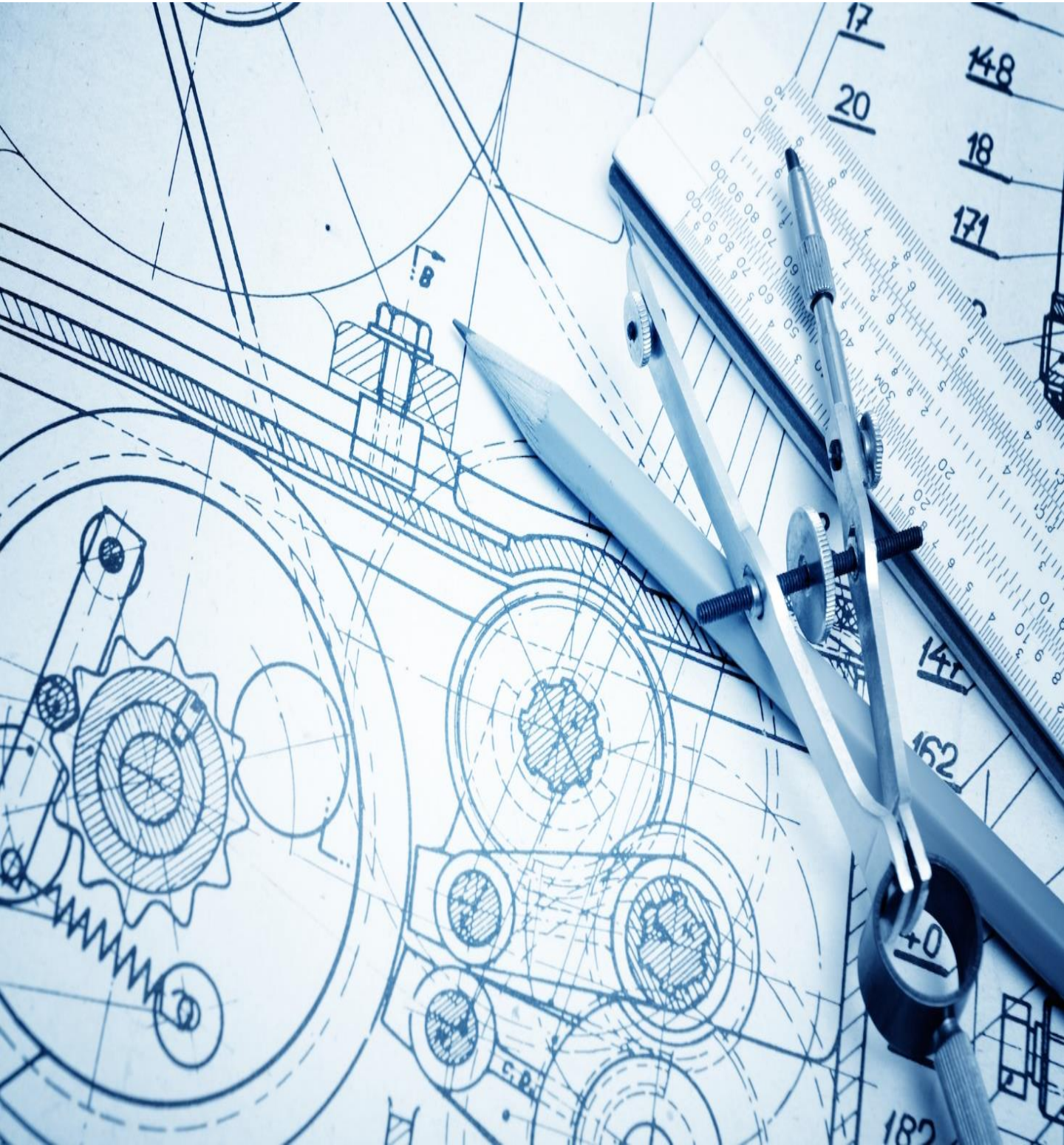


# College of Engineering

Undergraduate Academic Guidebook  
2018-2019



## Engineering Admissions – New Students - First Time in College/Freshman Applicants

In addition to 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 & a total SAT score of 1140 or better  
MATH ACT score of 23 or better & a composite ACT score of 23 or better
- Top 50% of high school graduating class  
MATH SAT score of 620 or better & a total SAT score of 1170 or better  
MATH ACT score of 24 or better & a composite ACT score of 24 or better
- 51% or lower high school graduating class  
MATH SAT score of 650 or better & a total SAT score of 1250 or better  
MATH ACT score of 26 or better & a composite ACT of 26 or better
- No high school rank (GED or homeschooled) or international high school  
MATH SAT score of 620 or better & a total SAT score of 1170 or better  
MATH ACT score of 24 or better & a composite ACT score of 24 or better

*Construction Engineering Technology or Mechanical Engineering Technology can earn MATH SAT score of 570 or better or MATH ACT score of 22 or better regardless of rank.*

## Engineering Admissions – New Students - Transfer & 2<sup>nd</sup> Bachelor's Degree Applicants

In addition to 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 coursework
- Eligibility to enter MATH 1710, Calculus 1, via prerequisite completion or testing (see next page)

## Pre-Engineering Major Program

If you do not meet the above criteria, you will be in the Pre-Engineering Major program. You may be eligible for admissions into the engineering major you desire when you meet criteria below.

## Engineering Admissions – UNT Students - Pre-Major Engineering & Change of Major Applicants

To be admitted from Pre-Engineering or another UNT major, you must meet **all** of the following criteria:

- Minimum 2.0 GPA based on all UNT coursework
- Minimum 2.5 GPA & minimum "C" grades in the courses below per your destination engineering major

### **Biomedical Engineering:**

Communications Core,  
TECM 2700, MATH 1710, MATH 1720,  
BMEN 1300, BMEN 1400

### **Electrical Engineering:**

Communications Core, TECM 2700,  
MATH 1710, MATH 1720,  
PHYS 1710, PHYS 1730, EENG 1910

### **Materials Science & Engineering:**

Communications Core, TECM 2700,  
MATH 1710, MATH 1720, PHYS 1710, PHYS 1730,  
CHEM 1410, CHEM 1430, CHEM 1420, MTSE 1100

### **Mechanical & Energy Engineering:**

Communications Core, TECM 2700, MATH 1710,  
MATH 1720, PHYS 1710, PHYS 1730, MEEN 1000

### **Construction Engineering Technology:**

Communications Core, TECM 2700,  
MATH 1710, PHYS 1710, PHYS 1730,  
ENGR 1030, CNET 1160, CNET 2180

### **Computer Engineering/Computer Science/ Information Technology:**

Communications Core, TECM 2700,  
MATH 1710, CSCE 1030, CSCE 1040

### **Mechanical Engineering Technology:**

Communications Core, TECM 2700,  
MATH 1710, PHYS 1710, PHYS 1730, ENGR 1304

## Engineering Dismissal

You are required to conduct yourself in a professional manner at UNT while making successful progression toward graduation. Failure to do so will 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](http://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 earn a minimum grade of "C" by the 2<sup>nd</sup> attempt in engineering required coursework and/or prerequisites.
- Failure to reach or maintain GPA criteria for engineering required coursework and/or prerequisites.
- Failure to maintain academic good standing (2.0 UNT cumulative GPA).
- Being placed on academic suspension from UNT due to UNT semester and/or cumulative GPA.

## Mathematics

All engineering degree plans require completion of MATH 1710, Calculus I, in the 1<sup>st</sup> semester to attempt graduation in a reasonable timeframe.

Enrollment in MATH 1710 is contingent on (1) completion of placement tests, or (2) completion of college level math prerequisite courses, or (3) college level math credit earned via AP, IB, or CLEP.

### **Prerequisite Course Sequence for Calculus I:**

MATH 1100, College Algebra, -> MATH 1650, Pre-Calculus, -> MATH 1710, Calculus I

### **AP, IB, CLEP, DC, Transfer Credits:**

AP Calculus AB score of 3 or higher: MATH 1710

AP Calculus BC score of 3 or higher: MATH 1710,1720

AP Calculus AB Subscore of BC score 3 or higher: MATH 1710

IB Mathematics - Calculus: MATH 1710

CLEP College Algebra: MATH 1100

CLEP Pre-calculus: MATH 1650

CLEP Calculus: MATH 1710

Community College MATH 1314 or 1414 : MATH 1100

Community College MATH 2312 or 2412: MATH 1650

Community College MATH 2313 or 2413 or 2513: MATH 1710

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

If you have not earned credit for math courses via AP, IB, CLEP, dual credit or transfer credit, you must 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 feel that you are capable of beginning your math courses at a higher level than your Math Group Level or qualification based on earned math credit, you can seek approval via 3 testing options:

- **Pearson MyMathTest** – free online test. Must score a minimum of 70 to enter MATH 1710. Must score a minimum 10 to enter MATH 1650.
- **ALEKS** – online test which requires a small fee & 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.
- **Accuplacer** – free on campus test available Mondays through Fridays from 8:30 A.M. to 3:00 P.M. in the General Academic Building (GAB) 443. Must score a minimum of 101 to enter MATH 1710. Must score a minimum of 86 to enter MATH 1650.

Please refer to Mathematics Department at (940) 565-2155 or [math.unt.edu](http://math.unt.edu) for more testing information.

## Courses

All UNT courses are documented using a four letter subject abbreviation & four digit number.

**Abbreviations:** ENGL for English  
HIST for History

**Numbers:** Freshman 1000 Junior 3000  
Sophomore 2000 Senior 4000

### **Different types of courses at UNT:**

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: junior or senior level course.  
Internet course or "INET": course in which the majority of instruction, assignments, & work is online.  
Blended course: course in which a portion of the instruction, assignments, & work is online.  
Restricted: course or section time that is limited to certain students such as Honors, Out of State, Majors.  
Frisco: course taught at the Frisco Campus in Frisco, Texas.  
CHEC: course taught at the Collin Higher Education Center in McKinney, Texas.

### **Different semester offerings of courses at UNT:**

Fall: August to December	8 Week: May to July	10 week: June to August
Spring: January to May	5 week 1: June to July	
3 Week: May	5 week 2: July to August	<i>UNT does not offer a winter semester</i>

## Credit Hours

Number of units assigned to each course. Referred to as "credits", "hours" or "credit hours". Tells you approximately how many hours per week you'll be in class & approximately how many hours per week you'll 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 to 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 semesters & 18 hours in the summer. This applies to credits enrolled at UNT & another institution (concurrent enrollment). You can receive overload approval to take more hours if you have met the following 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 & 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, an athlete, a scholarship recipient or receiving maximum financial aid. To attempt a timely graduation date, 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/term. 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 & may impact your eligibility for scholarships, financial aid, internships, etc.

<i>Freshman:</i>	0 - 29 hours	<i>Junior:</i>	60 - 89 hours
<i>Sophomore:</i>	30 - 59 hours	<i>Senior:</i>	90+ hours

## Grade Point Average (GPA)

Grades have a point value & courses are worth a certain amount of credit hours. GPA is calculated by dividing the number of grade points earned by the number of attempted hours. Attempted credit hours are used in calculating GPA. Credit hours earned by AP, CLEP, or IB & courses dropped "W" don't count as attempted hours & don't average into your GPA. Grades of "F" are attempted hours & 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
- Total 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 & transfer). A minimum 2.0 GPA is required.
- *Foundations GPA:* GPA you earn in foundations courses. A minimum 2.5 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](http://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 & 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 1<sup>st</sup> semester at UNT but it must be increased to at least a 2.0 after your 1<sup>st</sup> semester.

### **Academic Alert:**

Standing if you are a freshmen & your UNT GPA falls below 1.8 during the 1<sup>st</sup> semester or falls below 2.0 during the 2<sup>nd</sup> 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 & your UNT GPA falls below 1.8 during the 1<sup>st</sup> 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 1<sup>st</sup> suspension or 2 long semesters for a 2<sup>nd</sup> suspension. You must petition to re-enter the College of Engineering after completing the 1<sup>st</sup> or 2<sup>nd</sup> suspension period. You might be approved to return. You will be dismissed permanently from the College of Engineering if you are suspended a 3<sup>rd</sup> time.



## Grade Point Average (GPA): Honors

### Semester Honors:

Semester honors is based on your fall or spring semester GPA & 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: 4.000

Dean's List: 3.500 – 3.999

### Graduation with Honors:

Graduation with honors is based on your overall (UNT & transfer) GPA & 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

## Retaking Courses: Course Duplications

If your transcript(s) contains the same course with an earned grade more than once, the 1<sup>st</sup> grade will be treated as a duplication & 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, your academic status & excessive hours.

Engineering major required courses must be completed with a grade of C or better by the 2<sup>nd</sup> attempt. **Only the last grade will be used in fulfilling prerequisite, corequisite & graduation eligibility.** Contact your advisor to confirm how you will be affected if you take a course more than once.

## Dropping or Withdrawing

### Dropping:

Dropping refers to removing yourself from one or more courses for the semester (but you remain in at least one course for the semester). You can drop yourself via MyUNT before or shortly after the semester begins. The MyUNT drop functionality usually expires on the 1<sup>st</sup> day of summer semester & approximately 12 days into the fall/spring semesters. After the MyUNT drop functionality expires, you may drop via the procedures & deadlines listed at [unt.edu/registration](http://unt.edu/registration). Please note that if you are enrolled in only 1 course for a summer session & you need to remove that 1 course, it is considered a withdraw & not a drop. Please see withdraw information below. Only 6 drops are allowed during your academic career unless you began college before the fall semester of 2007. **Once the 6 drop limit is reached, no additional drops are approved.**

### Withdrawing:

Withdrawing refers to dropping all courses for the semester. You are not allowed to withdraw via MyUNT. You may withdraw via the procedures & deadlines listed at [unt.edu/registration](http://unt.edu/registration)

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

## Pass/No Pass Grading Option

You may elect to take courses which are not needed for your degree plan or graduation under the Pass/No Pass Grading Option. Certain criteria must be met & you must obtain approval from your advisor after you have enrolled in the course. A "grade" of "P" or "NP" will be recorded on your transcript. This "grade" is not calculated into 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 criteria:

- The course you plan to take has been preapproved by your advisor.
- You do not violate the maximum semester/term credit hour limit or residency requirements at UNT.
- You are not attempting to graduate the same semester/term in which you are concurrently enrolled.
- You submit the official transcript for the course to the Registrar's Office within 1 month of completion.

*Please note that your department reserves the right to reject online courses and/or courses at certain institutions.*

## Incompletes

An "I" or "Incomplete" grade is a pending grade on your record which does not affect your GPA. An "I" may be granted by the professor if you meet all of the following conditions:

- The final drop & withdraw deadlines for the semester/term 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 & 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 as each professor may use discretion. An automatic grade of "F" will be posted on your transcript if you did not complete the "I".*

## Registration

You will be using MyUNT to register for courses each semester/term. Information on registration enrollment periods, payment deadlines, etc. can be located at [unt.edu/registration](http://unt.edu/registration).

