

COLLEGE OF ENGINEERING

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General Statement

Engineering is the application of science and mathematics to the solution of relevant problems in our society. To a great extent, our current standard of living and high level of technology are due to the diligent and innovative efforts of engineers. In spite of the increasing expense of basic resources, modern engineers have succeeded in maintaining stable costs for a wide variety of goods, and at the same time have used their design and analysis abilities to introduce new products and technologies for the betterment of society.

The accelerating pace of industrial and technological developments has created an ever-increasing demand for highly qualified, professional engineers to maintain the momentum already achieved, and to extend and direct the course of these developments. The ever-expanding population and the increased demands for goods and services have imposed new challenges to provide effective solutions while minimizing unwanted side effects. Engineers recognize that all actions taken have their respective costs, and that solutions to long-standing societal problems are found in careful, thorough planning and study. With a pragmatic background in problem solving, engineers are perhaps best qualified to address society's problems.

The complexities of the current environment are such that all resources must be used in the best possible manner. Thus, the College of Engineering, through its curricula, strives to educate and train engineers who have the breadth of vision to formulate and solve the problems of today and the future. It is expected that students who conscientiously apply themselves and successfully complete an engineering program will be technically trained and socially educated, thereby being well prepared to make a significant contribution to the world in which they work.

The mission of the College of Engineering is to serve Texas, the nation and the global community by providing engineering graduates who are well founded in engineering fundamentals, instilled with the highest

standards of professional and ethical behavior, and prepared to meet the complex technical challenges of society.

To achieve this mission the College of Engineering is committed to:

- ensuring an academic environment conducive to our faculties achieving the highest levels of academic and research excellence;
- building upon our traditional partnerships with industry, engineering practitioners and former students, to enhance our impact on the profession of engineering;
- encouraging excellence, innovation and cross-disciplinary initiatives in education and research;
- providing national and international leadership in undergraduate and graduate engineering education;
- becoming the engineering college of choice for the increasingly diverse citizenry of the state; and
- encouraging and supporting opportunities for our students to grow beyond their chosen disciplines by participation in ethics courses, leadership programs, study-abroad programs and research.

A student engineer can pursue any one of several degree plans, according to personal ambitions, interests and abilities. The student may choose the traditional BS degree and consider advanced research-oriented graduate programs leading to the MS and PhD degrees. Alternatively, at the graduate level, the student may select the Master of Engineering or the Doctor of Engineering program which are directed toward professional engineering.

Within the College of Engineering, the undergraduate programs in aerospace engineering, biological and agricultural engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, interdisciplinary engineering, mechanical engineering, nuclear engineering, ocean engineering, and petroleum engineering are accredited by the Engineering Accreditation Commission (EAC) of ABET, [www.abet.org](https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.abet.org%2F&data=04%7C01%7Chamid.parsaei%40tamu.edu%7Cc241909fda5a4572e4d508da014ea516%7C68f381e346da47b9ba576f322b8f0d%7CTWFpbGZsb3d8eyJWljiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiIl6k1haWwiLCJlbnQ%3D&reserved=0) (https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.abet.org%2F&data=04%7C01%7Chamid.parsaei%40tamu.edu%7Cc241909fda5a4572e4d508da014ea516%7C68f381e346da47b9ba576f322b8f0d%7CTWFpbGZsb3d8eyJWljiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiIl6k1haWwiLCJlbnQ%3D&reserved=0). The electronic systems engineering technology program, manufacturing and mechanical engineering technology program, industrial distribution program, and multidisciplinary engineering technology program are accredited by the Engineering Technology Accreditation Commission (ETEC) of ABET, [www.abet.org](https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.abet.org%2F&data=04%7C01%7Chamid.parsaei%40tamu.edu%7Cc241909fda5a4572e4d508da014ea516%7C68f381e346da47b9ba576f322b8f0d%7CTWFpbGZsb3d8eyJWljiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiIl6k1haWwiLCJlbnQ%3D&reserved=0) (https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.abet.org%2F&data=04%7C01%7Chamid.parsaei%40tamu.edu%7Cc241909fda5a4572e4d508da014ea516%7C68f381e346da47b9ba576f322b8f0d%7CTWFpbGZsb3d8eyJWljiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiIl6k1haWwiLCJlbnQ%3D&reserved=0). The computer science program is accredited by the Computing Accreditation Commission (CAC) of ABET, [www.abet.org](https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.abet.org%2F&data=04%7C01%7Chamid.parsaei%40tamu.edu%7Cc241909fda5a4572e4d508da014ea516%7C68f381e346da47b9ba576f322b8f0d%7CTWFpbGZsb3d8eyJWljiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiIl6k1haWwiLCJlbnQ%3D&reserved=0) (https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.abet.org%2F&data=04%7C01%7Chamid.parsaei%40tamu.edu%7Cc241909fda5a4572e4d508da014ea516%7C68f381e346da47b9ba576f322b8f0d%7CTWFpbGZsb3d8eyJWljiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiIl6k1haWwiLCJlbnQ%3D&reserved=0).

