### College of Engineering

**B.S. Biomedical Engineering**

2019-2020 Texas Common Course Numbering System Transfer Guide

This four-year plan provides a model for on-time completion of this UNT program using as many TCCNS courses as possible. The four-year plan also shows the first point when no TCCNS options are available for this program. See the current Undergraduate Catalog for course prerequisites. Course availability at UNT is subject to change, and the plan shown below may change based on updates to UNT's course offerings.

UNT Courses noted (#) do not have TCCNS equivalents, but have approved transferable substitutions.

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>UNT Requirement</td>
<td>TCCNS Option</td>
</tr>
<tr>
<td>MATH 1710</td>
<td>MATH 2313 or 2413 or 2513</td>
<td>MATH 1720</td>
</tr>
<tr>
<td>CHEM 1410/1430</td>
<td>CHEM 1411 or 1311/1111</td>
<td>BIOL 2301/2311 or CHEM 1420/1440 or PHYS 2220/2240</td>
</tr>
<tr>
<td>BMEN 1300</td>
<td>None</td>
<td>BMEN 1400</td>
</tr>
<tr>
<td>ENGL 1310</td>
<td>ENGL 1301</td>
<td>BMEN 1400</td>
</tr>
<tr>
<td>UNT Core: Creative Arts</td>
<td>See list of approved courses</td>
<td>TECM 2700</td>
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</tbody>
</table>

| **SOPHOMORE** |                                      |                                     |
|              | UNT Requirement | TCCNS Option | UNT Requirement | TCCNS Option |
| MATH 2700   | MATH 2318 or 2418 | MATH 3410                             | None |
| PHYS 1710/1730 | PHYS 2425 or 2325/2125 | BMEN 2320                              | None |
| BMEN 2210   | None                                  | Track Elective                      | PSCI 2306 |
| Track Elective |                                      | PSCI 2306                             | GOVT 2306 |
| PSCI 2305   | GOVT 2305                            | UNT Core: American History           | See list of approved courses |

| **JUNIOR** |                                      |                                     |
|            | UNT Requirement | TCCNS Option | UNT Requirement | TCCNS Option |
| MATH 2730 or 3350 | MATH 2315 or 2415 | MATH 3680                              | None |
| BMEN 3310  | None                                  | BMEN 3312                             | None |
| BMEN 3311  | None                                  | BMEN 3321                             | None |
| BMEN 3350  | None                                  | Track Elective                       | See list of approved courses |
| Track Elective |                                      | UNT Core: Social & Behavioral Science | See list of approved courses |

| **SENIOR** |                                      |                                     |
|            | UNT Requirement | TCCNS Option | UNT Requirement | TCCNS Option |
| BMEN 4310  | None                                  | BMEN 4222                             | None |
| BMEN 4212  | None                                  | BMEN Elective (4000-level)            | None |
| BMEN Elective (4000-level) | None | BMEN Elective (4000-level) | None |
| Track Elective |                                      | Track Elective                       | See list of approved courses |
| UNT Core: Language, Philosophy and Culture | See list of approved courses | UNT Core: American History | See list of approved courses |

[http://registrar.unt.edu/transfer-guides](http://registrar.unt.edu/transfer-guides)

Last Revised: April 1, 2019
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- Admission to the university does not guarantee admission to the College of Engineering. To be admitted to the College of Engineering, students must meet the requirements listed under “Admission Requirements” on page two.
- To complete the B.S. Biomedical Engineering degree within four years, students should plan to take Calculus I (MATH 2313 or 2413 or 2513) and BMEN 1300 during the first semester of their freshman year. Please refer to the four-year plan on page one for a recommended schedule. Students interested in completing an associate’s degree at a community college may consult with a College of Engineering advisor about concurrent enrollment options.

Courses Recommended for Transfer

The UNT Core requirements are shown with Texas Common Course Numbering System values only when UNT offers equivalent courses. There may be other courses in transfer that apply toward the specific degree requirement, but those listed are known to apply to.

