

DOCTOR OF ENGINEERING IN ENGINEERING

The Doctor of Engineering (DEng) program has as its objective the education of men and women to function at the highest levels of the engineering profession, with emphasis on solving problems which arise in the use of technology to benefit society at large. Since these problems frequently have a societal impact which is non-technical in nature and since technological advances are implemented through business and industry, the Doctor of Engineering program seeks to couple understanding of the characteristics of social and business institutions with high competence in solving engineering problems.

Following entry into the Doctor of Engineering program, students will complete a minimum 36-semester-credit-hour course of study prior to a one calendar year (4 credit hours per semester) internship in which they will extend their education in a practice-oriented environment such as an industrial organization. The Doctor of Engineering program is administered by the Department of Multidisciplinary Engineering with the Graduate and Professional School.

The final oral/written examination for the Doctor of Engineering degree is administered by the student's advisory committee, as approved by the Department of Multidisciplinary Engineering and the Graduate and Professional School. Additional information can be obtained from the Department of Multidisciplinary Engineering.

Admission

An individual possessing a minimum of an ABET-accredited bachelor's degree in engineering or the equivalent may apply for program admission. A person applying with only a bachelor's degree must have a graduate point average of at least 3.00/4.00. An individual applying with a master's degree in engineering must have a grade point average of at least 3.25 for his/her overall graduate studies. To be admitted to the Doctor of Engineering program, an applicant must complete the appropriate application form, provide transcripts of all academic work taken beyond the secondary school level, prepare a 300-word essay dealing with the applicant's motivation for seeking admission to the program, be interviewed by the admissions subcommittee of the Doctor of Engineering program committee, and be approved by the Department of Multidisciplinary Engineering. A student is required to pass the oral and written examinations associated with the Doctor of Engineering qualifying examination described in "Examinations."

This program is also approved for delivery via asynchronous or synchronous distance education technology.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1)
- Degree Plan (p. 1)
- Transfer of Credit (p. 2)
- Examinations (p. 2)
 - Qualifying Examination (p. 2)
 - Qualifying Examination Format (p. 2)
 - Qualifying Examination Scheduling (p. 2)
 - Qualifying Examination Grading (p. 2)
 - Qualifying Examination Failure (p. 3)

- Final Examination (p. 3)
- Final Examination Scheduling (p. 3)
- Final Examination Grading (p. 3)
- Record of Study (p. 3)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to the Doctor of Engineering program, the student will consult with the head of their administrative department concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of not fewer than two (one chair and one co-chair/member) members of the graduate faculty representative of the student's several fields of study. One member of the committee must have an appointment to a department other than the student's administrative department.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her or his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, she or he can remain as chair without a co-chair for up to one year with written approval of the Department Head or Chair of the Intercollegiate Faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

The student's internship supervisor, a practicing engineer, also is a member of the advisory committee. The chair, in consultation with the student will select the remainder of the advisory committee. The chair will notify the tentative members of the advisory committee, giving the student's name and field of study, requesting that they consider serving on the advisory committee. The student will interview each prospective committee member to determine whether they will accept the assignment.

The student's advisory committee has the responsibility for guiding and directing the entire academic and internship programs of the student and for initiating all actions concerning the student. The chair of the advisory committee, who usually has immediate supervision of the student's program, has the responsibility for calling required meetings of the advisory committee and calling meetings at any other time considered desirable.

The duties of the advisory committee include responsibility for the proposed degree program, the Doctor of Engineering qualifying examination (written and oral), the technical adequacy of the internship program, the qualifications of the student to embark on the internship, the internship report, and the final examination. In addition, the advisory committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Dean of the College of Engineering and the Associate Provost and Dean of the Graduate and Professional School.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan which will constitute the basic academic requirements for the degree. The degree plan must be

filed with the Graduate and Professional School following the deadline imposed by the student's college, and no later than 90 days prior to the preliminary examination. The degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

The graduate portion of the proposed degree plan will include a minimum of 96 semester credit hours. Of these, 80 semester credit hours of coursework are required; the Professional Internship (see section on "Internship") will earn 4 semester credit hours per semester and per summer term.

The 80 semester credit hours of graduate coursework shall include a minimum of 20 semester credit hours of required core coursework, 12 semester credit hours of elective professional development courses, 32 semester credit hours of department-oriented graduate level courses, 12 semester credit hours of engineering design courses and 4 semester credit hours of professional development seminar.

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if such additional coursework is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Graduate and Professional School.