Entrance and Enrollment Requirements

The minimum requirements for entrance to the University are listed in the earlier pages of this catalog. Because of the importance of science and mathematics to engineering, high school students who aspire to pursue a career in engineering are encouraged to take as many of these courses as possible. In particular, high school preparation should include four years of mathematics and four years of science emphasizing algebra, geometry, trigonometry, calculus, chemistry, physics and biology.

A critical step in an engineering education is proper individual placement in the first courses undertaken. The College of Engineering strongly recommends the following guidelines to students participating in the math advanced placement examinations in high school. Incoming engineering students can earn advanced placement (AP) credits for MATH 151 with a score of 4 on the Calculus AB exam or 3 on the BC exam, and for MATH 151 and MATH 152 by a score of 4 on the BC exam. While the student can accept these AP credits and enroll in the next course in the engineering mathematics sequence, the college recommends a more conservative decision about accepting advanced placement credits in math. Students who earn a 4 or 5 on the Calculus AB exam or a 3 or 4 on the BC exam are recommended to begin in MATH 151. Students who score a 5 on the Calculus BC exam are recommended to begin in MATH 151 or MATH 152. These conservative recommendations help ensure students have thoroughly mastered the content that is fundamental to the engineering curriculum. Students should discuss their choice with their assigned undergraduate academic advisor before registering for mathematics classes. All students admitted into engineering are required to complete the Math Placement Exam (MPE) and should review algebra, trigonometry and geometry prior to taking the MPE.

Because of the importance of computing in the disciplines housed within the College of Engineering, all entering students are required to possess a portable, network-ready personal computer capable of running software appropriate to their academic program, as well as other required technology (<https://engineering.tamu.edu/academics/byod/devices/>). Details about the personal computer needed to meet the requirement can be found on our website (<https://engineering.tamu.edu/easa/areas/academics/byod/>). No student will be denied admission to Texas A&M University based on an inability to purchase a computer.

Students in General Engineering (<https://engineering.tamu.edu/admissions-and-aid/incoming-students/>), Texas A&M Engineering at Blinn (<https://engineering.tamu.edu/academics/academics/blinn-bryan/>), Engineering at Galveston (<https://engineering.tamu.edu/academics/engineering-at-galveston/>), Engineering at McAllen (<https://engineering.tamu.edu/admissions-and-aid/engineering-at-mcallen/>), or the Texas A&M Engineering Academy Programs (<https://engineering.tamu.edu/academics/>) pursue a common first year engineering curriculum to provide them opportunities to explore the various engineering majors (<https://engineering.tamu.edu/academics/degrees/>). Students are introduced to the different engineering majors in the first year engineering courses, ENGR 102, ENGR 216/PHYS 216 and ENGR 217/PHYS 217. Additionally, students are encouraged to leverage additional resources, including the Career Center, faculty, and academic advisors, to gain more information about engineering majors. Students must complete the following first year engineering curriculum requirements over the course of at least two semesters before applying to an engineering major: two engineering courses, two math courses, and two science courses. The entry-to-a-major (ETAM) process (<https://engineering.tamu.edu/academics/undergraduate/entry-to-a-major/>) enables students to take ownership of their future by identifying

at least three majors that are a good match for their academic and career goals. The ETAM process is designed to place students in the highest rank major possible based upon academic performance, ETAM application content, and program capacities. Students are encouraged to be in a major as early as possible. Students in General Engineering (<https://engineering.tamu.edu/admissions-and-aid/incoming-students/>), Texas A&M Engineering at Blinn (<https://engineering.tamu.edu/academics/academics/blinn-bryan/>), Engineering at Galveston (<https://engineering.tamu.edu/academics/engineering-at-galveston/>), Engineering at McAllen (<https://engineering.tamu.edu/admissions-and-aid/engineering-at-mcallen/>), or the Texas A&M Engineering Academy Programs (<https://engineering.tamu.edu/academics/>) must be in a major by the end of the fourth semester.

Transfer students are admitted directly to a major degree granting program through the admissions process.