**UNT Core: Communication**
ENGL 1301; and ENGL 1302 or 2311
A grade of ‘C’ or better is required on courses applied toward this requirement.
ENGL 2311 is required for all College of Engineering majors.

**UNT Core: Mathematics**
This requirement will be met by fulfilling the Biomedical Engineering program requirements (see "Other Course Requirements").

**UNT Core: Life & Physical Sciences**
This requirement will be met by fulfilling the Biomedical Engineering program requirements (see "Other Course Requirements").

**UNT Core: American History**
Two courses chosen from: HIST 1301, 1302, 2301

**UNT Core: Government/Political Science**
GOVT 2305 and 2306

**UNT Core: Creative Arts**
One course chosen from: ARTS 1301 or 1304; DRAM 1310; MUSI 1306; SPCH 2341

**UNT Core: Language, Philosophy and Culture**
One course chosen from: ARTS 1303, ENGL 2332 or 2333; HIST 2321 or 2322; PHIL 1301, 1304, 2303, 2306, or 2316

**UNT Core: Social & Behavioral Sciences**
One course chosen from: ANTH 2346 or 2351; COMM 1307; CRJ 1301; ECON 2301 or 2302; GEOG 1303; PSYC 2301; SOCI 1301; SOCW 2361; SPCH 1318; TECA 1354

**Biomedical Engineering: Major Requirements**
No TCCNS Options Available.

**Biomedical Engineering: Other Course Requirements**
TCCNS options:
- Required course in Technical Writing:
  - ENGL 2311
- Required courses in mathematics:
  - MATH 2313 or 2413 or 2513 (fulfills both Mathematics core and major requirements).
  - MATH 2314 or 2414
  - MATH 2315 or 2415
  - MATH 2318 or 2418
- Required courses in laboratory science:
  - BIOL 2401 or 2301/2101 or CHEM 1412 or 1312/1112 or PHYS 2426 or 2326/2126
  - CHEM 1411 or 1311/1111
  - PHYS 2425 or 2325/2125

BIOL and CHEM courses listed above fulfill both Life & Physical Sciences core and major requirements. PHYS courses listed above fulfill a portion of the CAO core and major requirements.

Courses listed above are TCCNS options and do not include all courses required for the UNT Biomedical Engineering major.

http://registrar.unt.edu/transfer-guides

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## College of Engineering: Admission Requirements

Admissions to the College of Engineering is contingent on clear admissions to the university.

Freshman applicants will be admitted to the College of Engineering in an Engineering program based on their high school graduation rank and SAT/ACT scores. See below for the full requirements:

1) Students in the top 25% of their class must meet one of the following requirements:
   - A) Math ACT score of 23 or better and a composite ACT score of 23 or better
   - B) If the SAT was taken February 2016 or before, Math SAT score of 570 or better and a total SAT score of 1070 or better
   - C) If the SAT was taken March 2016 or later, Math SAT score of 590 or better and a total SAT score of 1140 or better

2) Students in the top 50% of their class must meet one of the following requirements:
   - A) Math ACT score of 24 or better and a composite ACT score of 24 or better
   - B) If the SAT was taken February 2016 or before, Math SAT score of 600 or better and a total SAT score of 1100 or better
   - C) If the SAT was taken March 2016 or later, Math SAT score of 620 or better and a total SAT score of 1170 or better

3) Students below the top 50% of their class must meet one of the following requirements:
   - A) Math ACT score of 26 or better and a composite ACT score of 26 or better
   - B) If the SAT was taken February 2016 or before, Math SAT score of 630 or better and a total SAT score of 1180 or better
   - C) If the SAT was taken March 2016 or later, Math SAT score of 650 or better and a total SAT score of 1250 or better

## Biomedical Engineering: Foundation Courses

The Biomedical Engineering foundation courses are:

- BIOL 2401 or 2301/2101
- BMEN 1300 at UNT
- BMEN 1400 at UNT
- BMEN 2210 at UNT
- BMEN 2320 at UNT
- CHEM 1411 or 1311/1111
- ENGL 1301 or TECM 1700 at UNT
- ENGL 2311
- MATH 2313 OR 2413 OR 2513
- MATH 2314 or 2414
- PHYS 2425 or 2325/2125

Successful completion of foundation courses is based on achieving a C or higher in each course and a cumulative GPA of 2.5. Mandatory advisement is required each semester until the foundation courses have been completed.

