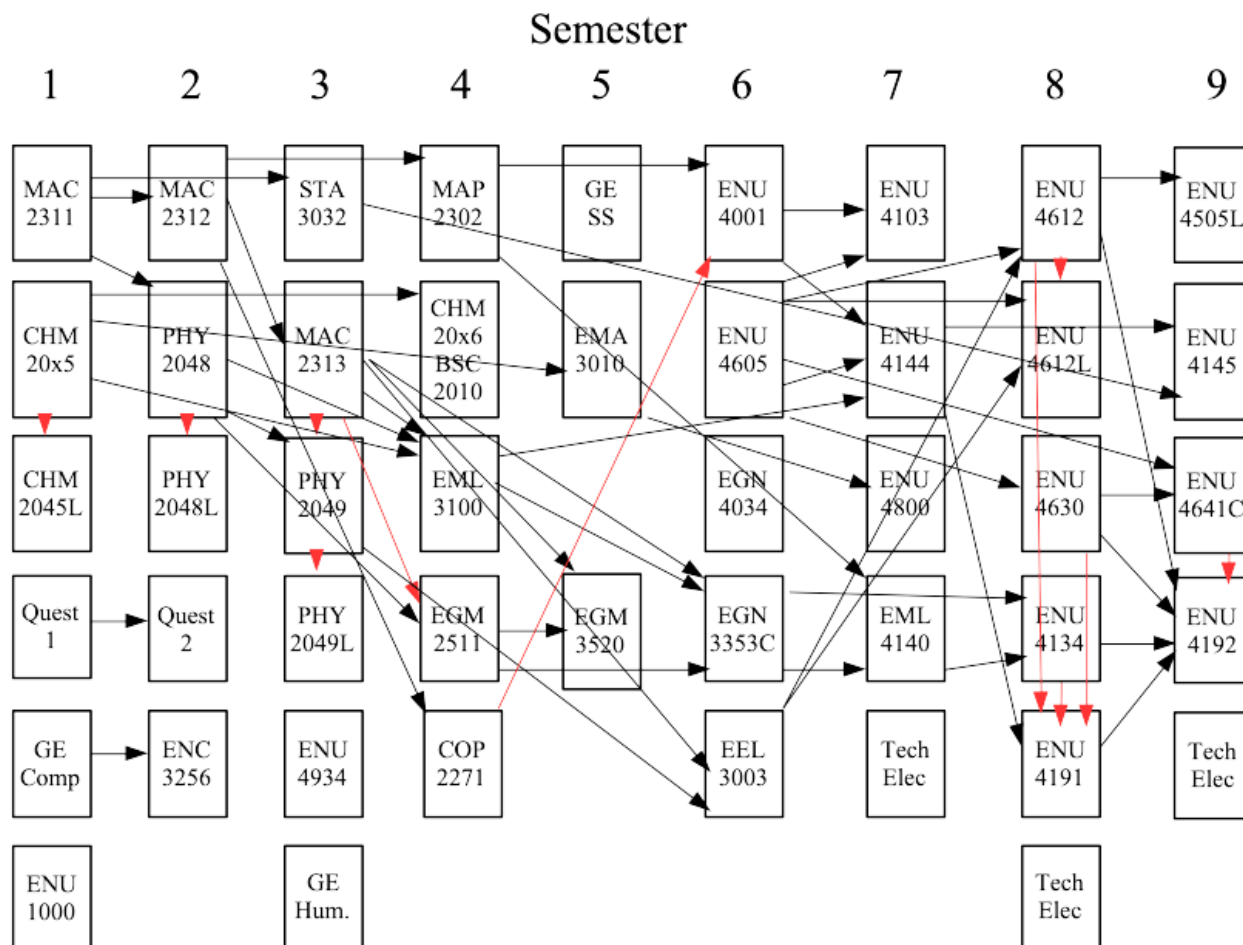
- Horticultural Sciences
- Information Systems & Operations Management
- Medicine-Radiation Oncology
- Medicine-Radiology
- Microbiology & Cell Science
- Natural Resources & Environment
- Public Health
- Soil and Water Science
- Wildlife Ecology & Conservation

4. Individual work. A maximum of 3 credits, combined, may come from individual work and co-op credits: ENU 4905 and ENU 4949. A combination of EGN 4912 (0 credits) and ENU 4905 (3 credits) may be used for a research experience led by a member of the nuclear faculty or approved by the NE Undergraduate Coordinator as relevant to nuclear engineering.

