

# Undergraduate Guide

## Department of Nuclear Engineering

### Texas A&M University

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#### 1. General

Each student is assigned a faculty advisor. You should feel free to consult him/her during their office hours regarding any matter of concern to you. Don't wait until a minor problem becomes a major problem. Note that all students must see their advisor and obtain approval of their schedule prior to registration. The Nuclear Engineering Department blocks the registration of **all** undergraduates until an approved schedule is received.

Additional assistance regarding career choices, study habits, mental depression, etc. is available from the Student Counseling Service, Room 104 Henderson Hall. You may make an appointment by calling 845-4427.

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 from the MSC Bookstore, and in "Texas A&M University Regulations," available at the Student Activities Office, Room 163 Koldus Building and 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. Members of the Corps of Cadets are especially encouraged to use the library rather than returning to their dorm during the day.

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.

#### 3. Admission to NUEN or RHEN Degree Sequences

Enrollment in sophomore and higher level (200 level or greater) engineering courses (particularly NUEN 201\* and MEEN 221) is restricted to those students who have been admitted

to either the NUEN or RHEN major degree sequence or have satisfied with grades of C or better all CBK prerequisites for these courses and have permission of the Undergraduate Advisor and the faculty offering the course.

To be certain of admission to the NUEN or RHEN Programs a student must:

1. Be in good academic standing (a grade point ratio of at least 2.0 overall),
2. Have a grade point ratio of at least 2.75 in the following Common Body of Knowledge (CBK) courses: CHEM 107 (CHEM 102\*\* for RHEN), ENGL 104, ENGR 111 and 112, MATH 151 and 152, PHYS 218 and 208. Note that a minimum grade point ratio of 3.0 in the CBK courses is recommended for reasonable assurance of success in either the NUEN or RHEN degree sequences.
3. Have earned a grade of at least C in each of the CBK courses.

In all cases a grade of D in one of the CBK courses requires that the course be repeated with a grade of C or better before a student will be admitted to a major degree sequence. This is also a requirement for graduation. To complete admission requirements prior to their second year, entering freshman who take MATH 150 should plan to take MATH 152 and PHYS 208 during summer school, preferably at Texas A&M; otherwise, NUEN 201 must be deferred until at least the second semester of the second year, which generally will lead to a five year program.

Students will be allowed to remain as lower-level students up to 60 hours (provided they are in good standing and making progress). At the 60-hour limit, students may be blocked from further registration in the Nuclear Engineering Department if the CBK and overall GPR requirements for upper division have not been achieved. Transfer students will be handled on an individual basis.

#### **4. Grades of D in other than CBK Courses and Graduation Requirements**

The department policy is to require 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. If you preregister in a more advanced course but make a D or F in a prerequisite course, you should add-drop as necessary. An exception to this policy may be granted only with the agreement of all three of the following: (1) the affected student's faculty advisor, (2) the respective course instructor, and (3) the Undergraduate Advisor of the Nuclear Engineering Department. 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 Courses**

Honors courses are encouraged except for Honors Math for entering freshman. Freshman should wait until their second semester to take Honors Math.

<sup>1</sup> \*\*Students are responsible for gaining credit for one of the pre-requisites for CHEM 102 before registering. CHEM 101, 107, 103 are suitable. A solid high school chemistry course should be sufficient to pass the Credit-by-Exam test in CHEM 101 given regularly by Measurement & Research Services.

## 6. Transfer Courses

You are advised against taking a technical 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.

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 Numbering System, which may be found at <http://essap.tamu.edu> and in the appendices of the undergraduate catalog. You may also contact the Registrar's Office at the General Services Building to determine which courses at another university will transfer for desired A&M courses. 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 following is departmental policy:

- If term GPR < C-6 and cum GPR  $\geq$  C, department sends student a warning letter
- If term GPR < C-12 or cum GPR < C, department sends student a probation letter with term GPR requirements and student is not allowed to preregister for the following semester.
- If cum GPR < C-12, and student was either on probation or was sent a warning letter, Nuclear Engineering Department sends student a blocking letter and dropped from all courses for next semester (unless student has been readmitted & is showing continuous improvement)
- If cum GPR < C-18, department has COE send student a blocking letter (unless student has been readmitted & is showing continuous improvement)
- Blocked students will not be readmitted without at least one semester of acceptable academic performance from a "recognized school." Note that this implies 2 consecutive semesters not attending TAMU because only completed grades will be considered and COE makes readmission decisions before grades are posted during the semester.
- For those students who currently are on probation by the COE (i.e. cum GPR < C-18), department sends letter clearly defining time limit to achieve GPR > C after readmission.

