Undergraduate Guide
Department of Nuclear Engineering
Texas A&M University

2020

1. General

The student advising team includes Faculty Advisor (currently, Lin Shao) and Staff Advisor (Marna Stephan), who are available daily. Depending on the need, Department Head and other faculty/staff members may get involved in consulting. Students are welcome to consult the advising team for any matters of concern. The advisors have both fixed office hours, which are announced at the beginning of each semester and posted publicly. Meeting appointments outside of the office hours are welcome through emails or phone calls.

Due to the current COVID-19 situation or any such unforeseeable situations, the College of Engineering is requiring that all advising meetings be held in a virtual format or by email communication. Please email Marna Stepan at marna@tamu.edu or Dr. Shao at lshao@tamu.edu to set up a Zoom meeting.

Additionally, students are encouraged to seek advising from Faculty members who focus on the student's area of interest in the Nuclear Engineering Field. A list of the faculty and their areas of research are available on the department website, located at http://engineering.tamu.edu/nuclear . Students are welcome to have a discussion with the Faculty Advisor regarding recommendations based on their academic and professional interests.

Additional assistance regarding career choices, study habits, mental depression, etc. is available from Counseling & Psychological Services. They are located on the 4th Floor of the Student Services Building at 471 Houston Street. This is located next to the Rudder/MSC complex. You may make an appointment by calling (979) 845-4427 or emailing caps@caps.tamu.edu

You are expected to be familiar with the rules, regulations, and academic policies of Texas A&M. These are given in the "Texas A&M University Undergraduate Catalog," available on the web (http://catalog.tamu.edu), and in "Texas A&M University Regulations" on the web (http://student-rules.tamu.edu).

2. Study Habits

The key to good academic performance at Texas A&M is to organize your time so that you keep up in all courses from the first class day. A minimum of two hours, frequently three hours, of study time is expected for each hour in class. However, all students should be aware that these numbers are only university averages. In general, engineering, science, and courses in other fields in which extensive mathematical, logical and empirical developments are involved will require **substantially** more than these minimum times and you must expect to devote the required hours if you do not want to jeopardize your ability to progress to graduation. Daytime hours should be used wisely. The university library is an ideal place to study between classes as is our dedicated Nuclear Engineering Lounge located on the second floor of the Annex. Members of the Corps of Cadets are especially encouraged to use the library rather than returning to their dorm during the day. Note that there are additional designated studying areas on campus.

Many students enter college with a misunderstanding of the kinds of efforts involved in learning. Most of the material you will be held responsible for is effectively learned (and your comprehension of it measured) only through solution of problems, i.e. homework. Therefore, homework is not optional but is an essential element of the learning process. Proper preparation for homework is critical if the homework itself is not to be meaningless: You should first read and study the assigned material extensively so that you are thoroughly familiar with its contents and its internal, logical development, an effort that involves reading and working through the assigned text materials a minimum of twice and possibly 4 times or more *prior to beginning* the homework assignment. If this sequence is rigorously adhered to, the homework then serves to integrate,

amplify, and make concrete the text material. Without the preparation, homework is simply exercises devoid of the context and most of the content of the material covered by the text.

4. Grades of D in other than NUEN Courses and Graduation Requirements

The department policy strongly recommends that any MATH or NUEN course in which a grade of D is made be repeated before taking a more advanced MATH or NUEN course, i.e., a course for which the current course is listed as a prerequisite. You are also strongly advised to repeat other courses in science or engineering in which grades of D are made before enrolling in more advanced courses.

In all cases, students must earn grades of at least C in all NUEN and MATH courses specifically required for their degrees before they will be permitted to graduate.

5. Honors Program

All eligible students are encouraged to challenge themselves by joining the Nuclear Engineering Track of the College of Engineering Honors Program.

General information regarding the Engineering Honors Program may be found at https://engineering.tamu.edu/academics/eh/index.html.

In particular, an overview of the honors program benefits is provided at https://engineering.tamu.edu/academics/eh/program/index.html

Details of the Nuclear Engineering Track are available at https://engineering.tamu.edu/academics/eh/program/nuen-track/index.html

Requirements of the program are available at https://engineering.tamu.edu/academics/eh/program/nuen-track/requirements.html

Students who need Honor's sections opened to meet requirements, should speak to the instructor of the course and the Academic Staff Advisor. All NUEN honors sections are stacked with the regular course sections, there will be additional work involved to bring the content up to Honor's level. The instructor does need to be willing to work with the student regarding the additional work, therefore, the student needs to approach the instructor first, then the Advisor can get the section created. These requests need to be processed before the respective semester begins.

