# College of Engineering

# Undergraduate Academic Guidebook 2021-2022



Information is subject to change Last updated on November 01, 2021

Engineering Admissions for Full-Major New Students: First Time in College/Freshman Applicants

In addition to meeting UNT admissions requirements, you must also meet one of the following criteria:

Top 25% of high school graduating class

- MATH SAT score of 590 or better and a total SAT score of 1140 or better
- MATH ACT score of 23 or better and a composite ACT score of 23 or better

Top 50% of high school graduating class or unranked (including GED and homeschooled)

- MATH SAT score of 620 or better and a total SAT score of 1170 or better
- MATH ACT score of 24 or better and a composite ACT score of 24 or better

51% or lower high school graduating class

- MATH SAT score of 650 or better and a total SAT score of 1250 or better
- MATH ACT score of 26 or better and a composite ACT score of 26 or better

Construction Engineering Technology or Mechanical Engineering Technology can be admitted as full-major with a MATH SAT score of 570 or better or a MATH ACT score of 22 or better regardless of rank.

Construction Management can be admitted as full-major regardless of SAT scores, ACT scores, or high school rank.

Engineering Admissions for Full-Major New Students: Transfer & 2<sup>nd</sup> Bachelor's Degree Applicants

In addition to meeting UNT admissions requirements, you must also meet all of the following criteria:

- Minimum 2.0 GPA based on all transfer coursework
- Minimum 2.0 GPA based on all transfer mathematics, science, engineering, & computing courses
- Eligibility to enter MATH 1710, Calculus I, via prerequisite completion or testing (see next page)

Construction Management can be admitted as full-major regardless of GPA or MATH 1710 eligibility

Engineering Admissions for Pre-Major Students & Change of Major Applicants

If you did not meet the above criteria to be admitted as a full-major, you have been accepted into the premajor. You will be eligible for admissions into the full-major once you meet all of the following criteria:

- Minimum 2.0 GPA based on all UNT coursework
- Minimum grade of "C" grade in the course below per your destination/desired engineering major

Biomedical Engineering: MATH 1710 Computer Engineering: CSCE 1030 Computer Science: CSCE 1030

Construction Engineering Technology: MATH 1710

Cybersecurity: CSCE 1035\*

Electrical Engineering: MATH 1710 Information Technology: CSCE 1030

Materials Science and Engineering: MATH 1710 Mechanical and Energy Engineering: MATH 1710 Mechanical Engineering Technology: MATH 1710

Must fulfill criteria by the end of your  $4^{th}$  long semester or you will be removed from the Pre-Major Program \*Can substitute with CSCE 1030 and CSCE 1040 with minimums grades of "C" in both based on advisor approval

#### **Engineering Dismissal**

You are required to conduct yourself in a professional manner at while making successful progression toward graduation. Failure to do so may result in dismissal from the College of Engineering. Criteria for dismissal includes (but is not limited to):

- Violation of the Code of Student Conduct located at deanofstudents.unt.edu/conduct. This includes, (but is not limited to) dishonesty, cheating, disruptive behavior, theft, hazing, abuse, violence, etc.
- Failure to enroll in engineering required coursework and/or prerequisites each semester.
- Failure to reach or maintain grade and/or GPA criteria for engineering required courses and prerequisites.
- Being placed on academic suspension from UNT due to UNT semester and/or cumulative GPA.

#### Mathematics

Completion of Calculus I (MATH 1710) in the 1st semester is necessary to attempt a timely graduation for most engineering degree plans. Enrollment in MATH 1710 is contingent on (1) completion of placement tests, or (2) completion of college level prerequisite courses. Math courses earned via AP, IB, CLEP, DC, and/or transfer is listed on page 36. If you are TSI incomplete in math, you may have additional courses to take.

#### Prerequisite Course Sequence for Calculus 1:

TSI MATH (if TSI required) → MATH 1100, College Algebra → MATH 1650, Pre-Calculus → MATH 1710, Calculus I

#### Pre-Placement for First Time in College/Freshmen:

If you are TSI complete and do have earned college math credit, you will begin math courses based on your Math Group Level assigned by the Math Department:

- Math Level 1 or No Math Level: MATH 1100
- Math Level 2: MATH 1650
- Math Level 3: MATH 1710

#### Placement Testing Options:

If you are TSI complete, you can test to attempt clearance into a high-level math course regardless of your Math Group Level or earned math credit. Options are:

- Canvas Math Placement free online test. Must score a minimum of 70 to enter MATH 1710. Must score a
  minimum of 10 to enter MATH 1650. Must have access to a webcam and download a web browser called
  Respondus Lockdown Browser to take the test. If the test option is not posted in your Canvas account, email Rita.Sears@unt.edu for access.
- ALEKS online test which requires a small fee and completion of a 6 week long tutorial. Must score a
  minimum of 70 to enter MATH 1710. Must score a minimum of 50 to enter MATH 1650. Must have access to
  a webcam and download a web browser called Respondus Lockdown Browser to take the test.

Please refer to the Mathematics Department at math unt.edu for more testing information.

#### Course Types

UNT offers many course types and/or formats. Below are common ones:

- Prerequisite or "Prereq": course that must be completed to move onto another course in a sequence.
- Corequisite or "Coreq": course that must be taken in the same semester as another course.
- Recitation or "Rec": extra, required meeting time to cover homework, take tests, answer questions, etc.
- Laboratory or "Lab": required time that's an application of the information that you learn in class.
- Advanced course: high level courses as indicated by a 3\*\*\* or 4\*\*\* numbering.
- Restricted: course or section time limited to certain students such as Honors, Out of State, Dual Credit.

#### **Course Locations**

UNT offers courses at many locations Below are common ones:

- Internet: instruction, assignments, and work is online.
- Hall Park: campus located in Frisco, TX.
- Inspire Park: campus located in Frisco, TX.
- Collin Higher Education Center: campus located in McKinney, TX.
- Discovery Park (NTDP): campus located north Denton, TX where most engineering courses are taught.

#### Course Semester Offerings

#### Fall semester/session offerings:

- Fall Regular: August to December
- Fall 8 Week I: August to October
- Fall 8 Week 2: October to December

#### Spring semester/session offerings:

- Spring 3 Week (winter): December to January
- Spring Regular: January to May
- Spring 8 Week I: January to March
- Spring 8 Week 2: March to May

#### Summer semester/session offerings:

- Summer 3 Week: May
- Summer 8 Week: May to July
- Summer 5 Week 1: June to July
- Summer 5 Week 2: July to August
- Summer 10 Week: June to August

Not every course is offered every semester or session

#### Credit Hours

Number of units assigned to each course. Also referred to as "credits" or "hours". It indicates approximately how many hours per week you'll be in class and how many hours per week that you will need to study for that course. It's also used in the calculation of your GPA.

#### How many hours do I earn for each course?

Depends on the course. Usually 3 – 4 hours but courses can range from 1 – 5 hours.

#### How many credits is full-time?

12 hours (approximately 4 courses).

#### How many hours can I take each semester?

19 hours in the fall/spring and 18 hours in the summer. This applies to credits enrolled at UNT and another institution (concurrent enrollment). You can receive overload approval to take more hours if you meet these criteria:

- At least a 3.0 GPA on a minimum 15 hour UNT residence load for the semester just completed.
- At least a 3.0 GPA on a minimum 12 hour UNT residence load for the summer terms just completed.
- At least a 3.0 GPA on all work completed at UNT and a minimum 24 hours of credit in residence.

#### Do I have to be a full-time student?

No, not unless you are an international student, athlete, scholarship receipt or receiving maximum financial aid. To attempt a timely graduation, you should plan to take 15-16 hours unless you work. Your number of work hours will impact the number of credit hours you should attempt each semester. Please consult with your advisor to determine the proper balance of work and school.

#### Classification

Your classification is based on the number of earned credit hours after semester grade posting; not the number of years you have been in school. Classification dictates your registration appointment time each semester and may impact your eligibility for scholarships, financial aid, internships, etc.

Freshman: 0 – 29 hours Junior: 60 – 89 hours Sophomore: 30 – 59 hours Senior: 90+ hours

#### Grade Point Average (GPA)

Grades have a point value and courses are worth an amount of credit hours. GPA is calculated by dividing grade points earned by the number of attempted hours. Grades of "CR" (AP, CLEP, IB credits) and "W" don't count as attempted hours in GPA calculations. Grades of "F" are attempted hours and count heavily against your GPA.

#### How do grades convert to grade points?

- A = 4 points x # of credit hours course is worth
- B = 3 points x # of credit hours course is worth
- C = 2 points x # of credit hours course is worth
- D = 1 points x # of credit hours course is worth
- F = 0 points x # of credit hours course is worth

#### How to calculate your GPA:

- Determine grade points for each course using the conversion above
- Total your number of grade points and your number of attempted hours
- Divide total grade points by total attempted hours
- Number that results = your GPA

#### Different types of GPAs:

- Semester or Term GPA: the GPA you earned for the semester/term just enrolled.
- UNT GPA: the cumulative GPA you earn in all UNT courses. A minimum 2.0 GPA is required.
- Overall GPA: GPA you earn in all courses (UNT and transfer). A minimum 2.0 GPA is required.
- Major GPA: the GPA you earn in courses in your major. A minimum 2.0 GPA is required

You can access a GPA calculator at advising.unt.edu/about-your-gpa/calculate-your-gpa

#### Grade Point Average (GPA): Academic Status

Your cumulative UNT grades are used to calculate academic status. Grades earned in transfer are considered in calculation of Graduation with Honors and fulfillment of degree requirements but are not considered with determination of academic status.

#### Academic Good Standing:

Standing if you earn at least a cumulative 2.0 UNT GPA. A 1.8 UNT GPA is acceptable during your 1st semester at UNT but it must be increased to at least a 2.0 after your 1st semester.

#### Academic Alert:

Standing if you are a freshman and your UNT GPA falls below 1.8 during the 1st semester or falls below 2.0 during the 2nd semester. You can only be placed on alert once. You will be required to participate in academic coaching sessions via the Learning Center during your alert semester. You must raise your UNT GPA to 2.0 or higher during your alert semester or you will be placed on probation.

#### Academic Probation:

Standing if you are not eligible for alert and your UNT GPA falls below 1.8 during the 1st semester or falls below 2.0 during any following semester. You must raise your UNT GPA to 2.0 to return to good standing or earn a semester GPA of at least 2.25 to remain on probation. You will be required to participate in academic coaching session via the Learning Center during your probation semester.

#### Academic Suspension:

Standing if you fail to raise your UNT GPA to a 2.0 or earn a 2.25 semester GPA while on probation. You are prohibited from attending UNT for 1 long semester for a 1st suspension or 2 long semesters for a 2nd suspension. You must petition for approval to re-enter the College of Engineering after completing the suspension period. You will be dismissed permanently from the College of Engineering if you are suspended a 3rd time.

#### Grade Point Average (GPA): Honors

#### Semester Honors:

Semester honors is based on your fall or spring semester GPA and is documented on your UNT transcript. You must complete at least 12 hours to be recognized for honors. Summer GPA is not recognized for honors. Candidates for a 2<sup>nd</sup> bachelor's degree are not eligible for semester honors.

President's List: 4.000Dean's List: 3.500-3.999

#### **Graduation with Honors:**

Graduation with honors is based on your overall (UNT and transfer) GPA and is documented on your UNT transcript. Candidates for a 2<sup>nd</sup> bachelor's degree are not eligible for graduation honors.

Cum laude: 3.500 – 3.699
Magna cum laude: 3.700 – 3.899
Summa cum laude: 3.900 – 4.000

#### Cancelling, Dropping or Withdrawing

#### Cancelling:

This refers to removing yourself from one, some, or all of your courses before the semester has started. You can do this via MyUNT. Refer to registrar.unt.edu for information and deadlines.

#### Dropping:

This refers to removing yourself from one or some courses (but remaining in at least one course) after the semester has started. You can do this via MyUNT. Refer to registrar.unt.edu for information and deadlines. Only 6 drops are allowed during your academic career. Once the 6 drop limit is reached, no additional drops are approved.

#### Withdrawing:

This refers to removing all of your courses after the semester has started. You are not allowed to withdraw via MyUNT. You may withdraw via the procedures and deadlines listed online. Refer to registrar.unt.edu.

Dropping or withdrawing may affect your financial aid and/or excessive hours.

#### Retaking Courses: Course Duplications

If your transcript(s) contains the same course with an earned grade more than once, the 1st grade will be treated as a duplication and will be deleted from your GPA. Any additional grades will be calculated into your GPA. This includes transfer courses/grades. Course duplication will impact your GPA, academic status and excessive hours.

Engineering major required courses must be completed with a grade of "C" or better. Only the last grade will be used in fulfilling prerequisite, corequisite, full-major eligibility, and graduation eligibility. Contact your advisor to confirm how you will be affected if you take a course more than once.

#### Incomplete Grade

An Incomplete ("I") grade is a pending grade. A professor may grant an "I" if you meet all of these conditions:

- The final drop and withdraw deadlines for the semester have passed.
- You experience an emergency situation that prohibits you from completing remaining work.
- You have been earning a passing grade to the point of the emergency situation.
- You can complete and submit outstanding work within 12 months after the grade of "I" is granted.

Professors are not required to grant an "I" even if you meet the conditions. An "I" grade does not impact your GPA but it will automatically convert to a "F" grade if you do not complete the "I" within 12 months.

#### Pass/No Pass Grading Option

You may elect to take a course under the Pass/No Pass grading option if it is not a prerequisite or required for your degree plan. Certain criteria must be met and you must obtain approval from your advisor after you have enrolled in the course. A "P" or "NP" will be recorded on your transcript and is not calculated in your GPA.

#### Taking Courses at another Institution: Concurrent Enrollment

Courses taken outside of UNT will not be applied to your degree audit unless you meet all of the following criteria:

- The course you plan to take has been pre-approved by your advisor.
- You do not violate the maximum semester credit hour limit or residency requirements at UNT.
- You are not attempting to graduate the same semester in which you are concurrently enrolled.
- You submit the official transcript for the course to the Registrar's Office within one month of completion.

Your department reserves the right to reject online courses and/or courses at certain institutions.

Concurrent enrollment in your last semester will delay graduation. You will not graduate or earn your degree until the following semester.

#### Registration and Payment

You will use MyUNT to register for courses each semester/term. Information on registration enrollment periods, payment deadlines, etc. can be located at registration.unt.edu.

You must arrange payment prior to the payment deadline listed in MyUNT or online. Failure to pay by the deadline listed will result in the cancellation of your entire schedule of classes. You must elect a tuition plan before your 1st semester/term payment deadline. Information on plans is located at sfs.unt.edu. You have numerous options available to pay. Refer to registration.unt.edu/cost-funding for information. If you have been awarded financial aid, refer to financialaid.unt.edu for information.

#### Canvas

This is where professors can post course syllabi, announcements, deadlines, assignments, grades, etc. Also, through Canvas, you can communicate with your professor and classmates in each course. After registration, your enrolled courses will be added to Canvas.

#### Registration Tips

#### Holds:

Holds are items that you need to complete prior to registration. Your holds are listed on your "Tasks" tile in MyUNT. If you have an "Advising Required" hold, you must meet with an advisor before you can register for courses in the upcoming semester.

#### Full Courses/Waitlist:

If a course is full, add yourself to the waitlist. Seats are allotted in position order as fully enrolled students vacate the course. The waitlist does not guarantee a seat in the course. You can waitlist for a maximum of 3 courses per semester/term. The waitlist option ends once add/drop closes for the semester/term.

#### Visual Schedule Builder:

This tool in MyUNT will allow you to graphically view schedule options based on the course time offerings that works best for you. This tool can be problematic because (1) it will include courses that are full (closed/waitlisted), (2) it does not list course location to allow commute time between main campus, Discovery Park, or the campuses in Frisco, TX. and McKinney, TX. and (3) it does not always include lab times or recitations times.

### Error Messages:

Read the message to learn why you received it and to determine if you are eligible to enroll in the course. Common errors refer to prerequisite, corequisite, and restricted sections.

#### Overrides:

Contact the department that teaches the course if you received an error message by mistake and you need to enroll in the open course. Below are department contacts for some common courses:

- BIOL: Contact Heather Tunnell at heather.tunnell@unt.edu
- BMEN: Contact Stephanie Deacon at whitney.smith2@unt.edu
- CHEM: Contact Heather Vidaurri at heather.vidaurri@unt.edu
- CNET: Submit request at mechanical.engineering.unt.edu/override-form
- CSCE: Submit request at computerscience.engineering.unt.edu/overrides
- EENG: Contact Jason Mieritz at jason.mieritz@unt.edu
- ELET: Submit request at mechanical.engineering.unt.edu/override-form
- ENGR: Submit request at mechanical.engineering.unt.edu/override-form
- MATH: Contact Rita Sears at rita.sears@unt.edu
- MEEN: Submit request at mechanical.engineering.unt.edu/override-form
- MEET: Submit request at mechanical.engineering.unt.edu/override-form
- MFET: Submit request at mechanical.engineering.unt.edu/override-form
- MTSE: Contact Lisa Dunlop at Lisa.Dunlop@unt.edu
- PHYS: Submit request at physics.unt.edu/forms/physics-course-override-request
- TECM: Contact tcoffice@unt.edu

Be prepared to provide your name, ID number, and the course/section you are wanting to enroll in.

#### **Tuition Increases**

#### Repeated Course Tuition Increase:

If you pay under the Texas resident tuition rate and you attempt courses more than twice, you are subject to pay an additional tuition rate per semester credit hour for the repeated course. Refer to information at sfs.unt.edu.

#### Excessive Hours Tuition:

If you pay under the Texas resident tuition rate, you may be subject to a higher tuition rate once you exceed more than 30 credit hours above the number of hours required for your degree plan. Additional hours are considered excessive and will result in additional tuition charges. Refer to information at sfs.unt.edu.

#### Maximum Hours - Financial Aid:

If you receive financial aid and maintain Satisfactory Academic Progress (SAP) and Pace of Progression (POP), your aid eligibility continues until you attempt 150% of the minimum credit hours required for your degree plan. For most students, once they attempt approximately 180 credit hours, their aid is discontinued.

#### Degree Audit (Plan)

The degree audit is the official document that lists all the requirements you need to complete to earn your degree. It tracks the application of completed requirements each semester/term. You can view your degree audit at mydegreeaudit.unt.edu. Please contact the Engineering Advising Office for any questions or concerns.