First Year Curriculum

Students in General Engineering (<https://engineering.tamu.edu/admissions-and-aid/incoming-students/>), Texas A&M Engineering at Blinn (<https://engineering.tamu.edu/academics/academics/blinn-bryan/>), Engineering at Galveston (<https://engineering.tamu.edu/academics/engineering-at-galveston/>), Engineering at McAllen (<https://engineering.tamu.edu/admissions-and-aid/engineering-at-mcallen/>), or the Texas A&M Engineering Academy Programs (<https://engineering.tamu.edu/academics/>) follow a common first year engineering curriculum. It is recognized that many students will change the sequence and number of courses taken in any semester. Deviations from the prescribed course sequence, however, should be made with care and in consultation with an academic advisor to ensure that prerequisites for all courses are met.

Bring Your Own Device (BYOD) (<https://engineering.tamu.edu/easa/areas/academics/byod/>)

Just as students are required to have specific textbooks and supplies in order to gain the highest quality engineering educational experience, the College of Engineering requires students to purchase a computer to complement the course instruction. The vast majority of the students entering the College already bring some form of desktop or laptop computer with them when they begin school. Unfortunately, the variation in the types of computers makes it next to impossible for instructors to routinely ask students to use their own computers in the classroom. A computer designated by the College and purchased by entering students will provide students the convenience to explore course content anytime, anywhere.

While there are many computers available, the College can only guarantee performance and provide support for the specific computers identified by the College of Engineering. These computers will accommodate most of the needs of an engineering student throughout a four-year degree plan, balancing performance, cost and expected life of the computer. The computers have been negotiated with the various vendors, which are external to Texas A&M University, at a price point that is lower than what an individual would likely be able to negotiate. The price for each computer includes up to a four-year warranty.

For financial aid recipients, purchase of the computer device can be considered in the cost of attendance. To request this, please complete the Request to Change Cost of Attendance form (<http://>

financialaid.tamu.edu/Forms/) for Scholarships & Financial Aid. Submission of documentation does not guarantee additional aid will be awarded. In certain situations, students may not be eligible for additional funding.

Your engineering education requires a computer to complement the course instruction. Undergraduate students entering the college of engineering are strongly encouraged to purchase from our list of recommended and supported devices (<https://engineering.tamu.edu/academics/byod/devices/>). Doing so guarantees performance, and hardware and software support throughout your years here as an engineering student. Should you choose a device not on this list, know that we cannot guarantee that the required software will run effectively, or that our IT team will be able to support your device. No student will be denied admission to Texas A&M University based on an inability to purchase a computer.

Texas A&M Engineering students co-enrolled in the Texas A&M Engineering Academies (<https://engineering.tamu.edu/academies/>) must apply for financial aid from the partner community college. Any questions about including the purchase of a computer in the cost of attendance should be directed to the community college financial aid office.

For more information, including specific requirements, visit the Bring Your Own Device (BYOD) website (<http://engineering.tamu.edu/easa/areas/academics/byod/>).

ENGR^[X]

ENGR^[X] is a zero-credit-hour required program that is composed of approved engineering-centric activities that meet the criteria of high-impact learning experiences. Undergraduate students can use their participation in one of these activities to satisfy in part their ENGR^[X] requirement. Full satisfaction of the ENGR^[X] requirement includes participating in an engineering-centric activity and submitting a meaningful, self-reflection that discusses the impact and overall experience on the student's education.

Each department in the College of Engineering identifies the activities it will accept in satisfying a student's ENGR^[X] requirement. Some activities may include the following:

- Education Abroad (<https://abroad.tamu.edu/>)
- Internship or Co-op Experience (<http://careercenter.tamu.edu/current-students/>)
- Grand Challenge Scholars Program (<https://engineering.tamu.edu/student-life/gcsp/>)
- The University, College, or Departmental Honors Program (<http://honorsprograms.tamu.edu/>)
- Aggies Invent (<https://engineering.tamu.edu/student-life/aggies-invent/>)
- AggieE_Challenge (<https://engineering.tamu.edu/academics/undergraduate/aggie-challenge/>)
- Startup Aggeland (<https://mays.tamu.edu/mcferrin-center-for-entrepreneurship/startup-aggeland/>)
- Undergraduate research (<https://engineering.tamu.edu/academics/undergraduate/undergraduate-bridges.html>)
- TAMU Minor or Certificate Programs, like the Zachry Leadership Program (<https://engineering.tamu.edu/student-life/zachry-leadership-program/>) or Engineering Honors Program (<https://engineering.tamu.edu/academics/eh/>)

- Department design competitions, like the High Altitude Balloon Club (<https://astrocenter.tamu.edu/stem-outreach/high-altitude-balloon-club/>)
- Leadership in student organizations (<https://engineering.tamu.edu/student-life/student-orgs.html>)

College Prerequisite Policy

The following prerequisite policy applies to any student in a College of Engineering undergraduate degree program and to any student who seeks admission to an undergraduate degree program in the College of Engineering. This policy is in addition to prerequisite policies imposed by the University (Texas A&M University Student Rules). For complete details concerning this policy, students should contact their Undergraduate Advising Office.

