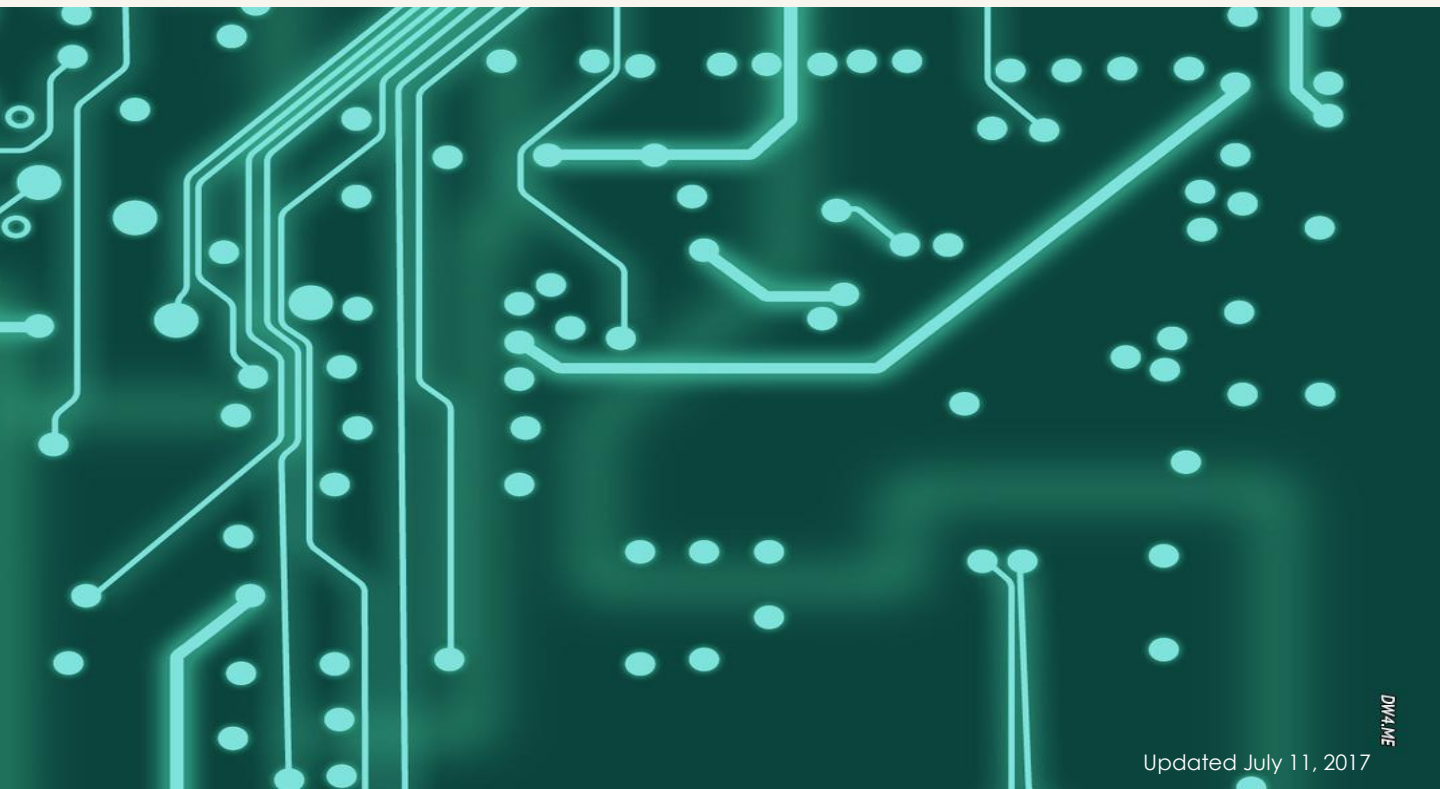


# College of Engineering

Undergraduate Academic Guidebook  
2017-2018





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## 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).

## Engineering Admissions

In addition to UNT admissions requirements, you must also meet College of Engineering admissions.

### **Freshman Applicants:**

Must meet one of the following criteria based on high school rank:

- Top 25% of high school graduating class -  
MATH SAT score of 570 or better & a total SAT score of 1070 or better if SAT taken Feb. 2016 or before  
MATH SAT score of 590 or better & a total SAT score of 1140 or better if SAT taken March 2016 or later  
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 600 or better & a total SAT score of 1100 or better if SAT taken Feb. 2016 or before  
MATH SAT score of 620 or better & a total SAT score of 1170 or better if SAT taken March 2016 or later  
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 630 or better & a total SAT score of 1180 or better if SAT taken Feb. 2016 or before  
MATH SAT score of 650 or better & a total SAT score of 1250 or better if SAT taken March 2016 or later  
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 600 or better & a total SAT score of 1100 or better if SAT taken Feb. 2016 or before  
MATH SAT score of 620 or better & a total SAT score of 1170 or better if SAT taken March 2016 or later  
MATH ACT score of 24 or better & a composite ACT score of 24 or better