#### Graduation

Graduation can usually be achieved 4 years after you are enrolled in Calculus I (MATH 1710), enrolled in the entry level engineering course(s) for your major, follow the correct requisite sequencing, follow the correct semester scheduling path, earn passing grades each semester/term, and complete approximately 30 degree required credits per year. Please note that graduation often occurs within 5-6 years for most students.

You must apply for graduation by the beginning of your final semester via MyUNT. Refer to registrar.unt.edu for more information and the application deadline. Failure to apply by the deadline will result in your failure to graduate or earn your degree even if you complete all of your degree audit requirements. You cannot enroll in another institution during your final semester/term or else your graduation will be delayed. You must meet with your academic advisor for a graduation check the semester before you plan to graduate.

#### Commencement

Commencement is the name of the graduation ceremony. Commencement is offered in December for students who earn their degree in fall or in May for students who earn their degree in spring. Students who earn their degree in summer can choose to attend the December or May commencement. In order to attend commencement, you must apply graduation by the beginning of your final semester and be approved by your academic advisor. Refer to unt.edu/commencement for more information.

#### Discovery Park (NTDP)

Discovery Park is located 4 miles north of the main campus in Denton, TX. It is the location of all College of Engineering offices. Most engineering classes and labs are taught at this campus. It offers a cafeteria, library, computer access labs, specialty engineering labs, engineering student organizations, an advising office, tutoring services, and a career services office.

Information on free bus transportation routes/times and available student parking passes/locations can be found at unt.edu/transit.

#### Advising

#### Academic Advisors:

Located in NTDP A-101, these advisors counsel you on academic goals and requirements in order to earn your degree. You should meet with your advisor each semester. You will be required to meet with your advisor if you are a freshman, first time in college student, pre-major, or if your GPA falls below good standing. Use appointments.unt.edu to schedule your appointment. Allow 3 weeks for an available opening and note that you will lose your appointment if you are late. The office phone number is 940-565-4201. E-mail information for each advisor is located at engineering.unt.edu/advising/advisors.

#### **Engineering Faculty Advisors:**

Located in each department, these professors assist with advising. They can help you with choosing the proper elective, specialization, track, or supporting area courses to prepare you to enter industry after graduation. Contact information is located on the following curriculum pages. Faculty advisors are listed on the next page.

#### Career Advisors:

Located in NTDP C-111, these advisors help you with career planning/selection, resume writing, interviewing skills, internships, and full-time employment. You can schedule an appointment via appointments.unt.edu.

#### International Advisors:

Located in Marquis Hall, these advisors help you if you are an international student to discuss policies, restrictions, and responsibilities based on your VISA type and/or sponsored scholarship type.

#### Advisors

Please see below for the academic and faculty advisors based on your degree program status.

	Academic Advisor(s)	Faculty Advisor(s)
Pre-Biomedical Engineering	David Bekker Melissa Getty	Dr. Vijay Vaidyanathan
Pre-Computer Engineering	David Bekker Melissa Getty	Dr. Robin Pottathuparambil
Pre-Computer Science	David Bekker Melissa Getty	Dr. Ryan Garlick
Pre-Construction Engineering Technology	David Bekker Melissa Getty	Dr. Al Attah
Pre-Cybersecurity	David Bekker Melissa Getty	Dr. Mark Thompson
Pre-Electrical Engineering	David Bekker Melissa Getty	Dr. Tom Derryberry
Pre-Information Technology	David Bekker Melissa Getty	Mr. David Keathly
Pre-Materials Science and Engineering	Nancy Van Hoy	Dr. Marcus Young
Pre-Mechanical and Energy Engineering	David Bekker Melissa Getty	Dr. Xiaohua Li
Pre-Mechanical Engineering Technology	David Bekker Melissa Getty	Dr. Huseyin Bostanci
Biomedical Engineering	Abdal Elkharoubi Errica Smith	Dr. Vijay Vaidyanathan
Computer Engineering	Abdal Elkharoubi Errica Smith	Dr. Robin Pottathuparambil
Computer Science	Heather Burrow Beverly Wilks	Dr. Ryan Garlick
Construction Engineering Technology	Mia Dallas Rachel Smith	Dr. Al Attah
Construction Management	Mia Dallas Rachel Smith	Dr. Seifollah Nasrazadani
Cybersecurity	Heather Burrow Beverly Wilks	Dr. Mark Thompson
Electrical Engineering	Abdal Elkharoubi Errica Smith	Dr. Tom Derryberry
Information Technology	Heather Burrow Beverly Wilks	Mr. David Keathly
Materials Science and Engineering	Nancy Van Hoy	Dr. Marcus Young
Mechanical and Energy Engineering	Mia Dallas Rachel Smith	Dr. Xiaohua Li
Mechanical Engineering Technology	Mia Dallas Rachel Smith	Dr. Huseyin Bostanci

### BIOMEDICAL ENGINEERING (STEM Tracks)

Bachelor of Science (B.S.) degree with a major in Biomedical Engineering Biomedical Engineering Department, Discovery Park (NTDP) B-131; (940) 565-3338

#### **University Core**

#### **COMMUNICATION**

1 Course (3 Hours) – see mydegreeaudit.unt.edu
Grade of "C" or better is required

#### **AMERICAN HISTORY I**

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Minimum 2.0 GPA

#### **TECHNICAL COMMUNICATIONS**

■ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 2700, Linear Algebra (3 Hours)
- MATH 2730, Multivariable Calculus (3 Hours) or MATH 3350, Numerical Analysis (3 Hours)
- MATH 3410, Differential Equations (3 Hours)
- MATH 3680, Applied Statistics (3 Hours)

Completion of the above courses will earn a Mathematics minor.

#### **SCIENCES**

- CHEM 1410, General Chemistry I (3 Hours) &
   CHEM 1430, General Chemistry I Lab (1 Hour)
- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- 1 Lab science and lab chosen from: BIOL 2301, Human Anatomy & Physiology (3 Hours) & BIOL 2311, Human Anatomy & Physiology Lab (1 Hour) or CHEM 1420, General Chemistry II (3 Hours) & CHEM 1440, General Chemistry II Lab (1 Hour) or PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)

## Major Requirements Minimum 2.0 GPA

#### **BIOMEDICAL ENGINEERING**

- BMEN 1300, Discover Biomedical Engineering (3 Hours)
- BMEN 1400, Software for Biomedical Engineers (4 Hours)
- BMEN 2210, DAQ Practices (3 Hours)
- BMEN 2320, Biomedical Instrumentation (3 Hours)
- BMEN 3310, Engr. Measurements from Human Systems (3 Hours)
- BMEN 3311, Biomedical Signal Analysis (3 Hours)
- BMEN 3312, Introduction to Biomechanics (3 Hours)
- BMEN 3321, Biomaterials (3 Hours)
- BMEN 3350, Biomedical Transport Phenomena (3 Hours)
- BMEN 4310, Biomedical Modeling (3 Hours)
- BMEN 4212, Senior Design I (1 Hour)
- BMEN 4222, Senior Design II (3 Hours)
- BMEN 4\*\*\*, Advanced Elective (3 Hours)
- BMEN 4\*\*\*, Advanced Elective (3 Hours)
- BMEN 4\*\*\*, Advanced Elective (3 Hours)

#### BIOMEDICAL ENGINEERING ELECTIVE TRACK

Choose an elective track and complete a minimum of 6 courses (18 Hours) from the approved options below:

- Track Elective (3 Hours)
- ☐ Track Elective (3 Hours)
- Track Elective (3 Hours)
- ☐ Track Elective (3 Hours)
- ☐ Track Elective (3 Hours)
- ☐ Track Elective (3 Hours)

Biomedical Instrumentation Elective Track:

EENG 2610/2611, 2620/2621, 2710/2711, 3510, & 4\*\*\* level course.

#### Biomechanics Elective Track:

MEEN 2301, 2302, 2210, 2332, & two MEEN 3\*\*\* and/or 4\*\*\* level courses. See advisor for specific course choices.

#### Biocomputing Elective Track:

CSCE 1030, 1040, 2100, 2110, & two CSCE 3\*\*\* and/or 4\*\*\* level courses.

#### Biomaterials Elective Track:

MTSE 3000, two courses from 3010, 3030, 3050, 3070, plus 3 MTSE  $3^{***}$  or  $4^{***}$  level courses. MTSE 3001 is strongly recommended.

#### Computational Epidemiology Track:

CSCE 1035, CSCE 1045, CSCE 2100, CSCE 2110, CSCE 3850, and CSCE 4820

#### Pre-Medical Elective Track:

BIOL 1710, 1720, 1760, 2041/2042, CHEM 2370/3210, BIOL 3451/3452, and 1 class/lab chosen from BIOL 3770/4580 or BIOC 3621/3622

Additional courses are required for admissions into medical school.

Completion of one of the tracks above can potentially earn a minor. Consult academic advisor for more information.

## Biomedical Engineering (STEM Track)

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH	Calculus I	4	F., Sp.,	*MATH	Calculus II	3	F., Sp.,
	1710	Pre-req: MATH 1650 or Test Placement		Su.	1720	Pre-req: MATH 1710		Su.
	*CHEM	General Chemistry I	3	F., Sp.,	*Lab	Lab Science Lecture	3	F., Sp.,
	1410	Pre-req: MATH 1100 or higher		Su.	Science	Must complete any necessary pre-reqs.	1	Su.
) ue	*CHEM 1430	General Chemistry I Lab	1	F., Sp., Su.	*Lab Science	Lab Science Corresponding Lab	1	F., Sp., Su.
Γ	*BMEN	Co/Pre-reg: CHEM 1410	3	5u. F.	*BMEN	Co/Pre-req: Lab Science Lecture Software for BMEN	4	
Year One	1300	Discover BMEN			1400	Pre-req: MATH 1650 or higher		Sp.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	*TECM 2700	Technical Writing  Pre-req: Communication Core	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	Total Hours		14	
	Total Hours		17					
	Hours	<u>L</u>	1/			<u> </u>	ı	
	MATH 2700	Linear Algebra Pre-rea: MATH 1720	3	F., Sp., Su.	MATH 3410	Differential Equations Pre-reg: MATH 1720	3	F., Sp., Su.
	*PHYS	Mechanics	3	F., Sp.,	*BMEN	Biomedical Instrumentation		
	1710	Pre-req: MATH 1710		Su.	2320	Pre-reqs: BMEN 1300, 2210 Co/Pre-req: BMEN 1400	3	Sp.
O W	*PHYS 1730	Mechanics Lab Co/Pre-reg: PHYS 1710	1	F., Sp., Su.	Elective Course	Elective Track Course Must complete any necessary pre-regs.	3	Varies
Year Two	*BMEN 2210	DAQ Practices Pre-reg: MATH 1720	3	F.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
>	Elective	Elective Track Course	3	Varies	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Course	Must complete any necessary pre-reqs.			Core	The second sec		Su.
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	Total			
	Core			Su.	Hours		15	
	Total Hours		16					
	MATH	NAULE Coloulus or Numerical Analysis	3	E Cn	MATH	Applied Statistics	3	E Cn
	2730 or	Multi. Calculus or Numerical Analysis  MATH 2730 Pre-reg: MATH 1720	3	F., Sp., Su.	3680	Applied Statistics Co/Pre-reg: MATH 1720	3	F., Sp., Su.
	3350	MATH 3350 Pre-req: MATH 2700 and Prog.		54.	3000	COFFE-FEG. WATTI 1720		Ju.
	BMEN	Human Systems	3	F.	BMEN	Introduction to Biomechanics	3	Sp.
	3310	Pre-reqs: BMEN 1300, 2320			3312	Pre-regs: BMEN 3310, PHYS 1710		
ee.	BMEN	Signal Analysis	3	F.	BMEN	Biomaterials	3	Sp.
ᆙ	3311	Pre-req: BMEN 2320			3321	Pre-regs: BMEN 3310, PHYS 1710, CHEM 1410		
Year Three	BMEN 3350	Transport Phenomena Pre-regs: BMEN 1300, MATH 3410, PHYS	3	F.	Elective Course	Elective Track Course  Must complete any necessary pre-reqs.	3	Varies
	Elective	1710, CHEM 1410  Elective Track Course	3	Varies	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Course	Must complete any necessary pre-reqs.	3	varies	Core	Options on mydegreeaudit.unt.edu	3	F., 3p., Su.
	Total Hours		15		Total Hours		15	
	DNATNI	Diama diad Ada dalia	T 2		DNATN	Contan Bastan II	1 2	C
	BMEN 4310	Biomedical Modeling Pre-regs: BMEN 3321	3	F.	BMEN 4222	Senior Design II Pre-regs: BMEN 4212	3	Sp.
	BMEN	Senior Design I	1	F.	BMEN	BMEN Advanced Elective	3	F., Sp.
	4212	Pre-reqs: BMEN 3*** Requirements	1		4***	Pre-reqs: BMEN 3*** Requirements		, Jp.
'n	BMEN	BMEN Advanced Elective	3	F., Sp.	BMEN	BMEN Advanced Elective	3	F., Sp.
P	4***	Pre-reqs: BMEN 3*** Requirements			4***	Pre-regs: BMEN 3*** Requirements	<u> </u>	<u> </u>
Year Four	Elective	Elective Track Course	3	Varies	Elective	Elective Track Course	3	Varies
>	Course	Must complete any necessary pre-reqs.	_		Course	Must complete any necessary pre-reqs.	_	
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		13		Total Hours		15	
L	110015		13	<u> </u>	110015	<u> </u>	1 13	l

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion. Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion. Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, BIOL, PHYS, BMEN and Elective require minimum grade of "C" for completion and/or prerequisite.

### BIOMEDICAL ENGINEERING (Business Tracks)

Bachelor of Science (B.S.) degree with a major in Biomedical Engineering Biomedical Engineering Department, Discovery Park (NTDP) B-131; (940) 565-3338

#### **University Core**

#### COMMUNICATION

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu Grade of "C" or better is required

#### AMERICAN HISTORY I

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### **AMERICAN HISTORY II**

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Minimum 2.0 GPA

#### **TECHNICAL COMMUNICATIONS**

□ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 2700, Linear Algebra (3 Hours)
- MATH 2730, Multivariable Calculus (3 Hours) or MATH 3350, Numerical Analysis (3 Hours)
- MATH 3410, Differential Equations (3 Hours)
- MATH 3680, Applied Statistics (3 Hours)

Completion of the above courses will earn a Mathematics minor.

#### **SCIENCES**

- CHEM 1410, General Chemistry I (3 Hours) &
   CHEM 1430, General Chemistry I Lab (1 Hour)
- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- 1 Lab science and lab chosen from:
  BIOL 2301, Human Anatomy & Physiology (3 Hours) &
  BIOL 2311, Human Anatomy & Physiology Lab (1 Hour) or
  CHEM 1420, General Chemistry II (3 Hours) &
  CHEM 1440, General Chemistry II Lab (1 Hour) or
  PHYS 2220, Electricity & Magnetism (3 Hours) &
  PHYS 2240, Electricity & Magnetism Lab (1 Hour)

## Major Requirements Minimum 2.0 GPA

#### **BIOMEDICAL ENGINEERING**

- BMEN 1300, Discover Biomedical Engineering (3 Hours)
- BMEN 1400, Software for Biomedical Engineers (4 Hours)
- BMEN 2210, DAQ Practices (3 Hours)
- BMEN 2320. Biomedical Instrumentation (3 Hours)
- □ BMEN 3310, Engr. Measurements from Human Systems (3 Hours)
- BMEN 3311, Biomedical Signal Analysis (3 Hours)
- BMEN 3312, Introduction to Biomechanics (3 Hours)
- BMEN 3321, Biomaterials (3 Hours)
- BMEN 3350, Biomedical Transport Phenomena (3 Hours)
- BMEN 4310, Biomedical Modeling (3 Hours)
- BMEN 4212, Senior Design I (1 Hour)
- BMEN 4222, Senior Design II (3 Hours)
- BMEN 4\*\*\*, Advanced Elective (3 Hours)
   BMEN 4\*\*\*, Advanced Elective (3 Hours)

#### BIOMEDICAL ENGINEERING ELECTIVE TRACK

Choose an elective track and complete a minimum of 4 courses (12 Hours) from the approved options below:

- Track Elective (3 Hours)
- ☐ Track Elective (3 Hours)
- ☐ Track Elective (3 Hours)
- ☐ Track Elective (3 Hours)

#### Business Foundations Track:

ACCT 2010\*, ACCT 2020, MKTG 3650 or MKTG 3651, MGMT 3720 or MGMT 3721 or MGMT 3820, FINA 3770, and a 3\*\*\* or 4\*\*\* level Business course

\*ACCT 2010 requires ECON 1100 as Pre/Co-requisite. ECON 1100 also applies towards Social and Behavioral Sciences Core requirement.

Entrepreneurship and Enterprise Management Track MGMT 3820, MGMT 3850, plus 12 hours (four courses at 3 credit hours each) from appropriate selections in catalog.

#### Management Track

MGMT 3720 plus 15 hours (five courses at 3 credit hours each) from appropriate selections in catalog.

#### Marketing Track

MKTG 3650 plus 15 hours (five courses at 3 credit hours each) from appropriate selections in catalog.

Only four courses from a track is required for degree completion. Listed above are the requirements to earn a minor if you would like.