Students must earn a grade of C or better in all courses identified in each College of Engineering undergraduate degree program and any prerequisites for these courses. If a student earns a grade of D or F in any of these courses, the student is required to repeat the course before enrolling in a more advanced course that has the D/F course as a prerequisite. A student may attempt a course no more than three times, including courses graded Q or W but excluding those graded NG, unless approval has been received from their department. A student must complete all prerequisites for a course with a grade of C or better by the start of the semester in which the student plans to enroll in the course.

A student is responsible for checking the prerequisites for each course to ensure the prerequisite requirements have been satisfied. A student who registers for a course for which he/she lacks the necessary prerequisite course(s) and/or the prerequisite grade requirement will be required to drop the course. A student who is told to drop a course and is still enrolled by the deadline set each semester may be administratively dropped by their department. If a student is administratively dropped from a course, the student is responsible for all financial obligations associated with the drop. An administrative drop may adversely impact (including, but not limited to): health insurance benefits, financial aid, athletic eligibility, INS status, veterans' benefits, and eligibility to participate in extracurricular activities.

Other Requirements

All required coursework must be taken for a grade to satisfy requirements for a degree in the College of Engineering. Courses cannot be taken on a satisfactory/unsatisfactory basis to satisfy this requirement.

Fast Track Program

This program allows students to begin making progress toward a master's degree while completing the undergraduate program. Each participating department in the College of Engineering has streamlined its program for Fast Track participants by substituting specific graduate courses for selected undergraduate offerings. Academically qualified students take these 600-level courses during their senior year, earning graduate credit while fulfilling undergraduate requirements through "credit by exam." The individual department sets its own grade and exam requirements for earning dual credit. The department also establishes the maximum number of credit hours allowed for acceleration, usually five to seven.

Industry-University Cooperative Education

Cooperative education is a study-work plan of education in which a student alternates periods of attendance in college or university with periods of employment in industry related to his or her major. Students who choose this degree plan must complete at least 12 months of experience in order to receive the cooperative education certificate. The practice of engineering is an art which is learned through practice as well as in the classroom. The cooperative education program provides the education that can be achieved from practice by having the student work with professional engineers on the job. Consequently, the student who graduates with the cooperative education certificate has both the academic background and the practical experience to qualify him or her for more meaningful employment in the profession of engineering. The cooperative education work periods also provide an income for students that allows them to pay for their school expenses.

Those who wish additional information concerning this program should contact the Associate Director, (rblock@tamu.edu) Engineering Career Services.

Advanced Study

Students who rank in the upper half of their undergraduate class should give serious consideration to developing their full intellectual potential in engineering by continuing with advanced studies at the graduate level. Two routes are available for students. The traditional master of science and doctor of philosophy degrees should be considered by students who wish to go into research fields. For those students interested in the practice of professional engineering, the master of engineering and doctor of engineering degrees should be given serious consideration. The professional doctor of engineering degree was established in the fall of 1974 to fill a need for better-educated engineers in the practice of engineering. Students may enter this program at any time after they receive the bachelor's degree in engineering by applying and being accepted to a departmental graduate program within the College of Engineering. Master's level degrees require a minimum of one year of course work after the bachelor's, and the doctoral degrees require a minimum of an additional two years of coursework. The doctor of philosophy also requires a dissertation based on research by the student, and the doctor of engineering requires at least one year of internship experience in industry or government.

For more information concerning these programs, please refer to the *Texas A&M University Graduate and Professional Catalog* or contact the College of Engineering Graduate Programs website (<https://engineering.tamu.edu/academics/graduate/>).

The engineering programs also provide a foundation for further education in the fields of medicine, law or business. An engineering background will prepare the individual to understand, contribute to and embrace technical advances in these fields. An early assurance program called Engineering to Medicine (E2M) (<https://medicine.tamu.edu/admissions/early-assurance/>) is available for outstanding Texas A&M University College of Engineering students who are interested in obtaining a medical degree with the Texas A&M College of Medicine, ultimately pursuing a career as a physician or physician scientist.