## 8. Adding and Dropping Courses

You may add courses through the 5<sup>th</sup> class day (4<sup>th</sup> class day in a summer session), and you may drop courses with no record through the 4<sup>th</sup> class day (3<sup>rd</sup> class day in a summer session). From the 5<sup>th</sup> class day (4<sup>th</sup> 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 department secretary. Note that over the course of your TAMU career you will be permitted a maximum of three 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 or RHEN degree, except for the 1 hour, each, of required KINE 198, KINE 199 and NUEN 481, may be taken on an S/U basis. Extra free-elective courses that are not used for a degree may also 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), and the Institute for Nuclear Materials Management (INMM)

All students are encouraged to become active in the student chapters of ANS, HPS, and/or INMM. 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 you may preregister via the web (<http://register.tamu.edu/>) on specified dates, ***every student in the department is blocked from registration. To remove this block, each student must complete a registration form and have it signed by the student's assigned advisor. This should be done well in advance of your preregistration date. Check in the NUEN office for your advisor's preregistration schedule or send your advisor an e-mail to set a time to meet. 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 or having student loans, requires at least 12 credit hours during the fall or spring semester, 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://myrecord.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 proper forms may be obtained from Room 204 Zachry, the Undergraduate Dean's office. Before withdrawing, see your advisor for general counseling.

## 13. Electives

### A. Electives

Core curriculum electives are listed near the front of the Undergraduate Catalog. Of the 18 hours shown as electives, 3 must be from Visual & Performing Arts, 3 from Social & Behavioral Sciences, 6 from U.S. History (usually HIST 105 & 106), 6 from Political Science (POLS 206 & 207), and 6 from International & Cultural Diversity. The International & Cultural

hours may be met by courses satisfying the Visual & Performing Arts, Social & Behavioral Sciences, and the Political Science & History requirements if they are also on the approved list for International & Cultural Diversity courses.

#### B. Kinesiology

One hour of KINE 198, Health and Fitness, and one hour of KINE 199 are required. The one hour of KINE 199 must be taken S/U. The one hour of KINE 198 may be taken either for a grade or S/U; you may change the grade basis using the online Student Information System (<https://myrecord.tamu.edu>) until the Q-drop deadline providing no section number change is involved. If one is required, then the normal add/drop procedures and deadline apply. Additional KINE 199 that does not apply to your degree plan may be taken either for a grade or S/U.

#### C. Technical Electives and Power Option Alternative

Technical electives should serve any of several purposes. They can facilitate the earning of a minor or even become part of a second major; they can enable students to explore ranges of areas to help them identify desirable research or employment directions; and they can 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.

If Technical Electives are in the engineering, scientific, or mathematical disciplines, then these courses must be intended for the level of technical preparation typical of junior and senior engineering students. While this requirement normally is fulfilled by 300 and 400 level courses in a variety of Departments and Colleges at Texas A&M, courses intended to serve as advanced, undergraduate credit for non-technical majors 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 advisor and the Undergraduate Program Coordinator. Up to 3 credit hours total of ENGR 385 (Co-op), NUEN 485 (Problems), or NUEN 491 (Research) may be used; however, use of advanced ROTC is not permitted.

Alternatively, 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 generally not qualify for Technical Elective credit.

Many departments in the University and the College (for example, Computer Science, Physics, Aerospace Engineering, Mathematics, Biology, and Electrical Engineering) offer Minor Programs (15-18 hours). Students are encouraged to use their technical electives to satisfy partial requirements for a Minor Program. See the department offering the Minor Program to determine their specific requirements. Completion of a Minor Program is officially indicated on the transcript.

#### Power Option Alternative

Students who intend to work in the nuclear power industry immediately upon completion of their B.S. degrees have the option of substituting the 3 hour course "Nuclear Plant Systems and Transients" for NUEN 430. If this choice is made, then the student must also select the 2 hour course "Core Modeling" as a technical elective. Since both are new courses, they are listed as NUEN 489.

### 14. Degree Checks and Petitions

The Registrar will process a degree check after completion of 95 hours of coursework. After the degree check is completed a Substitution Request (available from the department secretary) should be prepared 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.

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