## Biomedical Engineering (Business Tracks)

2021-2022 Catalog: Sample Four-Year Schedule

	Fall	Course Title	Credit	Term(s) Offered	Spring	Course Title	Credit	Term(s) Offered
	Semester *MATH	Calculus	Hours 4		Semester	Coloulus II	Hours 3	
	1710	Calculus I	4	F., Sp., Su.	*MATH 1720	Calculus II	3	F., Sp., Su.
		Pre-req: MATH 1650 or Test Placement				Pre-req: MATH 1710	-	
	*CHEM	General Chemistry I	3	F., Sp.,	*Lab	Lab Science Lecture	3	F., Sp.,
	1410	Pre-req: MATH 1100 or higher		Su.	Science	Must complete any necessary pre-reqs.		Su.
Year One	*CHEM	General Chemistry I Lab	1	F., Sp.,	*Lab	Lab Science Corresponding Lab	1	F., Sp.,
Ō	1430	Co/Pre-req: CHEM 1410		Su.	Science	Co/Pre-req: Lab Science Lecture		Su.
ā	*BMEN	Discover BMEN	3	F.	*BMEN	Software for BMEN	4	Sp.
Ϋ́	1300				1400	Pre-req: MATH 1650 or higher		
	*Comm.	Options on mydegreeaudit.unt.edu	3	F., Sp.,	*TECM	Technical Writing	3	F., Sp.,
	Core	,		Su.	2700	Pre-reg: Communication Core		Su.
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	Total			
	Core	options on mydegreedddit.dnt.edd		Su.	Hours		14	
	Total						<del></del>	
	Hours		17					
	Tiours		1/				1	
	MATH	Linear Algebra	3	F., Sp.,	MATH	Differential Equations	3	F., Sp.,
ĺ	2700	_	,	Γ., 3μ., Su.	3410	•		Γ., 3μ., Su.
		Pre-req: MATH 1720	3		*BMEN	Pre-reg: MATH 1720	+	Ju.
	*PHYS	Mechanics	3	F., Sp.,		Biomedical Instrumentation		C
	1710	Pre-req: MATH 1710		Su.	2320	Pre-reqs: BMEN 1300, 2210	3	Sp.
						Co/Pre-req: BMEN 1400		
o	*PHYS	Mechanics Lab	1	F., Sp.,	Business	Elective Track Course	3	Varies
Year Two	1730	Co/Pre-req: PHYS 1710		Su.	Elective	Must complete any necessary pre-reqs.		
<u>_</u>	*BMEN	DAQ Practices	3	F.	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
ĕ	2210	Pre-req: MATH 1720			Core			Su.
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Core	, ,		Su.	Core	, ,		Su.
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	Total			
	Core	opiioni on myaegi ceaaantanana		Su.	Hours		15	
	Total							
	Hours		16					
	•			•	-		•	•
	MATH	Multi. Calculus or Numerical Analysis	3	F., Sp.,	MATH	Applied Statistics	3	F., Sp.,
	2730 or	MATH 2730 Pre-req: MATH 1720		Su.	3680	Co/Pre-reg: MATH 1720		Su.
	3350	MATH 3350 Pre-req: MATH 2700 and Prog.				, , , , , , , , , , , , , , , , , , , ,		
	BMEN	Human Systems	3	F.	BMEN	Introduction to Biomechanics	3	Sp.
	3310	Pre-reqs: BMEN 1300, 2320			3312	Pre-regs: BMEN 3310, PHYS 1710		- 1
e	BMEN	Signal Analysis	3	F.	BMEN	Biomaterials	3	Sp.
ļ	3311	Pre-reg: BMEN 2320		٠.	3321	Pre-regs: BMEN 3310, PHYS 1710, CHEM 1410		Sp.
Ę								
ear Three	BMEN 3350	Transport Phenomena	2	_	Business	Elective Track Course	,	Varios
>	3330	Pre-regs: BMEN 1300, MATH 3410, PHYS	3	F.	Elective	Must complete any necessary pre-reqs.	3	Varies
	D'	1710, CHEM 1410	-	\/	11=1 11	0.1.	-	F .
	Business	Elective Track Course	3	Varies	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Elective	Must complete any necessary pre-reqs.			Core			Su.
	Total				Total			
<u> </u>	Hours		15		Hours		15	
	D1 (=::	I	1 -		D	T	T -	
	BMEN	Biomedical Modeling	3	F.	BMEN	Senior Design II	3	Sp.
	4310	Pre-reqs: BMEN 3321			4222	Pre-reqs: BMEN 4212	<u> </u>	
	BMEN	Senior Design I	1	F.	BMEN	BMEN Advanced Elective	3	F., Sp.
	4212	Pre-regs: BMEN 3*** Requirements			4***	Pre-reqs: BMEN 3*** Requirements	<u> </u>	
'n	BMEN	BMEN Advanced Elective	3	F., Sp.	BMEN	BMEN Advanced Elective	3	F., Sp.
Year Four	4***	Pre-reqs: BMEN 3*** Requirements			4***	Pre-reqs: BMEN 3*** Requirements		
Ē	BMEN	BMEN Advanced Elective	3	F., Sp.	BMEN	BMEN Advanced Elective	3	F., Sp.
ζ.	4***	Pre-regs: BMEN 3*** Requirements		,	4***	Pre-regs: BMEN 3*** Requirements	1	, -
-	Business	Elective Track Course	3	Varies	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Elective			v ai 163	Core	Options on mydegreeaudit.unt.edu		F., 3p., Su.
		Must complete any necessary pre-reqs.					+	Ju.
	Total		12		Total		15	
	Hours		13	l	Hours		15	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion. Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion. Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, BIOL, PHYS, BMEN and Business require minimum grade of "C" for completion and/or prerequisite.

### Computer Engineering

Bachelor of Science (B.S.) degree with a major in Computer Engineering
Department of Computer Science and Engineering, Discovery Park (NTDP) F-201; (940) 565-2767

#### **University Core**

#### **COMMUNICATION**

1 Course (3 Hours) – see mydegreeaudit.unt.edu
Grade of "C" or better is required

#### **AMERICAN HISTORY I**

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

■ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### TECHNICAL COMMUNICATIONS

□ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 1780, Probability Models (3 Hours)
- MATH 2700, Linear Algebra (3 Hours)
- MATH 2730, Multivariable Calculus (3 Hours)

#### SCIENCES

- CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)
- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)

#### ADVANCED MATHEMATICS OR SCIENCE ELECTIVE

1 advanced course (3 Hours) chosen from MATH 3\*\*\*, MATH 4\*\*\*, PHYS 3\*\*\*, CHEM 3\*\*\*, BIOL 3\*\*\*, BIOL 4\*\*\*, or GEOG 4\*\*\*. Check with your advisor for approved options.

### Major Requirements Grades of C or better

#### **ELECTRICAL ENGINEERING**

- EENG 2610, Circuit Analysis (3 Hours) & EENG 2611, Circuit Analysis Lab (1 Hour)
- EENG 2710, Digital Logic Design (3 Hours) & EENG 2711, Digital Logic Lab (1 Hour)
- EENG 3510, Electronics I (3 Hours)

#### COMPUTER SCIENCE AND ENGINEERING

- □ CSCE 1030, Computer Science I (4 Hours)
- □ CSCE 1040, Computer Science II (3 Hours)
- □ CSCE 2100, Foundations of Computing (3 Hours)
- □ CSCE 2110, Foundations of Data Structures (3 Hours)
- □ CSCE 2610, Assembly Lang. & Computer Organization (3 Hours)
- □ CSCE 3010, Signals & Systems (3 Hours)
- CSCE 3020, Communication Systems (3 Hours)
- □ CSCE 3600, Principles of Systems Programming (3 Hours)
- □ CSCE 3612, Embedded Systems Design (3 Hours)
- □ CSCE 3730, Reconfigurable Logic (3 Hours)
- □ CSCE 4011, Engineering Ethics (3 Hours)
- □ CSCE 4910, Senior Design I (3 Hours)
- □ CSCE 4915, Senior Design II (3 Hours)

#### SPECIALTY AREA

Choose a specialty area and complete 3 courses from the approved options below:

- Specialty Elective (3 Hours)
- Specialty Elective (3 Hours)
- Specialty Elective (3 Hours)

Artificial Intelligence and Machine Learning (Choose 3 courses): CSCE 3110, 4200, 4201, 4205, 4290, 4380, 4890

Real-time & Embedded Systems Specialty Area (Choose 3 courses): ELET 3750, CSCE 3444, 3610, 4440, 4600, 4610, 4620, 4730, 4890

VLSI & Electronics Specialty Area (Choose 3 courses): ELET 3750, 4300, 4340, CSCE 3610, 4610, 4730, 4890, PHYS 4500

Communications & Networks Specialty Area (Choose 3 courses): CSCE 3420, 3530, 3550, 4510, 4520, 4530, 4560, 4890

Computer Systems Specialty Area (Choose 3 courses): CSCE 3030, 3610, 4050, 4240, 4600, 4610, 4620, 4650, 4730, 4890

Maximum of 6 hours may be taken from CSCE 4890, 4920, 4930, 4940, or 4950.

#### ADVANCED LEVEL GENERAL ELECTIVE

☐ 1 advanced course (3 Hours) may be required to reach 42 total advanced hours.

This is an unofficial simplified checklist effective fall 2021. Degree requirements may change. You may need elective courses to help reach a minimum of 121 Total Hours and 42 Advanced Hours. Check with an advisor.

## Computer Engineering

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH 1710	Calculus I Pre-reg: MATH 1650 or Test Placement	4	F., Sp., Su.	MATH 1720	Calculus II Pre-reg: MATH 1710	3	F., Sp., Su.
e.	CHEM 1410	General Chemistry I  Pre-req: MATH 1100 or higher  Co-req: CHEM 1430	3	F., Sp., Su.	*CSCE 1040	Computer Science II Pre-req: CSCE 1030 Co/Pre-req: MATH 1710	3	F., Sp., Su.
Year One	CHEM 1430	General Chemistry   Lab Co/Pre-reg: CHEM 1410	1	F., Sp., Su.	*TECM 2700	Technical Writing  Pre-reg: Communication Core	3	F., Sp., Su.
Year	*CSCE 1030	Computer Science I Co/Pre-req: MATH 1710	4	F., Sp.	PHYS 1710	Mechanics Pre-req: MATH 1710. Co-req: PHYS 1730	3	F., Sp., Su.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	PHYS 1730	Mechanics Lab Co/Pre-reg: PHYS 1710	1	F., Sp., Su.
	Total Hours		15		University Core	Options on mydegreeaudit.unt.edu	3	
					Total Hours		16	
	MATH 2730	Multivariable Calculus Pre-reg: MATH 1720	3	F., Sp., Su.	MATH 1780	Probability Models Pre-reg: MATH 1710	3	F., Sp., Su.
	PHYS 2220	Electricity & Magnetism Pre-regs: MATH 1720 & PHYS 1710, 1730 Co-reg: PHYS 2240	3	F., Sp., Su.	MATH 2700	Linear Algebra Pre-req: MATH 1720	3	F., Sp., Su.
	PHYS 2240	Electricity & Magnetism Lab Co/Pre-req: PHYS 2220	1	F., Sp., Su.	CSCE 2110	Foundations of Data Structures  Pre-reg: CSCE 1040	3	F., Sp., Su.
Year Two	*CSCE 2100	Foundations of Computing Pre-req: CSCE 1040	3	F., Sp., Su.	CSCE 2610	Assembly Lang. & Computer Org.  Pre-req: CSCE 2100  Co/Pre-req: EENG 2710, 2711	3	F., Sp., Su.
>	EENG 2710	Digital Logic Co-req: EENG 2711	3	F., Sp.	EENG 2610	Circuit Analysis Pre-req: MATH 1720 Co/pre-req: PHYS 2220, 2240, EENG 2611	3	F., Sp., Su.
	EENG 2711	Digital Logic Lab Co-req: EENG 2710	1	F., Sp.	EENG 2611	Circuit Analysis Lab Co/pre-req: EENG 2610	1	F., Sp.,
	Total Hours		14		Total Hours		16	
	CSCE 3010	Signals and Systems Pre-regs: EENG 2610, 2611, MATH 2730 or 3410	3	F.	CSCE 3020	Communications Systems Pre-req: CSCE 3010	3	Sp.
	CSCE 3600	Systems Programming Pre-regs: CSCE 2100	3	F., Sp.	CSCE 3612	Embedded Systems Pre-regs: CSCE 2610, EENG 2710, 2711	3	Sp.
Three	CSCE 3730	Reconfigurable Logic Pre-req: CSCE 2610	3	F.	CSCE Specialty	Options at mydegreeaudit.unt.edu  Must complete pre-reqs	3	F., Sp.
Year <sup>-</sup>	EENG 3510	Electronics I Pre-regs: EENG 2610, 2611	3	F., Sp. Su.	Math or Science	3*** or 4*** level math or science.  Must complete necessary pre-regs	3	F., Sp.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		15		Total Hours		15	
	CSCE 4910	SENIOR Design I Pre-regs: CSCE 3612, EENG 3510	3	F.	CSCE 4915	Senior Design II Pre-req: CSCE 4910	3	Sp.
	CSCE Specialty	Options at mydegreeaudit.unt.edu  Must complete pre-regs	3	F., Sp.	CSCE 4011	Engineering Ethics Pre-req: CSCE 3600	3	F., Sp.
Year Four	CSCE Elective	Options at mydegreeaudit.unt.edu  Must complete pre-regs	3	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
Year	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	Elective	3*** or 4*** level elective to reach 42 advanced hours (if needed)	3	F., Sp., Su.
	Total Hours		15		Total Hours		15	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion. Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion. Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, ENGR, EENG, and CSCE require minimum grade of "C" for completion and/or prerequisite.

### Computer Science

Bachelor of Science (B.S.) degree with a major in Computer Science
Department of Computer Science and Engineering, Discovery Park (NTDP) F-201; (940) 565-2767

#### **University Core**

#### **COMMUNICATION**

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu
Grade of "C" or better is required

#### AMERICAN HISTORY I

☐ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### **AMERICAN HISTORY II**

☐ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### CREATIVE ARTS

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### TECHNICAL COMMUNICATIONS

- ☐ TECM 2700, Technical Writing (3 Hours)
- 1 Advanced TECM course chosen from:

TECM 4180, Advanced Technical Writing (3 Hours)

TECM 4200, Research Methods (3 Hours)

TECM 4250, Writing Procedures and Manuals (3 Hours)

TECM 4700, Writing in the Sciences (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 1780, Probability Models (3 Hours)
- ☐ MATH 2700, Linear Algebra (3 Hours)

#### **SCIENCES - PHYSICS**

- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)

#### SCIENCES - BIOLOGY AND/OR CHEMISTRY

- ☐ 1 Lab science and lab chosen from list options below
- ☐ 1 Lab science and lab chosen from list options below

CHEM 1410, General Chemistry I (3 Hours) and

CHEM 1430, General Chemistry I Lab (1 Hour) CHEM 1420, General Chemistry II (3 Hours) and

CHEM 1440, General Chemistry II Lab (1 Hour)

BIOL 1710, Biology I (3 Hours)

BIOL 1720, Biology II (3 Hours)

BIOL 1760, Biology Lab (2 Hours)

### Major Requirements Grades of C or better

#### **ELECTRICAL ENGINEERING**

■ EENG 2710, Digital Logic Design (3 Hours)

#### COMPUTER SCIENCE AND ENGINEERING

- CSCE 1030, Computer Science I (4 Hours)
- □ CSCE 1040, Computer Science II (3 Hours)
- □ CSCE 2100, Foundations of Computing (3 Hours)
- □ CSCE 2110, Foundations of Data Structures (3 Hours)
- □ CSCE 2610, Assembly Lang. & Computer Organization (3 Hours)
- ☐ CSCE 3110, Data Structures (3 Hours)
- ☐ CSCE 3444, Software Engineering (3 Hours)
- ☐ CSCE 3600, Principles of Systems Programming (3 Hours)
- ☐ CSCE 4010, Social Issues in Computing (3 Hours)
- ☐ CSCE 4110, Algorithms (3 Hours)
  - CSCE 4901, Capstone I (3 Hours)\*
- □ CSCE 4902, Capstone II (3 Hours)\*

#### COMPUTER SCIENCE AND ENGINEERING CORE ELECTIVES

- □ 1 CSCE Core course (3 Hours) chose from list options below
- ☐ 1 CSCE Core course (3 Hours) chose from list options below

CSCE 3530, Introduction to Computer Networks (3 Hours)

CSCE 4115, Formal Lang., Automata and Compatibility (3 Hours)

CSCE 4430, Programming Languages (3 Hours)

CSCE 4600, Introduction to Operating Systems (3 Hours)

CSCE 4650, Introduction to Compilation Techniques (3 Hours)

#### COMPUTER SCIENCE AND ENGINEERING BREADTH ELECTIVES

- ☐ 1 CSCE Breadth course (3 Hours) chose from list options below
- $f \square$  1 CSCE Breadth course (3 Hours) chose from list options below

CSCE 3550, Foundations of Computer Security (3 Hours)

CSCE 4201, Introduction to Artificial Intelligence (3 Hours)

CSCE 4210, Game Programming I (3 Hours)

CSCE 4230, Introduction to Computer Graphics (3 Hours)

CSCE 4240, Introduction to Digital Image Processing (3 Hours)

CSCE 4290, Introduction to Natural Language Processing (3 Hours)

CSCE 4350, Fundamentals of Database Systems (3 Hours)

CSCE 4460, Software Testing and Empirical Methodologies (3 Hours)

#### COMPUTER SCIENCE AND ENGINEERING FREE ELECTIVES:

- ☐ CSCE 3\*\*\* or 4\*\*\* (3 Hours) course not already applied above
- □ CSCE 3\*\*\* or 4\*\*\* (3 Hours) course not already applied above

Maximum of 6 hours may be taken from CSCE 4890, 4920, 4930, 4940, and 4950.