The Texas A&M Engineering Academies

The Texas A&M Engineering Academies are co-enrollment programs between the College of Engineering and select two-year institutions.

Students in the Texas A&M Engineering Academy program are Texas A&M engineering students who take math, science, and core courses from the two-year institution and engineering courses from the College of Engineering. Except for the co-enrollment program Texas A&M Engineering at Blinn, the admission process for the Texas A&M Engineering Academies is unique to each partner institution, with the offer of admission to the Texas A&M Engineering Academy made by Texas A&M University. Students enrolled in a Texas A&M Engineering Academy who satisfy the program GPA requirements, may be considered for entry to a major as early as the end of the first year.

Eligible students receive financial aid based upon their combined credit hours from both institutions.

For more information, including specific requirements for each of the partner institutions, visit Texas A&M Engineering Academies (<https://engineering.tamu.edu/academies/>).

Majors

College of Engineering

- Bachelor of Science in Biological and Agricultural Engineering (<https://nextcatalog.tamu.edu/undergraduate/agriculture-life-sciences/biological-agricultural-engineering/bs/>) — offered in conjunction with the College of Agriculture and Life Sciences

Department of Aerospace Engineering

- Bachelor of Science in Aerospace Engineering (<http://catalog.tamu.edu/undergraduate/engineering/aerospace/bs/>)

Department of Biomedical Engineering

- Bachelor of Science in Biomedical Engineering (<http://catalog.tamu.edu/undergraduate/engineering/biomedical/bs/>)

Artie McFerrin Department of Chemical Engineering

- Bachelor of Science in Chemical Engineering (<http://catalog.tamu.edu/undergraduate/engineering/chemical/bs/>)

Zachry Department of Civil and Environmental Engineering

- Bachelor of Science in Civil Engineering, Coastal Engineering Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-coastal-engineering-track/>)
- Bachelor of Science in Civil Engineering, Construction Engineering and Management Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-construction-engineering-management-track/>)
- Bachelor of Science in Civil Engineering, Environmental Engineering Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-environmental-engineering-track/>)
- Bachelor of Science in Civil Engineering, General Civil Engineering Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-general-civil-engineering-track/>)
- Bachelor of Science in Civil Engineering, Geotechnical Engineering Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-geotechnical-engineering-track/>)

- Bachelor of Science in Civil Engineering, Structural Engineering Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-structural-engineering-track/>)
- Bachelor of Science in Civil Engineering, Transportation and Infrastructure Materials Engineering Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-transportation-infrastructure-materials-engineering-track/>)
- Bachelor of Science in Civil Engineering, Water Resources Engineering Track (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-water-resources-engineering-track/>)
- Bachelor of Science in Environmental Engineering (<http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/environmental-engineering-bs/>)

Department of Computer Science and Engineering

- Bachelor of Arts in Computing (<http://catalog.tamu.edu/undergraduate/engineering/computer-science/computing-ba/>)
- Bachelor of Science in Computer Engineering (<http://catalog.tamu.edu/undergraduate/engineering/computer-science/computer-engineering-bs/>)
- Bachelor of Science in Computer Science (<http://catalog.tamu.edu/undergraduate/engineering/computer-science/bs/>)

Department of Electrical and Computer Engineering

- Bachelor of Science in Computer Engineering (<http://catalog.tamu.edu/undergraduate/engineering/electrical-computer/computer-engineering-bs/>)
- Bachelor of Science in Electrical Engineering (<http://catalog.tamu.edu/undergraduate/engineering/electrical-computer/electrical-bs/>)

Department of Engineering Technology and Industrial Distribution

- Bachelor of Arts in Information Technology Service Management (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/information-technology-service-management-ba/>)
- Bachelor of Science in Electronic Systems Engineering Technology (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/technology-electronic-systems-bs/>)
- Bachelor of Science in Industrial Distribution (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/industrial-distribution-bs/>)
- Bachelor of Science in Manufacturing and Mechanical Engineering Technology (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/technology-manufacturing-mechanical-bs/>)
- Bachelor of Science in Multidisciplinary Engineering Technology, Electro Marine Engineering Technology Track (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/multidisciplinary-engineering-technology-bs-electro-marine-engineering-technology-track/>)
- Bachelor of Science in Multidisciplinary Engineering Technology, Mechatronics Track (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/multidisciplinary-engineering-technology-bs-mechatronics-track/>)

[engineering/technology-industrial-distribution/multidisciplinary-engineering-technology-bs-mechatronics-track/](http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/multidisciplinary-engineering-technology-bs-mechatronics-track/))