### Full Courses:

If a course you need to take is full, add yourself to the waitlist. Seats are allotted in position order as fully enrolled students vacate the course. The waitlist will 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.

### Error Messages:

Contact the department that teaches the course if you receive an error message to seek an override into the course. Common error messages include prerequisite errors, corequisite errors & restricted section errors. Below are department contacts for some common courses:

- |        |  |
|--------|--|
| • ACCT | Accounting Department: BLB 213 or (940) 565-3080                       |
| • BIOL | Biological Sciences Department: BIOL 210 or (940) 565-3591             |
| • BMEN | Biomedical Engineering Department: DP B-131 or (940) 565-3338          |
| • CHEM | Chemistry Department: CHEM 101 or (940) 565-3525                       |
| • CNET | Engineering Technology Department: DP F-115 or (940) 565-2022          |
| • CSCE | Computer Science & Engineering Department: DP F-201 or (940) 565-2767  |
| • EENG | Electrical Engineering Department: DP B-270 or (940) 891-6872          |
| • ELET | Engineering Technology Department: DP F-115 or (940) 565-2022          |
| • ENGR | Engineering Technology Department: DP F-115 or (940) 565-2022          |
| • MATH | Mathematics Department: GAB 435 or (940) 565-2155                      |
| • MEEN | Mechanical & Energy Engineering Department: DP F-101 or (940) 565-2400 |
| • MEET | Engineering Technology Department: DP F-115 or (940) 565-2022          |
| • MFET | Engineering Technology Department: DP F-115 or (940) 565-2022          |
| • MTSE | Materials Science & Engineering Department: DP E-132 or (940) 565-3260 |
| • PHYS | Physics Department: PHYS 110 or (940) 565-2626                         |
| • TECM | Technical Communications Department: AUSB 317 or (940) 565-4458        |

## Payment

You must arrange payment prior to the payment deadline listed in MyUNT or [www.unt.edu/registration](http://www.unt.edu/registration). Failure to pay by the deadline listed will result in the cancellation of your entire schedule of classes.

You must elect the Traditional or Eagle Express tuition plan before your 1<sup>st</sup> semester/term payment deadline. Information on both plans can be found at [studentaccounting.unt.edu](http://studentaccounting.unt.edu).

You have numerous options available to pay. Refer to [unt.edu/paying-for-college.htm](http://unt.edu/paying-for-college.htm) for information.

If you have been awarded financial aid, please be aware that you must maintain Satisfactory Academic Progress (SAP) & Pace of Progression (POP) in order for your aid to continue. Refer to [financialaid.unt.edu/satisfactory-academic-progress-requirements](http://financialaid.unt.edu/satisfactory-academic-progress-requirements) for information.

## Tuition Increases

### **Repeated Course Tuition Increase:**

If you are a resident & you attempt courses for a 3<sup>rd</sup> time, you are subject to pay an additional tuition rate per semester credit hour for the repeated course. Refer information at [studentaccounting.unt.edu](http://studentaccounting.unt.edu).

### **Excessive Hours Regarding Tuition:**

Texas code specifies that a resident may be subject to a higher tuition rate for attempting excessive hours at any public institution. You cannot exceed more than 30 credit hours (or 45 credit hours if you started school prior to fall 2006) of the number of hours required for the completion of your degree plan. Any additional hours are considered excessive & will result in additional tuition charges. Refer to information at [studentaccounting.unt.edu](http://studentaccounting.unt.edu).

### **Maximum Hours Regarding Financial Aid:**

If you receive financial aid & maintain Satisfactory Academic Progress (SAP) & 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 an 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. A degree audit must be created for you in order to progress toward graduation. Please contact the Engineering Advising Office for any questions or concerns.

## Graduation

You must make an appointment with the Engineering Advising Office the semester/term before you plan to graduate to confirm that you are on track. 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, & complete approximately 30 degree accountable credits per year. Please note that graduation often occurs within 5-6 years for most students.

You must apply for graduation at the beginning of your final semester via your Student Center in MyUNT. Refer to [registrar.unt.edu](http://registrar.unt.edu) for more information & the application deadline. Failure to apply by the deadline will result in your failure to graduate or earn your degree even if you complete of your degree audit requirements. You cannot enroll in another institution during your final semester/term or else your graduation will be delayed.

## Commencement

Commencement is the name of the graduation ceremony. Commencement is offered in December for students you earn their degree in fall or 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 have applied for & been approved for graduation at the beginning of your final semester. Refer to [unt.edu/commencement](http://unt.edu/commencement) for more information.

## North Texas Discovery Park (NTDP)

North Texas Discovery Park (NTDP) is a 2<sup>nd</sup> campus located 4 miles north of the main campus. It is the location of all College of Engineering offices, classes, & labs. NTDP also offers a cafeteria, library, computer access labs, specialty engineering labs, engineering student organizations, an advising office, tutoring services, & a career services office.

Information on free bus transportation routes/times & available student parking passes/locations can be found at [unt.edu/transit](http://unt.edu/transit).



## Advising

### **Pre-Engineering Advisors:**

Located on main campus (TBD), these advisors help **pre-engineering majors** with full-major admissions & academic planning. You can schedule an appointment in person or via 940-565-4201. Allow 3 weeks for an available appointment & note that you will lose your appointment if you arrive late. Contact information is located at **[engineering.unt.edu/advising/advisors](http://engineering.unt.edu/advising/advisors)**. Below are the available advisors:

#### All Pre-Engineering Majors:

David Bekker  
Vacant

### **Engineering Advisors:**

Located in NTDP A-101, these advisors help **full-majors** with academic planning. You can schedule an appointment in person or via 940-565-4201. Allow 3 weeks for an available appointment & note that you will lose your appointment if you arrive late. Contact information is located at **[engineering.unt.edu/advising/advisors](http://engineering.unt.edu/advising/advisors)**. Below are the available advisors:

#### Biomedical Engineering

TBD by Track Selection

#### Computer Engineering

Abdal Elkharoubi  
Erica Smith

#### Computer Science

Heather Burrow  
Beverly Wilks

#### Electrical Engineering

Abdal Elkharoubi  
Erica Smith

#### Information Technology

Heather Burrow  
Beverly Wilks

#### Materials Science & Engineering

Nancy Van Hoy

#### Mechanical & Energy Engineering

Mia Dallas  
Adrian Stephens  
Rachel Smith

#### Construction Engineering Technology

Mia Dallas  
Adrian Stephens  
Rachel Smith

#### Mechanical Engineering Technology

Mia Dallas  
Adrian Stephens  
Rachel Smith

### **Engineering Faculty Advisors:**

Located in NTDP Departments, 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. Below are the available faculty advisors:

#### Biomedical Engineering

Dr. Vijay Vaidyanathan

#### Computer Engineering

Dr. Robin Pottathuparambil

#### Computer Science

Dr. Mark Thompson

#### Electrical Engineering

Dr. Colleen Bailey

#### Information Technology

Dr. Ryan Garlick  
Mr. David Keathly

#### Materials Science & Engineering

Dr. Marcus Young

#### Mechanical & Energy Engineering

Dr. Cherish Qualls  
Dr. Xiaohua Li

#### Construction Engineering Technology

Al Attah  
Dr. Cheng Yu

#### Mechanical Engineering Technology

Dr. Leticia Anaya

### **Career Advisors:**

Located in NTDP C-111 & Chestnut Hall 103, these advisors help you with career planning, major selection, resume writing, interviewing skills, internship & full-time employment securement. You can schedule an appointment in person or via 940-565-2105.

# BIOMEDICAL ENGINEERING

Bachelor of Science (B.S.) degree with a major in Biomedical Engineering

Biomedical Engineering Department  
Discovery Park B-131; (940) 565-3338

## University Core

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from options

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- 1 Course (3 Hours) chosen from options

## 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), **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

- BIOL 2301, Human Anatomy & Physiology (3 Hours) &  
BIOL 2311, Human Anatomy & Physiology Lab (1 Hour)
- CHEM 1410, General Chemistry I (3 Hours) &  
CHEM 1430, General Chemistry I Lab (1 Hour), **or**  
CHEM 1415, Chemistry for Engineers (3 Hours) &  
CHEM 1435, Chemistry for Engineers Lab (1 Hour)
- PHYS 1710, Mechanics (3 Hours) &  
PHYS 1730, Mechanics Lab (1 Hour)

## Major Requirements

Grades of C or better.

### 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 I (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 & 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.

*Completion of this track will earn an Electrical Engineering minor.*

### **Biomechanics Elective Track:**

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

*Completion of an additional MEEN 3\*\*\* and/or 4\*\*\* level specific course in addition to this track will earn a Mechanical & Energy Engineering minor.*

### **Biocomputing Elective Track:**

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

*Completion of this track will earn a Computer Science & Engineering minor.*

### **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.

*Completion of this track will earn Materials Science & Engineering minor.*

### **Pre-Medical Elective Track:**

BIOL 1710, 1720, 1760, 2041, 2042, 3451, 3452, 4580, 4770, BIOC 3621, 3622.

*Completion of this track will earn a Biological Sciences minor.*

*Additional courses are required for admissions into medical school.*

# BIOMEDICAL ENGINEERING

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or CHEM 1415, Chemistry (see note 2)	3
CHEM 1430 or CHEM 1435, Chemistry Lab (see note 2)	1
BMEN 1300, Discover BMEN	3
Communication Core course	3
University Core course	<u>3</u>
Total Hours	17

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
BIOL 2301, Human Anatomy & Physiology	3
BIOL 2311, Human Anatomy & Physiology Lab	1
BMEN 1400, Software for Biomed (MATH 1650 or higher)	4
TECM 2700, Tech. Writing (Communication Core)	<u>3</u>
Total Hours	14

### SOPHOMORE YEAR

#### FALL

MATH 2700, Linear Algebra (MATH 1720)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
BMEN 2210, DAQ Practices (MATH 1720)	3
Elective Track Course (see note 7)	3
University Core course	<u>3</u>
Total Hours	16

#### SPRING

MATH 3410, Differential Equations (MATH 1720)	3
BMEN 2320, Biomed. Instrumentation I (see note 3)	3
Elective Track Course (see note 7)	3
University Core course	3
University Core course	<u>3</u>
Total Hours	15

### JUNIOR YEAR

#### FALL

MATH 2730, Multi. Calculus or MATH 3350 (see note 4)	3
BMEN 3310, Human Systems (see note 5)	3
BMEN 3311, Signal Analysis (BMEN 2320)	3
BMEN 3350, Transp. Phenom. (see note 6)	3
Elective Track course (see note 7)	<u>3</u>
Total Hours	15

#### SPRING

MATH 3680, Statistics and Probability (MATH 1720)	3
BMEN 3312, Intro. to Biomech. (BMEN 3310, PHYS 1710)	3
BMEN 3321, Biomaterials (BMEN 3310, PHYS, CHEM)	3
Elective Track course (see note 7)	3
University Core course	<u>3</u>
Total Hours	15

### SENIOR YEAR

#### FALL

BMEN 4310, Modeling (BMEN 3321) or Grad Track	3
BMEN 4212, Senior Design I (BMEN 3*** reqts)	1
BMEN 4***, Advanced Elective (BMEN 3311, 3312)	3
Elective Track course (see note 7)	3
University Core course	<u>3</u>
Total Hours	13

#### SPRING

BMEN 4222, Senior Design II (BMEN 4212)	3
BMEN 4***, Advanced Elective or Grad Track course	3
BMEN 4***, Advanced Elective or Grad Track course	3
Elective Track course (see note 7)	3
University Core course	<u>3</u>
Total Hours	15

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: BMEN 2320 requires completion of BMEN 1300, BMEN 2210, BMEN 1400 or concurrent enrollment in BMEN 1400.

Note 4: MATH 2730 requires completion of MATH 1720. MATH 3350 requires completion of MATH 2700 and Programming.

Note 5: BMEN 3310 requires completion of BMEN 1300, BMEN 2320, BIOL 2301, and BIOL 2311.

Note 6: BMEN 3350 requires completion of BMEN 1300, MATH 3410, PHYS 1710, and CHEM reqt.

Note 7: Elective Track Courses depend on your chosen BMEN track. See BMEN curriculum page for options. Some track courses are offered fall only or spring only. Must meet prerequisite for track courses.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, BMEN 1300, BMEN 1400, BMEN 2210, BMEN 2320, MATH 1710, MATH 1720, PHYS 1710, PHYS 1730, BIOL 2301, BIOL 2311, CHEM 1410, CHEM 1430 or CHEM 1415, 1435 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# BIOMEDICAL ENGINEERING

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

### YEAR ONE

#### FALL

BIOL 2301, Human Anatomy & Physiology	3
BIOL 2311, Human Anatomy & Physiology Lab	1
BMEN 1300, Discover BMEN	3
BMEN 2210, DAQ Practices (MATH 1720)	3
MATH 2700, Linear Algebra (MATH 1720)	<u>3</u>
Total Hours	13

#### SPRING

BMEN 1400, Software for Biomed (MATH 1650 or higher)	4
BMEN 2320, Biomed. Instrumentation I (see note 1)	3
MATH 3410, Differential Equations (MATH 1720)	3
Elective Track Course (see note 5)	<u>3</u>
Total Hours	13

### YEAR TWO

#### FALL

MATH 2730, Multi. Calculus or MATH 3350 (see note 2)	3
BMEN 3310, Human Systems (see note 3)	3
BMEN 3311, Signal Analysis (BMEN 2320)	3
BMEN 3350, Transp. Phenom. (see note 4)	3
Elective Track course (see note 5)	<u>3</u>
Total Hours	15

#### SPRING

MATH 3680, Statistics and Probability (MATH 1720)	3
BMEN 3312, Intro. to Biomech. (BMEN 3310, PHYS 1710)	3
BMEN 3321, Biomaterials (BMEN 3310, PHYS, CHEM)	3
Elective Track course (see note 5)	<u>3</u>
Total Hours	12

### YEAR THREE

#### FALL

BMEN 4310, Biomedical Modeling (BMEN 3321)	3
BMEN 4212, Senior Design I (BMEN 3*** reqts)	1
BMEN 4***, Advanced Elective (BMEN 3311, 3312)	3
Elective Track course (see note 5)	3
Elective Track Course (see note 5)	<u>3</u>
Total Hours	13

#### SPRING

BMEN 4222, Senior Design II (BMEN 4212)	3
BMEN 4***, Advanced Elective	3
BMEN 4***, Advanced Elective	3
Elective Track course (see note 5)	<u>3</u>
Total Hours	12

### Notes:

Note 1: BMEN 2320 requires completion of BMEN 1300, BMEN 2210, BMEN 1400 or concurrent enrollment in BMEN 1400.

Note 2: MATH 2730 requires completion of MATH 1720. MATH 3350 requires completion of MATH 2700 and Programming.

Note 3: BMEN 3310 requires completion of BMEN 1300, BMEN 2320, BIOL 2301, and BIOL 2311.

Note 4: BMEN 3350 requires completion of BMEN 1300, MATH 3410, PHYS 1710, and CHEM reqt.