Make sure to contact honors program coordinators, Drs. Sunil Chirayath (sunilsc@tamu.edu) and Pavel Tsvetkov (tsvetkov@tamu.edu).

6. Transfer Courses

Students should talk to Faculty Advisor before taking a math/science/engineering course at another university to substitute for an A&M course on your degree plan. The coverage and level frequently will be different from the A&M course. This may cause difficulties in later courses at A&M. Note: All NUEN courses must be taken at Texas A&M.

However, you may take non-technical courses, for transfer credit, i.e. Core Curriculum Electives. To determine course equivalencies, you may use the Texas Common Course [i]Numbering System, which may be found at https://www.tccns.org/ and in the appendices of the undergraduate catalog. You may also consult the transfer course equivalency sheets

https://compassxe-ssb.tamu.edu/HCA/ssb/transferCourseEquivalency/#/ on the Admissions website. If a course does not appear in the Texas Common Course Numbering System but is listed on a transcript from your previous school, you will generally need to show your syllabus and other evidence of course coverage to the TAMU department offering the corresponding course for which you seek credit for its approval of the course substitution. Your advisor cannot make such a determination.

7. Grade Requirements and Departmental Academic Standards

To be in good academic standing a student must maintain a grade point ratio of at least 2.0 overall and 2.0 in his/her major field. For GPR < 2.0, the Department of Nuclear Engineering is following the College of Engineering Probation and Block Policies included in your New Student Conference information.

8. Adding and Dropping Courses

You may add courses through the 5th class day (4th class day in a summer session), and you may drop courses with no record through the 4th class day (3rd class day in a summer session). From the 5th class day (4th class day in a summer session) until the Q-drop deadline proper reasons may justify dropping a course with a grade of Q. The necessary forms may be obtained from the Advising Office in M202 of the AIEN building. Forms are also located on the Registrar's website http://registrar.tamu.edu . Note that over the course of your TAMU career you will be permitted a maximum of four Q-drops or a combined total of 6 dropped courses at all state colleges and universities.

9. Courses Taken on a Satisfactory/Unsatisfactory (S/U) Basis

No course used for the NUEN degree, except for the 1 hour of NUEN 481, may be taken on an S/U basis. Extra free-elective courses that are not used for a degree may be taken on an S/U basis. The use of S/U grades is discouraged if one is uncertain as to future use of a course for degree credit.

10. The Student Chapters of the American Nuclear Society (ANS), the Health Physics Society (HPS), the Institute for Nuclear Materials Management (INMM), and Women in Nuclear (WIN)

All students are encouraged to become active in the student chapters of ANS, HPS, INMM, and WIN. Our department is sufficiently small that students have the opportunity to know each other. The student chapters promote professional development, friendship between classes, and provide valuable services for the department and the nuclear community.

11. Preregistration

Students in good academic standing are encouraged to preregister for the following semester during the preregistration period, which is normally conducted early in the last third of the semester. Even though the students may preregister via the web (https://howdy.tamu.edu/) on specified dates, they must check to ensure that their account is cleared from holds preventing registration. Students with holds must resolve their hold with the entity that put the hold on their account. Please allow time to resolve your holds. Students must also have a current Degree Planner approved on the schedule mandated by the university. Students are notified by the

registrar when their degree planner is due. Students without an approved degree plan will be blocked until the students submits a degree plan and it is approved by the Staff Advisor. Students on academic probation are not permitted to preregister but must wait to register after final semester grades are received.

Full-time student status, usually required for students awarded scholarships, grants requires at least 12 credit hours that apply towards their degree plan during the fall or spring semester (6 hours) for student loans, 4 hours during a 5-week summer session, and 8 hours in the 10-hour summer semester. Caution: Students may lose university scholarships if they Q-drop a course and fall below full time status.

The online Student Information System (https://howdy.tamu.edu/) allows students to access the University computer system to make address changes, check availability of course sections, view student schedules, check for registration blocks, view billing statements, check on dropped courses, and view a degree audit. Students can access this system in many of the computing labs on campus or from their own personal computers.

12. Withdrawal from the University

Students who drop all their courses must officially withdraw before the Q-drop deadline from the university to prevent the grade of F in all their courses. The withdrawal request is available on the My Record tab of your HOWDY portal. Before withdrawing, you must see your advisor for general counseling and notation on your student account.