- Bachelor of Science in Multidisciplinary Engineering Technology, STEM Education Track (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/multidisciplinary-engineering-technology-bs-stem-education-track/>)
- Bachelor of Science in Technology Management (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/technology-management-bs/>)

Wm Michael Barnes '64 Department of Industrial and Systems Engineering

- Bachelor of Science in Data Engineering (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/data-engineering-bs/>)
- Bachelor of Science in Industrial Engineering (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/industrial-bs/>)
- Bachelor of Science in Industrial Engineering and Master of Public Health in Occupational Safety and Health, 5-Year Degree Program (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/industrial-bs-occupational-safety-and-health-mph/>)
- Bachelor of Science in Industrial Engineering and Master of Science in Finance, 5-Year Degree Program (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/industrial-bs-finance-ms/>)

Department of Materials Science and Engineering

- Bachelor of Science in Materials Science and Engineering (<http://catalog.tamu.edu/undergraduate/engineering/materials-science/bs/>)

J. Mike Walker '66 Department of Mechanical Engineering

- Bachelor of Science in Mechanical Engineering (<http://catalog.tamu.edu/undergraduate/engineering/mechanical/bs/>)

Department of Multidisciplinary Engineering

- Bachelor of Science in Architectural Engineering, Mechanical Systems for Buildings Track (<http://catalog.tamu.edu/undergraduate/engineering/multidisciplinary/architectural-engineering-bs-mechanical-systems-buildings-track/>)
- Bachelor of Science in Architectural Engineering, Structural Systems for Buildings Track (<http://catalog.tamu.edu/undergraduate/engineering/multidisciplinary/architectural-engineering-bs-structural-systems-buildings-track/>)
- Bachelor of Science in Interdisciplinary Engineering (<http://catalog.tamu.edu/undergraduate/engineering/multidisciplinary/interdisciplinary-engineering-bs/>)
- Bachelor of Science in Interdisciplinary Engineering and Master of Public Health in Occupational Safety and Health, 5-Year Degree Program (<http://catalog.tamu.edu/undergraduate/engineering/multidisciplinary/interdisciplinary-engineering-bs-occupational-safety-and-health-mph/>)
- Bachelor of Science in Interdisciplinary Engineering and Juris Doctor, 6-Year Degree Program (<http://catalog.tamu.edu/undergraduate/engineering/multidisciplinary/interdisciplinary-engineering-bs-juris-doctor-6-year-program/>)

engineering/multidisciplinary/interdisciplinary-engineering-bs-juris-doctor/)

Department of Nuclear Engineering

- Bachelor of Science in Nuclear Engineering (<http://catalog.tamu.edu/undergraduate/engineering/nuclear/bs/>)

Department of Ocean Engineering

- Bachelor of Science in Ocean Engineering (<http://catalog.tamu.edu/undergraduate/engineering/ocean/ocean-engineering-bs/>)

Harold Vance Department of Petroleum Engineering

- Bachelor of Science in Petroleum Engineering (<http://catalog.tamu.edu/undergraduate/engineering/petroleum/bs/>)

Minors

College of Engineering

- Cybersecurity Minor (<http://catalog.tamu.edu/undergraduate/engineering/cybersecurity-minor/>)
- Engineering Concepts Minor (<http://catalog.tamu.edu/undergraduate/engineering/engineering-concepts-minor/>)

Department of Aerospace Engineering

- Aerospace Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/aerospace/minor/>)

Department of Biomedical Engineering

- Biomedical Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/biomedical/minor/>)

Artie McFerrin Department of Chemical Engineering

- Chemical Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/chemical/minor/>)

Department of Computer Science and Engineering

- Computer Science Minor (<http://catalog.tamu.edu/undergraduate/engineering/computer-science/minor/>)
- Game Design and Development Minor (<http://catalog.tamu.edu/undergraduate/engineering/computer-science/game-design-development-minor/>)

Department of Electrical and Computer Engineering

- Electrical Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/electrical-computer/electrical-minor/>)

Department of Engineering Technology and Industrial Distribution

- Embedded Systems Integration Minor (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/embedded-systems-integration-minor/>)
- Information Technology Service Management Minor (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/information-technology-service-management-minor/>)
- Technology Management Minor (<http://catalog.tamu.edu/undergraduate/engineering/technology-industrial-distribution/technology-management-minor/>)

Wm Michael Barnes '64 Department of Industrial and Systems Engineering

- Industrial Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/industrial-minor/>)

Department of Materials Science and Engineering

- Materials Science and Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/materials-science/minor/>)