For non-distance degree programs, no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs. A maximum of 9 hours of 400-level undergraduate courses may be used toward meeting credit-hour requirements for the Doctor of Engineering.

Transfer of Credit

On-Campus and Distance Education Degree Programs

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Graduate and Professional School. These courses must not have been used previously for another degree. Except for officially approved joint degree programs with other Texas A&M University System institutions, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Graduate and Professional School.

Grades for courses completed at other institutions are not included in computing the GPA. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Examinations

On-Campus and Distance Education Degree Programs

Qualifying Examination

A student admitted to the program is required to pass a comprehensive written and oral examination called the Doctor of Engineering Qualifying Examination.

Qualifying Examination Format

It will be administered when semester credit hours equivalent to the number required for a Master of Engineering degree have been accumulated. An individual holding a master's degree when they enter the Doctor of Engineering program will be expected to take the Doctor of Engineering Qualifying Examination during their first semester of enrollment. The examination determines whether or not the student is prepared to continue study toward the Doctor of Engineering degree.

The student's major department and advisory committee may require departmental, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee. For instance, these examinations may be used for determining the technical depth and breadth required for the internship project.

Qualifying Examination Scheduling

Students are eligible to schedule the Qualifying Examination in the Academic Requirements Completion System (ARCS) if they meet the following list of eligibility requirements:

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or Summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Graduate and Professional School prior to commencing the first component of the examination.
- Student's cumulative GPA is at least 3.000.
- Student's degree plan GPA is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Qualifying Examination Grading

Credit for the Qualifying Examination is not transferable in cases where a student changes degree programs after passing a Qualifying Exam.

A positive evaluation of the Qualifying Examination by all members of a student's examination committee with at most one dissension is required to pass a student on the Qualifying Examination.

The student's department will promptly report the results of the Qualifying Examination to the Graduate and Professional School *via* the Academic Requirements Completion System (ARCS) within 10 working days of completion of the Qualifying Examination.

If an approved examination committee member substitution (one only) has been made, their approval must be submitted to the Graduate and Professional School *via* ARCS. The approval of the designated department approver is also required on the request.

Qualifying Examination Failure

A student who fails the Qualifying Examination may, with the approval of the advisory committee, retake the examination once. The second examination will be administered after a suitable period of preparation, normally not less than six months, upon the recommendation of the advisory committee.

Final Examination

Candidates for the degree of Doctor of Engineering must pass a final oral examination in the final semester following the internship by deadline dates announced in the Graduate and Professional School Calendar (<https://grad.tamu.edu/knowledge-center/dates-and-deadlines/dates-and-deadlines/>) each semester. The student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been admitted to candidacy and their current official cumulative and degree plan GPAs are 3.00 or better.

Refer to the Admission to Candidacy (<https://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/#degreerequirementstext>) section of the graduate catalog for candidacy requirements.

This exam will include presentation of results of internship work.

Final Examination Scheduling

A request to schedule the final examination must be submitted to the Graduate and Professional School *via* ARCS a minimum of 10 working days in advance of the scheduled date. Any changes to the degree plan must be approved by the Graduate and Professional School prior to the submission of the request for final examination.

The student's advisory committee, as finally constituted, will conduct this examination, which will include the internship experience and closely allied topics as well as the broad field of the candidate's training. Only one committee member substitution is allowed with the approval of the Graduate and Professional School.

The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have

a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Final Examination Grading

The student's department will promptly report the results of the Final Examination to the Graduate and Professional School *via* the Academic Requirements Completion System (ARCS) within 10 working days of completion of the final examination. The Graduate and Professional School will be automatically notified *via* ARCS of any cancellations.

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on their final exam. If an approved committee member substitution (one only) has been made, their approval must be submitted to the Graduate and Professional School *via* ARCS.

A department can have a stricter requirement provided there is consistency within all degree programs within a department. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. The advisory committee will submit its recommendations through the Dean of the College of Engineering to the Graduate and Professional School regarding the acceptability of the candidate for the doctoral degree.

Record of Study

On-Campus and Distance Education Degree Programs

A record of study, which usually is a report of the student's internship experiences, must be prepared in accordance with guidelines issued by the Doctor of Engineering program committee. By deadlines announced each semester, the candidate must submit to the Office of the Dean of the College of Engineering one copy of the record of study in final form. The suggestions and corrections of the members of the advisory committee must be incorporated, and the report must bear the signature of the department head and the members of the student's advisory committee. The record of study must be the original work of the candidate.

A record of study's format must be acceptable to the Graduate and Professional School as outlined in the Guidelines for Theses, Dissertations, and Records of Study.