Note 5: Elective Track Courses depend on your chosen BMEN track. See BMEN curriculum page for options. Some track courses are offered fall only or spring only. Must meet prerequisite for track courses.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, BMEN 1300, BMEN 1400, BMEN 2210, BMEN 2320, MATH 1710, MATH 1720, PHYS 1710, PHYS 1730, BIOL 2301, BIOL 2311, CHEM 1410, CHEM 1430 or CHEM 1415, 1435 as foundations to enroll in advanced courses.**

#### Credits Which Could be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:

Communications Core	TECM 2700
HIST 2610	CHEM 1410, 1430
HIST 2620	PHYS 1710, 1730
PSCI 2305	
PSCI 2306	
Creative Arts Core	
Language Philosophy Culture Core	
Social Behavioral Sciences Core	

#### Credits Which Should be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:

MATH 1710  
MATH 1720

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# COMPUTER ENGINEERING

Bachelor of Science (B.S.) degree with a major in Computer Engineering

Department of Computer Science & Engineering  
Discovery Park F-201; (940) 565-2767

## University Core

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from options

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- 1 Course (3 Hours) chosen from options

## Major Requirements

Grades of C or better.

### TECHNICAL COMMUNICATION

- 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

- 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)

or

- CHEM 1415, Chemistry for Engineers (3 Hours) & CHEM 1435, Chemistry for Engineers Lab (1 Hour)

## Major Requirements

Grades of C or better.

### ADVANCED MATHEMATICS OR SCIENCE ELECTIVE

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

### ELECTRICAL ENGINEERING

- ENGR 2405, Circuit Analysis (3 Hours) & ENGR 2415, Circuit Analysis Lab (1 Hour)
- ENGR 2720, Digital Logic Design (3 Hours) & ENGR 2730, 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, Communications 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 & complete 3 courses from the approved options below:

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

### **Real-time & Embedded Systems Specialty Area (Choose 3 courses):**

ELET 3750, CSCE 3610, 4440, 4444, 4600, 4610, 4620, 4730, 4890

### **VLSI & Electronics Specialty Area: (Choose 3 courses)**

ELET 3750, 4300, 4340, CSCE 3610, 4610, 4730, 4890

### **Communications & Networks Specialty Area (Choose 3 courses):**

CSCE 3420, 3530, 4510, 4520, 4530, 4550, 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, 4950.*

### ADVANCED LEVEL GENERAL ELECTIVE

- 1 advanced course (3 Hours) may be required depending on transfer credits and/or core/minor selection to reach 42 total advanced hours.

# COMPUTER ENGINEERING

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core COURSES.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or 1415, Chemistry (see note 2)	3
CHEM 1430 or 1435, Chemistry Lab (see note 2)	1
CSCE 1030, Computer Science I (see note 3)	4
Communication Core course	<u>3</u>
Total Hours	15

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
CSCE 1040, Comp. Science II (CSCE 1030, MATH 1710)	3
TECM 2700, Tech. Writing (Communication Core)	3
University Core course	<u>3</u>
Total Hours	16

### SOPHOMORE YEAR

#### FALL

MATH 2730, Multivariable Calculus (MATH 1720)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
CSCE 2100, Foundation of Computing (CSCE 1040)	3
ENGR 2720, Digital Logic	3
ENGR 2730, Digital Logic Lab	1
University Core course	<u>3</u>
Total Hours	17

#### SPRING

MATH 1780, Probability Models (MATH 1710)	3
MATH 2700, Linear Algebra (MATH 1720)	3
CSCE 2110, Found. Data Structures (CSCE 1040)	3
CSCE 2610, Assem. & Org. (co CSCE 2100, ENGR 2720,2730)	3
ENGR 2405, Circuit Analysis (see note 4)	3
ENGR 2415, Circuit Analysis Lab (see note 4)	<u>1</u>
Total Hours	16

### JUNIOR YEAR

#### FALL

EENG 3510, Electronics I (ENGR 2405)	3
CSCE 3010, Signals & Systems (ENGR 2405, MATH 2730)	3
CSCE 3600, Systems Programming (CSCE 2100)	3
CSCE 3730, Reconfigurable Logic (CSCE 2610)	3
University Core course	<u>3</u>
Total Hours	15

#### SPRING

CSCE 3020, Comm. (CSCE 3010)	3
CSCE 3612, Embed. Sys. Design (ENGR 2720,2730 CSCE 2610)	3
CSCE Specialty Area Elective course (see note 5)	3
Advanced Math or Science Elective	3
University Core course	<u>3</u>
Total Hours	15

### SENIOR YEAR

#### FALL

CSCE 4910, Design I (CSCE 3612, EENG 3510)	3
CSCE Specialty Area Elective course (see note 5)	3
CSCE Specialty Area Elective course (see note 5)	3
University Core course	3
University Core course	<u>3</u>
Total Hours	15

#### SPRING

CSCE 4915, Design II (CSCE 4910)	3
CSCE 4011, Engineering Ethics (CSCE 3600)	3
University Core course	3
University Core course	3
Advanced Level General Elective (see note 6)	<u>3</u>
Total Hours	15

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: CSCE 1030 requires completion of MATH 1650, Pre-Calculus, or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.

Note 4: ENGR 2405 & ENGR 2415 requires completion of MATH 1720 & either completion of or co-enrollment in PHYS 2220 & 2240 as prerequisite.

Note 5: See curriculum page for options. Most specialization courses are offered fall only or spring only. Must meet prerequisite for specialization courses. Graduate Track option available.

Note 6: Advanced level general elective may be needed to reach 42 total advanced hours. Please check with an advisor.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in CSCE 1030, CSCE 1040, CSCE 2100, CSCE 2110, & MATH 1710 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**



# COMPUTER ENGINEERING

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core COURSES.**

Year One	
<b>FALL</b>	
CSC E 1030, Computer Science I	4
TECM 2700, Tech. Writing (Communication Core)	3
ENGR 2720, Digital Logic	3
ENGR 2730, Digital Logic Lab	1
MATH 1720, Calculus II (MATH 1710)	<u>3</u>
Total Hours	14
<b>SPRING</b>	
CSC E 1040, Comp. Science II (CSC E 1030, MATH 1710)	3
MATH 2730, Multivariable Calculus (MATH 1720)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
ENGR 2405, Circuit Analysis (see note 4)	3
ENGR 2415, Circuit Analysis Lab (see note 4)	<u>1</u>
Total Hours	14
<b>SUMMER</b>	
CSC E 2100 Foundations of Computing (CSC E 1040)	3
<b>Year Two</b>	
<b>FALL</b>	
MATH 1780, Probability Models (MATH 1710)	3
CSC E 2110, Foundations of Data Structures (CSC E 1040)	3
CSC E 2610, Assem. & Org. (co CSC E 2100, ENGR 2720,2730)	3
EENG 3510, Electronics I (ENGR 2405)	3
CSC E 3010, Signals & Systems (ENGR 2405, MATH 2730)	<u>3</u>
Total Hours	15
<b>SPRING</b>	
MATH 2700, Linear Algebra (MATH 1720)	3
CSC E 3600, Systems Programming (CSC E 2100)	3
CSC E 3020, Comm. (CSC E 3010)	3
CSC E 3612, Embed. Sys. Design (ENGR 2720,2730 CSC E 2610)	3
CSC E Specialty Area Elective course (see note 1)	<u>3</u>
Total Hours	15
<b>Year Three</b>	
<b>FALL</b>	
CSC E 3730, Reconfigurable Logic (CSC E 2610)	3
CSC E 4910, Design I (CSC E 3612, EENG 3510)	3
CSC E Specialty Area Elective course (see note 1)	3
CSC E Specialty Area Elective course (see note 1)	<u>3</u>
Total Hours	12
<b>SPRING</b>	
CSC E 4915, Design II (CSC E 4910)	3
CSC E 4011, Engineering Ethics (CSC E 3600)	3
Advanced Math or Science Elective	3
Advanced Level General Elective (see note 2)	<u>3</u>
Total Hours	12

### Notes:

Note 1: See curriculum page for options. Most specialization courses are offered fall only or spring only. Must meet prerequisite for specialization courses. Graduate Track option available.

Note 2: Advanced level general elective may be needed to reach 42 total advanced hours. Please check with an advisor.

Note 3: CSC E 1030 requires completion of MATH 1650, Pre-Calculus, or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.

Note 4: ENGR 2405 & ENGR 2415 requires completion of MATH 1720 & either completion of or co-enrollment in PHYS 2220 & 2240 as prerequisite.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in CSC E 1030, CSC E 1040, CSC E 2100, CSC E 2110, & MATH 1710 as foundations to enroll in advanced courses.**

### Credits Which Could be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:

Communications Core	TECM 2700
HIST 2610	CHEM 1410, 1430
HIST 2620	
PSCI 2305	
PSCI 2306	
Creative Arts Core	
Language Philosophy Culture Core	
Social Behavioral Sciences Core	

### Credits Which Should be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:

MATH 1710  
PHYS 1710, 1730

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# COMPUTER SCIENCE

Bachelor of Science (B.S.) degree with a major in Computer Science

Department of Computer Science & Engineering  
Discovery Park F-201; (940) 565-2767

## University Core

### COMMUNICATION

- ❑ 1 Course (3 Hours) chosen from options

**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) chosen from options

### LANGUAGE, PHILOSOPHY, & CULTURE

- ❑ 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- ❑ 1 Course (3 Hours) chosen from options

## Major Requirements

Grades of C or better.

### TECHNICAL COMMUNICATION

- ❑ TECM 2700, Technical Writing (3 Hours)
- ❑ 1 advanced TECM course chosen from:
  - TECM 4100, Writing Grants & Proposals (3 Hours)
  - TECM 4180, Advanced Technical Writing (3 Hours)
  - TECM 4190, Technical Editing (3 Hours)
  - TECM 4200, Research Methods (3 Hours)
  - TECM 4250, Writing Procedures & Manuals (3 Hours)
  - TECM 4300, Usability & User Experience (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 & Vector Geometry (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)

## Major Requirements

Grades of C or better.

### SCIENCES (Continued)

- ❑ 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) & CHEM 1430, General Chemistry I Lab (1 Hour) **or**
  - CHEM 1415, Chemistry for Engineers (3 Hours) & CHEM 1435, Chemistry for Engineers Lab (1 Hour)
  - CHEM 1420, General Chemistry II (3 Hours) & 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)

### 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 3600, Principles of Systems Programming (3 Hours)
- ❑ CSCE 4010, Social Issues in Computing (3 Hours)
- ❑ CSCE 4110, Algorithms (3 Hours)
- ❑ CSCE 4444, Software Engineering (3 Hours)
- ❑ CSCE 4901, Computer Science Capstone (3 Hours) **or** CSCE 4999, Senior Thesis (3 Hours)

### COMPUTER SCIENCE and ENGINEERING CORE ELECTIVES

- ❑ 1 CSCE Core course (3 Hours) chosen from list options below
- ❑ 1 CSCE Core course (3 Hours) chosen from list options below

CSCE 3530, Introduction to Computer Networks (3 Hours)  
CSCE 4115, Formal Lang., Automata & Computability (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) chosen from list options below
- ❑ 1 CSCE Breadth course (3 Hours) chosen from list options below

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 4310, Introduction to Artificial Intelligence (3 Hours)  
CSCE 4350, Fundamentals of Database Systems (3 Hours)  
CSCE 4460, Software Testing & Empirical Methodologies (3 Hours)  
CSCE 4550, Introduction to Computer Security (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
- ❑ CSCE 3\*\*\* or 4\*\*\* (3 Hours) course not already applied above

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

# COMPUTER SCIENCE

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or 1415, Chemistry (see note 2)	3
CHEM 1430 or 1435, Chemistry Lab (see note 2)	1
CSCE 1030, Computer Science I (see note 3)	4
Communication Core course	<u>3</u>
Total Hours	15

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
CSCE 1040, Comp. Science II (CSCE 1030, MATH 1710)	3
TECM 2700, Tech. Writing (Communication Core)	3
BIOL 1710, Biology I (see note 2)	3
BIOL 1760, Biology Lab (see note 2)	<u>2</u>
Total Hours	14

### SOPHOMORE YEAR

#### FALL

MATH 2700, Linear Algebra (MATH 1720)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
CSCE 2100, Foundation of Computing (CSCE 1040)	3
EENG 2710, Digital Logic Design	3
University Core course	<u>3</u>
Total Hours	16

#### SPRING

MATH 1780, Probability Models (MATH 1710)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
CSCE 2110, Foundations of Data Structures (CSCE 1040)	3
CSCE 2610, Assembly & Org. (co CSCE 2100, EENG 2710)	3
University Core course	<u>3</u>
Total Hours	16

### JUNIOR YEAR

#### FALL

CSCE 3110, Data Structures (CSCE 2100, 2110)	3
CSCE 3600, Systems Programming (CSCE 2100)	3
CSCE Elective course (see note 5)	3
TECM 4*** course (TECM 2700)	3
University Core course	<u>3</u>
Total Hours	15

#### SPRING

CSCE 4010, Social Issues (CSCE 3600)	3
CSCE 4110, Analysis of Algorithms (CSCE 3110)	3
CSCE Elective course (see note 5)	3
CSCE Elective course (see note 5)	3
University Core course	<u>3</u>
Total Hours	15

### SENIOR YEAR

#### FALL

CSCE 4444, Software Engineering (see note 7)	3
CSCE Elective course (see note 5)	3
CSCE Elective course (see note 5)	3
University Core course	3
University Core course	<u>3</u>
Total Hours	15

#### SPRING

CSCE 4901, Capstone, or CSCE 4999, Thesis (see note 6)	3
CSCE Elective course (see note 5)	3
CSCE Elective course (see note 5)	3
University Core course	3
University Core course	<u>3</u>
Total Hours	15

### Notes:

- Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.
- Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite. There is no prerequisite for BIOL.
- Note 3: CSCE 1030 requires completion of MATH 1650, Pre-Calculus, or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.
- Note 4: CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.
- Note 5: Most courses are offered fall only or spring only. Must complete appropriate prerequisite(s) for each course. Graduate Track option available.
- Note 6: CSCE 4901 requires TECM 2700 and CSCE 4444 as prerequisite as well as CSCE 4110 as corequisite or prerequisite. CSCE 4999 requires professor consent as prerequisite.
- Note 7: Current prerequisite for CSCE 4444 is CSCE 2100 & CSCE 2110. This may soon change to CSCE 3110.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in CSCE 1030, CSCE 1040, CSCE 2100, CSCE 2110, & MATH 1710 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# COMPUTER SCIENCE

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

### YEAR ONE

#### FALL

MATH 1780, Probability (MATH 1710)	3
CSCE 1030, Computer Science I (see note 3)	4
CHEM 1410 or 1415, Chemistry (see note 2)	3
CHEM 1430 or 1435, Chemistry Lab (see note 2)	1
TECM 2700	3
Total Hours	14

#### SPRING

MATH 2700, Linear Algebra (MATH 1720)	3
CSCE 1040, Comp. Science II (CSCE 1030, MATH 1710)	3
BIOL 1710, Biology I (see note 2)	3
BIOL 1760, Biology Lab (see note 2)	2
EENG 2710, Digital Logic Design	3
Total Hours	14

#### SUMMER

CSCE 2100, Foundation of Computing (CSCE 1040)	3
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### YEAR TWO

#### FALL

CSCE 2110, Foundation of Data Structures (CSCE 1040)	3
CSCE 2610, Assembly & Org.(co CSCE 2100, EENG 2710)	3
CSCE 3600 (CSCE 2100)	3
TECM 4*** course (TECM 2700)	3
Total Hours	12

#### SPRING

CSCE 3110 (CSCE 2110)	3
CSCE 4010 (CSCE 3600)	3
CSCE Core Elective (see note 4)	3
CSCE Adv Elective (see note 4)	3
Total Hours	12

### YEAR THREE

#### FALL

CSCE 4110, Analysis of Algorithms (CSCE 3110)	3
CSCE 4444, Software Engineering (CSCE 3110)	3
CSCE Core Elective (see note 4)	3
CSCE Breadth Elective (see note 4)	3
Total Hours	12

#### SPRING

CSCE 4901, Capstone, or CSCE 4999, Thesis (see note 5)	3
CSCE Breadth Elective (see note 4)	3
CSCE Adv Elective (see note 4)	3
CSCE Adv Elective (see note 4)	3
Total Hours	12

#### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or completion of MATH 1610 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: BIOL 1710 & 1760 has no prerequisite. CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: CSCE 1030 requires completion of MATH 1650, Pre-Calculus, or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.