## Biomedical Engineering: Other Requirements

Students interested in pursuing a Bachelor’s Degree in Biomedical Engineering will be able to choose from one of the following five tracks (18 hours):

- Biocomputing
- Biomaterials
- Biomedical instrumentation
- Biomechanics
- Biotechnology (Pre-Medical)

No TCCNS Options Available.
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<table>
<thead>
<tr>
<th>College of Engineering: Admission requirements (continued)</th>
<th>Special Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4) Students with no graduating class ranking (homeschooled, GED, international students, etc.) must meet one of the following requirements:</td>
<td></td>
</tr>
<tr>
<td>A) Math ACT score of 24 or better and a composite ACT score of 24 or better</td>
<td></td>
</tr>
<tr>
<td>B) If the SAT was taken February 2016 or before, Math SAT score of 600 or better and a total SAT score of 1100 or better</td>
<td></td>
</tr>
<tr>
<td>C) If the SAT was taken March 2016 or later, Math SAT score of 620 or better and a total SAT score of 1170 or better</td>
<td></td>
</tr>
</tbody>
</table>

Engineering Technology programs
- Freshman applicants to Engineering Technology programs must have a math SAT score of 540 or better, or a math ACT score of 22 or better.

Math courses
- Enrollment in mathematics classes for entering freshmen will be determined in accordance with criteria established by the Department of Mathematics.

Transfer, International and Post-Baccalaureate
- Transfer applicants must have a minimum 2.0 GPA in math/science/engineering courses and be eligible to enroll in MATH 1710 (Calculus I; TCCNS: MATH 2313 or 2413 or 2513) or higher. MATH 1650 (Pre-Calculus; TCCNS: MATH 2312 or 2412) completed with a grade of C or better is a prerequisite to enroll in MATH 1710/Calculus I.

For applicants who do not meet the above requirements, you may participate in the Pre-Engineering program. You may be eligible for admissions into engineering when you meet the major changer criteria below.

To be admitted from the Pre-Engineering or another UNT major, you must meet all of the following criteria:
- Participate in an engineering Major Changers session
- Minimum 2.0 GPA based on all UNT coursework
- Minimum 2.5 GPA & minimum “C” grades in the courses below per your destination engineering major:
  - Communications Core
  - TECM 2700
  - MATH 1710
  - MATH 1720
  - BMEN 1300
  - BMEN 1400

Hours Required and General/College Requirements:
A minimum of 120 semester hours, of which 36 must be advanced, and fulfillment of degree requirements for the Bachelor of Science degree as specified in the general university requirements section of the UNT catalog and the College of Engineering requirements.

- A GPA of 2.0 or better is required in all degree major courses including, but not limited to, engineering, math, sciences, laboratory sciences, and technical electives.

UNT Core Curriculum/Transfer of Core Curriculum: UNT complies with the mandates of the 1997 Texas Legislature regarding requirements for state-assisted institutions. Students who successfully complete the common core curriculum (in whole or in part) at a Texas state-assisted institution of higher education are eligible to transfer as “core complete” for those categories in the UNT University Core Curriculum.

Individual academic programs may require courses contained in parts of the University Core Curriculum. Students who wish to take courses that will fulfill both core and major/program requirements simultaneously should check with academic advisors for assistance in selecting core courses.

Choice of Catalog: Any student transferring directly from a Texas public community college to UNT shall have the same choice of catalog designating degree requirements as the student would have had if the dates of attendance at the university had been the same as the dates of attendance at the community college.

The College of Engineering required curriculum and policies are located in the undergraduate catalog under the corresponding catalog year.

For additional program and contact information see the College of Engineering Student Advising website: http://engineering.unt.edu/advising