5. Students who complete the 2-course, 6-credit Integrated Product and Process Design (IPPD) may apply these credits as technical electives. Three of the credits will be considered as nuclear technical elective credits and three as breadth technical elective credits.

3.2.5. Pre-requisite Flowchart (2012-2021 Catalog Years)

In this figure, black lines indicate pre-requisites and red lines co-requisites.



3.2.6. Recommendations (2012-2021 Catalog Years)

The following are *recommendations* based on the experiences of students in the NE program in the last 5-10 years. They are not programmatic requirements but may be useful as you launch your professional career.

- In semester four, students have the choice among three courses: CHM 2046, CHM 2096, and BSC 2010. Students who are not intending to pursue a career in nuclear medicine, medical physics, or another health sciences field are *strongly* encouraged to take one of the two chemistry courses.
- It can be easier to obtain a job or place in graduate school immediately following a Spring or Summer graduation. If you find yourself off-cycle (tracking for a December graduation), you are encouraged to consider a minor or certificate program. The appropriate program depends on your career goals and area(s) of technical interest; the academic services office

and undergraduate coordinator (in addition to other NE program faculty) are available to discuss options.

- ENU 4191 (Fall) and ENU 4192 (Spring) form the senior design sequence and projects are carried over between the terms. To the extent possible, students are assigned a project and technical area relevant to their interests. Separating the two courses by a calendar year is strongly discouraged and usually results in students being assigned to fill out a group's roster rather than based on their individual interests.
- Students who intend to work in the civilian nuclear power industry immediately following graduation with their B.S. degree are encouraged to take EIN 3354 (Engineering Economy) as an elective.

3.2.7. Approved Blanket Petitions (2012-2021 Catalog Years)

- Students may take EML 4140 (Heat Transfer) concurrently with ENU 4134 (Reactor Thermal Hydraulics) if and only if it allows them to graduate earlier than taking the courses sequentially.
- Students who are in their third-to-last (or later) fall semester who are officially listed as Nuclear Engineering majors may register for ENU 4934. The registration system may block you, based on an out-of-date Junior Standing pre-requisite. Students, including first-year students and others still advised by the college advising office, will need to contact the (MSE/NE) Academic Services Office to enroll in this course.
- Students may complete COP 2xxx Python Programming for Engineers in lieu of COP 2271. (COP 2xxx is 3 credits – 1 more than COP 2271 – the “extra” credit may *not* count as a technical elective credit.)
- Students may substitute ENU 1000 and/or ENU 4934 according to the following criteria. These are particularly useful for transfer students and those students who move into the NE major later than their first semester at UF.
 1. All students may substitute EGS 1006 for ENU 1000.
 2. ENU 4905 (Special Problems in Nuclear and Radiological Engineering) or ENU 4949 (Co-op Work Experience) may also be used to fulfill this requirement. Use of 1 ENU 4905 or ENU 4949 in lieu of ENU 1000 does not count against the 3-credit individual work limit for technical electives.
 3. Transfer students may also complete 1 additional credit of technical elective to replace ENU 1000. This may come from courses, numbered 1000 and above, offered by the College of Engineering (including nuclear courses) or any of the following departments. Exceptions: ENU 2002 Fundamentals of Nuclear Engineering may not be used as an elective. ENU 5005 Introduction to Nuclear Engineering may not be used by students in the 2012-2021 Catalog Years to fulfill any requirements. For courses that are accepted for UF transfer credit that have no direct UF equivalent (i.e.; no UF course has the same prefix and final three digits of the course number), determination of their applicability under this rule will be made by the NE Undergraduate Coordinator.
 - Astronomy
 - Behavioral Science & Community Health