13. Electives

A. Electives

Core curriculum electives are listed near the front of the Undergraduate Catalog. Of the 21 hours shown as electives, 3 must be from Creative Arts, 3 from Social & Behavioral Sciences, 6 from U.S. History (usually HIST 105 & 106), 6 from Political Science (POLS 206 & 207), 3 hours from Language, Philosophy and Culture and 3 hours from International & Cultural Diversity and 3 hours from Cultural Discourse. The International & Cultural and Cultural Discourse hours may be met by courses satisfying the Creative Arts, Social & Behavioral Sciences, History requirements and the Language, Philosophy and Culture requirements if they are also on the approved list for International & Cultural Diversity and Cultural Discourse courses.

B. Technical Electives

Technical electives serve any of several purposes.

- Facilitate earning a minor, certificate or even become part of a second major
- Enable students to explore ranges of areas to help them identify desirable research or employment directions
- Enable students to gain depth in a particular technical area by selection of courses from one or several departments.

Whichever the choice, the Department of Nuclear Engineering intends for the technical electives to contribute to a student's knowledge at the advanced undergraduate level in preparation for their anticipated post-baccalaureate pursuits.

Technical electives in the engineering, scientific, or mathematical disciplines,

- Courses must be intended for students with technical backgrounds typical of at least junior-year engineering students.
  Exception: while this requirement normally is fulfilled by 300 and 400 level courses, there are courses intended to serve as advanced, undergraduate credit for non-technical majors which do not qualify for technical elective credit.
- If a 200 level course is taken to fulfill a pre-requisite requirement for a qualifying 300 or 400 level course, then both courses may be accredited as technical electives.
- Specific exceptions to the 300/400 level requirement are recognized for STAT 211 and CHEM 227/237 and others with the approval of both the student's assigned undergraduate Faculty Advisor and Staff Advisor.
- Up to 3 credit hours total of ENGR 385 (Co-op), NUEN 485 (Directed Studies), or NUEN 491 (Research) may be used; however, use of advanced ROTC is not permitted.

Content could vary from semester to semester in courses that are not required for the majors in the offering department. Students are advised to contact the professor offering the course and request a syllabus or at least a description of course content.

Technical elective credit for advanced, non-technical courses as part of a minor

Technical elective credit for 300 and 400 level courses from disciplines other than engineering, science, and mathematics will be permitted under the condition that those courses be used to complete a minor. Note that preparatory, lower level courses required for these more advanced courses will not qualify for technical elective credit.

Many departments in the University and the College offer minor programs (15-18 hours). See individual department to learn if it offers a minor and to determine its specific requirements. Completion of a minor program is officially indicated on the transcript.

14. Degree Checks and Petitions

The Howdy Portal allows students to run their Degree Audit at any point in their academic career. If the Degree Audit does not account for all courses that can be used in a curriculum an Undergraduate Adjustment Form will be prepared by the Undergraduate Advisor to specify any substitutions as well as the actual courses used for the Technical Electives. If a course that is transferred by title is substituted for a required course, a course description should be attached to the petition. An approved petition should be completed prior to the last semester so that any unexpected deficiencies may be remedied during the last semester. If it is necessary to clarify a debatable point earlier in your program, the same process is necessary.

15. Minor Program Requirements

The acceptance into the Nuclear Engineering Minor or Radiological Health Engineering Minor Programs is decided by Departmental Faculty Advisor. Department Head and other faculty/staff members may get involved in decision making. Students are welcome to consult the advising team for any matters of concern.

For Nuclear Engineering Minor

NUEN 301	Nuclear Reactor Theory
NUEN 302*	Introduction to Nuclear Engineering II

Select one course of the below two

NUEN 303	Nuclear Detection and Isotope Technology Laboratory
NUEN 405**	Nuclear Engineering Experiments

Select two upper level 300/400 NUEN courses from a suggested list by the Undergraduate Program Advisors. The list is approved by the Department.

*Taking NUEN 302 without NUEN 201 as the prerequisite is allowed for this minor program. But the wavier requires instructor approval.

**Taking NUEN 405 without NUEN 304 as the prerequisite is allowed for this minor program. But the wavier requires instructor approval.

For Radiological Health Engineering Minor

NUEN 302*	Introduction to Nuclear Engineering II
NUEN 303	Nuclear Detection and Isotope Technology Laboratory
NUEN 309/SENG 309	Radiological Safety

Select one course of the below two

NUEN 475	Environmental Nuclear Engineering
NUEN 479	Radiation Protection Engineering

Select one upper level 300/400 NUEN course from a suggested list by the Undergraduate Program Advisors. The list is approved by the Department.

*Taking NUEN 302 without NUEN 201 as the prerequisite is allowed for this minor program. But the wavier requires instructor approval.