\*CSCE 4999, Senior Thesis (3 Hours) may replace Capstones with addition of a CSCE 3\*\*\* or 4\*\*\* (3 Hours) elective course

## Computer Science

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH	Calculus I	4	F., Sp.,	MATH	Calculus II	3	F., Sp.,
	1710	Pre-req: MATH 1650 or Test Placement		Su.	1720	Pre-req: MATH 1710		Su.
	CHEM	General Chemistry I	3	F., Sp.,	*CSCE	Computer Science II	3	F., Sp.,
<b>9</b>	1410	Pre-req: MATH 1100 or higher		Su.	1040	Pre-req: CSCE 1030, Co/Pre-req: MATH 1710		Su.
Year One	CHEM	General Chemistry I Lab	1	F., Sp.,	*TECM	Technical Writing	3	F., Sp.,
ar	1430	Co/Pre-req: CHEM 1410		Su.	2700	Pre-req: Communication Core		Su.
۶	*CSCE	Computer Science I	4	F., Sp.	BIOL	Biology I	3	F., Sp.,
	1030	Co/Pre-req: MATH 1710			1710			Su.
	*Comm.	Options on mydegreeaudit.unt.edu	3	F., Sp.,	BIOL	BIOL Lab	2	F., Sp.,
	Core			Su.	1760	Co/Pre-req: BIOL 1710		Su.
	Total				Total			
	Hours		15		Hours		14	
	MATH	Linear Algebra	3	F., Sp.,	+MATH	Drobability Madala	3	F., Sp.,
	2700	Linear Algebra	3	F., 3p., Su.	1780	Probability Models Pre-reg: MATH 1710	3	r., sμ., Su.
	PHYS	Pre-req: MATH 1720	3	F., Sp.,	PHYS		3	F., Sp.,
	1710	Mechanics	3	F., 3p., Su.	2220	Electricity & Magnetism  Pre-reqs: MATH 1720 & PHYS 1710/1730	3	r., sμ., Su.
	PHYS	Pre-req: MATH 1710  Mechanics Lab	1	F., Sp.,	PHYS	Electricity & Magnetism Lab	1	F., Sp.,
0	1730	Co/Pre-reg: PHYS 1710	1	Γ., 3μ., Su.	2240	Co/Pre-reg: PHYS 2220	1	Γ., 3μ., Su.
≥	*CSCE	Foundations of Computing	3	F., Sp.,	*CSCE	Foundations of Data Structures	3	F., Sp.,
<u>_</u>	2100	Pre-req: CSCE 1040		Su.	2110	Pre-reg: CSCE 1040	,	Γ., 3ρ., Su.
Year Two	+EENG	Digital Logic Design	3	F., Sp.,	CSCE	Assembly Lang. & Computer Org.	3	F., Sp.,
-	2710	Digital Logic Design		Su.	2610	Pre-regs: CSCE 2100, Co/Pre-reg: EENG 2710		Su.
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Core	Options on mydegreedddit.dnt.edd		Su.	Core	Options on mydegreedudit.unt.edu		Su.
	Total				Total			
	Hours		16		Hours		16	
			1		ı			
	+CSCE	Data Structures	3	F., Sp.,	+CSCE	Software Engineering	3	F., Sp.,
	3110	Pre-req: CSCE 2100, 2110		Su.	3444	Pre-reqs: CSCE 3110		Su.
	+CSCE	Systems Programming	3	F., Sp.	+CSCE	Analysis of Algorithms	3	F., Sp.,
au	3600	Pre-regs: CSCE 2100			4110	Pre-regs: CSCE 3110		Su.
Year Three	CSCE	Options at mydegreeaudit.unt.edu	3	F., Sp.,	CSCE	Options at mydegreeaudit.unt.edu	3	F., Sp.,
두	Elective	Must complete pre-reqs		Su.	Elective	Must complete pre-reqs		Su.
ē	TECM	Options at mydegreeaudit.unt.edu	3	F., Sp.	CSCE	Options at mydegreeaudit.unt.edu	3	F., Sp.
×	4***	Must complete pre-reqs			Elective	Must complete pre-reqs		
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Core			Su.	Core			Su.
	Total				Total			
	Hours		15		Hours		15	
	+CSCE	Social Issues	3	F., Sp.,	+CSCE	Capstone II	3	F., Sp.
	4010	Pre-regs: CSCE 3600		Γ., 3ρ., Su.	4902	Pre-reg: CSCE 4901		ι., υρ.
	+CSCE	Capstone I	3	F., Sp.,	CSCE	Options at mydegreeaudit.unt.edu	3	F., Sp.
	4901	Pre-regs: TECM 2700, CSCE 3444		Su.	Elective	Must complete pre-regs		, op.
		Co/Pre-req: CSCE 4110				mast complete pie regs		
our	CSCE	Options at mydegreeaudit.unt.edu	3	F., Sp.	CSCE	Options at mydegreeaudit.unt.edu	3	F., Sp.,
ŗ.	Elective	Must complete pre-reqs		' '	Elective	Must complete pre-regs		Su.
Year Four	University	Options on mydegreeaudit.unt.edu	3	F., Sp.	University	Options on mydegreeaudit.unt.edu	3	F., Sp.
>	Core	options on mydegreedudicanticud		,	Core	options on mydegreeddditianticud	_	,
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	Misc.	Misc. Elective to reach 120 hours	3	F., Sp.,
		· -	1	c	Elective	/: f    \	1	Su.
	Core			Su.	Liective	(if needed)		Ju.
	Core Total			Su.	Total	(If needed)		- Ju.

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion.

Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion.

Courses with + = Courses offered at Collin Higher Education Center (CHEC) in McKinney, TX during opposite term than Denton.

Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, BIOL, EENG, and CSCE require minimum grade of "C" for completion and/or prerequisite.

## Construction Engineering Technology

Bachelor of Science in Engineering Technology (B.S.E.T) degree with a major in Construction Engineering Technology Department of Mechanical Engineering, Discovery Park (NTDP) F-115; (940) 565-2400

#### **University Core**

#### **COMMUNICATION**

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu Grade of "C" or better is required

#### **AMERICAN HISTORY I**

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

■ ECON 1100 (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### **TECHNICAL COMMUNICATIONS**

■ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)

#### **SCIENCES**

- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)
- CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)

#### MISC. Elective

 1 course (3 Hours) may be required to reach 124 total hours (check with advisor)

### Major Requirements Grades of C or better

#### CONSTRUCTION ENGINEERING TECHNOLOGY

- □ CNET 1160, Construction Methods and Materials (3 Hours)
- □ CNET 2180, Building Construction Techniques (3 Hours)
- □ CNET 2300, Construction Graphics and Modeling (3 Hours
- □ CNET 3150, Construction Contract Documents (3 Hours)
- □ CNET 3160, Construction Cost Estimating (3 Hours)
- □ CNET 3190, Construction Scheduling (3 Hours)
- ☐ CNET 3410, Occupational Safety and Liability (3 Hours)
- □ CNET 3430, Structural Analysis (3 Hours)
- □ CNET 3440, Steel Structures (3 Hours)
- □ CNET 3460, Soils and Foundations (3 Hours)
- CNET 3480, Structural Design with Concrete, Timber, etc. (3 Hours)
- □ CNET 4170, Construction Management (3 Hours)
- ☐ CNET 4180, Problems in Project Management (3 Hours)
- □ CNET 4620, Adv. Design in Cold-Formed Steel Structures (3 Hours)
- □ CNET 4780, Senior Design I (1 Hour)
- □ CNET 4790, Senior Design II (3 Hours)
- ENGR 1030, Technical Systems (3 Hours)
- ENGR 2301, Statics (3 Hours)
- ENGR 2332, Mechanics of Materials (4 Hours)

#### BUSINESS

- □ ACCT 2010, Accounting Principles I (3 Hours)
- BCIS 2610, Introduction to Computers in Business (3 Hours)
- BLAW 3430, Legal and Ethical Environment of Business (3 Hours)
- BLAW 4770, Real Estate Law and Contracts (3 Hours)
- ECON 1100, Microeconomics (3 Hours)
- □ OPSM 3830, Operations Management (3 Hours)

#### **TECHNICAL ELECTIVES**

☐ Any level course chosen from appropriate elective options (3 Hours)

Electives must be chosen from the subjects of business, engineering, mathematics, and science. Check with an advisor for appropriate technical elective course options. Suggestions include, but are not limited to:

MATH 1600	CNET 3450	ACCT 2020	CHEM 1420
MATH 1610	CNET 4190	LSCM 3960	PHYS 3010
MATH 1650	CNET 4230	MKTG 3010	
MATH 2700	CSCE 1030	MKTG 3651	
MATH 2730	ENGR 1304	MGMT 3330	
MATH 3410	ENGR 2302	MGMT 3721	
MATH 3680	ENGR 3450	MGMT 3820	
	MFET 3110	MGMT 3850	
		MGMT 4470	

### Construction Engineering Technology

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH	Calculus I	4	F., Sp.,	MATH	Calculus II	3	F., Sp.,
	1710	Pre-req: MATH 1650 or Test Placement		Su.	1720	Pre-req: MATH 1710		Su.
	CHEM	General Chemistry I	3	F., Sp.,	*PHYS	Mechanics	3	F., Sp.,
	1410	Pre-req: MATH 1100 or higher		Su.	1710	Pre-req: MATH 1710		Su.
One	CHEM	General Chemistry I Lab	1	F., Sp.,	*PHYS	Mechanics Lab	1	F., Sp.,
ő	1430	Co/Pre-req: CHEM 1410		Su.	1730	Co/Pre-req: PHYS 1710		Su.
Year	*+CNET 1160	Construction Methods and Materials	3	F.	*CNET 2180	Building Construction Techniques  Pre-req: CNET 1160	3	Sp.
	*+ENGR 1030	Technological Systems	3	F., Sp.	*TECM 2700	Technical Writing Pre-req: Communication Core	3	F., Sp., Su.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp. Su.
	Total Hours		17		Total Hours		16	
					•			
	PHYS 2220	Electricity and Magnetism  Pre-regs: MATH 1720, PHYS 1710, 1730	3	F., Sp., Su.	ACCT 2010	Accounting Principles I Pre-req: ECON 1100	3	F., Sp., Su.
	PHYS 2240	Electricity and Magnetism Lab Co-req/pre-req: PHYS 2220	1	F., Sp., Su.	BCIS 2610	Intro. to Computers in Business Pre-req: MATH 1100 or higher	3	F., Sp., Su.
9	*CNET 2300	Construction Graphics and Modeling	3	F.	ENGR 2332	Mechanics and Materials  Pre-reg: ENGR 2301	4	F., Sp., Su.
Year Two	ENGR 2301	Statics Pre-reas: PHYS 1710, 1730	3	F., Sp., Su.	OPSM 3830	Operations Management	3	F., Sp., Su.
¥	ECON 1100	Microeconomics	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	Total Hours		16	
	Total Hours		16					
	ı		1	1		<u></u>	1	
	CNET 3150	Construction Contract Documents  Pre-req: CNET 2180	3	F.	CNET 3190	Construction Scheduling Pre-req: CNET 3160	3	Sp.
	CNET 3160	Construction Cost Estimating Pre-req: CNET 2180	3	F.	CNET 3440	Steel Structures Pre-req: CNET 3430	3	Sp.
ſhree	CNET 3430	Structural Analysis Pre-reg: ENGR 2332	3	F.	CNET 3460	Soils and Foundations Pre-req: CNET 2180, ENGR 2332	3	Sp.
Year Three	BLAW 3430	Legal and Ethical Environment of BUSI  Pre-reg: PSCI 2305, 2306	3	F., Sp., Su.	CNET 3410	Occupational Safety and Liability	3	Sp.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		15		Total Hours		15	
			,					
	CNET 3480	Structural Design with Concrete, Timber, etc.  Pre-req: CNET 2180, 3430	3	F.	CNET 4180	Problems in Project Management Pre-req: CNET 4170	3	Sp.
	CNET 4170	Construction Management Pre-reg: CNET 3160	3	F.	CNET 4620	Adv. Design in Cold-Formed Steel Struc.  Pre-req: CNET 3430	3	F., Sp.
Four	CNET 4780	Senior Design I Pre-reg: Senior Class., CNET 3190, 3440, 3460	1	F.	CNET 4790	Senior Design II Pre-req: CNET 4780	3	F., Sp.
Year Four	BLAW 4770	Real Estate Law and Contracts	3	F., Sp.	Technical Elective	Options at mydegreeaudit.unt.edu Must complete pre-regs	4	Varies
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	MISC Elective	MISC. Elective to reach 124 Hours (If needed)	3	F., Sp., Su.
	Total Hours		13		Total Hours		16	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion. Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion. Courses with + = Courses offered at Hall Park and/or Inspire Park in Frisco, Texas as well as in Discovery Park in Denton, Texas. Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, ENGR, ECON, ACCT, OPSM, BCIS, BLAW, and CNET require minimum grade of "C" for completion and/or prerequisite.

This is an unofficial sample schedule. Requirements, prerequisites, corequisites, and term offerings may change. You should check your degree audit at mydegreeaudit.unt.edu each term. You should meet with your advisor each term to discuss individual scheduling, program decisions, etc.

## Construction Management

Bachelor of Science (B.S) degree with a major in Construction Management Department of Mechanical Engineering, Discovery Park (NTDP) F-115; (940) 565-2400

#### **University Core**

#### **COMMUNICATION**

1 Course (3 Hours) – see mydegreeaudit.unt.eduGrade of "C" or better is required

#### **AMERICAN HISTORY I**

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

☐ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

■ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### CREATIVE ARTS

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

1 Course (3 Hours) – see mydegreeaudit.unt.edu

### Major Requirements Grades of C or better

#### WRITING/TECHNICAL COMMUNICATIONS

1 course chosen from list options below TECM 2700, Technical Writing (3 Hours) ENGL 1320, First-Year English Writing II (3 Hours) ENGL 1321, Honors Frist-Year Writing II (3 Hours)

#### **MATHEMATICS**

MATH 1710, Calculus I (4 Hours) or MATH 1190, Business Calculus (3 Hours)

#### **SCIENCES**

- PHYS 1410, General Physics I (3 Hours) & PHYS 1430, General Physics I Lab (1 Hour) or PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- PHYS 1420, General Physics II (3 Hours) &
   PHYS 1440, General Physics II Lab (1 Hour) or
   PHYS 2220, Electricity & Magnetism (3 Hours) &
   PHYS 2240, Electricity & Magnetism Lab (1 Hour)

## Major Requirements Grades of C or better

#### CONSTRUCTION ENGINEERING TECHNOLOGY

- □ CNET 1160, Construction Methods and Materials (3 Hours)
- CNET 2180, Building Construction Techniques (3 Hours)
- ☐ CNET 2200, Surveying for Construction (3 Hours)
- □ CNET 2300, Construction Graphics and Modeling (3 Hours)
- CNET 3150, Construction Contract Documents (3 Hours)
- □ CNET 3160, Construction Cost Estimating (3 Hours)
- □ CNET 3190, Construction Scheduling (3 Hours)
- ☐ CNET 3410, Occupational Safety and Liability (3 Hours)
- CNET 3435, Structural Analysis (3 Hours)
- □ CNET 3445, Steel Structures (3 Hours)
- □ CNET 3465, Soils and Foundations (3 Hours)
- □ CNET 3485, Structural Design with Concrete, Timber, etc. (3 Hours)
- CNET 4170, Construction Management (3 Hours)
- ☐ CNET 4180, Problems in Project Management (3 Hours)
- □ CNET 4625, Adv. Design in Cold-Formed Steel Structures (3 Hours)
- ☐ CNET 4630, Construction Management for MEP Systems (3 Hours)
- □ CNET 4785, Senior Design I (1 Hour)
- □ CNET 4795, Senior Design II (3 Hours)
- ENGR 1030, Technical Systems (3 Hours)
- ENGR 2304, Statics and Strengths of Materials (3 Hours)

#### BUSINESS

- ☐ BLAW 3430, Legal and Ethical Environment of Business (3 Hours)
- BLAW 4770, Real Estate Law and Contracts (3 Hours)
- MGMT 3820, Management Concepts (3 Hours)
- ☐ MGMT 3850, Foundations of Entrepreneurship (3 Hours)

#### **TECHNICAL ELECTIVES**

- Any level course chosen from appropriate elective options (3 Hours)
- ☐ Any level course chosen from appropriate elective options (3 Hours)
- ☐ Any level course chosen from appropriate elective options (3 Hours)

Electives must be chosen from the subjects of business, engineering, mathematics, and science. Check with an advisor for appropriate technical elective course options.

#### MISC. Elective

☐ 1 course (3 Hours) may be required to reach 120 total hours (check with advisor)

### Construction Management

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	MATH 1190	Business Calculus Pre-req: MATH 1100 or MATH 1180 or Test Placement 2	3	F., Sp., Su.	PHYS 1420	General Physics II Pre-req: PHYS 1410	3	F., Sp., Su.
a)	PHYS 1410	General Physics I Pre-req: MATH 1100 or higher	3	F., Sp., Su.	PHYS 1440	General Physics II Lab Co/Pre-req: PHYS 1420	1	F., Sp., Su.
Year One	PHYS 1430	General Physics I Lab Co/Pre-req: PHYS 1410	1	F., Sp., Su.	*CNET 2180	Building Construction Techniques  Pre-req: CNET 1160	3	Sp.
	*+CNET 1160	Construction Methods and Materials	3	F.	*TECM 2700	Technical Writing Pre-req: Communication Core	3	F., Sp., Su.
	*+ENGR 1030	Technological Systems	3	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp. Su.
	Total Hours		16		Total Hours		16	
	*CNET 2300	Construction Graphics and Modeling	3	F.	^CNET 2200	Surveying for Construction	3	Sp.
	^ENGR 2304	Statics and Strength of Materials Pre-regs: MATH 1190, PHYS 1410	3	F.	MGMT 3850	Foundations of Entrepreneurship	3	F., Sp., Su.
Year Two	MGMT 3820	Management Concepts	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
Year	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		15		Total Hours		15	
	CNET 3150	Construction Contract Documents Pre-reg: CNET 2180	3	F.	CNET 3190	Construction Scheduling Pre-reg: CNET 3160	3	Sp.
	CNET 3160	Construction Cost Estimating Pre-req: CNET 2180	3	F.	CNET 3445	Steel Structures Pre-req: CNET 3435	3	Sp.
Year Three	CNET 3435	Structural Analysis Pre-req: ENGR 2304	3	F.	CNET 3465	Soils and Foundations Pre-req: CNET 2180, ENGR 2304	3	Sp.
Year	BLAW 3430	Legal and Ethical Environment of BUSI Pre-req: PSCI 2305, 2306	3	F., Sp., Su.	CNET 3410	Occupational Safety and Liability	3	Sp.
	Technical Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	Varies	BLAW 4770	Real Estate Law and Contracts	3	F., Sp.
	Total Hours		15		Total Hours		15	
	CNET 3485	Structural Design with Concrete, Timber, etc.  Pre-req: CNET 2180, 3435	3	F.	CNET 4180	Problems in Project Management Pre-req: CNET 4170	3	Sp.
	CNET 4170	Construction Management  Pre-req: CNET 3160	3	F.	CNET 4625	Adv. Design in Cold-Formed Steel Struc.  Pre-req: CNET 3435	3	F., Sp.
Four	CNET 4785	Senior Design I  Pre-req: Senior Class., CNET 3190, 3445, 3465	1	F.	CNET 4795	Senior Design II Pre-req: CNET 4785	3	F., Sp.
Year Four	CNET 4630	Construct. Mgmt. for MEP Systems  Pre-req: CNET 2180	3	F.	Technical Elective	Options at mydegreeaudit.unt.edu Must complete pre-regs	3	Varies
	Technical Elective	Options at mydegreeaudit.unt.edu Must complete pre-regs	3	Varies	Misc. Elective	MISC. Elective to reach 120 Hours (If needed)	3	F., Sp., Su.
	Total Hours		13		Total Hours		15	

Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion.

Courses with + = Courses offered at Hall Park and/or Inspire Park in Frisco, Texas as well as in Discovery Park in Denton, Texas.

Courses with ^ = New courses created for Construction Management. Semester offering may change per ME Department's decision. Courses in Bold = New courses created for Construction Management major. Semester offering may change and/or course may be

changed per ME Department's decision.