- Biology-Biological Sciences
 - Biology-Botany
 - Biology-Zoology
 - Chemistry
 - Design Construction and Planning
 - Economics
 - Entomology & Nematology
 - Food Science & Human Nutrition (FOS prefixes, only)
 - Geological Sciences
 - Geomatics
 - Horticultural Sciences
 - Information Systems & Operations Management
 - Mathematics
 - Medicine-Radiation Oncology
 - Medicine-Radiology
 - Microbiology & Cell Science
 - Natural Resources & Environment
 - Physics
 - Public Health
 - Soil and Water Science
 - Statistics
 - Wildlife Ecology & Conservation
4. Student may also substitute any Introduction to Engineering course for ENU 1000 or (for Catalog Years 2012-2019 only) ENU 4934, subject to advisor approval of the specific course as representing an introduction to engineering.

3.3. Combination B.S./M.S. Degree Program and Requirements

The NE Program offers a combination B.S. (Nuclear Engineering)/M.S. (Nuclear Engineering Sciences) degree program. The combination B.S./M.S. degree program allows qualified students to apply for graduate admissions to pursue both degrees concurrently.

3.3.1. Admission Requirements for the Combination B.S./M.S. Program

Students need to satisfy both [MSE/NE 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 ENU courses and have an overall GPA of at least 3.0.

3.3.2. 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.

3.3.3. Specific Courses (2022-2024 Catalog Years)

The course substitutions should include the following two senior-year classes.

| Undergraduate Requirement | | Graduate Course | |
|---------------------------|--|--------------------------|--|
| ENU 4145 | Risk Assessment for Radiation Systems | ENU 5142 | Reliability and Risk Analysis for Nuclear Facilities |
| ENU 4180 | Introduction to the Nuclear Fuel Cycle | ENU 5186 | Nuclear Fuel Cycles |

These courses total 6 credits. The additional 6 credits may come from ENU electives. Students should meet with the undergraduate coordinator in the fall of their junior year to discuss the elective options that will be available.

3.3.4. Specific Courses (2012-2021 Catalog Years)

The course substitutions should include the following two senior-year classes.

| Undergraduate Requirement | | Graduate Course | |
|---------------------------|---------------------------------------|--------------------------|--|
| ENU 4134 | Reactor Thermal Hydraulics | ENU 6135 | Nuclear Thermal Hydraulics |
| ENU 4145 | Risk Assessment for Radiation Systems | ENU 5142 | Reliability and Risk Analysis for Nuclear Facilities |

These courses total 7 credits. The additional 5 credits may come from ENU electives. Students should meet with the undergraduate coordinator in spring of their junior year to discuss the elective options that will be available in their senior year.

3.4. Minors

Students majoring in nuclear engineering are eligible to complete a minor in a range of other subjects; consult the undergraduate catalog or the department/program offering the minor for details.

The NE Program offers a minor in Nuclear and Radiological Engineering. Students earning a degree with any major other than NE can apply for this minor. They must have at least 45 credit hours completed and cannot be on college probation. The minor was updated for the 2023 Catalog.

3.4.1. NRE Minor (2023-2024 Catalog Years)

The Nuclear and Radiological Engineering Minor has one pre-requisite:

| Pre-Requisites for NRE Minor | | |
|------------------------------|-----------------------------------|---|
| MAP 2302 | Elementary Differential Equations | 3 |

| | |
|----------------------|----------|
| Total credits | 3 |
|----------------------|----------|

There are four required courses in the NRE minor. All required courses must be completed with a C or better; students must also have a minimum overall GPA of 2.0.

| Requirements for NRE Minor | | |
|-----------------------------------|---|-----------|
| ENU 4001 | Nuclear Engineering Analysis I | 4 |
| ENU 4103 | Reactor Analysis and Computation 1: Statics | 4 |
| ENU 4605 | Radiation Interactions and Sources 1 | 4 |
| ENU 4612 | Nuclear Radiation Detection and Instrumentation | 3 |
| Total credits | | 15 |

A blanket petition is in place to allow students who have declared the NRE minor to take ENU 4103 without the ENU 4003 pre-requisite, if they have completed ENU 4001. Note that you must *officially declare* the NRE minor prior to registering for ENU 4103 to take advantage of this blanket petition.