Note 4: Must complete appropriate prerequisite(s) for each CSCE Core, Breadth and/or Free elective course. Graduate Track option available.

Note 5: CSCE 4901 requires TECM 2700 and CSCE 4444 as prerequisite as well as CSCE 4110 as corequisite or prerequisite. CSCE 4999 requires professor consent as prerequisite.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in CSCE 1030, CSCE 1040, CSCE 2100, CSCE 2110, & MATH 1710 as foundations to enroll in advanced courses.**

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

*Credits Which Could Be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:*

Communications Core	Creative Arts Core
HIST 2610	Language Philosophy Culture Core
HIST 2620	Social Behavioral Sciences Core
PSCI 2305	
PSCI 2306	

*Credits Which Should Be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:*

MATH 1710
MATH 1720
PHYS 1710/1730
PHYS 2220/2240

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# CONSTRUCTION ENGINEERING TECHNOLOGY

Bachelor of Science in Engineering Technology (B.S.E.T) degree with a major in Construction Engineering Technology

Department of Engineering Technology  
Discovery Park F-115; (940) 565-2022

## University Core

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from options

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- Fulfilled by ECON, 1100, Microeconomics

## 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)

## Major Requirements

Grades of C or better.

### CONSTRUCTION ENGINEERING TECHNOLOGY

- CNET 1160, Construction Methods & Materials (3 Hours)
- CNET 2180, Construction Methods & Surveying (4 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 & Liability (3 Hours)
- CNET 3430, Structural Analysis (3 Hours)
- CNET 3440, Steel Structures (3 Hours)
- CNET 3460, Soils & Foundations (3 Hours)
- CNET 3480, Structural Design w/ 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 Hours)
- 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 3610, Basic Information Systems (3 Hours)
- BLAW 3430, Legal & Ethical Environment of Business (3 Hours)
- BLAW 4770, Real Estate Law & 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	MFET 3110	LSCM 3960	CSCE 1030
MATH 1610	MGMT 3330	MKTG 3010	CHEM 1420
MATH 1650	MGMT 3720	MKTG 3650	PHYS 3010
MATH 3410	MGMT 3820	ENGR 1304	
MATH 3680	MGMT 3850	ENGR 2302	
ACCT 2020	MGMT 4470	ENGR 3450	

*This is an unofficial simplified checklist effective Fall 2018. Degree requirements may change. You may need elective courses to help reach a minimum of 124 Total Hours & 42 Advanced Hours. Check with an advisor.*

# CONSTRUCTION ENGINEERING TECHNOLOGY

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or 1415, Chemistry (see note 2)	3
CHEM 1430 or 1435, Chemistry Lab (see note 2)	1
CNET 1160, Const. Methods & Materials	3
ENGR 1030, Technological Systems	3
Communication Core course	<u>3</u>
<b>Total Hours</b>	<b>17</b>

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
CNET 2180, Const. Methods & Surveying (CNET 1160)	4
TECM 2700, Technical Writing (Communication Core)	3
University Core course	<u>3</u>
<b>Total Hours</b>	<b>17</b>

### SOPHOMORE YEAR

#### FALL

PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
CNET 2300, Construction Graphics and Modeling	3
ENGR 2301, Statics (MATH 1710, PHYS 1710, 1730)	3
ECON 1100, Microeconomics	3
University Core course	<u>3</u>
<b>Total Hours</b>	<b>17</b>

#### SPRING

ACCT 2010, Accounting Principles I (ECON 1100)	3
BCIS 3610, Basic Information Systems	3
ENGR 2332, Mechanics of Materials (ENGR 2301)	4
OPSM 3830, Operations Management	3
University Core course	<u>3</u>
<b>Total</b>	<b>16</b>

### JUNIOR YEAR

#### FALL

CNET 3150, Const. Contract Doc. (CNET 2180)	3
CNET 3160, Const. Cost Estimating (CNET 2180)	3
CNET 3430, Structural Analysis (ENGR 2332)	3
BLAW 3430, Legal & Ethical Env. (PSCI 2306, PSCI 2305)	3
University Core course	<u>3</u>
<b>Total Hours</b>	<b>15</b>

#### SPRING

CNET 3190, Const. Scheduling (CNET 3160)	3
CNET 3440, Steel Structures (CNET 3430)	3
CNET 3460, Soils & Foundations (CNET 2180, ENGR 2332)	3
CNET 3410, Occupational Safety & Liability	3
University Core course	<u>3</u>
<b>Total Hours</b>	<b>15</b>

### SENIOR YEAR

#### FALL

CNET 3480, Structural Design (CNET 2180, CNET 3430)	3
CNET 4170, Const. Management (CNET 3160)	3
CNET 4780, Senior Design I (see note 3)	1
BLAW 4770, Real Estate Law & Contracts	3
University Core course	<u>3</u>
<b>Total Hours</b>	<b>13</b>

#### SPRING

CNET 4180, Problems in Project Mgmt. (CNET 4170)	3
CNET 4620, Adv. Design (CNET 3430)	3
CNET 4790, Senior Design II (CNET 4780)	3
Technical elective course	<u>3</u>
<b>Total hours</b>	<b>12</b>

#### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: CNET 4780 requires senior classification & completion of CNET 3190, CNET 3440, and CNET 3460 as prerequisite.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communication Core, ENGR 1030, MATH 1710, PHYS 1710, CNET 1160, CNET 2180, & CNET 2300 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**



# CONSTRUCTION ENGINEERING TECHNOLOGY

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

### YEAR ONE

#### FALL

PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
CNET 2300, Construction Graphics and Modeling	3
ENGR 2301, Statics (MATH 1710, PHYS 1710, 1730)	3
ECON 1100, Microeconomics	3
CNET 1160, Const. Methods & Materials	<u>3</u>
Total Hours	15

#### SPRING

ACCT 2010, Accounting Principles I (ECON 1100)	3
ENGR 2332, Mechanics of Materials (ENGR 2301)	4
TECM 2700, Technical Writing (Communication Core)	3
CNET 2180, Const. Methods & Surveying (CNET 1160)	<u>4</u>
Total	14

### YEAR TWO

#### FALL

CNET 3150, Const. Contract Doc. (CNET 2180)	2
CNET 3160, Const. Cost Estimating (CNET 2180)	3
CNET 3430, Structural Analysis (ENGR 2332)	3
BLAW 3430, Legal & Ethical Env. (PSCI 2306, PSCI 2305)	3
OPSM 3830, Operations Management	<u>3</u>
Total Hours	14

#### SPRING

CNET 3190, Const. Scheduling (CNET 3160)	3
CNET 3440, Steel Structures (CNET 3430)	3
CNET 3460, Soils & Foundations (CNET 2180, ENGR 2332)	3
CNET 3410, Occupational Safety & Liability	<u>3</u>
Total Hours	12

### YEAR THREE

#### FALL

CNET 3480, Structural Design (CNET 2180, CNET 3430)	3
CNET 4170, Const. Management (CNET 3160)	3
CNET 4780, Senior Design I (see note 3)	1
BLAW 4770, Real Estate Law & Contracts	3
BCIS 3610, Basic Information Systems	3
Technical elective course	<u>2</u>
Total Hours	15

#### SPRING

CNET 4180, Problems in Project Mgmt. (CNET 4170)	3
CNET 4620, Adv. Design (CNET 3430)	3
CNET 4790, Senior Design II (CNET 4780)	3
Technical elective course	3
Technical elective course	<u>3</u>
Total Hours	15

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or completion of MATH 1610 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: CNET 4780 requires senior classification & completion of CNET 3190, CNET 3440, and CNET 3460 as prerequisite.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communication Core, ENGR 1030, MATH 1710, PHYS 1710, CNET 1160, CNET 2180, & CNET 2300 as foundations to enroll in advanced courses.**

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

#### Credits Which Could Be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:

Communications Core	ENGR 1030(via ENGR 1201)
HIST 2610	CHEM 1410 & 1430
HIST 2620	
PSCI 2305	
PSCI 2306	
Creative Arts Core	
Language Philosophy Culture Core	

#### Credits Which Should Be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:

MATH 1710
MATH 1720
PHYS 1710 & 1730

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# ELECTRICAL ENGINEERING

Bachelor of Science (B.S.) degree with a major in Electrical Engineering

Department of Electrical Engineering  
Discovery Park B-270; (940) 891-6872

## University Requirements

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from options on page 30

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options on page 30

### SOCIAL & BEHAVIORAL SCIENCES

- 1 Course (3 Hours) chosen from options on page 30

## 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 & Vector Geometry (3 Hours)
- MATH 3410, Differential Equations (3 Hours)
- MATH 3680, Applied Statistics (3 Hours)

Please note that completion of the above UNT Math courses will earn a minor in Mathematics.

### 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 1 (3 Hours) &
- CHEM 1430, General Chemistry 1 Lab (1 Hour)

**OR**

- CHEM 1415, Chemistry for Engineers (3 Hours) &
- CHEM 1435, Chemistry for Engineers Lab (1 Hour)

## Major Requirements

Grades of C or better.

### ELECTRICAL ENGINEERING

- EENG 1910, Learning to Learn (3 Hours)
- EENG 2610, Circuit Analysis (3 Hours) & EENG 2611, Circuit Analysis Lab (1 Hour)
- EENG 2620, Signals & Systems (3 Hours) & EENG 2621, Signals & Systems Lab (1 Hour)
- EENG 2710, Digital Logic Design (3 Hours) & EENG 2711, Digital Logic Design Lab (1 Hour)
- EENG 2920, Analog 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 Lab (1 Hour)
- EENG 3520, Electronics II (3 Hours)
- EENG 3710, Computer Organization (3 Hours)
- EENG 3810, Communications Systems (3 Hours) & EENG 3811, Communications 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\*\*\*\* Elective (3 Hours)
- EENG 4\*\*\*\* Elective (3 Hours)
- EENG 4\*\*\*\* Elective (3 Hours)

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

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

EENG 4920 & 4951 cannot be taken as electives.

### COMPUTER PROGRAMMING

- CSCE 1030, Computer Science I (4 Hours)

### MANAGEMENT

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

A minor in Business Foundations will fulfill the management requirement.

# ELECTRICAL ENGINEERING

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or 1415, Chemistry (see note 2)	3
CHEM 1430 or 1435, Chemistry Lab (see note 2)	1
EENG 1910, Learning to Learn	3
Communication Core course	3
CSCS 1030, Computer Science 1 (MATH 1650)	4
Total Hours	18

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
EENG 2710, Digital Logic Design	3
EENG 2711, Digital Logic Design Lab (coreq EENG 2710)	1
TECM 2700, Tech. Writing (Communication Core)	3
University Core course	3
Total Hours	17

### SOPHOMORE YEAR

#### FALL

MATH 2730, Multivariable Calculus (MATH 1720)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
EENG 2610, Circ. (MATH 1720, coreq PHYS 2220, 2240)	3
EENG 2611, Circ. Lab (coreq EENG 2610)	1
University Core course	3
Total Hours	14

#### SPRING

MATH 2700, Linear Algebra (MATH 1720)	3
MATH 3410, Diff. Equ. (MATH 1720 coreq MATH 2700)	3
EENG 2620, Signals & Sys. (EENG 2610, 2611, MATH 2730)	3
EENG 2621, Signals & Sys. Lab (coreq EENG 2620)	1
EENG 2920, Analog Circ. Des. (EENG 2610, 2611)	3
University Core course	3
Total Hours	16

### JUNIOR YEAR

#### FALL

MATH 3680, Statistics (MATH 1710, coreq MATH 1720)	3
EENG 3410, Electromag. (EENG 2610, 2611, MATH 3410)	3
EENG 3411, Electromag. Lab (coreq EENG 3410)	1
EENG 3510, Electronics I (EENG 2610, 2611)	3
EENG 3511, Electronics I Lab (coreq EENG 3510)	1
EENG 3910, DSP System Design (EENG 2620, 2621)	3
University Core course	3
Total Hours	17

#### SPRING

EENG 3520, Electronics II (EENG 3510, 3511)	3
EENG 3710, Comp. Org. (EENG 2710, 2711, CSCS 1030)	3
EENG 3810, Comm. Sys. (EENG 2620, 3510, MATH 3680)	3
EENG 3811, Comm. Sys. Lab (coreq EENG 3810)	1
EENG 3920, Modern Comm. Sys. (coreq EENG 3520)	3
University Core course	3
Total Hours	16

### SENIOR YEAR

#### FALL

EENG Elective (see note 3)	3
EENG Elective (see note 3)	3
EENG 4910, Senior Design I (EENG 3810, 3811, 3910, 3920)	3
OPSM 3830, Operations Management	3
University Core course	3
Total Hours	15

#### SPRING

EENG Elective (see note 3)	3
EENG Elective (see note 3)	3
EENG 4990, Senior Design II (EENG 4910)	3
MGMT 3850, Entrepreneurship	3
University Core course	3
Total Hours	15

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: Must complete prerequisite(s) for each EENG Elective course. Graduate Track option available.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, MATH 1720, PHYS 1710, PHYS 1730, EENG 1910 & EENG 2610 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# ELECTRICAL ENGINEERING

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

### YEAR ONE

#### FALL

CSCE 1030, Computer Science 1 (MATH 1650)	4
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
MATH 2730, Multivariable Calculus (MATH 1720)	3
EENG 2610, Circ. (MATH 1720, coreq PHYS 2220, 2240)	3
EENG 2611, Circ. Lab (coreq EENG 2610)	<u>1</u>
<b>Total Hours</b>	<b>15</b>