Courses with subject abbreviations of ENGL, TECM, MATH, PHYS, ENGR, CNET and Business require minimum grade of "C" for completion and/or prerequisite.

## Cybersecurity

Bachelor of Science (B.S.) degree with a major in Cybersecurity Department of Computer Science and Engineering, Discovery Park (NTDP) F-201; (940) 565-2767

#### **University Core**

#### COMMUNICATION

1 Course (3 Hours) – see mydegreeaudit.unt.edu Grade of "C" or better is required

#### **AMERICAN HISTORY I**

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

### Major Requirements Grades of C or better

#### TECHNICAL COMMUNICATIONS

□ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 2700, Linear Algebra (3 Hours)
- MATH 3680, Applied Statistics (3 Hours)

#### **SCIENCES - PHYSICS**

- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- □ PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)

#### SCIENCES - BIOLOGY AND/OR CHEMISTRY

- 1 Lab science and lab chosen from list options below
- 1 Lab science and lab chosen from list options below

CHEM 1410, General Chemistry I (3 Hours) and

CHEM 1430, General Chemistry I Lab (1 Hour)

CHEM 1420, General Chemistry II (3 Hours) and

CHEM 1440, General Chemistry II Lab (1 Hour)

BIOL 1710, Biology I (3 Hours)

BIOL 1720, Biology II (3 Hours)

BIOL 1760, Biology Lab (2 Hours)

#### Major Requirements Grades of C or better

#### COMPUTER SCIENCE AND ENGINEERING

- CSCE 1035, Computer Programming I (4 Hours)
- □ CSCE 1045, Computer Programming II (3 Hours)
- □ CSCE 2100, Foundations of Computing (3 Hours)
- □ CSCE 2110, Foundations of Data Structures (3 Hours)
- □ CSCE 3530, Introduction to Computer Networks (3 Hours)
- □ CSCE 3550, Foundations of Computer Security (3 Hours)
- □ CSCE 3560, Computer Systems Security (3 Hours)
- □ CSCE 3600, Principles of Systems Programming (3 Hours)
- □ CSCE 4010, Social Issues in Computing (3 Hours)
- □ CSCE 4535, Introduction to Network Administration (3 Hours)
- □ CSCE 4555, Computer Forensics (3 Hours)
- □ CSCE 4560, Secure Electronic Commerce (3 Hours)
- □ CSCE 4565, Secure Software Systems (3 Hours)
- □ CSCE 4575, Blockchain and Applications (3 Hours)
- □ CSCE 4907, Cybersecurity Capstone I (3 Hours)
- □ CSCE 4927, Cybersecurity Capstone II (3 Hours)

#### ADVANCED SUPPORTING ELECTIVES

- 1 course (3 Hours) chosen from list options below
- 1 course (3 Hours) chosen from list options below
- 1 course (3 Hours) chosen from list options below
- □ 1 course (3 Hours) chosen from list options below

CSCE 4050, Applications of Cryptography (3 Hours)

CSCE 4350, Fundamentals of Database Systems (3 Hours)

CSCE 4357, Database Systems Security (3 Hours)

CSCE 4520, Wireless Networks and Protocols (3 Hours)

CSCE 4570, Information Privacy (3 Hours)

CSCE 4600, Introduction to Operating Systems (3 Hours)

INFO 4670, Data Analysis and Knowledge Discovery (3 Hours)

INFO 4710, Information Technology Management (3 Hours)

INFO 4745, Information Architecture (3 Hours)

CJUS 3340, Computer Crime (3 Hours)

CJUS 4330, Domestic and International Terrorism (3 Hours)

BCIS 4630, Fundamentals of Info. Technology Security (3 Hours)

BCIS 4720, Web-Based Information Technologies (3 Hours)

BCIS 4740, Administration and Policy in Info. Security (3 Hours)

## Cybersecurity

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH 1710	Calculus I Pre-req: MATH 1650 or Test Placement	4	F., Sp., Su.	MATH 1720	Calculus II Pre-req: MATH 1710	3	F., Sp., Su.
One	CHEM 1410	General Chemistry I Pre-req: MATH 1100 or higher	3	F., Sp., Su.	*CSCE 1045	Computer Programming II Pre-req: CSCE 1035, Co/Pre-req: MATH 1710	3	F., Sp.
Year Or	CHEM 1430	General Chemistry I Lab Co/Pre-req: CHEM 1410	1	F., Sp., Su.	TECM 2700	Technical Writing Pre-req: Communication Core	3	F., Sp., Su.
¥	*CSCE 1035	Computer Programming I Co/Pre-req: MATH 1710	4	F., Sp.	BIOL 1710	Biology I	3	F., Sp., Su.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	BIOL 1760	Biology I Lab Co/Pre-req: BIOL 1710	2	F., Sp., Su.
	Total Hours		15		Total Hours		14	

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	MATH	Linear Algebra	3	F., Sp.,	MATH	Applied Statistics	3	F., Sp.,
	2700	Pre-req: MATH 1720		Su.	3680	Co/Pre-req: MATH 1720		Su.
	PHYS	Mechanics	3	F., Sp.,	PHYS	Electricity & Magnetism	3	F., Sp.,
	1710	Pre-req: MATH 1710		Su.	2220	Pre-regs: MATH 1720 & PHYS 1710/1730		Su.
0	PHYS	Mechanics Lab	1	F., Sp.,	PHYS	Electricity & Magnetism Lab	1	F., Sp.,
Ž	1730	Co/Pre-req: PHYS 1710		Su.	2240	Co/Pre-req: PHYS 2220		Su.
a.	*CSCE	Foundations of Computing	3	F., Sp.,	+CSCE	Systems Programming	3	F., Sp.
Ϋ́e	2100	Pre-req: CSCE 1045		Su.	3600	Pre-reqs: CSCE 2100 & CSCE 2110		
	CSCE	Foundations of Data Structures	3	F., Sp.,	Supporting	Options at mydegreeaudit.unt.edu	3	Varies
	2110	Pre-req: CSCE 1045		Su.	Elective	Must complete pre-reqs		
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Core			Su.	Core			Su.
	Total				Total			
	Hours		16		Hours		16	

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	+CSCE 3530	Introduction to Computer Networks  Pre-req: CSCE 3600	3	F., Sp.	CSCE 3560	Computer Systems Security Pre-req: CSCE 3600	3	Sp.
ee	+CSCE 3550	Foundations of Computer Security Pre-req: CSCE 2110	3	F.	CSCE 4560	Secure Electronic Commerce Pre-req: CSCE 2110	3	Sp.
ar Three	+CSCE 4010	Social Issues in Computing Pre-req: CSCE 3600	3	F., Sp.	CSCE 4555	Computer Forensics Pre-req: CSCE 2110	3	Sp.
Year	Supporting Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	Varies	University Core	Options on mydegreeaudit.unt.edu	3	Sp.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		15		Total Hours		15	

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	CSCE 4907	Cybersecurity Capstone I Co-req: CSCE 4565	3	F.	CSCE 4927	Cybersecurity Capstone II Pre-req: CSCE 4907	3	Sp.
'n	CSCE 4565	Secure Software Systems Pre-req: CSCE 3550	3	F.	Supporting Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	Varies
Year Fo	+CSCE 4535	Introduction to Network Admin.  Pre-req: CSCE 3530	3	F.	Supporting Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	Varies
Ye	CSCE 4575	Blockchain and Applications Pre-req: CSCE 3600	3	F.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	MISC. Elective	Misc. Elective to reach 120 hours (if needed)	3	F., Sp., Su.
	Total Hours		15		Total Hours		15	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion. Per advisor approval, completion of CSCE 1030 and CSCE 1040 with minimum grades of "C" may substitute for CSCE 1035.

Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion.

Courses with + = Courses offered at Collin Higher Education Center (CHEC) in McKinney, TX during opposite term than Denton.

Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, BIOL, and CSCE require minimum grade of "C" for completion and/or prerequisite.

## **Electrical Engineering**

Bachelor of Science (B.S.) degree with a major in Electrical Engineering Department of Electrical Engineering, Discovery Park (NTDP) B-270; (940) 891-6872

#### **University Core**

#### **COMMUNICATION**

1 Course (3 Hours) – see mydegreeaudit.unt.edu
Grade of "C" or better is required

#### AMERICAN HISTORY I

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### **TECHNICAL COMMUNICATIONS**

■ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 2730, Multivariable Calculus (3 Hours)
- MATH 2700, Linear Algebra (3 Hours)
- MATH 3410, Differential Equations (3 Hours)
- MATH 3680, Applied Statistics (3 Hours)

Completion of the above courses will earn a Mathematics minor.

#### **SCIENCES**

- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- □ PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)
- □ CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)

### Major Requirements Grades of C or better

#### **ELECTRICAL ENGINEERING**

- EENG 1910, Introduction to Electrical Engineering(3 Hours)
- EENG 2610, Circuit Analysis, (3 Hours) & EENG 2611, Circuit Analysis Lab (1 Hour)
- EENG 2620, Signals and Systems (3 Hours) &
  - EENG 2621, Signals and Systems Lab (1 Hour)
- EENG 2710, Digital Logic Design (3 Hours) &
   EENG 2711, Digital Logic Design Lab (1 Hour)
- EENG 2920, Analog and Digital Circuit Design (3 Hours)
- EENG 3410, Engineering Electromagnetics (3 Hours) &
   EENG 3411, Engineering Electromagnetics Lab (1 Hour)
- EENG 3510, Electronics I (3 Hours) &
  - EENG 3511, Electronics I Lab (1 Hour)
- EENG 3520, Electronics II (3 Hours)
- EENG 3710, Computer Organization (3 Hours)
- EENG 3810, Communications Systems (3 Hours) &
   EENG 3811, Communication Systems Lab (1 Hour)
- EENG 3910, DSP System Design (3 Hours)
- EENG 3920, Modern Comm. System Design (3 Hours)
- EENG 4910, Senior Design I (3 Hours)
- EENG 4990, Senior Design II (3 Hours)
- EENG 4\*\*\* Elective (3 Hours)

EENG 4\*\*\* level elective can be chose from: EENG 4010, 4310, 4330, 4340, 4350, 4410, 4710, 4760, 4810, 4850, and 4900.

EENG 4010 is a topics course and the content of 4010 varies for each semester. EENG 4010 may be repeated for credit if you do not re-take the exact same topic the 2<sup>nd</sup> time.

EENG 4920 and 4951 cannot be taken as electives.

#### COMPUTER PROGRAMMING

□ CSCE 1030, Computer Science I (4 Hours)

#### <u>Management</u>

- OPSM 3830, Operations Management (3 Hours)
- ☐ MGMT 3850, Entrepreneurship (3 Hours)

A Business Foundations minor will fulfill the management requirement.

## Electrical Engineering

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH 1710	Calculus I Pre-req: MATH 1650 or Test Placement	4	F., Sp., Su.	*MATH 1720	Calculus II Pre-req: MATH 1710	3	F., Sp., Su.
	CHEM 1410	General Chemistry I	3	F., Sp.,	*PHYS 1710	Mechanics	3	F., Sp., Su.
		Pre-req: MATH 1100 or higher	1	Su.		Pre-reg: MATH 1710	1	
a	CHEM 1430	General Chemistry I Lab	1	F., Sp., Su.	*PHYS 1730	Mechanics Lab	1	F., Sp., Su.
)u(	*EENG	Co/Pre-req: CHEM 1410	3		EENG	Co/Pre-req: PHYS 1710	3	
Year One	1910	Learning to Learn	3	F., Sp.	2710	Digital Logic Design	3	F., Sp., Su.
Ϋ́	CSCE 1030	Computer Science I Co/Pre-req: MATH 1710	4	F., Sp., Su.	EENG 2711	Digital Logic Design Lab Co/Pre-req: EENG 2710	1	F., Sp., Su.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	*TECM 2700	Technical Writing Pre-req: Communication Core	3	F., Sp., Su.
	Total Hours		18		University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	1100.15		10		Total		17	
					Hours			
	MATH 2700	Linear Algebra  Pre-req: MATH 1720	3	F., Sp., Su.	MATH 2730	Multivariable Calculus  Pre-reg: MATH 1720	3	F., Sp., Su.
	MATH 3410	Differential Equations Pre-req: MATH 1720	3	F., Sp., Su.	EENG 2620	Signals and Systems Pre-regs: EENG 2610/2611	3	F., Sp.
						Co/Pre-req: MATH 2730 or 3410		
9	PHYS 2220	Electricity & Magnetism Pre-regs: MATH 1720 & PHYS 1710/1730	3	F., Sp., Su.	EENG 2621	Signals and Systems Lab Co/Pre-req: EENG 2620	1	F., Sp.
Year Two	PHYS 2240	Electricity & Magnetism Lab Co/Pre-req: PHYS 2220	1	F., Sp. Su.	EENG 2920	Analog Circuit Design  Pre-regs: EENG 1910, EENG 2610/2611, and EENG 2710/2711	3	F., Sp.
	*EENG 2610	Circuit Analysis Co/Pre-regs: PHYS 2220/2240, MATH 3410	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	EENG 2611	Circuit Analysis Lab Co/Pre-regs: EENG 2610	1	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total	Coffic regs. ELVG 2010			Total			
	Hours		14		Hours		16	
	MATH 3680	Applied Statistics Pre-reg: MATH 1710, Co/Pre-reg: MATH 1720	3	F., Sp., Su.	EENG 3520	Electronics II Pre-regs: EENG 3510/3511	3	F., Sp.
	EENG 3410	Electromagnetics  Pre-regs: EENG 2610/2611	3	F., Sp.	EENG 3710	Computer Organization Pre-regs: EENG 2710/2711, CSCE 1030	3	F., Sp.
	EENG 3411	Electromagnetics Lab Co/Pre-req: EENG 3410	1	F., Sp.	EENG 3810	Communications Systems Pre-regs: EENG 2620, 3510, MATH 3680	3	F., Sp.
ree	EENG 3510	Electronics I  Pre-regs: EENG 2610/2611	3	F., Sp., Su.	EENG 3811	Communications Systems Lab Co/Pre-reg: EENG 3810	1	F., Sp.
Year Three	EENG	Electronics I Lab	1	F., Sp.,	EENG	Modern Communications System Design	3	F., Sp.
Yea	3511	Co/Pre-req: EENG 3510		Su.	3920	Pre-req: EENG 2920 Co/Pre-reg: EENG 3520 and 3810/3811		
	EENG 3910	DSP System Design Pre-regs: EENG 2620/2621 and EENG 2920	3	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	Total Hours		16	
	Total Hours		17					
		Ontions at muda		Г С:	FENC	Ontions at mustamentally and all	1 2	
	EENG Elective	Options at mydegreeaudit.unt.edu  Must complete pre-reqs	3	F., Sp.	EENG Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	F., Sp.
	EENG Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	F., Sp.	EENG Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	F., Sp.
Four	EENG 4910	Senior Design I Pre-regs: EENG 3810/3811, 3910, 3920	3	F., Sp.	EENG 4990	Senior Design II Pre-regs: EENG 4910	3	F., Sp.
Year Four	OPSM 3830	Operations Management	3	F., Sp.	MGMT 3850	Entrepreneurship	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total				Total			
	Hours		15		Hours		15	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion.

Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion.

Courses with subject abbreviations of ENGL, TECM, MATH, CSCE, CHEM, PHYS, EENG, OPSM, and MGMT require minimum grade of "C" for completion and/or prereq.

## Information Technology

Bachelor of Arts (B.A.) degree with a major in Information Technology
Department of Computer Science and Engineering, Discovery Park (NTDP) F-201; (940) 565-2767

#### **University Core**

#### **COMMUNICATION**

1 Course (3 Hours) – see mydegreeaudit.unt.eduGrade of "C" or better is required

#### AMERICAN HISTORY I

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

☐ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

☐ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### CREATIVE ARTS

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### TECHNICAL COMMUNICATIONS

■ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1680 or MATH 1780, Probability (3 Hours)

#### SCIENCES

- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)

BIOL 1710, Biology I (3 hours) & BIOL 1760, Biology Lab (2 Hours)

## Major Requirements Grades of C or better

#### COMPUTER SCIENCE AND ENGINEERING

- □ CSCE 1030, Computer Science I (4 Hours)
- □ CSCE 1040, Computer Science II (3 Hours)
- □ CSCE 2100, Foundations of Computing (3 Hours)
- □ CSCE 2110, Foundations of Data Structures (3 Hours)
- □ CSCE 3055, IT Project Management (3 Hours)
- □ CSCE 3220, Human Computer Interfaces (3 Hours)
- □ CSCE 3420, Internet Programming (3 Hours)
- □ CSCE 3530, Introduction to Computer Networks (3 Hours)
- □ CSCE 3550, Foundations of Computer Security (3 Hours)
- ☐ CSCE 3600, Principles of Systems Programming (3 Hours)
- □ CSCE 3605, Systems Administration (3 Hours)
- □ CSCE 3615, Enterprise Systems Arch., Analysis and Design (3 Hours)
- □ CSCE 4010, Social Issues in Computing (3 Hours)
- □ CSCE 4350, Fundamentals of Database Systems (3 Hours)
- □ CSCE 4355, Database Administration (3 Hours)
- □ CSCE 4535, Network Administration (3 Hours)
- □ CSCE 4905, Information Technology Capstone I (3 Hours)
- □ CSCE 4925, Information Technology Capstone II (3 Hours)

#### **SUPPORTING AREA**

- □ Course approved by an advisor (3 Hours)
- □ Course approved by an advisor (3 Hours)
- ☐ Course approved by an advisor (3 Hours)
- ☐ Course approved by an advisor (3 Hours)
- □ Course approved by an advisor (3 Hours)
- ☐ Course approved by an advisor (3 Hours)
- Course approved by an advisor (3 Hours)

You must choose a supporting area (21 Hours) and complete approved courses. Check with your advisor concerning approved classes. Suggestions include, but are not limited to:

Security Health Professions

Networking Pre-Med/Pre-Vet/Pre-Dental

Information Systems Pre-Law

Data Science Education/Teach North Texas

Web DevelopmentPre-MBA BusinessGame DevelopmentGeneral BusinessProject ManagementManagementTechnical CommunicationsMarketing

Microsoft/Oracle/Cisco Cert. Logistics/Decision Sciences

Information Science

Graphic/Communications Design Geographic Information Systems (GIS)

Completion of CSCE 2610, CSCE 4560, & CSCE 4600 toward a Supporting Area in Security and/or Networking also earns a Security Certificate from the National Security Agency and Department of Homeland Security. CSCE 2610 requires EENG 2710/2711 as prerequisite.

