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## College of Engineering

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### Introduction

Engineering is the application of science and mathematics to the solution of relevant societal needs and problems. The current standard of living is due in large part to efforts of engineers and technologists. Technological development has created a demand for qualified engineers and technologists who maintain the momentum of innovation and who extend and direct its course. The expanding population, with its increased demand for goods and services, has imposed challenges to provide a

diversity of new and better products with minimized adverse side effects. Engineers and technologists recognize that long-term solutions are found in careful, thorough planning and study.

The University of North Texas College of Engineering strives to educate and train engineers and technologists who have the vision to recognize and solve the problems of society. The College of Engineering comprises four degree-granting departments of instruction and research. The Department of Computer Science and Engineering, the Department of Electrical Engineering, the Department of Engineering Technology, and the Department of Materials Science and Engineering offer programs of study and research leading to bachelor's, master's, and doctoral degrees; some offer programs in one or more concentrations. Undergraduate programs include computer engineering, computer science, construction engineering technology, electrical engineering, electronics engineering technology, mechanical engineering technology, manufacturing engineering technology and nuclear engineering technology.

*Most of the programs in the College of Engineering are accredited by the Accreditation Board for Engineering and Technology (ABET) [111 Market Place, Suite 1050, Baltimore, MD 21202; (410) 347-7700].*

Each program provides some flexibility through elective course opportunities to permit program individualism while meeting basic requirements.

## Academic Advising

Information about academic matters is available from various sources within the College of Engineering. Advising is available in the major department. Advisers assist students in the selection of courses and answer questions about selecting a major, degree audits, application of transfer credit, and general academic requirements, policies and procedures.

## Degree Audit

Students should have a degree audit prepared in their academic dean's office at the beginning of their sophomore year. Transfer students who have chosen a major should have a degree audit made during their first term/semester at UNT.

Students should take a complete evaluated transcript of all college work to their faculty advisers for conferences to fill out advisory sheets. After the advisory sheets have been signed by both the adviser and the department chair, students should bring all materials to the College of Engineering Undergraduate Academic Advising Office, where official degree audits will be prepared. Graduation checks should be requested during the term/semester before graduation.

## Programs of Study

The college offers the following undergraduate degrees:

- Bachelor of Science, and
- Bachelor of Arts, both with a major in computer science.
- Bachelor of Science with a major in computer engineering.
- Bachelor of Science with a major in electrical engineering.
- Bachelor of Science in Engineering Technology with majors in construction engineering technology\*, electronics engineering technology\*, manufacturing engineering technology,\* mechanical engineering technology\* and nuclear engineering technology\*.

Nuclear engineering technology is available at the TXU Comanche Peak Steam Electric Station.

Candidates for the Bachelor of Science degree must satisfy all general requirements for the bachelor's degree listed in the Academics section of this catalog, and all requirements of the engineering degree requirements as listed below.

*\*Name change pending approval by the Texas Higher Education Coordinating Board.*

## Degree Requirements and the University Core Curriculum

Occasionally a course required for a degree may also satisfy a requirement of the University Core Curriculum. In addition to taking the required course, a student may elect to take a different course from among those available to fulfill that core requirement; doing so, however, may add to the total number of hours required for the degree. Students who have questions regarding degree requirements and core requirements should consult an academic adviser.

## Bachelor of Science Degree Requirements

Candidates for the Bachelor of Science must meet the following requirements.

1. **Hours Required for the Degree:** Completion of a minimum of 128 total semester hours; 42 must be advanced.
2. **General University Requirements:** See "General University Degree Requirements" in the Academics section of this catalog.
3. **College of Engineering Requirements:** See "Engineering Degree Requirements" in the College of Engineering section of this catalog for specific requirements and list of approved courses. See specific degree plan for exact hours.
4. **Major Requirements:** A major of at least 24 semester hours; 12 hours of advanced work in the major must be completed at UNT.

5. **Minor (optional):** A minor is at least 18 hours, of which a minimum of 6 hours must be advanced, from a field outside the major. Minors are chosen with faculty advisers for selected majors. For some majors the minor is specified, but for most majors a minor field is optional. Consult major requirements.

6. **Electives:** See individual major.

7. **Other Course Requirements:** See individual major.

8. **Other Requirements:** Completion of all other requirements for a major and a minor as specified by the respective departments.

## Bachelor of Arts Degree Requirements

Candidates for the Bachelor of Arts must meet the following requirements.

1. **Hours Required for the Degree:** Completion of a minimum of 128 semester hours; 42 must be advanced.

2. **General University Requirements:** See “General University Degree Requirements” in the Academics section of this catalog.

3. **College of Engineering Requirements:** See “Engineering Degree Requirements” in the College of Engineering section of this catalog for specific requirements and list of approved courses. See specific degree plan for exact hours.

4. **Major Requirements:** A major of at last 30 semester hours; 12 hours of advanced work in the major must be completed at UNT.

5. **Minor (optional):** A minor is at least 18 hours, of which a minimum of 6 hours must be advanced, from a field outside the major. Minors are chosen with faculty advisers for selected majors. For some majors the minor is specified, but for most majors a minor field is optional. Consult major requirements.

6. **Electives:** See individual major.

7. **Other Course Requirements:** See individual major.

8. **Foreign language (3-14 hours or proficiency):** Must attain Intermediate II (2050) level (prerequisite for 2050 course is 2040; prerequisite for 2040 is 1020; prerequisite for 1020 course is 1010).

9. **Other Requirements:** Completion of all other requirements for a major and minor as specified by the respective departments.

## Core Curriculum

Candidates for the Bachelor of Science degrees in the College of Engineering must complete the University Core Curriculum. Students should see the departmental adviser for their major for more information.

## College of Engineering Required Core Courses

The following requirements are in addition to or a specification of the University Core Curriculum requirements for bachelor's degrees in the College of Engineering. The requirement of the engineering core courses should be met prior to enrollment in upper-division courses.

Students must achieve a grade of C or better and maintain a minimum GPA of 2.5 in each group of the following courses:

1. **Mathematics:** A minimum of 6 hours (may also be used to satisfy the Mathematics requirement of the University Core Curriculum; some majors require specific and/or additional courses; contact a departmental adviser for more information) selected from the following: MATH 1710, 1720, 1780, 2700, 2730, 2770, or 3310. **Note:** Students may not elect to take both MATH 2770 and 3410 to fulfill this requirement; contact a departmental adviser for more information.

2. **Science:** Three courses including two laboratories (may also be used to satisfy the Natural Sciences requirement of the University Core Curriculum; some majors require specific and/or additional courses; contact a departmental adviser for more information) selected from the following: PHYS 1710/1730, 2220/2240; CHEM 1410/1430; BIOL 1710/1730, 1720/1740.

3. **Oral and Advanced Written Communication (6 hours):** ENGL 2700 (may also be used to satisfy part of the English Composition and Rhetoric requirement of the University Core Curriculum) and GNET 2060 (may also be used to satisfy the Communication requirement of the University Core Curriculum).

### Major and Minor

For requirements in the major and minor, students should consult “General University Requirements” in the Academics section, and department or division sections of this catalog.

### Other Requirements

Elective hours as needed at either the lower level or advanced level to meet the minimum of 128 semester hours for graduation, including the 42 advanced. Electives should be chosen in consultation with an adviser.

## Courses of Instruction

All Courses of Instruction are located in one section at the back of this catalog.

### Course and Subject Guide

The “Course and Subject Guide,” found in the Courses of Instruction section of this book, serves as a table of contents and provides quick access to subject areas and prefixes.