#### SPRING

TECM 2700, Tech. Writing (Communication Core)	3
EENG 2920, Analog Circ. Des. (EENG 2610, 2611)	3
EENG 2620, Signals & Sys. (EENG 2610, 2611, MATH 2730)	3
EENG 2621, Signals & Sys. Lab (coreq EENG 2620)	1
EENG 2710, Digital Logic Design	3
EENG 2711, Digital Logic Design Lab (coreq EENG 2710)	<u>1</u>
<b>Total Hours</b>	<b>14</b>

### YEAR TWO

#### FALL

MATH 2700, Linear Algebra (MATH 1720)	3
MATH 3410, Diff. Equ. (MATH 1720 coreq MATH 2700)	3
EENG 3510, Electronics I (EENG 2610, 2611)	3
EENG 3511, Electronics I Lab (coreq EENG 3510)	1
EENG 3910, DSP System Design (EENG 2620, 2621)	<u>3</u>
<b>Total Hours</b>	<b>13</b>

#### SPRING

EENG 3520, Electronics II (EENG 3510, 3511)	3
EENG 3710, Comp. Org. (EENG 2710, 2711, CSCE 1030)	3
EENG 3810, Comm. Sys. (EENG 2620, 3510, MATH 3680)	3
EENG 3811, Comm. Sys. Lab (coreq EENG 3810)	1
EENG 3920, Modern Comm. Sys. (coreq EENG 3520)	3
MATH 3680, Statistics (MATH 1710, coreq MATH 1720)	<u>3</u>
<b>Total Hours</b>	<b>16</b>

### YEAR THREE

#### FALL

EENG 3410, Electromag. (EENG 2610, 2611, MATH 3410)	3
EENG 3411, Electromag. Lab (coreq EENG 3410)	1
EENG Elective (see note 1)	3
EENG Elective (see note 1)	3
EENG 4910, Senior Design I (EENG 3810, 3811, 3910, 3920)	3
OPSM 3830, Operations Management	<u>3</u>
<b>Total Hours</b>	<b>16</b>

#### SPRING

EENG Elective (see note 1)	3
EENG Elective (see note 1)	3
EENG 4990, Senior Design II (EENG 4910)	3
MGMT 3850, Entrepreneurship	<u>3</u>
<b>Total Hours</b>	<b>12</b>

#### Notes:

Note 1: Must complete prerequisite(s) for each EENG Elective course. Graduate Track option available.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, MATH 1720, PHYS 1710, PHYS 1730, EENG 1910 & EENG 2610 as foundations to enroll in advanced courses.**

*Credits Which Could be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:*

Communications Core	TECM 2700
HIST 2610	CHEM 1410, 1430
HIST 2620	
PSCI 2305	
PSCI 2306	
Creative Arts Core	
Language Philosophy Culture Core	
Social Behavioral Sciences Core	

*Credits Which Should be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:*

MATH 1710
MATH 1720
PHYS 1710, 1730
ENGR 1201 (EENG 1910)

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# INFORMATION TECHNOLOGY

Bachelor of Arts (B.A.) degree with a major in Information Technology

Department of Computer Science & Engineering  
Discovery Park F-201; (940) 565-2767

## University Core

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from options

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- 1 Course (3 Hours) chosen from options on

## 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)
- or**
- CHEM 1415, Chemistry for Engineers (3 Hours) & CHEM 1435, Chemistry for Engineers Lab (1 Hour)
- or**
- 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, Foundation of Computing (3 Hours)
- CSCE 2110, Foundation of Data Structure (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 3600, Principles of Systems Programming (3 Hours)
- CSCE 3605, Systems Administration (3 Hours)
- CSCE 3615, Enterprise Systems Arch., Analysis & 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 4550, Introduction to Computer Security (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) & 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
Software/Web Development	Education/Teach North Texas
Game Development	Pre-MBA Business
Criminology/Forensics	General Business
Technical Communications	Management
Microsoft/Oracle/Cisco Cert.	Logistics
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 or ENGR 2720/2730 as prerequisite.

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

# INFORMATION TECHNOLOGY

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or 1415 or BIOL 1710 (see note 2)	3
CHEM 1430 or 1435 or BIOL 1760 (see note 2)	1
CSCE 1030, Computer Science I (see note 3)	4
Communication Core course	<u>3</u>
Total Hours	15

#### SPRING

MATH 1680 or MATH1780, Probability (MATH 1710)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
CSCE 1040, Comp. Science II (CSCE 1030, MATH 1710)	3
TECM 2700, Technical Writing (Communication Core)	3
University Core course	<u>3</u>
Total Hours	16

### SOPHOMORE YEAR

#### FALL

CSCE 2100, Foundations of Computing (CSCE 1040)	3
Supporting Area course (see note 4)	3
University Core course	3
University Core course	3
University Core course	<u>3</u>
Total Hours	15

#### SPRING

CSCE 2110, Foundations of Data Structure (CSCE 1040)	3
CSCE 3600, Systems Programming (CSCE 2100)	3
Supporting Area course (see note 4)	3
University Core course	3
University Core course	<u>3</u>
Total Hours	15

### JUNIOR YEAR

#### FALL

CSCE 3055, IT Project Management (CSCE 2100)	3
CSCE 3220, Human Computer Interfaces (CSCE 2110)	3
CSCE 3420, Internet Programming (CSCE 2110)	3
CSCE 3530, Computer Networks (CSCE 3600)	3
Supporting Area course (see note 4)	<u>3</u>
Total Hours	15

#### SPRING

CSCE 4010, Social Issues (CSCE 3600)	3
CSCE 3605, Systems Administration (CSCE 3600)	3
CSCE 3615, Enterprise Systems Arch. (CSCE 2100)	3
CSCE 4350, Database Systems (CSCE 2110)	3
University Core course	<u>3</u>
Total Hours	15

### SENIOR YEAR

#### FALL

CSCE 4535, Network Administration (CSCE 3530)	3
CSCE 4355, Database Administration (CSCE 4350)	3
CSCE 4550, Computer Security (CSCE 3600)	3
CSCE 4905, Capstone I (CSCE 3055, CSCE 3615)	3
Supporting Area course (see note 4)	<u>3</u>
Total Hours	15

#### SPRING

CSCE 4925, Capstone II (CSCE 4905)	3
Supporting Area course (see note 4)	3
Supporting Area course (see note 4)	3
Supporting Area course (see note 4)	3
University Core course	<u>3</u>
Total Hours	15

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: BIOL 1710 & 1760 has no prerequisite. CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: CSCE 1030 requires completion of MATH 1650, Pre-Calculus, or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.

Note 4: Must enroll in Supporting Area courses approved by an advisor & complete prerequisite(s) for approved courses.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in CSCE 1030, CSCE 1040, CSCE 2100, and MATH 1710 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**



# INFORMATION TECHNOLOGY

Sample three-year schedule

Sample schedule based on completion of all core curriculum with AP, IB, CLEP and/or DC credits

Required prerequisite(s) indicated in parentheses & notes

<b>YEAR ONE</b>			
<b>FALL</b>		<b>SPRING</b>	
MATH 1710, Calculus I (see note 1)	4	MATH 1680 or MATH1780, Probability (MATH 1710)	3
CHEM 1410 or 1415 or BIOL 1710 (see note 2)	3	PHYS 1710, Mechanics (MATH 1710)	3
CHEM 1430 or 1435 or BIOL 1760 (see note 2)	1	PHYS 1730, Mechanics Lab (MATH 1710)	1
CSCE 1030, Computer Science I (see note 3)	4	CSCE 1040, Comp. Science II (CSCE 1030, MATH 1710)	3
TECM 2700, Technical Writing (Communication Core)	<u>3</u>	Supporting Area course (see note 4)	<u>3</u>
Total Hours	15	Total Hours	13
<b>SUMMER</b>			
CSCE 2100, Foundations of Computing (CSCE 1040)	<u>3</u>		
Total Hours	3		
<b>YEAR TWO</b>			
<b>FALL</b>		<b>SPRING</b>	
CSCE 2110, Foundations of Data Structure (CSCE 1040)	3	CSCE 3530, Computer Networks (CSCE 3600)	3
CSCE 3055, IT Project Management (CSCE 2100)	3	CSCE 3605, Systems Administration (CSCE 3600)	3
CSCE 3600, Systems Programming (CSCE 2100)	3	CSCE 3615, Enterprise Systems Arch. (CSCE 2100)	3
Supporting Area course (see note 4)	3	CSCE 4010, Social Issues (CSCE 3600)	3
Supporting Area course (see note 4)	<u>3</u>	CSCE 4350, Database Systems (CSCE 2110)	<u>3</u>
Total Hours	15	Total Hours	15
<b>YEAR THREE</b>			
<b>FALL</b>		<b>SPRING</b>	
CSCE 3220, Human Computer Interfaces (CSCE 2110)	3	CSCE 4925, Capstone II (CSCE 4905)	3
CSCE 3420, Internet Programming (CSCE 2110)	3	Supporting Area course (see note 4)	3
CSCE 4535, Network Administration (CSCE 3530)	3	Supporting Area course (see note 4)	3
CSCE 4355, Database Administration (CSCE 4350)	3	Supporting Area course (see note 4)	3
CSCE 4550, Computer Security (CSCE 3600)	3	Supporting Area course (see note 4)	<u>3</u>
CSCE 4905, Capstone I (CSCE 3055, CSCE 3615)	<u>3</u>	Total Hours	15
Total Hours	18		

*Notes:*

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: BIOL 1710 & 1760 has no prerequisite. CHEM 1410 & 1430 requires MATH 1100, College Algebra (or higher) as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus (or higher) as prerequisite.

Note 3: CSCE 1030 requires completion of MATH 1650, Pre-Calculus, or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.

Note 4: Must enroll in Supporting Area courses approved by an advisor & complete prerequisite(s) for approved courses.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in CSCE 1030, CSCE 1040, CSCE 2100, and MATH 1710 as foundations to enroll in advanced courses.**

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

*Credits Which Could Be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:*

Communications Core	Creative Arts Core
HIST 2610	Language Philosophy Culture Core
HIST 2620	Social Behavioral Sciences Core
PSCI 2305	
PSCI 2306	

*Credits Which Should Be Earned Prior to Enrollment at UNT – AP, IB, CLEP, DC, Transfer:*

MATH 1650 Pre-Calculus (see note 1)

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# MATERIALS SCIENCE & ENGINEERING

Bachelor of Science (B.S.) degree with a major in Materials Science & Engineering

Department of Materials Science & Engineering  
Discovery Park E-132; (940) 565-3260

## University Core

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- 1 Course (3 Hours) chosen from options

## 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 & ENGINEERING

- ENGR 2301, Statics (3 Hours)
- MTSE1100, Discover How & Why Materials Matter (3 Hours)
- MTSE 3000, Fundamentals of Materials Science & Engr. I (3 Hours)
- MTSE 3001, Fundamentals of Materials Science & Engr. II (3 Hours)
- MTSE 3010, Bonding & Structure (3 Hours)
- MTSE 3020, Microstructure & Characterization (3 Hours)
- MTSE 3030, Thermodynamics & 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, & 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 & Engineering (3 Hours)
- MTSE 4050, Polymer Science & Engineering (3 Hours)
- MTSE 4060, Materials Selection & Performance (3 Hours)
- MTSE 4090, Senior Design I (3 Hours)
- MTSE 4100, Senior Design II (3 Hours)

### MATERIALS SCIENCE & 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 & ENGINEERING

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410, General Chemistry I (see note 2)	3
CHEM 1430, General Chemistry I Lab (see note 2)	1
Communication Core course	3
MTSE 1100, Discover How & Why Materials Matter	3
Total Hours	14

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
CHEM 1420, General Chemistry II (CHEM 1410, 1430)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
TECM 2700, Tech. Writing (Communication Core)	3
University Core course	3
Total Hours	16

### SOPHOMORE YEAR

#### FALL

MATH 2730, Multivariable Calculus (MATH 1720)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
ENGR 2301, Statics (MATH 1710, PHYS 1710, 1730)	3
MTSE 3000, Fundamentals I (CHEM 1410, 1430)	3
University Core course	3
Total Hours	16

#### SPRING

MATH 3410, Differential Equations (MATH 1720)	3
PHYS 3010, Modern Physics (PHYS 2220, 2240)	3
MTSE 3001, Fundamentals II (prereq/coreq MTSE 3000)	3
University Core course	3
University Core course	3
Total Hours	15

#### FALL

MTSE 3010, Bonding & Structure (MTSE 3000)	3
MTSE 3020, Micro & Characterization (MTSE 3000)	3
MTSE 3030, Thermo & Phase Diagrams (MTSE 3000)	3
MTSE 3040, Transport Phen. (MTSE 3000, MATH 3410)	3
MTSE 3090, Laboratory I (MTSE 3000)	1
University Core course	3
Total Hours	16

#### SPRING

MTSE 3050, Mechanical Properties (MTSE 3000)	3
MTSE 3060, Phase Transform. (MTSE 3010, 3030, 3040)	3
MTSE 3070, Elect., Opt., & Mag. Properties (MTSE 3000)	3
MTSE 3080, Materials Processing (MTSE 3040)	3
MTSE 3100, Laboratory II (MTSE 3090)	1
University Core course	3
Total Hours	16

### SENIOR YEAR

#### FALL

MTSE 4010, Phys. Metallurgy Prin. (MTSE 3010, 3030, 3040)	3
MTSE 4030, Ceramic Sci. & Engr. (MTSE 3010, 3020, 3040)	3
MTSE 4050, Polymer Sci. & Engr. (MTSE 3000)	3
MTSE 4090, Senior Design I (see note 3)	3
University Core course	3
Total Hours	15

#### SPRING

MTSE Advanced Level MTSE Elective (see note 4)	3
MTSE Advanced Level MTSE Elective (see note 4)	3
MTSE 4060, Selection & Perform. (MTSE 3030, 3040, 3050)	3
MTSE 4100, Senior Design II (MTSE 4090)	3
Total Hours	12

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra, or placement into a higher level math course as prerequisite.

Note 3: MTSE 4090 requires completion of MTSE 3010, 3020, 3030, 3040, 3050, 3070, 3080 as prerequisite.