A maximum of 6 hours may be taken for the Supporting Area from CSCE 4890, 4920, 4930, 4940, or 4950.

## Information Technology

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH 1710	Calculus I Pre-req: MATH 1650 or Test Placement	4	F., Sp., Su.	*CSCE 1040	Computer Science II Pre-req: CSCE 1030 Co/Pre-req: MATH 1710	3	F., Sp., Su.
ne	CHEM 1410 or BIOL 1710	General Chemistry I or Biology I Pre-req for CHEM 1410: MATH 1100 or higher Pre-req for BIOL 1710: none	3	F., Sp., Su.	MATH 1680 or MATH 1780	Statistics or Probability Models Pre-req for MATH 1680: none Pre-req for MATH 1780: MATH 1710	3	F., Sp., Su.
Year One	CHEM 1430 or BIOL 1760	General Chemistry I Lab or Biology I Lab Co/Pre-req for CHEM 1430: CHEM 1410 Co/Pre-req for BIOL 1760: BIOL 1710	1-2	F., Sp., Su.	*TECM 2700	Technical Writing Pre-req: Communication Core	3	F., Sp., Su.
	*CSCE 1030	Computer Science I Co/Pre-req: MATH 1710	4	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		15-16		Total Hours		15	
	*CSCE 2100	Foundations of Computing Pre-reg: CSCE 1040	3	F., Sp., Su.	*CSCE 2110	Foundations of Data Structures  Pre-reg: CSCE 1040	3	F., Sp., Su.
	PHYS 1710	Mechanics Pre-reg: MATH 1710	3	F., Sp., Su.	+CSCE 3600	Systems Programming Pre-reg: CSCE 2100	3	F., Sp.
9	PHYS 1730	Mechanics Lab Co/Pre-reg: PHYS 1710	1	F., Sp., Su.	Supporting Area	Options via mydegreeaudit.unt.edu or your advisor	3	F., Sp.
Year Two	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
Ϋ́	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	Total Hours		15	
	Total Hours		16					
	+CSCE 3055	IT Project Management Pre-reg: CSCE 2100	3	F.	+CSCE 3605	Systems Administration Pre-regs: CSCE 3600	3	Sp.
	+CSCE 3220	Human Computer Interfaces Pre-reg: CSCE 2100, 2110	3	F.	+CSCE 3615	Enterprise Systems Architecture Pre-regs: CSCE 2100	3	Sp.
ear Three	+CSCE 3420	Internet Programming Pre-req: CSCE 2100, 2110	3	F.	+CSCE 4010	Social Issues Pre-regs: CSCE 3600	3	F., Sp., Su.
Year <sup>-</sup>	+CSCE 3530	Introduction to Computer Networks Pre-req: CSCE 3600	3	F.	+CSCE 4350	Database Systems Pre-reg: CSCE 2100, 2110	3	Sp.
	Supporting Area	Options via mydegreeaudit.unt.edu or your advisor	3	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		15		Total Hours		15	
	+CSCE 3550	Foundations of Computer Security Pre-reg: CSCE 2110	3	F.	+CSCE 4925	Capstone II Pre-reg: CSCE 4905	3	Sp.
	+CSCE 4355	Database Administration  Pre-req: CSCE 4350	3	F.	Supporting Area	Options via mydegreeaudit.unt.edu or your advisor	3	F., Sp.
Four	+CSCE 4535	Network Administration  Pre-req: CSCE 3530	3	F.	Supporting Area	Options via mydegreeaudit.unt.edu or your advisor	3	F., Sp.
Year Four	+CSCE 4905	Capstone I Pre-regs: CSCE 3055, 3615	3	F.	Supporting Area	Options via mydegreeaudit.unt.edu or your advisor	3	F., Sp.
	Supporting Area	Options via mydegreeaudit.unt.edu or your advisor	3	F., Sp.	Supporting Area	Options via mydegreeaudit.unt.edu or your advisor	3	F., Sp.
	Total Hours		15		Total Hours		15	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion. Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion. Courses with + = Courses offered at Collin Higher Education Center (CHEC) in McKinney, TX. during opposite term than Denton. Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, BIOL, and CSCE require minimum grade of "C" for completion and/or prerequisite. Supporting area courses require minimum grade of "C" for completion and/or prerequisite.

## Materials Science and Engineering

Bachelor of Science (B.S.) degree with a major in Materials Science and Engineering Department of Materials Science and Engineering, Discovery Park (NTDP) E-132; (940) 565-3260

#### **University Core**

#### COMMUNICATION

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu Grade of "C" or better is required

#### **AMERICAN HISTORY I**

☐ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### **AMERICAN HISTORY II**

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

☐ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### <u>Creative arts</u>

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### TECHNICAL COMMUNICATIONS

■ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 2730, Multivariable Calculus (3 Hours)
- MATH 3410, Differential Equations (3 Hours)

## Major Requirements Grades of C or better

#### **SCIENCES**

- CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)
- □ CHEM 1420, General Chemistry II (3 Hours)
- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)
- □ PHYS 3010, Modern Physics (3 Hours)

#### MATERIALS SCIENCE AND ENGINEERING

- ENGR 2301, Statics (3 Hours)
- MTSE 1100, Discover How and Why Materials Matter (3 Hours)
- ☐ MTSE 3000, Fundamentals of Materials Science and Engr. I (3 Hours)
- MTSE 3001, Fundamentals of Materials Science and Engr. II (3 Hours)
- MTSE 3010, Bonding and Structure (3 Hours)
- ☐ MTSE 3020, Microstructure and Characterization (3 Hours)
- ☐ MTSE 3030, Thermodynamics and Phase Diagrams (3 Hours)
- MTSE 3040, Transport Phenomena (3 Hours)
- MTSE 3050, Mechanical Properties (3 Hours)
- ☐ MTSE 3060, Phase Transformations (3 Hours)
- MTSE 3070, Electrical, Optical, and Magnetic Properties (3 Hours)
- ☐ MTSE 3080, Materials Processing (3 Hours)
- ☐ MTSE 3090, Laboratory I (1 Hour)
- MTSE 3100, Laboratory II (1 Hour)
- ☐ MTSE 4010, Physical Metallurgy Principles (3 Hours)
- MTSE 4030, Ceramic Science and Engineering (3 Hours)
- ☐ MTSE 4050, Polymer Science and Engineering (3 Hours)
- MTSE 4060, Materials Selection and Performance (3 Hours)
- ☐ MTSE 4090, Senior Design I (3 Hours)
- ☐ MTSE 4100, Senior Design II (3 Hours)

#### MATERIALS SCIENCE AND ENGINEERING ELECTIVES

- □ 1 MTSE 4\*\*\* elective (3 Hours) chosen from list options below
- □ 1 MTSE 4\*\*\* elective (3 Hours) chosen from list options below

MTSE 4020, Materials in Medicine (3 Hours)

MTSE 4040, Computational Materials Science (3 Hours)

MTSE 4070, Electronic Materials (3 Hours)

### Materials Science and Engineering

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH	Calculus I	4	F., Sp.,	*MATH	Calculus II	3	F., Sp.,
	1710	Pre-req: MATH 1650 or Test Placement		Su.	1720	Pre-req: MATH 1710		Su.
	*CHEM	General Chemistry I	3	F., Sp.,	*PHYS	Mechanics	3	F., Sp.,
	1410	Pre-reg: MATH 1100 or higher		Su.	1710	Pre-reg: MATH 1710		Su.
a	*CHEM	General Chemistry I Lab	1	F., Sp.,	*PHYS	Mechanics Lab	1	F., Sp.,
Ě	1430	•	1	Su.	1730		1	Γ., 3ρ., Su.
Ī		Co/Pre-req: CHEM 1410	2			Co/Pre-req: PHYS 1710	-	
Year One	*MTSE 1100	Discover How and Why Materials Matter	3	F.	*CHEM 1420	General Chemistry II Pre-req: CHEM 1410, 1430	3	F., Sp.
	Comm.	Options on mydegreeaudit.unt.edu	3	F., Sp.,	*TECM	Technical Writing	3	F., Sp.,
	Core	,		Su.	2700	Pre-reg: Communication Core		Su.
	Total				University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Hours		14		Core	options on mydegreeduditionalitiedu		Su.
					Total			
					Hours		16	
	MATH	Multivariable Calculus	3	F., Sp.,	MATH	Differential Equations	3	F., Sp.,
	2730	Pre-reg: MATH 1720		Su.	3410	Pre-reg: MATH 1720		Su.
	PHYS	Electricity & Magnetism	3	F., Sp.,	PHYS	Modern Physics	3	F., Sp.
	2220	Pre-regs: MATH 1720 & PHYS 1710/1730		Su.	3010	Pre-regs: PHYS 2220, 2240		
	PHYS	Electricity & Magnetism Lab	1	F., Sp.,	MTSE	Fundamentals II	3	Sp.
0	2240	Co/Pre-req: PHYS 2220	_	Su.	3001	Co/Pre-reg: MTSE 3000		٠,
≥	*MTSE	Fundamentals I	3	F., Sp.	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
`=	3000		3	1 ., Jp.	Core	Options on mydegreeaddit.unt.edd	,	Su.
Year Two		Pre-req: CHEM 1410, 1430	2	Г С-		0 .: 1	-	
	ENGR	Statics	3	F., Sp.,	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	2301	Pre-regs: MATH 1710, PHYS 1710, 1730		Su.	Core			Su.
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	Total		4.5	
	Core			Su.	Hours		15	
	Total		4.6					
	Hours		16					
	MTSE	Bonding and Structure	3	F.	MTSE	Mechanical Properties	3	Sp.
	3010	Pre-reg: MTSE 3000			3050	Pre-reg: MTSE 3000		·
	MTSE	Microstructure and Characterization	3	F.	MTSE	Phase Transformations	3	Sp.
	3020	Pre-reg: MTSE 3000			3060	Pre-reg: MTSE 3010, 3030, 3040		- 4-
	MTSE	Thermodynamics and Phase Diagrams	3	F.	MTSE	Elect., Optical, Magnetic Properties	3	Sp.
e	3030	Pre-reg: MTSE 3000			3070	Pre-req: MTSE 3000		Sp.
Year Three	MTSE	,	3	F.	MTSE		3	Çn.
F	3040	Transport Phenomena	3	г.	3080	Materials Processing	3	Sp.
ea		Pre-req: MTSE 3000, MATH 3410		_		Pre-req: MTSE 3040		-
>	MTSE	Laboratory I	1	F.	MTSE	Laboratory II	1	Sp.
	3090	Pre-req: MTSE 3000			3100	Pre-req: MTSE 3090		
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,
	Core			Su.	Core			Su.
	Total				Total			
	Hours		16		Hours		16	
	MTSE	Physical Metallurgy Principles	3	F.	MTSE	Polymer Science and Engineering	3	Sp.
	4010	Pre-regs: MTSE 3010, 3030, 3040			4050	Pre-req: MTSE 3000		
	MTSE	Ceramic Science and Engineering	3	F.	MTSE	Senior Design II	3	Sp.
	4030	Pre-reqs: MTSE 3010, 3020, 3040		]	4100	Pre-req: MTSE 4090		-,-
_	MTSE	Selection and Performance	3	F.	MTSE	MTSE 4020 or MTSE 4040 or MTSE 4070.	3	Sp.
בַ	4060		3	ſ .	Elective	Must complete pre-reqs.	3	οp.
요		Pre-regs: MTSE 3030, 3040, 3050	2	-			-	C -
Year Four	MTSE	Senior Design I	3	F.	MTSE	MTSE 4020 or MTSE 4040 or MTSE 4070.	3	Sp.
۲e	4090	Pre-regs: MTSE 3010, 3020, 3030, 3040, 3050,			Elective	Must complete pre-reqs.		
	L	3070, 3080	_		<u> </u>		<del>                                     </del>	
	University	Options on mydegreeaudit.unt.edu	3	F., Sp.,	Total		1.5	
	Core			Su.	Hours		12	
	Total							
	Hours		15	1	Ī	1	1	1

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion.

Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion.

Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, ENGR, and MTSE require minimum grade of "C" for completion and/or prerequisite.

## Mechanical and Energy Engineering

Bachelor of Science (B.S.) degree with a major in Mechanical and Energy Engineering Department of Mechanical Engineering, Discovery Park (NTDP) F-101; (940) 565-2400

#### **University Core**

#### **COMMUNICATION**

1 Course (3 Hours) – see mydegreeaudit.unt.eduGrade of "C" or better is required

#### AMERICAN HISTORY I

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### **AMERICAN HISTORY II**

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

□ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### TECHNICAL COMMUNICATIONS

□ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- ☐ MATH 2700, Linear Algebra (3 Hours)
- MATH 2730, Multivariable Calculus (3 Hours)
- MATH 3410, Differential Equations (3 Hours)

#### **SCIENCES**

- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)
- □ CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)

### Major Requirements Grades of C or better

#### MECHANICAL AND ENERGY ENGINEERING

- MEEN 1000, Discover Mechanical and Energy (2 Hours)
- ☐ MEEN 2110, Engineering Data Analysis (3 Hours)
- MEEN 2210, Thermodynamics I (3 Hours)
- ☐ MEEN 2240, Programming for Mechanical Engr. (3 Hours)
- MEEN 2301, Mechanics I (3 Hours)
- MEEN 2302, Mechanics II (3 Hours)
- MEEN 2332, Mechanics III (3 Hours)
- MEEN 3100, Manufacturing Processes (3 Hours)
- MEEN 3110, Thermodynamics II (3 Hours)
- MEEN 3120, Fluid Mechanics (3 Hours)
- MEEN 3130, Machine Elements (3 Hours)
- MEEN 3210, Heat Transfer (3 Hours)
- ☐ MEEN 3230, System Dynamics and Controls (3 Hours)
- MEEN 3240, Laboratory I (2 Hours)
- MEEN 3242, Laboratory II (1 Hour)
- MEEN 3250, Analytical Methods (3 Hours)
- MEEN 4150, Design I (3 Hours)
- MEEN 4250, Capstone Design (3 Hours)
- ENGR 1304, Engineering Graphics (3 Hours)
- EENG 2610, Circuit Analysis (3 Hours)
- MTSE 3000, Fundamentals of Materials Sci. & Engr. (3 Hours) & MTSE 3003, Fundamentals I Lab (1 Hour)

#### **ENERGY FLECTIVES**

- ☐ 1 Energy Elective course (3 Hours) chosen from list below
- □ 1 Energy Elective course (3 Hours) chosen from list below

MEEN 3125	MEEN 4310	MEEN 4332	MEEN 4410
MEEN 4110	MEEN 4315	MEEN 4335	MEEN 4810
MEEN 4112	MEEN 4320	MEEN 4340	
MEEN 4300	MEEN 4330	MEEN 4350	

#### TECHNICAL FLECTIVES

- □ 1 Technical Elective course (3 Hours) chosen from list below
- ☐ 1 Technical Elective course (3 Hours) chosen from list below

MEEN 4120	MEEN 4151	MEEN 4415	MEEN 4800
MEEN 4130	MEEN 4152	MEEN 4488	MEEN 4930
MEEN 4140	MEEN 4160	MEEN 4510	MFET 4190

## Mechanical and Energy Engineering

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH	Calculus I	4	F., Sp.,	MATH	Calculus II	3	F., Sp.,
	1710	Pre-reg: MATH 1650 or Test Placement		Su.	1720	Pre-req: MATH 1710		Su.
	CHEM	General Chemistry I	3	F., Sp.,	*PHYS	Mechanics	3	F., Sp.,
	1410	Pre-req: MATH 1100 or higher		Su.	1710	Pre-reg: MATH 1710		Su.
One	CHEM	General Chemistry I Lab	1	F., Sp.,	*PHYS	Mechanics Lab	1	F., Sp.,
ō	1430	Co/Pre-req: CHEM 1410		Su.	1730	Co/Pre-req: PHYS 1710		Su.
Year	*MEEN 1000	Discover Mechanical & Energy Pre-req: MATH 1650	2	F., Sp.	ENGR 1304	Engineering Graphics	3	F., Sp.
	*Comm. Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	TECM 2700	Technical Writing Pre-req: Communication Core	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		16				16	
	•		•		•			
	MATH 2730	Multivariable Calculus Pre-req: MATH 1720	3	F., Sp., Su.	MATH 3410	Differential Equations Pre-req: MATH 1720	3	F., Sp., Su.
	PHYS 2220	Electricity & Magnetism Pre-regs: MATH 1720 & PHYS 1710/1730	3	F., Sp., Su.	*MEEN 2210	Thermodynamics I Pre-regs: MEEN 1000, MATH 1720, & PHYS 1710	3	F., Sp., Su.
	PHYS 2240	Electricity & Magnetism Lab Co/Pre-req: PHYS 2220	1	F., Sp., Su.	*MEEN 2302	Mechanics II Pre-regs: MEEN 2301 & MATH 1720	3	F., Sp., Su.
Year Two	*MEEN	Mechanics I	3	F., Sp.,	MEEN	Mechanics III	3	F., Sp.,
E	2301	Pre-req: PHYS 1710/1730, MEEN 1000		Su.	2332	Pre-req: MEEN 2301		Su.
Υe	MEEN 2240	Programming for Mechanical Engineers Pre-req: MEEN 1000, Co-req MATH 2700	3	F., Sp.	EENG 2610	Circuit Analysis Pre-regs: MATH 1720 Co/Pre-reg: PHYS 2220/2240	3	F., Sp., Su.
	MATH 2700	Linear Algebra Pre-reg: MATH 1720	3	F., Sp., Su.	MEEN 2110	Engineering Data Analysis  Pre-regs: MATH 2700 & MEEN 1000	3	F., Sp., Su.
	Total Hours		16				18	
	MEEN 3110	Thermodynamics II Pre-req: MEEN 2210	3	F., Sp., Su.	MEEN 3130	Machine Elements Pre-regs: MEEN 2332 & ENGR 1304	3	F., Sp., Su.
	MEEN 3120	Fluid Mechanics Pre-regs: MATH 2730, 3410, MEEN 2210, 2332	3	F., Sp., Su.	MEEN 3210	Heat Transfer Pre-regs: MEEN 3110, 3120, 3250	3	F., Sp., Su.
ee	MEEN 3240	Laboratory I Pre-regs: MEEN 2110, 2210, & MATH 3410	2	F., Sp.	MEEN 3230	Dynamics and Controls Pre-regs: MEEN 2302, MATH 2700, 3410	3	F., Sp., Su.
ear Three	MEEN 3250	Analytical Methods Pre-regs: MEEN 2240 & MATH 3410	3	F., Sp., Su.	MEEN 3242	Laboratory II Pre-reqs: MEEN 3240 & 3120, Co/Pre-req: MEEN 3210	1	F., Sp.
Ye	MTSE 3000	Materials Fundamentals Pre-req: CHEM reqt.	3	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	MTSE 3003	Materials Lab  Pre-req: CHEM reqt.	1	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours	· ·	15				16	
					_			
	MEEN 3100	Manufacturing Processes  Pre-regs: MEEN 2332, & MTSE 3000/3003	3	F., Sp.	MEEN 4250	Capstone Design Pre-req: MEEN 3100 & 4150	3	F., Sp.
_	MEEN 4150	Design I Pre-regs: EENG 2610, MEEN 3130, 3210, 3230, & 3242 Co/Pre-req: MEEN 3100	3	F., Sp.	Energy Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	F., Sp.
Year Four	Energy Elective	Options at mydegreeaudit.unt.edu  Must complete pre-reqs	3	F., Sp.	Technical Elective	Options at mydegreeaudit.unt.edu  Must complete pre-regs	3	F., Sp., Su.
Year	Technical Elective	Options at mydegreeaudit.unt.edu Must complete pre-regs	3	F., Sp.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total			-				-
	Hours		15				15	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 GPA required for completion. Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion. Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, ENGR, EENG, MEEN, and MTSE require minimum grade of "C" for completion and/or prerequisite.