After successful defense and approval by the student's advisory committee and the head of the student's major department, a student must submit the record of study in electronic format as a single PDF file to <https://etd.tamu.edu/>. Additionally, a record of study approval form with original signatures must be received by the Graduate and Professional School through the Academic Requirements Completion System (ARCS). Both the PDF file and the completed ARCS approval form must be received by the deadline.

Except as noted in the sections above, the requirements for the Doctor of Engineering degree are identical to those for the Doctor of Philosophy.

Deadline dates for submitting are announced each semester or summer term in the Graduate and Professional School Calendar (see Time Limit statement). These dates also can be accessed *via* the Graduate and Professional School website (<https://grad.tamu.edu/>).

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A record of study that is deemed unacceptable by the Graduate and Professional School because of excessive corrections will be returned to the student's department head. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 4)
- Continuous Registration (p. 4)
- Scholarship (p. 4)
- Internship or Practicum (p. 4)
- 99-Hour Cap on Doctoral Degrees (p. 4)
- Application to Degree (p. 5)

Residence

On-Campus Degree Program

A student who enters the DEng program with baccalaureate degrees must spend two academic years in resident study at Texas A&M University. A student who holds a master's degree when he or she enters the program must spend one academic year in resident study. In this context, an academic year is defined as two regular semesters, two 10-week summer semesters or a regular semester and a 10-week summer semester. To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his or her employment to the Graduate and Professional School.

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in a program leading to a Doctor of Engineering who has completed all coursework on his or her degree plan other than 684 (Internship) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/#registrationandacademicstatustext>). However, colleges or departments may have additional or higher requirements.

Scholarship

On-Campus and Distance Education Degree Programs

To remain in good standing, a student admitted to the Doctor of Engineering program must maintain a GPA of 3.00 during his or her graduate studies.

Internship or Practicum

On-Campus and Distance Education Degree Programs

As part of the degree requirements after completing courses on the approved degree plan (except ENGR 684), each student will spend a minimum of one calendar year working under the supervision of a practicing engineer in industry, business or government. The objectives of the internship are two-fold:

1. to enable the student to demonstrate the ability to apply both knowledge and technical education by making an identifiable contribution in an area of practical concern to the organization or industry in which the internship is served, and
2. to enable the student to function in a non-academic environment in a position in which he or she will become aware of the organizational approach to problems, in addition to those of traditional engineering design or analysis.

During the internship phase of the program, the student must be continuously enrolled in the university.

The nature of the internship experience will be determined by mutual consent among the student, the advisory committee and the supervising organization prior to commencement of the internship period. It is expected that the internship experience will be at a level in the organization which will enable the student to deal with broadly based problems affecting more than one facet of the organization, rather than a single narrow or specific technical problem. The student is responsible for identifying and arranging a suitable internship. Specific arrangements for the internship will be made through the student's major department, and an internship agreement must be negotiated between the student and the advisory committee, and the internship supervisor and appropriate representatives of the industrial organization. Copies of all agreements must be approved by the College of Engineering.

99-Hour Cap on Doctoral Degrees

On-Campus and Distance Education Degree Programs

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of non-resident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

Doctoral students at Texas A&M have seven years to complete their degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who are currently charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments or recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral

students who have not accumulated 100 hours after seven years of study are eligible to pay in-state tuition if otherwise eligible.

Doctoral students who exceed the credit limit will receive notification from the Graduate and Professional School during the semester in which they are enrolled and exceeding the limit in their current degree program. The notification will explain that the State of Texas does not provide funding for any additional hours in which a student is enrolled in excess of 99 hours. Texas A&M University will recover the lost funds by requiring students in excess of 99 hours to pay tuition at the non-funded, non-resident rate. This non-funded, non-resident tuition rate status will be updated for the following semester and in all subsequent semesters until receipt of a doctoral degree. Please see the Tuition Calculator (<https://tuition.tamu.edu/>) at the non-resident rate for an example of potential charges.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees and have a limit of 130 doctoral hours:

- Biochemistry and Molecular Biophysics
- Biomedical Sciences
- Clinical Psychology
- Counseling Psychology
- Epidemiology and Environmental Health
- Genetics and Genomics
- Health Services Research
- Medical Sciences
- Microbiology
- Neurosciences (College of Medicine)
- Nutrition
- Oral and Craniofacial Biomedical Sciences
- Pharmaceutical Sciences
- Public Health Sciences
- School Psychology
- Toxicology

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/#degreerequirementstext>) section.