Note 4: Must complete prerequisite(s) for each Advanced Elective MTSE course. Graduate Track option available.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, MATH 1720, CHEM 1410, CHEM 1430, CHEM 1420, PHYS 1710, PHYS 1730, MTSE 1100, & MTSE 3000 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# MATERIALS SCIENCE & ENGINEERING

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

### YEAR ONE

#### FALL

MATH 2730, Multivariable Calculus (MATH 1720)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
ENGR 2301, Statics (MATH 1710, PHYS 1710, 1730)	3
MTSE 1100, Discover How & Why Materials Matter	<u>3</u>
Total Hours	13

#### SPRING

MATH 3410, Differential Equations (MATH 1720)	3
PHYS 3010, Modern Physics (PHYS 2220, 2240)	3
MTSE 3000, Fundamentals I (CHEM 1410, 1430)	3
MTSE 3001, Fundamentals II (coreq MTSE 3000)	3
TECM 2700, Technical Writing	<u>3</u>
Total Hours	15

### YEAR TWO

#### FALL

MTSE 3010, Bonding & Structure (MTSE 3000)	3
MTSE 3020, Micro & Characterization (MTSE 3000)	3
MTSE 3030, Thermo & Phase Diagrams (MTSE 3000)	3
MTSE 3040, Transport Phen. (MTSE 3000, MATH 3410)	3
MTSE 3090, Laboratory I (MTSE 3000)	<u>1</u>
Total Hours	13

#### SPRING

MTSE 3050, Mechanical Properties (MTSE 3000)	3
MTSE 3060, Phase Transform. (MTSE 3010, 3030, 3040)	3
MTSE 3070, Elect., Opt., & Mag. Properties (MTSE 3000)	3
MTSE 3080, Materials Processing (MTSE 3040)	3
MTSE 3100, Laboratory II (MTSE 3090)	<u>1</u>
Total Hours	13

### YEAR THREE

#### FALL

MTSE 4010, Phys. Metallurgy Prin. (MTSE 3010, 3030, 3040)	3
MTSE 4030, Ceramic Sci. & Engr. (MTSE 3010, 3020, 3040)	3
MTSE 4050, Polymer Sci. & Engr. (MTSE 300)	3
MTSE 4090, Senior Design I (see note 1)	<u>3</u>
Total Hours	12

#### SPRING

MTSE Advanced Level MTSE Elective (see note 2)	3
MTSE Advanced Level MTSE Elective (see note 2)	3
MTSE 4060, Selection & Perform. (MTSE 3030, 3040, 3050)	3
MTSE 4100, Senior Design II (MTSE 4090)	<u>3</u>
Total Hours	12

### Notes:

Note 1: MTSE 4090 requires completion of MTSE 3010, 3020, 3030, 3040, 3050, 3070, 3080 as prerequisite.

Note 2: Must complete prerequisite(s) for each Advanced Elective MTSE course. Graduate Track option available.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, MATH 1720, CHEM 1410, CHEM 1430, CHEM 1420, PHYS 1710, PHYS 1730, MTSE 1100, & MTSE 3000 as foundations to enroll in advanced courses.**

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

Credits Which Could Be Earned Prior to Enrollment at  
UNT – AP, IB, CLEP, DC, Transfer:

Communications Core  
HIST 2610  
HIST 2620  
PSCI 2305  
PSCI 2306  
Creative Arts Core  
Language Philosophy Culture Core  
Social Behavioral Sciences Core

Credits Which Should Be Earned Prior to Enrollment at  
UNT – AP, IB, CLEP, DC, Transfer:

MATH 1710  
MATH 1720  
CHEM 1410, 1430  
CHEM 1420  
PHYS 1710, 1730

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# MECHANICAL & ENERGY ENGINEERING

Bachelor of Science (B.S.) degree with a major in Mechanical & Energy Engineering

Department of Mechanical & Energy Engineering  
Discovery Park F-101; (940) 565-2400

## University Core

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from options

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- 1 Course (3 Hours) chosen from options

## Major Requirements

Grades of C or better.

### TECHNICAL COMMUNICATION

- TECM 2700, Technical Writing (3 Hours)

### MATHEMATICS

- MATH 1710, Calculus I (4 Hours)
- MATH 1720, Calculus II (3 Hours)
- MATH 2700, Linear Algebra & Vector Geometry (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 Hours)
- CHEM 1410, General Chemistry I (3 Hours) & CHEM 1430, General Chemistry I Lab (1 Hour)

or

- CHEM 1415, Chemistry for Engineers (3 Hours) & CHEM 1435, Chemistry for Engineers Lab (1 Hour)

## Major Requirements

Grades of C or better.

### MECHANICAL & ENERGY ENGINEERING

- MEEN 1000, Discover Mechanical & Energy (3 Hours)
  - MEEN 2110, Engineering Data Analysis (2 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 & 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)
  - ENGR 2405, Circuit Analysis (3 Hours)
- or
- EENG 2610, Circuit Analysis (3 Hours)
  - MTSE 3000, Fundamentals of Materials Sci. & Engr. I (3 Hours) & MTSE 3003, Fundamentals I Lab 1 (1 Hour)

### ENERGY ELECTIVES

- 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 4350
MEEN 4110	MEEN 4315	MEEN 4335	MEEN 4410
MEEN 4112	MEEN 4320	MEEN 4335	MEEN 4810
MEEN 4300	MEEN 4330	MEEN 4340	

### TECHNICAL ELECTIVES

- 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 & ENERGY ENGINEERING

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or 1415, Chemistry (see note 2)	3
CHEM 1430 or 1435, Chemistry Lab (see note 2)	1
MEEN 1000, Discover Mech. & Energy (see note 3)	3
Communication Core course	3
University Core course	3
Total Hours	17

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
ENGR 1304, Engineering Graphics	3
TECM 2700, Tech Writing (Communication Core)	3
University Core course	3
Total Hours	16

### SOPHOMORE YEAR

#### FALL

MATH 2730, Multivariable Calculus (MATH 1720)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
MEEN 2301, Mech I (PHYS 1710, 1730, MEEN 1000)	3
MEEN 2240, Prog. Mech. Engr. (MEEN 1000, MATH 2700 or co)	3
MATH 2700, Linear Algebra (MATH 1720)	3
Total Hours	16

#### SPRING

MATH 3410, Diff. Equ. (MATH 1720, coreq MATH 2700)	3
MEEN 2210, Thermo (MEEN 1000, MATH 1720, PHYS 1710)	3
MEEN 2302, Mech II (MEEN 2301, MATH 1720)	3
MEEN 2332, Mech III (MEEN 2301)	3
EENG 2610 or ENGR 2405, Circuit Analysis (see note 4)	3
MEEN 2110, Engr. Data Analysis (MATH 2700, MEEN 1000)	2
Total Hours	17

### JUNIOR YEAR

#### FALL

MEEN 3110, Thermodynamics II (MEEN 2210)	3
MEEN 3120, Fluids (MATH 2730, 3410, MEEN 2210, 2332)	3
MEEN 3240, Lab I (MEEN 2110, MEEN 2210, MATH 3410)	2
MEEN 3250, Analy. Methods (MEEN 2240, MATH 3410)	3
MTSE 3000, Materials (CHEM reqt.)	3
MTSE 3003, Materials Lab (CHEM reqt.)	1
Total Hours	15

#### SPRING

University Core course	3
MEEN 3130, Mach. Elem. (MEEN 2332, ENGR 1304)	3
MEEN 3210, Heat Transfer (MEEN 3110, 3120, 3250)	3
MEEN 3230, Dyna. & Contls (MEEN 2302, MATH 2700, 3410)	3
MEEN 3242, Laboratory II (MEEN 3240, MEEN 3210 or co)	1
University Core course	3
Total Hours	16

### SENIOR YEAR

#### FALL

MEEN 3100, Manufact. (MEEN 2332, MTSE 3000, 3003)	3
MEEN 4150, Design I (see note 5)	3
Energy Elective (see note 6)	3
Technical Elective (see note 6)	3
University Core course	3
Total Hours	15

#### SPRING

MEEN 4250, Capstone Design (MEEN 3100, MEEN 4150)	3
Energy Elective (see note 6)	3
Technical Elective (see note 6)	3
University Core course	3
University Core course	3
Total Hours	15

#### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra, or placement into a higher level math course as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus, or placement into a higher level math course as prerequisite.

Note 3: MEEN 1000 requires MATH 1650, Pre-Calculus, or placement into a higher level math course as prerequisite.

Note 4: EENG 2610 or ENGR 2405 require MATH 1720 as prerequisite and PHYS 2220, 2240 as prerequisite or corequisite.

Note 5: MEEN 4150 requires EENG 2610 or ENGR 2405, MEEN 3130, MEEN 3210, MEEN 3230, MEEN 3242 & completion or concurrent enrollment in MEEN 3100 as prerequisite.

Note 6: Must complete appropriate prerequisite(s) for energy & technical electives. Graduate Track option available.

**Must earn at least a grade of "C" & a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, MATH 1720, PHYS 1710, PHYS 1730, MEEN 1000, MEEN 2210, MEEN 2301, & MEEN 2302 as foundations to enroll in advanced courses.**



# MECHANICAL & ENERGY ENGINEERING

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

### YEAR ONE

#### FALL

MEEN 2730, Multivariable Calculus (MATH 1720)	3
PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
MEEN 2301, Mech I (MEEN 1000, PHYS 1710, 1730)	3
MEEN 2240, Prog. Mech. Engr. (MEEN 1000, Co MATH 2700)	3
MATH 2700, Linear Algebra (MATH 1720)	<u>3</u>
Total Hours	16

#### SPRING

MATH 3410, Diff. Equ. (MATH 1720, coreq MATH 2700)	3
ENGR 1304, Engineering Graphics	3
MEEN 2302, Mech II (MEEN 2301, MATH 1720)	3
MEEN 2332, Mech III (MEEN 2301)	3
TECM 2700, Technical Writing	3
MEEN 2110, Engr. Data Analysis (MATH 2700, MEEN 1000)	<u>2</u>
Total Hours	17

#### SUMMER

MEEN 2210, Thermo (MEEN 1000, MATH 1720, PHYS 1710)	<u>3</u>
	3

### YEAR TWO

#### FALL

MEEN 3110, Thermodynamics II (MEEN 2210)	3
MEEN 3120, Fluids (MATH 2730, 3410, MEEN 2210, 2332)	3
MEEN 3240, Lab I (MEEN 2110, MEEN 2210, MATH 3410)	2
MEEN 3250, Analy. Methods (MEEN 2240, MATH 3410)	3
MTSE 3000, Materials (see note 5)	3
MTSE 3003, Materials Lab (see note 5)	<u>1</u>
Total Hours	15

#### SPRING

EENG 2610 or ENGR 2405, Circuit (Analysis see note 4)	3
MEEN 3130, Mach. Elem. (MEEN 2332, ENGR 1304)	3
MEEN 3210, Heat Transfer (MEEN 3110, 3120, 3250)	3
MEEN 3230, Dyna. & Contls (MEEN 2302, MATH 2700, 3410)	3
MEEN 3242, Lab II (MEEN 3240, 3120, 3210 or co)	<u>1</u>
Total Hours	13

### YEAR THREE

#### FALL

MEEN 3100, Manufact. (MEEN 2332, MTSE 3000, 3003)	3
MEEN 4150, Design I (see note 6)	3
Energy Elective (see note 7)	3
Technical Elective (see note 7)	<u>3</u>
Total Hours	12

#### SPRING

MEEN 4250, Capstone Design (MEEN 4150)	3
Energy Elective (see note 7)	3
Technical Elective (see note 7)	<u>3</u>
Total Hours	9

#### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or completion of MATH 1610 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra, or placement into a higher level math course as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus, or placement into a higher level math course as prerequisite.

Note 3: MEEN 1000 requires MATH 1650, Pre-Calculus, or placement into a higher level math course as prerequisite.

Note 4: EENG 2610 or ENGR 2405 require MATH 1720 as prerequisite and PHYS 2220, 2240 as prerequisite or corequisite.

Note 5: MTSE 3000, 3003 requires PHYS 1710 and CHEM 1410, 1430 or CHEM 1415, 1435 as prerequisite.

Note 6: MEEN 4150 requires EENG 2610 or ENGR 2405, MEEN 3130, MEEN 3210, MEEN 3230, MEEN 3242 & completion or concurrent enrollment in MEEN 3100 as prerequisite.

Note 7: Must complete appropriate prerequisite(s) for energy & technical electives. Graduate Track option available.

**Must earn at least a grade of "C" & a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, MATH 1720, PHYS 1710, PHYS 1730, MEEN 1000, MEEN 2210, MEEN 2301, & MEEN 2302 as foundations to enroll in advanced courses.**

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

Credits Which Could Be Earned Prior to Enrollment at  
UNT – AP, IB, CLEP, DC, Transfer:

Communications Core	MEEN 1000 (via ENGR 1201)
HIST 2610	HIST 2620
PSCI 2305	PSCI 2306
Creative Arts	
Language Philosophy Culture Core	
Social Behavioral Sciences Core	

Credits Which Should Be Earned Prior to Enrollment at  
UNT – AP, IB, CLEP, DC, Transfer:

MATH 1710
MATH 1720
PHYS 1710 & 1730
CHEM 1410 & 1430

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# MECHANICAL ENGINEERING TECHNOLOGY

Bachelor of Science in Engineering Technology (B.S.E.T.) degree with a major in Mechanical Engineering Technology

Department of Engineering Technology  
Discovery Park F-115; (940) 565-2022

## University Core

### COMMUNICATION

- 1 Course (3 Hours) chosen from options

**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) chosen from options

### LANGUAGE, PHILOSOPHY, & CULTURE

- 1 Course (3 Hours) chosen from options

### SOCIAL & BEHAVIORAL SCIENCES

- 1 Course (3 Hours) chosen from options on

## Major Requirements

Grades of C or better.