## Mechanical Engineering Technology

Bachelor of Science in Engineering Technology (B.S.E.T) degree with a major in Mechanical Engineering Technology Department of Mechanical Engineering, Discovery Park (NTDP) F-115; (940) 565-2400

#### **University Core**

#### COMMUNICATION

1 Course (3 Hours) – see mydegreeaudit.unt.edu
 Grade of "C" or better is required

#### AMERICAN HISTORY I

□ 1 Course (3 Hours) chosen from HIST 2610 or HIST 2675

#### AMERICAN HISTORY II

□ 1 Course (3 Hours) chosen from HIST 2620 or HIST 2685

#### FEDERAL GOVERNMENT/POLITICAL SCIENCE

☐ 1 Course (3 Hours) chosen from PSCI 2305 or PSCI 2315

#### STATE GOVERNMENT/POLITICAL SCIENCE

□ 1 Course (3 Hours) chosen from PSCI 2306 or PSCI 2316

#### **CREATIVE ARTS**

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### LANGUAGE, PHILOSOPHY, AND CULTURE

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

#### SOCIAL AND BEHAVIORAL SCIENCES

☐ 1 Course (3 Hours) – see mydegreeaudit.unt.edu

## Major Requirements Grades of C or better

#### TECHNICAL COMMUNICATIONS

□ TECM 2700, Technical Writing (3 Hours)

#### **MATHEMATICS**

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)

#### **SCIENCES**

- PHYS 1710, Mechanics (3 Hours) & PHYS 1730 Mechanics Lab (1 Hour)
- PHYS 2220, Electricity & Magnetism (3 Hours) & PHYS 2240, Electricity & Magnetism Lab (1 Hour)
- CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)

#### COMPUTER PROGRAMMING

□ CSCE 1030, Computer Science I (4 Hours)

## Major Requirements Grades of C or better

#### MECHANICAL ENGINEERING TECHNOLOGY

- ENGR 1030, Technological Systems (3 Hours)
- ENGR 1304, Engineering Graphics (3 Hours)
- ENGR 2301, Statics (3 Hours)
- ENGR 2302, Dynamics (3 Hours)
- ENGR 2332, Mechanics and Materials (4 Hours)
- EENG 2610, Circuit Analysis (3 Hours) & EENG 2611, Circuit Analysis Lab (1 Hour)
- ENGR 3450, Engineering Materials (4 Hours)
- ELET 3980, Digital Control of Industrial Processes (3 Hours)
- ☐ MEET 3550, Geometrical Dimensions & Tolerancing (3 hours)
- MEET 3650, Design of Mechanical Components (3 Hours)
- MEET 3940, Fluid Mechanics Applications (3 Hours)
- MEET 3990, Applied Thermodynamics (3 Hours)
- MEET 4050, Mechanical Design (3 Hours)
- MEET 4350, Heat Transfer Applications (3 Hours)
- MEET 4360, Experimental Thermal Sciences (3 Hours)
- MEET 4780, Senior Design I (1 Hour)
- MEET 4790, Senior Design II (3 Hours)
- ☐ MFET 3110, Machining Principles and Processes (3 Hours)
- MFET 4190, Quality Assurance (3 Hours)
- ☐ MFET 4200, Engineering Cost Analysis (3 Hours)
- ☐ MFET 4210, CAD/CAM System Operations (3 Hours)

#### TECHNICAL ELECTIVES

- Advanced level (3\*\*\* or 4\*\*\* level) course chose from appropriate elective options (3 Hours)
- ☐ Advanced level (3\*\*\* or 4\*\*\* level) course chose from appropriate elective options (3 Hours)
- Any level course chosen from appropriate elective options (3 Hours)

#### Recommended elective options are below:

MFET 4220	LGAV 3100	CNET 3410
MEET 3750	LGAV 3110	MKTG 3651
MEET 4100	LGAV 3120	MGMT 3820
MEET 4100	LGAV 3130	MGMT 3850

Completion of MEET 3550 or MEET 3750 or MEET 4100 or MFET 4220 for an advanced technical elective earns a Certificate in Manufacturing Engineering Technology.

## Mechanical Engineering Technology

2021-2022 Catalog: Sample Four-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	*MATH 1710	Calculus I Pre-req: MATH 1650 or Test Placement	4	F., Sp., Su.	MATH 1720	Calculus II Pre-req: MATH 1710	3	F., Sp., Su.
	CHEM 1410	General Chemistry I  Pre-reg: MATH 1100 or higher	3	F., Sp., Su.	*PHYS 1710	Mechanics Pre-reg: MATH 1710	3	F., Sp., Su.
One	CHEM 1430	General Chemistry I Lab	1	F., Sp., Su.	*PHYS 1730	Mechanics Lab	1	F., Sp., Su.
Year One	ENGR 1030	Co/Pre-req: CHEM 1410 Technological Systems	3	F., Sp.	*TECM 2700	Co/Pre-req: PHYS 1710  Technical Writing	3	F., Sp.,
_	*ENGR	Engineering Graphics	3	F., Sp.	University Core	Pre-req: Communication Core Options on mydegreeaudit.unt.edu	3	Su. F., Sp., Su.
	*Comm.	Options on mydegreeaudit.unt.edu	3	F., Sp.,	University	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		17	Su.	Core Total Hours		16	Su.
	Hours		1 -7		110013		I	ı
	PHYS 2220	Electricity and Magnetism Pre-regs: MATH 1720, PHYS 1710, 1730	3	F., Sp., Su.	ENGR 2302	Dynamics Pre-reqs: ENGR 2301, MATH 1720	3	Sp.
	PHYS 2240	Electricity and Magnetism Lab Co-reg/pre-reg: PHYS 2220	1	F., Sp., Su.	ENGR 2332	Mechanics of Materials Pre-regs: ENGR 2301	4	F., Sp., Su.
Year Two	*ENGR 2301	Statics  Pre-regs: PHYS 1710, 1730	3	F., Sp., Su.	EENG 2610	Circuit Analysis Pre-req: MATH 1720 Co/Pre-req: PHYS 2220/2240	3	F., Sp., Su.
Yea	CSCE 1030	Computer Science I Co/Pre-req: MATH 1710	4	F., Sp.	ENGR 2611	Circuit Analysis Lab Co/Pre-req: EENG 2610	1	F., Sp.
	Technical Elective	Options at mydegreeaudit.unt.edu  Must complete pre-regs	3	Varies	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	Total Hours		14		Total Hours		14	
	ENGR	Engineering Materials	4	F., Sp.	ELET	Digital Controls of Industrial Processes	3	Sp.
	3450 MEET 3940	Pre-req: PHYS 1710, CHEM 1410/1430 Fluid Mechanics	3	F.	3980 MEET 3650	Pre-req: MATH 1650 or higher  Design of Mechanical Components	3	Sp.
ee	MEET 3990	Applied Thermodynamics	3	F.	MFET 4190	Pre-req: ENGR 2332  Quality Assurance	3	Sp.
Year Three	MFET 3110	Pre-req: ENGR 2332, CHEM 1410/1430  Machining Principles and Processes Pre-req: MATH 1650	3	F., Sp.	MFET 4210	Pre-req: MATH 1720  CAD/CAM System Operation Pre-req: MFET 3110, ENGR 1304, and MATH/PHYS/CHEM requirements	3	F., Sp.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.	MEET 3550	Geometric Dimens. and Tolerancing  Pre-regs: MFET 3110, ENGR 1304	3	Sp.
	Total Hours		16		Total Hours	776 76q3.191127 3110, ENGN 1304	15	
				· -	<b>1</b>			
	MEET 4050	Mechanical Design Pre-req: MEET 3650	3	F.	MEET 4790	Senior Design II Pre-req: MEET 4780	3	Sp.
	MEET 4350	Heat Transfer Applications Pre-req: MEET 3940, 3990	3	F.	MEET 4360	Experimental Thermal Sciences Pre-req: MEET 3940, 3990, 4350	3	Sp.
ž	MEET 4780	Senior Design I Co/Pre-req: MFET 4210, MEET 4050, 4350	1	F.	Advanced Elective	Options at mydegreeaudit.unt.edu Must complete pre-reqs	3	Varies
Year Four	MFET 4200	Engineering Cost Analysis Pre-req: MATH 1720	3	F.	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
Ye	Advanced Elective	Options at mydegreeaudit.unt.edu Must complete pre-regs	3	Varies	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.
	University Core	Options on mydegreeaudit.unt.edu	3	F., Sp., Su.				
	Total Hours		16		Total Hours		15	

Course in Bold = Destination course required to transition to a full-major. Minimum grade of "C" and 2.0 UNT GPA required for completion.

Courses with \* = Foundations courses required to progress to advanced level courses. Minimum grade of "C" required for completion.

Courses with subject abbreviations of ENGL, TECM, MATH, CHEM, PHYS, ENGR, ELET, CSCE, MEET, and MFET require minimum grade of "C" for completion and/or prerequisite.

#### Minor/Certificate Information GAME PROGRAMMING CERTIFICATE (12 Hours) ADDITIVE AND DIGITAL MANUFACTURING CERTIFICATE (12 Hours) ■ CSCE 4210, Game Programming I (3 Hours) TECM 2700, Technical Writing (3 Hours) CSCE 4220, Game Programming II (3 Hours) ENGR 299Z or MTSE 299Z or MEEN 299Z (0 Hours) CSCE 4250, Topics in Game Development (3 Hours) 9 hours (3 Courses) chosen from ENGR 1304, MTSE 3000, 4900 CSCE 4255, Programming Math & Physics for Games (3 Hours) (Additive Manufacturing), 4040, 4060, MEEN 4800 (CAD/CAE), 3100, MEET 3550, 3750, 4100, ENGR 3450, MGMT 4850, DSCI 2710, OPSM 3830 GENERAL ENGINEERING TECHNOLOGY MINOR (18 Hours) 12 hours (4 courses) chosen from CNET, ELET, ENGR, MEET, MFET, or **BIOMEDICAL ENGINEERING MINOR (18 Hours)** NUET 1\*\*\*, 2\*\*\*, 3\*\*\*, and/or 4\*\*\* level 6 advanced hours (2 courses) chosen from CNET, ELET, ENGR, MEET, BMEN 2210, DAQ Practices (3 Hours) MFET, or NUET 3\*\*\* or 4\*\*\* level BMEN 2320, Biomedical Instrumentation I (3 Hours) BMEN 3350, Biomedical Transport Phenomena (3 Hours) 6 advanced hours (2 courses) chosen from: MANUFACTURING ENGINEERING TECHNOLOGY CERTIFICATE (15 Hours) BMEN 3311, Biomedical Signal Analysis (3 Hours) MFET 3110, Machining Principles and Processes (4 Hours) BMEN 3312, Intro to Biomechanics (3 Hours) MFET 4190, Quality Assurance (3 Hours) BMEN 3321, Biomaterials (3 Hours) MFET 4200, Engineering Cost Analysis (2 Hours) Plus 3 advanced hours (1 course) chosen from BMEN 4\*\*\* MFET 4210, CAD/CAM System Operations (3 Hours) 3 Hours (1 course) chosen from: COMPUTER SCIENCE AND ENGINEERING MINOR (19 Hours) MEET 3550, Geometric Dimensioning & Tolerancing (3 Hours) CSCE 1030, Computer Science I (4 Hours), or MEET 3750, Digital Marketing (3 Hours) CSCE 1035, Computer Programming I (4 Hours) MEET 4100, Fund. of Product/Process Design & Develop. (3 Hours) CSCE 1040, Computer Science II (3 Hours), or MFET 4220, CNC Programming and Operation (3 Hours) CSCE 1045, Computer Programming II (3 Hours) CSCE 2100, Foundations of Computing (3 Hours) MATERIALS SCIENCE AND ENGINEERING MINOR (18 Hours) CSCE 2110, Foundations of Data Structures (3 Hours) ■ MTSE 3000, Fundamentals of Materials Sci. & Engr. I (3 Hours) CSCE 3\*\*\* or 4\*\*\*, CSCE advanced level course (3 Hours) 6 advanced hours (2 courses) chosen from: CSCE 3\*\*\* or 4\*\*\*, CSCE advanced level course (3 Hours) MTSE 3010, Bonding and Structure (3 Hours) MTSE 3030, Thermodynamics & Phase Diagrams (3 Hours) **CYBERSECURITY MINOR** (19 Hours) MTSE 3050, Mechanical Properties of Materials (3 Hours) □ CSCE 1035, Computer Programming I (4 Hours) MTSE 3070), Elect., Optic, & Magnetic Properties (3 Hours) CSCE 1045, Computer Programming II (3 Hours) 9 advanced hours (3 courses) chosen from options above or from ☐ CSCE 2110, Foundations of Data Structures (3 Hours) any MTSE 3\*\*\* or MTSE 4\*\*\* level courses. MTSE 3001 is recommended. □ CSCE 3550, Foundations of Security (3 Hours) CSCE 3560, Computer Systems Security (3 Hours) MECHANICAL AND ENERGY ENGINEERING MINOR (18 Hours) CSCE 3600, Systems Programming (3 Hours) ■ MEEN 2210, Thermodynamics I (3 Hours) MEEN 2302, Mechanics II (3 Hours) **ELECTRICAL ENGINEERING MINOR (18 Hours)** MEEN 2332, Mechanics III (3 Hours) EENG 2610, Circuit Analysis, (3 Hours) & 9 advanced hours chosen from: EENG 2611, Circuit Analysis Lab (1 Hour) MEEN 3100, Manufacturing Processes (3 Hours) EENG 2620, Signals and Systems (3 Hours) & MEEN 3110, Thermodynamics II (3 Hours) EENG 2621, Signals and Systems Lab (1 Hour) MEEN 3120, Fluid Mechanics (3 Hours) EENG 2710, Digital Logic Design (3 Hours) & MEEN 3130, Machine Elements (3 Hours) EENG 2711, Digital Logic Design Lab (1 Hour) MEEN 3210, Heat Transfer (3 Hours) EENG 3510, Electronics I (3 Hours) MEEN 3230, Systems Dynamics and Controls (3 Hours) EENG 4\*\*\*, EENG advanced level course (3 Hours) MEEN 3240, MEE Lab I (2 Hours) MEEN 3242, MEE Lab II (1 Hour) ELECTROMECHANICAL SYSTEMS AND MECHATRONICS CERTIFICATE MEEN 4110, Alternative Energy (3 Hours) (12 Hours) MEEN 4140, Finite Element Analysis (3 Hours)

12 hours (4 courses) chosen from EENG 2620, EENG 3510,

**ENERGY ASSESSMENT OF BUILDINGS CERTIFICATE** (18 Hours)

MEEN 4320, Building Energy Systems (3 Hours)

Commercial Buildings (3 Hours)

Residential Buildings (3 Hours)

■ MEEN 3220, Thermal Fluid Science for Buildings (3 Hours)

MEEN 4760

EENG 3520, EENG 4310, MEEN 2302, MEEN 3130, MEEN 3230,

MEEN 4335, Comp. Sim. Of Building Energy Systems (3 Hours)

MEEN 4350, Energy Efficiencies and Green Building Design for

MEEN 4340, Energy Efficiencies & Green Building Design for

SECURITY CERTIFICATE (18 Hours)

CSCE 2610, Assembly Lang. and Comp. Organization (3 Hours)

CSCE 3530, Intro. To Computer Networks (3 Hours)

CSCE 3550, Foundations of Computer Security (3 Hours)

MEEN 4160, Mechanical Vibrations (3 Hours)

CSCE 4350, Intro. To Database Systems Design (3 Hours)

CSCE 4560, Secure Electronic Commerce (3 Hours)

CSCE 4600, Operating Systems (3 Hours)

Completion of a minor and/or a certificate is not required in order to graduate. Must complete appropriate prerequisites for minor or certificate courses. Grades of "C" required for most minor or certificate courses.

## **University Core Options**

**COMMUNICATION** (1 Course)

ENGL 1310, First-Year Writing I

ENGL 1311, Honors First-Year Writing I

ENGL 1315, Writing about Literature I

LING 1312, Writing for International Students

TECM 1700, Intro. To Technical Writing

AMERICAN HISTORY I (1 Course)

HIST 2610, U.S. History to 1865

HIST 2675, Honors U.S. History to 1865

AMERICAN HISTORY II (1 Course)

HIST 2620, U.S. History from 1865

HIST 2685, Honors U.S. History from 1865

FEDERAL GOVT/POLI. SCIENCE (1 Course)

PSCI 2305, U.S. Political Behavior & Policy PSCI 2315, Honors U.S. Political Behav. & Policy

STATE GOVT/POLI. SCIENCE (1 Course) PSCI 2306, U.S. and Texas

PSCI 2316, Honors U.S. and Texas

CREATIVE ARTS (1 Course)

ART 1300, Art Appreciation

ART 1301, Honors Art Appreciation

ART 2360, Art History Survey II

ART 2370, Art History Survey III

COMM 2060, Performance of Literature

DANC 1200, Appreciation of Dance

DANC 2800, Survey of Dance

MUJS 3400, Understanding Jazz

MUMH 1610, Music as Communication

MUMH 2040, Music Appreciation

MUMH 2050, Sounds and Cinema

MUMH 2060, History of Rock

MUMH 3000, Nineteenth-Century Music

MUMH 3010, Twentieth-Century Music

MUMH 3100, Music, Gender, Sexuality

MUMH 3200, Music as Politics

CREATIVE ARTS Cont'd (1 Course)

THEA 1340, Aesthetics of the Theatre

THEA 2340, Theater Appreciation

THEA 3030, World Theatre to 1700

THEA 3040, World Theatre from 1700

LANGUAGE, PHILOSOPHY, & CULTURE

(1 Course)

Ager 2250, Aging in Film and Lit

ANTH 3101, American Culture and Society

ANTH 3110, Indigenous People of N. Am.