3.4.2. NRE Minor (2012-2022 Catalog Years)

The Nuclear and Radiological Engineering Minor has two pre-requisites:

| Pre-Requisites for NRE Minor | | |
|---|--|----------|
| ENU 4001 | Nuclear Engineering Analysis I | 4 |
| Select one of the following two courses | | |
| EML 3007 | Elements of Thermodynamics and Heat Transfer | 3 |
| EML 3100 | Thermodynamics | 3 |
| Total credits | | 7 |

There are five required courses in the NRE minor. All required courses must be completed with a C or better; students must also have a minimum overall GPA of 2.0.

| Requirements for NRE Minor | | |
|-----------------------------------|---|-----------|
| EGN 3353C | Fluid Mechanics | 3 |
| ENU 4103 | Reactor Analysis and Computation 1: Statics | 4 |
| ENU 4144 | Nuclear Power Plant Systems 1 | 3 |
| ENU 4605 | Radiation Interactions and Sources 1 | 4 |
| ENU 4612 | Nuclear Radiation Detection and Instrumentation | 3 |
| Total credits | | 17 |

Note that ENU 4144 was taught for the last time in Spring 2024. A blanket petition is in place to allow students in the NRE Minor (2012-2022 Catalog Years) to take either ENU 4630 (Fundamental Aspects of Radiation Shielding) or ENU 4800 (Introduction to Nuclear Reactor Materials) instead. Either three-credit course can be taken following completion of ENU 4605, with ENU 4630 offered in the Fall and ENU 4800 in the Spring.

3.5. Internships

As part of the undergraduate NE program, students can take an internship, e.g. in industry or national laboratories over the summer, and receive 1 course credit for ENU 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 undergraduate internship request form at <https://mse.ufl.edu/academics/forms/>. The offer letter from the company should be attached. The student needs to have permission from the Undergraduate Coordinator (dlschubring@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 ENU 4949.

Once registered for ENU 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:

- Internship Employer Evaluation Form
- Student Work Report

These forms are available at <https://mse.ufl.edu/academics/forms/> and are common between ENU 4949 and EMA 4949 (the equivalent course in the MSE curriculum).

Students who complete a summer internship may be eligible for a waiver of the Summer Registration Requirement (9 credits at SUS Universities during summer terms). Students should consult the Academic Services Office for assistance in filling out the relevant paperwork.

3.6. 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 NE program.

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 NE program. Before the end of classes of the semester in which the student graduates, they 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 NE program, a co-chair must be selected who is from the NE program.

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 at the defense summarizing their research;

it should be about 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 Section 3.1.3 or 3.2.3 and the flowchart in Section 3.1.5 or 3.2.5 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 16 during Fall and Spring and 9 during the summer. However, individual students may have semesters between 12 and 18, depending on AP/IB courses, getting off-sequence, changing majors or transferring, as well as additional electives, minors and certificate programs the student may pursue.

Students can register for courses on 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://one.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 <https://one.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. There is no standard grading scale (numerical grade to letter grade conversion) at UF, within the MSE department, or within the NE program; this matter is at the discretion of instructors and will vary from course to course.

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 NE 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 six of the eight non-ENU Critical Tracking have been completed. Application must include up-to-date transcripts that show "in progress" for the final two of these Critical Tracking courses. All eight of these 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/transfercredit>.

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://one.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 NE 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 NE program can be found at <https://mse.ufl.edu/academics/accreditation/ne-program-accreditation/>

5. Research

All students conducting research within the Herbert Wertheim College of Engineering must be

registered for EGN 4912, which allows for 0 credit registration. Students may also be on a paid (OPS) appointment, in addition to EGN 4912. (Research conducted outside of the HWCOE cannot be used to meet any degree requirements. Policies will vary from college to college and department to department; they are beyond the scope of this handbook.)