### TECHNICAL COMMUNICATION

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

**OR**

- CHEM 1415, Chemistry for Engineers (3 Hours) & CHEM 1435, Chemistry for Engineers Lab (1 Hour)

## 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 of Materials (4 Hours)
- ENGR 2405, Circuit Analysis (3 Hours) & ENGR 2415, Circuit Analysis Lab (1 Hour)
- ENGR 3450, Engineering Materials (4 Hours)
  
- ELET 3980, Digital Control of Industrial Processes (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)

### COMPUTER PROGRAMMING

- CSCE 1030, Computer Science I (4 Hours)

### TECHNICAL ELECTIVES

- Advanced level (3\*\*\* or 4\*\*\* level) course chosen from appropriate elective options (3 Hours)
- Advanced level (3\*\*\* or 4\*\*\* level) course chosen from appropriate elective options (3 Hours)
- Advanced level (3\*\*\* or 4\*\*\* level) course chosen from appropriate elective options (3 Hours)
- Advanced level (3\*\*\* or 4\*\*\* level) course chosen from appropriate elective options (2 Hours)
- Any level course chosen from appropriate elective options (3 Hours)

*Electives must be chosen from the options below:*

MFET 4220	NUET 3910
CNET 3410	NUET 3930
ELET 3220	NUET 4950
ELET 4720	NUET 4800 (Human Performance)

*Completion of MFET 4220 for an advanced technical elective earns a Certificate in Manufacturing Engineering Technology.*

*Completion of NUET 3910, NUET 3930, NUET 4950, & NUET 4900 for advanced technical elective earns a Certificate in Nuclear Power Technology from the Nuclear Power Institute at Texas A & M University*

# MECHANICAL ENGINEERING TECHNOLOGY

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

**Must earn at least a grade of "C" in each course except for most University Core courses.**

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
CHEM 1410 or 1415, Chemistry (see note 2)	3
CHEM 1430 or 1435, Chemistry Lab (see note 2)	1
ENGR 1030, Technological Systems	3
ENGR 1304, Engineering Graphics	3
Communication Core course	<u>3</u>
Total Hours	17

#### SPRING

MATH 1720, Calculus II (MATH 1710)	3
PHYS 1710, Mechanics (MATH 1710)	3
PHYS 1730, Mechanics Lab (MATH 1710)	1
TECM 2700, Tech. Writing (Communication Core)	3
University Core course	3
University Core course	<u>3</u>
Total Hours	16

### SOPHOMORE YEAR

#### FALL

PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
ENGR 2301, Statics (PHYS 1710, 1730)	3
CSCE 1030, Computer Science I (MATH 1650)	4
University Core course	3
University Core course	<u>3</u>
Total Hours	17

#### SPRING

ENGR 2302, Dynamics (ENGR 2301, MATH 1720)	3
ENGR 2332, Mechanics of Materials (ENGR 2301)	4
ENGR 2405, Circuit (MATH 1720, PHYS 2220, 2240)	3
ENGR 2415, Circuit Lab (MATH 1720, PHYS 2220, 2240)	1
University Core course	3
University Core course	<u>3</u>
Total Hours	17

### JUNIOR YEAR

#### FALL

ENGR 3450, Materials (PHYS 1710, CHEM Reqt.)	4
MEET 3940, Fluid Mechanics (ENGR 2302, MATH 1720)	3
MEET 3990, Thermo. (ENGR 2332, CHEM Reqt.)	3
MFET 3110, Mach. Principles & Processes (MATH 1650)	<u>3</u>
Total Hours	14

#### SPRING

ELET 3980, Digital Controls (MATH 1650 or higher)	3
MEET 3650, Design of Mech. Components (ENGR 2332)	3
MFET 4190, Quality Assurance (MATH 1720)	3
MFET 4210, CAD/CAM System Operations (see note 3)	3
Advanced Technical Elective	<u>3</u>
Total Hours	15

### SENIOR YEAR

#### FALL

MEET 4050, Mechanical Design (MEET 3650)	3
MEET 4350, Heat Transfer Appl (MEET 3940, 3990)	3
MEET 4780, Senior Design I (see note 4)	1
MFET 4200, Engineering Costs Analysis (MATH 1720)	3
Advanced Technical Elective	3
University Core course	<u>3</u>
Total Hours	16

#### SPRING

MEET 4790, Senior Design II (MEET 4780)	3
MEET 4360, Exper. Thermal Sci. (MEET 3940, 3990, 4350)	3
Advanced Technical Elective	3
Advanced Technical Elective	2
Technical Elective course	<u>3</u>
Total Hours	14

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra, or placement into a higher level math course as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus, or placement into a higher level math course as prerequisite.

Note 3: MFET 4210 requires MFET 3110, ENGR 1304, & completion of all MATH, PHYS, & CHEM requirements as prerequisite.

Note 4: MEET 4780 requires completion of MFET 4210 and completion of or concurrent enrollment in MEET 4050 and MEET 4350.

**Must earn at least a grade of "C" & a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, PHYS 1710, PHYS 1730, ENGR 1304, & ENGR 2301 as foundations to enroll in advanced courses.**

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# MECHANICAL ENGINEERING TECHNOLOGY

## Sample Three-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

### YEAR ONE

#### FALL

PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
ENGR 2301, Statics (PHYS 1710, 1730)	3
CSCE 1030, Computer Science I (MATH 1650)	4
ENGR 1304, Engineering Graphics	<u>3</u>
Total Hours	14

#### SPRING

ENGR 2302, Dynamics (ENGR 2301, MATH 1720)	3
ENGR 2332, Mechanics of Materials (ENGR 2301)	4
ENGR 2405, Circuit (MATH 1720, co PHYS 2220, 2240)	3
ENGR 2415, Circuits Lab (see above)	1
TECM 2700, Technical Writing	<u>3</u>
Total Hours	14

### YEAR TWO

#### FALL

ENGR 3450, Materials (PHYS 1710, CHEM Reqt.)	4
MEET 3940, Fluid Mechanics (ENGR 2302, MATH 1720)	3
MEET 3990, Thermo. (ENGR 2332, CHEM Reqt.)	3
MFET 3110, Mach. Principles & Processes (MATH 1650)	<u>3</u>
Total Hours	13

#### SPRING

ELET 3980, Digital Controls (MATH 1650 or higher)	3
MEET 3650, Design of Mech. Components (ENGR 2332)	3
MFET 4190, Quality Assurance (MATH 1720)	3
MFET 4210, CAD/CAM System Operations (see note 3)	3
Advanced Technical Elective	<u>3</u>
Total Hours	15

### YEAR THREE

#### FALL

MEET 4050, Mechanical Design (MEET 3650)	3
MEET 4350, Heat Transfer Appl (MEET 3940, 3990)	3
MEET 4780, Senior Design I (see note 4)	1
MFET 4200, Engineering Costs Analysis (MATH 1720)	3
Advanced Technical Elective	<u>3</u>
Total Hours	13

#### SPRING

MEET 4790, Senior Design II (MEET 4780)	3
MEET 4360, Exper. Thermal Sci. (MEET 3940, 3990, 4350)	3
Advanced Technical Elective	3
Technical Elective	<u>3</u>
Total Hours	12

### Notes:

Note 1: MATH 1710 requires one of the following as prerequisite: completion of MATH 1650 with a grade of "C" or higher; or completion of MATH 1610 with a grade of "C" or higher; or Freshman Math Group Level 3; or approval authorized by score via mathematics testing; or earned credit for a math course at or above the MATH 1710 level.

Note 2: CHEM 1410 & 1430 requires MATH 1100, College Algebra, or placement into a higher level math course as prerequisite. CHEM 1415 & 1435 requires MATH 1650, Pre-Calculus, or placement into a higher level math course as prerequisite.

Note 3: MFET 4210 requires MFET 3110, ENGR 1304, & completion of all MATH, PHYS, & CHEM requirements as prerequisite.

Note 4: MEET 4780 requires completion of MFET 4210 and completion of or concurrent enrollment in MEET 4050 and MEET 4350.

**Must earn at least a grade of "C" & a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, PHYS 1710, PHYS 1730, ENGR 1304, & ENGR 2301 as foundations to enroll in advanced courses.**

**Must earn at least a grade of "C" in each course above except for most University Core courses.**

Credits Which Could Be Earned Prior to Enrollment at  
UNT – AP, IB, CLEP, DC, Transfer:

Communications Core	ENGR 1030 (via ENGR 1201)
HIST 2610	
HIST 2620	
PSCI 2305	
PSCI 2306	
Creative Arts Core	
Language Philosophy Culture Core	
Social Behavioral Sciences Core	

Credits Which Should Be Earned Prior to Enrollment at  
UNT – AP, IB, CLEP, DC, Transfer:

MATH 1710
MATH 1720
PHYS 1710 & 1730
CHEM 1410 & 1430

**This is an unofficial sample schedule. Requirements, prerequisites, etc. may change. Students should meet with an advisor each semester for individual scheduling, program decisions, etc. Engineering admissions requirements must be met & a degree audit must be created in order to progress in the program to a timely graduation.**

# Minor/Certificate Information

## **BIOMEDICAL ENGINEERING MINOR** (18 Hours)

BMEN 2210, DAQ Practices (3 Hours)  
BMEN 2320, Biomedical Instrumentation I (3 Hours)  
BMEN 3350, Biomedical Transport Phenomena (3 Hours)  
6 advanced hours (2 courses) chosen from:  
    BMEN 3311, Biomedical Signal Analysis (3 Hours)  
    BMEN 3312, Intro. to Biomechanics (3 Hours)  
    BMEN 3321, Biomaterials (3 Hours)  
Plus 3 advanced hours (1 course) chosen from BMEN 4\*\*\*.

## **COMPUTER SCIENCE & ENGINEERING MINOR** (19 Hours)

CSCS 1030, Computer Science I (4 Hours)  
CSCS 1040, Computer Science II (3 Hours)  
CSCS 2100, Computing Foundations I (3 Hours)  
CSCS 2110, Computing Foundations II (3 Hours)  
CSCS 3\*\*\* or 4\*\*\*, CSCS advanced level course (3 Hours)  
CSCS 3\*\*\* or 4\*\*\*, CSCS advanced level course (3 Hours)

## **ELECTRICAL ENGINEERING MINOR** (18 Hours)

EENG 2610, Circuit Analysis (3 Hours)  
EENG 2611, Circuit Analysis Lab (1 Hour)  
EENG 2620, Signals & Systems (3 Hours)  
EENG 2621, Signals & Systems Lab (1 Hour)  
EENG 2710, Digital Logic Design (3 Hours)  
EENG 2711, Digital Logic Design Lab (1 Hour)  
EENG 3510, Electronics I (3 Hours)  
EENG 4\*\*\*, EENG advanced level course (3 Hours)

## **GENERAL ENGINEERING TECHNOLOGY MINOR** (18 Hours)

6 courses (12 Hours) including 2 advanced level courses (6 Hours) chosen from the Department of Engineering Technology. Courses from this department are coded as CNET, ELET, ENGR, MEET, or MFET.

## **MATERIALS SCIENCE & ENGINEERING MINOR** (18 Hours)

ENGR 3450, Engineering Materials (3 Hours)  
**or**  
MTSE 3000, Fundamentals of Materials Science & Engr. I (3 Hours)

6 advanced hours (2 courses) chosen from:  
    MTSE 3010, Bonding & Structure (3 hours)  
    MTSE 3030, Thermodynamics & Phase Diagrams (3 Hours)  
    MTSE 3050, Mechanical Properties of Materials  
    MTSE 3070, Electrical, Optic, & Magnetic Properties (3 Hours)

Plus 9 advanced hours (3 courses) chosen from options above or from any MTSE 3\*\*\*, MTSE 4\*\*\* level courses. Options are located in the UNT catalog at [catalog.unt.edu](http://catalog.unt.edu). MTSE 3001 is strongly recommended.

## **MECHANICAL AND ENERGY ENGINEERING MINOR (18 Hours)**

MEEN 2210, Thermodynamics I (3 Hours)  
MEEN 2302, Mechanics II, (3 Hours)  
MEEN 2332, Mechanics III (3 Hours)  
9 advanced hours chosen from:  
    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, Systems Dynamics & Controls (3 Hours)  
    MEEN 3240, MEE Lab I (2 Hours)  
    MEEN 3242, MEE Lab II (1 Hour)  
    MEEN 4110, Alternative Energy (3 Hours)  
    MEEN 4140, Finite Element Analysis (3 Hours)  
    MEEN 4160, Mechanical Vibrations (3 Hours)

## **ENERGY ASSESSMENT OF BUILDINGS CERTIFICATE** (15 Hours)

MEEN 3220, Thermal Fluid Science for Buildings(3 Hours)  
MEEN 4320, Mechanical Systems of Buildings (3 Hours)  
MEEN 4335, Comp. Sim. of Building Energy Systems (3 Hours)  
MEEN 4340, Energy Efficiencies & Green Building Design for Commercial Buildings (3 Hours)  
MEEN 4350, Energy Efficiencies & Green Building Design for Residential Buildings (3 Hours)

## **GAME PROGRAMMING CERTIFICATE** (12 Hours)

CSCS 4210, Game Programming I (3 Hours)  
CSCS 4215, Programming Math & Physics for Games (3 Hours)  
CSCS 4220, Game Programming II (3 Hours)  
CSCS 4250, Topics in Game Development (3 Hours)

## **MANUFACTURING ENGINEERING TECHNOLOGY CERTIFICATE** (15 Hours)

MFET 3110, Machining Principles and Processes (4 Hours)  
MFET 4190, Quality Assurance (3 Hours)  
MFET 4200, Engineering Cost Analysis (2 Hours)  
MFET 4210, CAD/CAM System Operations (3 Hours)  
MFET 4220, CNC Programming and Operation (3 Hours) .

## **NUCLEAR POWER TECHNOLOGY CERTIFICATE** (12 Hours)

Completion of 12 Hours (4 courses) of NUET courses at UNT will earn this certificate from the Nuclear Power Institute at Texas A & M University.

NUET 3910, Principles of Nuclear Technology (3 Hours)  
NUET 3930, Radiation Biology & Safety (3 Hours)  
NUET 4950, Nuclear Plant Systems (3 Hours)  
NUET 4900, Special Topic: Human Performance (3 Hours)

## **SECURITY CERTIFICATE** (18 Hours)

CSCS 2610, Assembly Lang. & Comp. Organization (3 Hours)  
CSCS 3530, Intro. to Computer Networks (3 Hours)  
CSCS 4350, Intro. to Database Systems Design (3 Hours)  
CSCS 4550, Intro. to Computer Security (3 hours)  
CSCS 4560, Secure Electronic Commerce (3 Hours)  
CSCS 4600, Operating Systems (3 Hours)

*Must complete appropriate prerequisites for minor or certificate courses*

*Grades of "C" required for most minor or certificate courses.*

*Completion of a minor and/or a certificate is not required in order to graduate with a bachelor's degree from the College of Engineering at UNT.*

*Information on more minor and/or certificate options & requirements can be found in the UNT catalog located at [catalog.unt.edu](http://catalog.unt.edu).*

# Grad Track/License Information

## **GRAD TRACK PROGRAM**

The Grad Track Program allows UNT College of Engineering undergraduate students to accelerate the time required to earn a Master of Science degree. Students are allowed to count 9 hours of graduate credit toward both their bachelor's and master's degrees, saving both time and money. Grad Track students save as much as one semester of graduate tuition, totaling \$5,000 or more.

### **Eligibility:**

Students should apply for the Grad Track Program when they have earned at least 75 hours toward the bachelor's degree & are in the semester before the 1<sup>st</sup> semester of Senior Design or Capstone. Successful applicants typically have a GPA of 3.5 or better.

Students may only earn a master's degree in the same program for which they have earned a bachelor's degree. For example, a student who earns a Computer Science BS degree is only eligible for the Grad Track Program if they apply for the Computer Science MS program. Additionally, students have to enroll full-time in the MS program in the first long semester after completing their BS degree in order for the completed graduate-level classes to count toward the MS degree.

### **To Apply:**

Each department has its own application for Grad Track. You may also have to submit unofficial transcripts and letters of recommendation. Please visit your department's website and/or contact your department's undergraduate or graduate advisor for more information.