ANTH 3120, Indigenous Cultures of S.W.

ANTH 3140, Latinos in the U.S.

ANTH 3200, Latin American Cultures

ANTH 3210 Mesoamerica

ANTH 3220, Mayan Culture

ANTH 3300, Peoples of the Pacific

ANTH 3400, Peoples of Africa

ANTH 3500, Peoples of the Middle East

ANTH 3700, Peoples of South Asia

ART 2350, Art History Survey I

ENGL 2210, World Literature to 1700

ENGL 2220. World Literature from 1700

**FNGL 2321 British Literature** 

ENGL 2326 American Literature

ENGL 2331 World Literature

ENGL 2351 Mexican American Literature

ENGL 3450, Short Story

FREN 3040, France Today

FREN 4060, Studies in French Literature

FREN 4310. Contemp. French Civilization

GEOG 1000, National Parks

GERM 3040, Topics in German Culture

GERM 3050, Topics in German Culture

HDFS 2313, Courtship and Marriage

HIST 1050, World History to 16th Century

HIST 1060, World History from 16th Century

ITAL 3040, Topics in Italian Culture

ITAL 3050, Comp. Italian Culture Through Film

JAPN 3020, Advanced Japanese I

LING 2050, Language of Now

LANGUAGE, PHILOSOPHY, & CULTURE

Cont'd (1 Course)

MUET 2000, Global Perspectives

MUET 3030. Music Cultures of the World

PHIL 1050, Introduction to Philosophy

PHIL 1400, Contemporary Moral Issues

PHIL 2050, Introduction to Logic

PHIL 2070, World Religions

PHIL 2100, Intro. To Judaism

PHIL 2310, Intro. To Ancient Philosophy

PHIL 2600, Ethics in Science

WLLC 3810, Russian Popular Culture

#### SOCIAL AND BEHAVIORAL SCIENCES

(1 Course)

AGER 4560, Minority Aging

AGER 4800, Social Context of Aging

ANTH 1010, Intro. To Anthropology

ANTH 2300, Culture and Society

BEHV 2300, Behavior Principles I

CJUS 2100, Crime and Justice in the U.S.

COMM 2020, Interpersonal Comm.

EADP 4050, Special Pop. In Disasters

ECON 1100, Microeconomics

ECON 1110. Macroeconomics

GEOG 1200, Global Societies

HDFS 1013, Human Development

HLTH 2200, Family Life and Human Sexuality

JOUR 1210, Mass Comm. And Society

MDSE 2750, Consumers in Global Market

PADM 2100, Cultural Competency

PSYC 1630, General Psychology I

PSYC 1650, Biological Psychology

PSYC 3620, Developmental Psychology RHAB 3100, Disability and Society

SOCI 1510, Intro to Sociology

SOWK 1450, Intro to Social Work

## AP, IB, CLEP, DC, Transfer – University Core Credits

#### COMMUNICATION

AP English Lang. And Comp. Score of 3 IB English A: Lang. and Lit. Score of 5 Community College: ENGL 1301 Community College: ENGL 1302

#### **AMERICAN HISTORY I**

AP U.S. History score of 3 CLEP History of United States I Community College: HIST 1301

**AMERICAN HISTORY II** AP U.S. History score of 3 CLEP History of United States II Community College: HIST 1302

#### FEDERAL GOVT/POLLSCIENCE

AP U.S. Government score of 3 **CLEP American Government** Community College: GOVT 2305

#### STATE GOVT/POLI SCIENCE

Community College: GOVT 2306

#### CREATIVE ARTS

AP Art History score of 3 IB Dance score of 4\*

Community College: ARTS 1301 Community College: ARTS 1304 Community College: MUSI 1306 Community College: DRAM 1310

### LANGUAGE, PHILOSOPHY, AND CULTURE

AP English Literature and Comp. score of 3

AP World History score of 3

IB History score of 4\* IB Philosophy score of 5

IB English Language A: Lit. Score of 5 Community College: ENGL 2332

Community Collee ENGL 2333

Community College: HIST 2321 Community College: HIST 2322

Community College: PHIL 1301 Community College: PHIL 1304

Community College: PHIL 2303 Community College: PHIL 2306

#### SOCIAL AND BEHAVIORAL SCIENCES

AP Macroeconomics score of 3

AP Microeconomics score of 3

AP Psychology score of 3 IB Economics score of 4\*

IB Geography score of 4\*

IB Psychology score of 4\* **CLEP Macroeconomics** 

**CLEP Microeconomics CLEP Human Growth and Development** 

**CLEP Introductory Psychology** 

**CLEP Introductory Sociology** Community College: ANTH 2346

Community College: ANTH 2351 Community College: SPCH 1318

Community College: ECON 2301 Community College: ECON 2302

Community College: GEOG 1303 Community College: TECA 1354

Community College: COMM 1307 Community College: PSYC 2301

Community College: PSYC 2302 Community College: SOCI 1301

### AP, IB, CLEP, DC, Transfer - Major Credits

#### TECHNICAL WRITING CHEMISTRY (Continued) ☐ Community College ENGL 2311: TECM 2700 Community College CHEM 1411: CHEM 1410, 1430 ☐ AP English Lang. And Comp. Score of 3: ENGL 1320 Community College CHEM 1412: CHEM 1420, 1440 IB English A: Lang. and Lit. Score of 5: ENGL 1320 Community College ENGL 1302: ENGL 1320 **PHYSICS** COMPUTING/PROGRAMMING AP Physics 1 score of 3: PHYS 1210 AP Computer Science A score of 3: CSCE 1010 AP Physics 1 score of 4: PHYS 1410, 1430 AP Computer Science A score of 4: CSCE 1030 AP Physics 2 score of 3: PHYS 1315 AP Computer Science Principles score of 3: CSCE 1010 AP Physics 2 score of 4: PHYS 1420, 1440 IB Computer Science: CSCE 1030, 1040 AP Physics C (Mechanics) score of 3: PHYS 1410, 1430 Community College COSC 1336: CSCE 1030 AP Physics C (Mechanics) score of 4: PHYS 1710, 1730 Community College COSC 1337: CSCE 1040 PHYS Physics C (Electricity and Magnetism) score of 3: PHYS 1420, 1440 Community College COSC 1436: CSCE 1030 PHYS Physics C (Electricity and Magnetism) score of 4: PHYS 2220, 2240 Community College COSC 1437: CSCE 1040 Community College PHYS 1101: PHYS 1430 Community College COSC 2325: CSCE 2610 Community College PHYS 1102: PHYS 1440 Community College COSC 2425: CSCE 2610 Community College PHYS 1301: PHYS 1410 Community College COSC 2336: CSCE 2110 Community College PHYS 1302: PHYS 1420 Community College COSC 2436: CSCE 2110 Community College PHYS 1401: PHYS 1410, 1430 Community College MATH 2305: Substitutes for CSCE 2100 Community College PHYS 1402: PHYS 1420, 1440 Community College PHYS 2125: PHYS 1730 **ENGINEERING** Community College PHYS 2126: PHYS 2240 Community College ENGR 1201: Substitute for EENG 1910, Community College PHYS 2325: PHYS 1710 ENGR 1030, MEEN 1000, or MTSE 1100 Community College PHYS 2326: PHYS 2220 Community College ENGR 1204: ENGR 1304 Community College PHYS 2425: PHYS 1710, 1730 Community College ENGR 1304: ENGR 1304 Community College PHYS 2426: PHYS 2220, 2240 Community College ENGR 2105: EENG 2611 Community College ENGR 2106: EENG 2711 **MATHEMATICS** Community College ENGR 2107: ENGR 2415 AP Statistics score of 3: MATH 1680 Community College ENGR 2301: ENGR 2301 AP Calculus AB score of 3: MATH 1710 Community College ENGR 2302: ENGR 2302 AP Calculus BC score of 3: MATH 1710, 1720 Community College ENGR 2332: ENGR 2332 AP Calculus AB sub score of BC Exam score 3: MATH 1710 Community College ENGR 2305: EENG 2610 **CLEP Mathematics: Elective** Community College ENGR 2306: EENG 2710 CLEP College Algebra: MATH 1100 Community College ENGR 2307: ENGR 2405 CLEP Pre-calculus: MATH 1650 Community College ENGR 2405: EENG 2610, 2611 CLEP Calculus: MATH 1710 Community College ENGR 2406: EENG 2710, 2711 IB Mathematic Studies: Elective IB Mathematics - Calculus: MATH 1710 **BIOLOGY** IB Mathematics Unspecified: MATH 1\*\*\* AP Biology score of 3: BIOL 1112, 1122 Community College MATH 1314: MATH 1100 AP Biology score of 4, 5: BIOL 1710, 1720, 1760 Community College MATH 1316, MATH 1600, Prerequisite for Pre-Calculus IB Biology: BIOL 1710, 1720, 1760 Community College MATH 1325, MATH 1190, Prerequisite for Pre-Calculus CLEP Biology: BIOL 1710, 1720 Community College MATH 1425: MATH 1190, Prerequisite for Pre-Calculus Community College BIOL 1108: BIOL 1\*\*\* Community College MATH 1342: MATH 1680 Community College BIOL 1109: BIOL 1\*\*\* Community College MATH 1414: MATH 1100 Community College BIOL 1306: BIOL 1710 Community College MATH 1442: MATH 1680 Community College BIOL 1307, BIOL 1720 Community College MATH 2312: MATH 1650 Community College BIOL 1308: BIOL 1\*\*\* Community College MATH 2412: MATH 1650 Community College BIOL 1309: BIOL 1\*\*\* Community College MATH 2313: MATH 1710 Community College BIOL 1406: BIOL 1710, 1760 Community College MATH 2314: MATH 1720 Community College BIOL 1407: BIOL 1720, 1760 Community College MATH 2315: MATH 2730 Community College BIOL 1408: BIOL 1\*\*\* Community College MATH 2318: MATH 2700 Community College BIOL 1409: BIOL 1\*\*\* Community College MATH 2320: Substitutes for MATH 3410 Community College BIOL 2101: BIOL 2311 Community College MATH 2342: MATH 1680 Community College BIOL 2301: BIOL 2301 Community College MATH 2413: MATH 1710 Community College BIOL 2401: BIOL 2301, 2311 Community College MATH 2414: MATH 1720 **CHEMISTRY** Community College MATH 2415: MATH 2730 AP Chemistry score of 3: CHEM 1360 Community College MATH 2418: MATH 2700 AP Chemistry score of 4: CHEM 1410, 1430 Community College MATH 2420: Substitutes for MATH 3410 AP Chemistry score of 5: CHEM 1410, 1430, and 1420, 1440 Community College MATH 2442: MATH 1680 CLEP General Chemistry: CHEM 1410, 1420 Community College MATH 2513: MATH 1710 IB Chemistry: CHEM 1410, 1430, and 1420, 1440 Community College ENGR 2300: Substitutes for MATH 2700 Community College CHEM 1111: CHEM 1430 Community College CHEM 1112: CHEM 1440 Community College CHEM 1305: CHEM 1\*\*\* Community College MATH 2305: MATH 2000 (Substitutes for CSCE 2100 if Community College CHEM 1307: CHEM 1\*\*\* taken prior to admissions at UNT Community College CHEM 1311: CHEM 1410 Community College CHEM 1312: CHEM 1420 Community College CHEM 1405: CHEM 1\*\*\* Other community college or university courses may

Community College CHEM 1407: CHEM 1\*\*\*

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fulfill requirements. Please confirm with your advisor.

## Preparation You Need to Secure a Full-Time Job

#### Get an Internship

Your Career Center advisor can assist you with applying for paid internships prior to graduation. Internships provide you with the hands-on experience that all employers want when considering you for a full-time position after you have graduated. The Career Center hosts 2 career fairs each year and offers services in resume writing, cover letter writing, interviewing skills, and printing free business cards.

#### Assist with Research

Research opportunities exist within engineering departments as well as national and international team competitions mentored by organizations or industry. Enrollment in zero credit research course(s) reflect your research experience but require no cost or grade documentation.

#### Earn a Graduate Degree

UNT offers graduate degrees in most engineering disciplines. You can pursue the Grad Track program while completing your bachelor's degree to accelerate the time required to earn a Master of Science (MS) or a Doctor of Philosophy (PhD) degree. Students are allowed to count courses toward both their bachelor's and master's degrees or doctorate degrees, saving both time and money.

<u>Eligibility</u>: Students should apply for the Grad Track Program the semester before their Senior Design or Capstone rotation begins. Successful applications typically have a GPA of 3.5 or better. Students typically earn a MS or PhD in the same program for which they have earned a bachelor's degree. Students have to enroll full-time in the MS or PhD program in the first long semester after completing their BS degree in order for the completed graduate-level classes to count toward the graduate degree.

<u>To Apply</u>: Each department has its own application for Grad Track. You may also have to submit transcripts and letters of recommendation. Please visit your department's website and/or contact your department for more information.

Masters of Science (MS)	Total Hours	Hours Earned	Total Hours Required (PhD)	Hours Earned
Programs	Required (MS)	During BS		During BS
Artificial Intelligence	Thesis: N/A	9	N/A	N/A
	Non-Thesis: 33			
Biomedical Engineering	Thesis: 30	9	Concentration Available - See	12
	Non-Thesis: 33		Department for Information	
Computer Engineering	Thesis: 30	9	Approximately 72	12
	Non-Thesis: 36			
Computer Science	Thesis: 30	9	Approximately 72	12
	Non-Thesis: 36			
Cybersecurity	Thesis: 30	9	N/A	N/A
	Non-Thesis: 36			
Electrical Engineering	Thesis: 30	9	Approximately 72	12
	Non-Thesis: 33			
Engineering Technology	Thesis: 30	9	N/A	N/A
	Non-Thesis: 33			
Mechanical and Energy	Thesis: 30	9	Approximately 72	12
Engineering	Non-Thesis: 33			
Materials Science and	Thesis: 30	9	Approximately 72	12
Engineering	Non-Thesis: 35			

#### Get Licensed:

<u>Fundamentals of Engineering (FE) Exam:</u> is not required in order to earn your engineering degree but it is generally your first step in the process to becoming a professionally licensed engineer. It is designed for recent graduates and students who are close to finishing an undergraduate engineering degree. Passing this exam legally certifies the candidate as an "engineer in training" (EIT) or an "engineer intern" (EI). UNT tutoring options for the exam can be found at engineering-exam.

<u>Principles and Practices of Engineering (PE) exam:</u> PE licensure is the engineering profession's highest standard of competence. EITs and EIs are permitted to attempt the exam after completing a minimum of 4 years of professional work experience under the supervisor of a PE. Passing the PE exam qualifies the candidate as a licensed professional engineer.

## Resource Information

Catalag (Bullatin)	Catalagunt adu
Catalog (Bulletin)	Catalog.unt.edu
Computer Access Labs  Counseling Lighth Testing Convices:	Computerlabs.unt.edu
Counseling, Health, Testing Services:	Coount adu/abild and family resource alinia
Child and Family Resource Clinic Counseling and Human Development Center	Coe.unt.edu/child-and-family-resource-clinic Coe.unt.edu/counseling-and-human-development
Counseling and numan bevelopment Center  Counseling and Testing Service	Unt.edu/cat
Health and Wellness Center	Healthcenter.unt.edu
Psychology Clinic	
	Psychology.unt.edu/clinic Untwell.unt.edu
WELL Clinic (personal and career counseling)	
Deadlines (Registration, Drop, Withdrawal, Payment, etc.)	Registrar.unt.edu/registration-guides-by-semester
Dean of Students (Withdrawal Process, Complaints, etc.)	Deanofstudents.unt.edu
Email Account (EagleConnect)	It.unt.edu/eagleconnect
Engineering Student Organizations and Honor Societies	Engineering.unt.edu/students/organizations
Employment, Internships, and Job Skills:	
Career Center	Careercenter.unt.edu
InRoads Internships	Inroads.org
InternMatch	Intermatch.com
Texas Internships	Texasinternships.jobs
Financial Assistance:	
Financial Aid and Scholarships Office	Financialaid.unt.edu
Financial Services (Student Accounting)	Sfs.unt.edu
Money Management Center	Moneymanagement.unt.edu
Housing	Housing.unt.edu
Libraries	Library.unt.edu
Office of Disability Access	Disability.unt.edu
Registrar (Drops, Excessive Hours, Registration, Transcripts	Essc.unt.edu/registrar
Verification of Enrollment)	
Registration Information	Registration.unt.edu
Scholarships	Engineering.unt.edu/students/scholarships
	Financialaid.unt.edu
Student Activities and Organizations	Studentactivities.unt.edu
Student Government Association	Sga.unt.edu
Student Legal Services	Studentlegal.unt.edu
Texas Success Initiative (TSI): Learning Center	Learningcenter.unt.edu
Tutoring and Academic Improvement Services:	
Business Labs (ACCT, BCIS, etc.)	Cob.unt.edu/lab
Chemistry Resource Center	Chemistry.unt.edu
Chegg (online)	Chegg.com
Code Academy	Codeacademy.com
Computer Class Help Lab	Cse.unt.edu
Coursera (online)	Coursera.org
Economics Help Center	Economics.unt.edu/undergraduate/help-center
Educator (online)	Educator.com
Edx (online)	Edx.org
Khan Academy (online)	Khanacademy.org
Learning Center (numerous courses)	Learningcenter.unt.edu
LinkedIn Learning (online)	Linkedin.com/learning
Math Lab	Math.unt.edu/mathlab
Mathway (online)	Mathway.com
Physics Instructional Center	Phys.unt.edu/PIC
Quizlet (online)	Quizlet.com
Thinkwell (online)	Thinkwell.com
Wolf Ram Alpha (online)	Wolframalpha.com
Writing Lab	Ltc.unt.edu/labs
	EtG.dift.Gdd/ldb3
Veteran Center and Services	Veteranscenter.unt.edu or unt.edu/veterans and
	registrar.unt.edu