The syllabus for EGN 4912 is controlled by the Herbert Wertheim College of Engineering (rather than the MSE department or NE program); details of policies change from time to time. The most recent EGN 4912 policies, as well as a link to the registration form, can be found at:

<https://www.eng.ufl.edu/graduate/about-us/undergraduate-research/egn-4912-engineering-undergraduate-research/>

All researchers must follow appropriate department-specific policies for laboratory access (see your Research Mentor for guidance). Policies for the MSE Department are contained in this section; students conducting research with a faculty member in another department are subject to the policies of that department, which may differ. Undergraduates interested in research are encouraged to explore options with other faculty; the NE Undergraduate Coordinator is available to suggest faculty relevant to specific research interests.

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 Materials Science & Engineering 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. To facilitate appropriate training of safety concerns, all MSE department students are required to complete a laboratory checklist prior to gaining access to the laboratory:

<https://www.eng.ufl.edu/labsafety/wp-content/uploads/sites/28/2017/10/Engineering-Laboratory-Safety-Guidelines-and-Training-Checklist-2017-FINAL.pdf>.

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 MSE department has a 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 required for all University of Florida students. Students

conducting research will be required 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: <https://research.ufl.edu/rcr/rcr-training/>.

6. General Information

6.1. Undergraduate Coordinator

The [Undergraduate Coordinator](#) is the advisor to all admitted and present UF NE undergraduate students in the NE Program. 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. Furthermore, transfer credits are processed. The Undergraduate Coordinator is not able to assist applicants or non-admitted students, nor are they involved in financial aid. 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, in collaboration with the NE Program Director. The Academic Services Office assists students in admission, deadlines, course requirements, registration, and routine administrative issues. Inquiries on these matters regarding the undergraduate program should first be made to the Academic Services Office (advising@mse.ufl.edu), which can then be forwarded to the NE Program Director and/or NE Undergraduate Coordinator, 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. NE Program Director and NE Program Committees

The NE Program Director oversees the operation of the NE Academic Program, is responsible for academic program administration and policy directions, ensuring policy compliance with policies of the NE Program, MSE Department, Herbert Wertheim College of Engineering, and the University. The Curriculum Committee suggests academic policy changes. The Petitions Committee reviews student petitions. A student may petition with 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 and NE student activities to promote common goals and interests of the MSE and NE student body, (2) advance and enrich the academic and educational experience of students in the UF MSE Department, and (3) seek the improvement of MSE and NE student education through active communication and representation between department students (commonly represented through department student organization's officers) and faculty, and other governing bodies at the University of Florida such as the UF Student Government. All MSE and NE 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 may 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. However, a student may not mix-and-match between two catalog years, except by formal petition to the NE program.

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

The NE Program offers a number of awards for students in good academic standing. Interested students should follow up with 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. 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 required 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.

Students are required to know and follow all relevant UF, college, department, program, and course policies relating to ChatGPT and other AI assistance. As this is an emerging issue in university education, these policies may be subject to frequent updates during the coming years.

8. Satisfactory Progress and Scholarship

Every student is required 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), the timely meeting of academic milestones, e.g. obeying the Honor Code. Students with a GPA of less than 2.0 GPA 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 major, or may be denied further registration in the program. Students who fail to maintain the minimum 2.0 GPA in either the cumulative or departmental courses are placed on Academic Probation. A hold is then placed on their record that will prevent them from registering until they meet with both an academic advisor and the Graduate Coordinator. They will be monitored for being off-track and will be required to sign a probation contract. The student will then have two semesters to attain good academic standing. Students may not be on academic probation for more than two semesters during their undergraduate program. A student who fails to meet the conditions of their probation contract must petition our department to be allowed to continue in the major. Approval of this petition is at the discretion of the NE program.

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://one.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 Survey. Instructions on how to complete this survey will be emailed to you by the Academic Services Office after the degree application deadline in your final term.

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.