<b>Masters Program</b>	<b>Grad Track Credits Earned</b>	<b>Thesis Credit Hours through MS Enrollment</b>	<b>Non-Thesis Credit Hours through MS Enrollment</b>	<b>Total Hours Required</b>
<b>Biomedical Engineering</b>	9	15 hours of coursework, 6 thesis hours	24 hours of coursework	Thesis: 30 Non-thesis: 33
<b>Computer Engineering</b>	9	15 hours of coursework, 6 thesis hours	27 hours of coursework	Thesis: 30 Non-thesis: 36
<b>Computer Science</b>	9	14 hours of coursework, 6 thesis hours	27 hours of coursework	Thesis: 30 Non-thesis: 36
<b>Electrical Engineering</b>	9	15 hours coursework, 6 thesis hours	24 hours of coursework	Thesis: 30 Non-thesis: 33
<b>Engineering Technology</b>	9	15 hours coursework, 6 thesis hours	24 hours of coursework	Thesis: 30 Non-thesis: 33
<b>Mechanical and Energy Engineering</b>	9	15 hours coursework, 6 thesis hours	24 hours of coursework	Thesis: 30 Non-thesis: 33
<b>Materials Science and Engineering</b>	9	23 hours coursework, 6 thesis hours	26 hours of coursework	Thesis: 32 Non-thesis: 35

## **FUNDAMENTALS OF ENGINEERING (FE) EXAM**

This exam 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 & 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.unt.edu/engineering-exam](http://engineering.unt.edu/engineering-exam).

## **PRINCIPLES AND PRACTICES OF ENGINEERING (PE) EXAM**

PE licensure is the engineering profession's highest standard of competence. EITs & 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.

# University Core Options

<p><b>COMMUNICATION</b> (1 Course) ENGL 1310, College Writing I ENGL 1311, Honors College Writing I ENGL 1315, Writing about Literature I TECM 1700, Intro. to Technical Writing</p> <p><b>AMERICAN HISTORY I</b> (1 Course) HIST 2610, U.S. History to 1865 HIST 2675, Honors U.S. History to 1865</p> <p><b>AMERICAN HISTORY II</b> (1 Course) HIST 2620, U.S. History from 1865 HIST 2685, Honors U.S. History from 1865</p> <p><b>FEDERAL GOVT./POLI. SCIENCE</b> (1 Course) PSCI 2305, U.S. Political Behav. &amp; Policy PSCI 2315, Honors U.S. Political Behav.</p> <p><b>STATE GOVT./POLI. SCIENCE</b> (1 Course) PSCI 2306, U.S. &amp; Texas PSCI 2316, Honors U.S. &amp; Texas</p> <p><b>CREATIVE ARTS</b> (1 Course) ART 1300, Art Appreciation ART 1301, Honors Art Appreciation ART 2360, Art History Survey II COMM 2060, Performance of Literature DANC 1200, Appreciation of Dance DANC 2800, Survey of Dance MUJS 3400, Understanding Jazz MUMH 2040, Music Appreciation MUMH 3000, Nineteenth-Century Music MUMH 3010, Twentieth-Century Music MUMH 3500, Music Hist. &amp; Lit. to 1750 MUMH 3510, Music His. &amp; Lit from 1750 THEA 1340, Aesthetics of the Theatre THEA 2340, Theater Appreciation THEA 3030, World Theatre to 1700 THEA 3040, World Theatre from 1700</p>	<p><b>LANGUAGE, PHIL. &amp; CULTURE</b> (1 Course) AGER 2250, Aging in Film &amp; Lit. ANTH 3101 American Culture &amp; 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 Asian ENGL 2210, World Literature to 1700 ENGL 2211, Honors World Lit. to 1700 ENGL 2220, World Literature from 1700 ENGL 2221, Honors World Lit. from 1700 ENGL 3450, Short Story FREN 3040, France Today FREN 4060, Studies in French Literature FREN 4310, Contemp. French Civilization GERM 3040, Topics in German Culture GERM 3050, Topics in German Literature HDFS 2313, Courtship &amp; Marriage HIST 1050, World History to 16<sup>th</sup> Century HIST 1060, World History from 16<sup>th</sup> Century ITAL 3040, Topics in Italian Culture ITAL 3050, Comp. Italian Culture Thru Film ITAL 3070, Intro. to Italian Literature JAPN 3020, Advanced Japanese I LANG 3020, Russian Pop Culture 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, Great Religions PHIL 2100, Intro. To Judaism PHIL 2310, Intro. To Ancient Philosophy PHIL 2600, Ethics in Science</p>	<p><b>SOCIAL &amp; BEHAVIORAL SCIENCE</b> (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 &amp; Human Sexuality JOUR 1210, Mass Comm. &amp; Society MDSE 2750, Consumers in Global Market MKTG 2650 Culture and Consumption MUAG 1500 Occupational Health w/ Music PADM 2100, Cultural Competency PSYC 1630, General Psychology I PSYC 1650, General Psychology II PSYC 3620, Developmental Psychology RHAB 3100, Disability &amp; Society SOCL 1510, Intro to Sociology SOCL 2100, Crime &amp; Justice in the U.S. SOWK 1450, Intro. to Social Work</p>
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## AP, IB, CLEP, DC, Transfer - University Core Credits

<p><b>COMMUNICATION</b> AP English Lang. &amp; Comp. score of 3 or IB English A: Lang. &amp; Lit. score of 5 Community College: ENGL 1301 Community College: ENGL 1302</p> <p><b>AMERICAN HISTORY I</b> AP U.S. History score of 3 CLEP History of United States I Community College: HIST 1301</p> <p><b>AMERICAN HISTORY II</b> AP U.S. History score of 3 CLEP History of United States II Community College: HIST 1302</p> <p><b>FEDERAL GOVT./POLI. SCIENCE</b> AP U.S. Government score of 3 CLEP American Government Community College: GOVT 2305</p> <p><b>STATE GOVT./POLI. SCIENCE</b> Community College: GOVT 2306</p>	<p><b>CREATIVE ARTS</b> 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</p> <p><b>LANGUAGE, PHIL. &amp; CULTURE</b> AP English Literature &amp; 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 College: 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</p>	<p><b>SOCIAL &amp; BEHAVIORAL SCIENCES</b> 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 &amp; Development CLEP Introductory Psychology CLEP Introductory Sociology Community College: ANTH 2346 Community College: ANTH 2351 Community College: CRIJ 1301 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: SOCL 1301 Community College: SOCW 2361</p>
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\* Completion of IB program, earned IB Diploma, & minimum score of 4 or completion of IB program without the earned diploma & minimum score of 5, 6 or 7.

Other community college or university courses may fulfill requirements. Please confirm with your advisor.

# AP, IB, CLEP, DC, Transfer – STEM Credits

## **TECHNICAL WRITING**

Community College ENGL 2311: TECM 2700

## **COMPUTING/PROGRAMMING**

AP Computer Science A score of 3: CSCE 1010  
AP Computer Science A score of 4: CSCE 1030  
AP Computer Science Principles score of 3: CSCE 1010  
IB Computer Science: CSCE 1030,1040  
Community College COSC 1336: CSCE 1030  
Community College COSC 1337: CSCE 1040  
Community College COSC 1436: CSCE 1030  
Community College COSC 1447: CSCE 1040  
Community College COSC 2325: CSCE 2610  
Community College COSC 2425: CSCE 2610

## **ENGINEERING**

Community College ENGR 1201: May substitute for  
EENG 1910 or ENGR 1030 or MEEN 1000 or MTSE 1100  
depending on student's intended major  
Community College ENGR 1204: ENGR 1304  
Community College ENGR 1304: ENGR 1304  
Community College ENGR 2105: ENGR 2415  
Community College ENGR 2107: ENGR 2415  
Community College ENGR 2301: ENGR 2301  
Community College ENGR 2302: ENGR 2302  
Community College ENGR 2332: ENGR 2332  
Community College ENGR 2305: ENGR 2305  
Community College ENGR 2307: ENGR 2405  
Community College ENGR 2405: ENGR 2405

## **BIOLOGY**

AP Biology score of 3: BIOL 1112,1122  
AP Biology score of 4, 5: BIOL 1710,1720,1760  
IB Biology: BIOL 1710,1720,1760  
CLEP Biology: BIOL 1710, 1720  
Community College BIOL 1108: BIOL 1\*\*\*  
Community College BIOL 1109: BIOL 1\*\*\*  
Community College BIOL 1306: BIOL 1710  
Community College BIOL 1307: BIOL 1720  
Community College BIOL 1308: BIOL 1\*\*\*  
Community College BIOL 1309: BIOL 1\*\*\*  
Community College BIOL 1406: BIOL 1710, 1760  
Community College BIOL 1407: BIOL 1720, 1760  
Community College BIOL 1408: BIOL 1\*\*\*  
Community College BIOL 1409: BIOL 1\*\*\*  
Community College BIOL 2101: BIOL 2311  
Community College BIOL 2301: BIOL 2301  
Community College BIOL 2401: BIOL 2301, 2311

## **CHEMISTRY**

AP Chemistry score of 3: CHEM 1360  
AP Chemistry score of 4: CHEM 1410,1430  
AP Chemistry score of 5: CHEM 1410,1430 & 1420,1440  
CLEP General Chemistry: CHEM 1410,1420  
IB Chemistry: CHEM 1410,1430 & 1420,1440  
Community College CHEM 1111: CHEM 1430  
Community College CHEM 1112: CHEM 1440  
Community College CHEM 1305: CHEM 1\*\*\*  
Community College CHEM 1307: CHEM 1\*\*\*  
Community College CHEM 1311: CHEM 1410  
Community College CHEM 1312: CHEM 1420  
Community College CHEM 1405: CHEM 1\*\*\*  
Community College CHEM 1407: CHEM 1\*\*\*  
Community College CHEM 1411: CHEM 1410, 1430  
Community College CHEM 1412: CHEM 1420, 1440

## **PHYSICS**

AP Physics 1 score of 3: PHYS 1210  
AP Physics 1 score of 4: PHYS 1410,1430  
AP Physics 2 score of 3: PHYS 1315  
AP Physics 2 score of 4: PHYS 1420,1440  
AP Physics C (Mechanics) score of 3: PHYS 1410,1430  
AP Physics C (Mechanics) score 4: PHYS 1710,1730  
AP Physics C (Electricity & Magnetism) score of 3: PHYS 1420,1440  
AP Physics C (Electricity & Magnetism) score of 4: PHYS 2220,2240  
Community College PHYS 1101: PHYS 1430  
Community College PHYS 1102: PHYS 1440  
Community College PHYS 1301: PHYS 1410  
Community College PHYS 1302: PHYS 1420  
Community College PHYS 1401: PHYS 1410, 1430  
Community College PHYS 1402: PHYS 1420, 1440  
Community College PHYS 2125: PHYS 1730  
Community College PHYS 2126: PHYS 2240  
Community College PHYS 2325: PHYS 1710  
Community College PHYS 2326: PHYS 2220  
Community College PHYS 2425: PHYS 1710, 1730  
Community College PHYS 2426: PHYS 2220, 2240

## **MATHEMATICS**

AP Statistics score of 3: MATH 1680  
AP Calculus AB score of 3: MATH 1710  
AP Calculus BC score of 3: MATH 1710,1720  
AP Calculus AB Subscore of BC Exam score 3: MATH 1710  
CLEP Mathematics: Elective  
CLEP College Algebra: MATH 1100  
CLEP Pre-calculus: MATH 1650  
CLEP Calculus with Elementary Functions: MATH 1710  
IB Mathematic Studies: Elective  
IB Mathematics - Calculus: MATH 1710  
IB Mathematics Unspecified: MATH 1\*\*\*  
Community College MATH 1314 : MATH 1100  
Community College MATH 1316: MATH 1600, Prereq for Pre-Calculus  
Community College MATH 1325: MATH 1190, Prereq for Pre-Calculus  
Community College MATH 1425: MATH 1190, Prereq for Pre-Calculus  
Community College MATH 1342: MATH 1680  
Community College MATH 1414: MATH 1100  
Community College MATH 1442: MATH 1680  
Community College MATH 2312: MATH 1650  
Community College MATH 2412: MATH 1650  
Community College MATH 2313: MATH 1710  
Community College MATH 2314: MATH 1720  
Community College MATH 2315: MATH 2730  
Community College MATH 2318: MATH 2700  
Community College MATH 2320: May substitute for MATH 3410  
Community College MATH 2342: MATH 1680  
Community College MATH 2413: MATH 1710  
Community College MATH 2414: MATH 1720  
Community College MATH 2415: MATH 2730  
Community College MATH 2418: MATH 2700  
Community College MATH 2420: May substitute for MATH 3410  
Community College MATH 2442: MATH 1680  
Community College MATH 2513: MATH 1710  
Community College: ENGR 2300: May substitute for MATH 2700

*Other community college or university  
courses may fulfill requirements.  
Please confirm with your advisor.*



# Resource Information

Catalog	catalog.unt.edu
Computer Access Labs	gacl.unt.edu
Counseling & Health Services: Child and Family Resource Clinic Counseling & Human Development Center Counseling & Testing Service Health & Wellness Center Psychology Clinic WELL Clinic (personal & career counseling)	coe.unt.edu/child-and-family-resource-clinic coe.unt.edu/counseling-and-human-development-center unt.edu/cat healthcenter.unt.edu psychology.unt.edu/clinic untwell.unt.edu
Deadlines (Registration, Drop, Withdrawal, Payment, etc.)	unt.edu/registration or my.unt.edu
Dean of Students (Withdrawal Process, Complaints, etc.)	deanofstudents.unt.edu
Email Account (EagleConnect)	eagleconnect.unt.edu or unt.edu/helpdesk
Engineering Student Organizations & Honor Societies	engineering.unt.edu/ceo/home
Employment, Internships, & Job Skills: Career Center InRoads Internships InternMatch Texas Internships	careercenter.unt.edu inroads.org ntermatch.com texasinternships.jobs
Financial Assistance: Financial Aid & Scholarships Office Student Accounting Money Management Center	financialaid.unt.edu essc.unt.edu/saucs moneymangement.unt.edu
Housing	housing.unt.edu
Libraries	library.unt.edu
Office of Disability Accommodations	disability.unt.edu
Registrar (Drop, Excessive Hours, Registration, Transcripts)	essc.unt.edu/registrar
Registration	my.unt.edu or unt.edu/registration
Scholarships	engineering.unt.edu/student/scholarships financialaid.unt.edu
Student Activities & Organizations	studentactivities.unt.edu
Student Government Association	sga.unt.edu
Student Legal Services	studentlegal.unt.edu
Texas Success Initiative: Learning Center	learningcenter.unt.edu
Tutoring & Academic Improvement Services: Business Labs (ACCT, BCIS, etc.) Chemistry Resource Center Chegg (online) Computer Class Help Lab Coursera (online) Economics Help Center Educator (online) Edx (online) Khan Academy (online) Learning Center LyndaCampus (online) Math Lab & Private Tutor List Mathway (online) Physics Instructional Center Quizlet (online) That Tutor Guy (online) Thinkwell (online) Wolf Ram Alpha (online) Writing Lab	cob.unt.edu/lab/tutor.php chemistry.unt.edu chegg.com cse.unt.edu coursera.org economics.unt.edu/undergraduate/help-center educator.com edx.org khanacademy.org learningcenter.unt.edu it.unt.edu/lynda math.unt.edu/mathlab mathway.com phys.unt.edu/PIC quizlet.com thattutorguy.com thinkwell.com wolframalpha.com ltc.unt.edu/labs
Veteran Center & Services	veteranscenter.unt.edu or unt.edu/veterans & registrar.unt.edu