J. Mike Walker '66 Department of Mechanical Engineering

- Analysis, Design and Management of Energy Conversion Systems Minor (<http://catalog.tamu.edu/undergraduate/engineering/mechanical/analysis-design-management-energy-conversion-systems-minor/>)
- Control of Mechanical Systems Minor (<http://catalog.tamu.edu/undergraduate/engineering/mechanical/control-mechanical-systems-minor/>)
- Design and Simulation of Mechanical Systems Minor (<http://catalog.tamu.edu/undergraduate/engineering/mechanical/design-simulation-mechanical-systems-minor/>)

Department of Multidisciplinary Engineering

- Engineering Project Management Minor (<http://catalog.tamu.edu/undergraduate/engineering/multidisciplinary/engineering-project-management-minor/>)

Department of Nuclear Engineering

- Nuclear Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/nuclear/minor/>)
- Radiological Health Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/nuclear/radiological-health-minor/>)

Harold Vance Department of Petroleum Engineering

- Petroleum Engineering Minor (<http://catalog.tamu.edu/undergraduate/engineering/petroleum/minor/>)

Certificates

The College of Engineering has designed the following certificate programs to offer ambitious students the opportunity to go beyond the traditional curriculum and gain specific knowledge in a concentration area. Students are required to consult with their academic advisor prior to submitting an application for a certificate. Enrolling and being accepted into a certificate program does not guarantee registration into required courses. Each certificate will be recognized on the candidate's transcript. A coordinator reviews each student's coursework via a certificate worksheet and requirements met prior to certification. Certificate coordinators are given the discretion to determine the eligibility of students in other colleges and/or majors to pursue College of Engineering certificates. For specific information on each certificate available, visit the College of Engineering website.

College of Engineering

- Engineering Concept, Creation, and Commercialization Certificate (<http://catalog.tamu.edu/undergraduate/engineering/engineering-concept-creation-commercialization-certificate/>)
- Holistic Leadership in Engineering Certificate (<http://catalog.tamu.edu/undergraduate/engineering/holistic-leadership-certificate/>)
- International Engineering Certificate (<http://catalog.tamu.edu/undergraduate/engineering/international-certificate/>)

Department of Biomedical Engineering

- Quality Engineering for Regulated Medical Technologies Certificate (<http://catalog.tamu.edu/undergraduate/engineering/biomedical/quality-regulated-medial-technologies-certificate/>)

Artie McFerrin Department of Chemical Engineering

- Engineering Therapeutics Manufacturing Certificate (<http://catalog.tamu.edu/undergraduate/engineering/chemical/therapeutics-manufacturing-certificate/>)
- Safety Engineering Certificate (<http://catalog.tamu.edu/undergraduate/engineering/chemical/safety-engineering-certificate/>)

Wm Michael Barnes '64 Department of Industrial and Systems Engineering

- Data Center Operations Engineering Certificate (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/data-center-operations-certificate/>)
- Data Engineering Certificate (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/data-engineering-certificate/>)
- Engineering Systems Management Certificate (<http://catalog.tamu.edu/undergraduate/engineering/industrial-systems/engineering-systems-management-certificate/>)

Department of Materials Science and Engineering

- Corrosion Science and Engineering Certificate (<http://catalog.tamu.edu/undergraduate/engineering/materials-science/corrosion-science-engineering-certificate/>)

- Polymer Specialty Certificate (<http://catalog.tamu.edu/undergraduate/engineering/materials-science/polymer-specialty-certificate/>)

Harold Vance Department of Petroleum Engineering

- Data Analytics for Petroleum Industry Certificate (<http://catalog.tamu.edu/undergraduate/engineering/petroleum/data-analytics-petroleum-industry-certificate/>)
- Energy Engineering Certificate (<http://catalog.tamu.edu/undergraduate/engineering/petroleum/energy-engineering-certificate/>)
- Petroleum Ventures Certificate (<http://catalog.tamu.edu/undergraduate/engineering/petroleum/petroleum-ventures-certificate/>)

Masters

Department of Aerospace Engineering

- Master of Engineering in Aerospace Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/aerospace/meng/>)
- Master of Science in Aerospace Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/aerospace/ms/>)

Department of Biomedical Engineering

- Master of Engineering in Biomedical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/biomedical/meng/>)
- Master of Science in Biomedical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/biomedical/ms/>)

Artie McFerrin Department of Chemical Engineering

- Master of Engineering in Chemical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/chemical/meng/>)
- Master of Science in Chemical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/chemical/ms/>)
- Master of Science in Safety Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/chemical/ms-seng/>)

Zachry Department of Civil and Environmental Engineering

- Master of Engineering in Civil Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/civil-environmental/meng/>)
- Master of Science in Civil Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/civil-environmental/ms/>)

Department of Computer Science and Engineering

- Master of Computer Science in Computer Science (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/computer-science/mcs/>)
- Master of Engineering in Computer Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/computer-science/engineering-meng/>)
- Master of Science in Computer Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/computer-science/engineering-ms/>)
- Master of Science in Computer Science (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/computer-science/ms/>)

Department of Electrical and Computer Engineering

- Master of Engineering in Computer Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/electrical-computer/computer-meng/>)
- Master of Engineering in Electrical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/electrical-computer/electrical-meng/>)
- Master of Science in Computer Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/electrical-computer/computer-ms/>)
- Master of Science in Electrical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/electrical-computer/electrical-ms/>)

Department of Engineering Technology and Industrial Distribution

- Master of Engineering Technical Management in Technical Management (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/technology-industrial-distribution/metm/>)
- Master of Industrial Distribution in Industrial Distribution (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/technology-industrial-distribution/mid/>)
- Master of Science in Engineering Technology (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/technology-industrial-distribution/ms-entc/>)

Wm Michael Barnes '64 Department of Industrial and Systems Engineering

- Master of Engineering in Industrial Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/industrial-systems/meng/>)
- Master of Engineering in Systems Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/industrial-systems/systems-engineering-meng/>)
- Master of Science in Engineering Management (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/industrial-systems/engineering-systems-management-ms/>)

- Master of Science in Industrial Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/industrial-systems/ms/>)

Department of Materials Science and Engineering

- Master of Engineering in Materials Science and Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/meng/>)
- Master of Science in Materials Science and Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/ms/>)

J. Mike Walker '66 Department of Mechanical Engineering

- Master of Engineering in Mechanical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/mechanical/meng/>)
- Master of Science in Mechanical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/mechanical/ms/>)

Department of Multidisciplinary Engineering

- Master of Engineering in Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/multidisciplinary/engineering-meng/>)
- Master of Engineering in Engineering and Doctor of Medicine Combined Degree Program (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/interdepartmental-degree-programs/men-md/>)
- Master of Science in Interdisciplinary Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/multidisciplinary/interdisciplinary-ms/>)

Department of Nuclear Engineering

- Master of Engineering in Nuclear Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/nuclear/meng/>)
- Master of Science in Nuclear Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/nuclear/ms/>)

Department of Ocean Engineering

- Master of Engineering in Ocean Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/ocean/ocean-meng/>)
- Master of Science in Ocean Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/ocean/ocean-ms/>)

Harold Vance Department of Petroleum Engineering

- Master of Engineering in Petroleum Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/petroleum/meng/>)
- Master of Science in Petroleum Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/petroleum/ms/>)

Doctoral

Department of Aerospace Engineering

- Doctor of Philosophy in Aerospace Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/aerospace/phd/>)

Department of Biomedical Engineering

- Doctor of Philosophy in Biomedical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/biomedical/phd/>)

Artie McFerrin Department of Chemical Engineering

- Doctor of Philosophy in Chemical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/chemical/phd/>)

Zachry Department of Civil and Environmental Engineering

- Doctor of Philosophy in Civil Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/civil-environmental/phd/>)

Department of Computer Science and Engineering

- Doctor of Philosophy in Computer Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/computer-science/engineering-phd/>)
- Doctor of Philosophy in Computer Science (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/computer-science/phd/>)

Department of Electrical and Computer Engineering

- Doctor of Philosophy in Computer Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/electrical-computer/computer-phd/>)
- Doctor of Philosophy in Electrical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/electrical-computer/electrical-phd/>)

Wm Michael Barnes '64 Department of Industrial and Systems Engineering

- Doctor of Philosophy in Industrial Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/industrial-systems/phd/>)

Department of Materials Science and Engineering

- Doctor of Philosophy in Materials Science and Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/phd/>)

J. Mike Walker '66 Department of Mechanical Engineering

- Doctor of Philosophy in Mechanical Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/mechanical/phd/>)

Department of Multidisciplinary Engineering

- Doctor of Engineering in Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/multidisciplinary/engineering-deng/>)
- Doctor of Philosophy in Interdisciplinary Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/multidisciplinary/interdisciplinary-phd/>)

Department of Nuclear Engineering

- Doctor of Philosophy in Nuclear Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/nuclear/phd/>)

Department of Ocean Engineering

- Doctor of Philosophy in Ocean Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/ocean/ocean-phd/>)

Harold Vance Department of Petroleum Engineering

- Doctor of Philosophy in Petroleum Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/petroleum/phd/>)