### **Transfer & 2<sup>nd</sup> Bachelor's Degree Applicants:**

Must have minimum 2.0 GPA & be eligible to enroll in Math 1710 (Calculus I) by completion of proper prerequisite(s) and/or testing. Entry into MATH 1710 can be gained via completion of (1) MATH 1650, Pre-Calculus with a grade of C or better; or (2) MATH 1610, Functions, Graphs & Applications, with a grade of C or better; or (3) earn a minimum score of 70 on ALEKS; or (4) earn a minimum score of 70 on MyMathTest, or (5) earn a minimum score of 101 on Accuplacer.

### **Pre-Engineering Program:**

If you do not meet the above criteria, you must participate in the Pre-Engineering (PREP) program in the College of Health & Public Service (HPS). You may be eligible for admissions into engineering when you need transfer & 2<sup>nd</sup> bachelor's degree criteria (see above). You must contact the College of Engineering Advising Office to seek admissions.

## Engineering Dismissal

You are required to conduct yourself in a professional manner at UNT community 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).

## 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/term 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	UNT does not offer a winter semester

## 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.

Freshman:	0 - 29 hours	Junior:	60 - 89 hours
Sophomore:	30 - 59 hours	Senior:	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" & "WF" 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 the Academic Success Program offered through the Learning Center at the beginning of 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 the Academic Success Program offered through the Learning Center at the beginning of 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. A 1<sup>st</sup> suspension is for 1 long semester, a 2<sup>nd</sup> suspension is for 2 long semesters, & a 3<sup>rd</sup> suspension (indefinite suspension) is for 4 long semesters. You must petition to re-enter the College of Engineering after completing a 1<sup>st</sup> or 2<sup>nd</sup> suspension period. You might be allowed to return. If you are placed on a 3<sup>rd</sup> (indefinite) suspension, you might be allowed to return to UNT but you will be dismissed permanently from the College of Engineering.

## Grade Point Average (GPA): Honors

### Semester Honors:

Semester honors is determined from 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 determined by 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> course/grade will be treated as a duplication & deleted from your GPA. Any additional courses/grades will be calculated into the GPA. This includes transfer courses/grades.

Course duplication will impact your GPA & your academic status (alert, probation, suspension, or good standing).

Please note engineering required courses must be completed with a grade of C or better. There is a 2 attempt limit on engineering required courses that require a grade of C or better no later than the 2<sup>nd</sup> attempt. **Only the last attempt/grade will be used in fulfilling prerequisite and/or corequisite fulfillment as well as certifying eligibility for graduation.** Contact your advisor to confirm how your GPA or graduation eligibility 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/term (but you remain in at least one course for the semester/term). You can drop yourself via the MyUNT registration system before or shortly after the semester/term begins. The MyUNT drop functionality usually expires on the 1<sup>st</sup> day of summer semesters/terms/sessions or approximately 12 days into the fall/spring semesters/terms. After the MyUNT drop functionality expires, you may still be able to drop via approval of your course's instructor. Please see drop procedures & deadlines listed at [unt.edu/registration](http://unt.edu/registration). A "W" or "WF" may be recorded on your transcript. 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 below for withdraw information.

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/term. You are not allowed to withdraw (drop all courses) via the MyUNT registration system. You must follow the procedures & deadlines listed at [unt.edu/registration](http://unt.edu/registration). A "W" or "WF" may be recorded on your transcript.

*Remember that a "WF" is calculated as a "F" grade on your GPA.*

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

## 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 one year after the grade of "I" is granted.

*Professors are not required to grant an "I" even if you meet the conditions. Each professor may use his or her discretion when deciding whether or not to grant an "I". Incompletes must be completed within 12 months or an automatic grade of "F" will be posted on your transcript.*

## Pass/No Pass Grading Option

You may elect to take miscellaneous 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.

## Registration

You will be using MyUNT located at [my.unt.edu](http://my.unt.edu) 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).

### **Payment:**

Failure to pay by the deadline listed will result in the cancellation of your entire schedule of classes.

### **Full Courses:**

If a course you need to take is full, add yourself to the waitlist. Seats are given 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 registration 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
- LTEC Learning Technologies Department: DP G-150 or (940) 565-2057
- 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
- Other courses (940) 565-2000 & ask to be transferred to the appropriate department

## Payment

You must register during open enrollment periods & pay by the deadline listed in MyUNT or [www.unt.edu/registration](http://www.unt.edu/registration). Failure to pay will result in the cancellation of your entire schedule of classes.

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

You have numerous options available to pay. These include financial aid, scholarships, grants, loans, & student employment. 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 Texas resident & you attempt certain courses more than twice, 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 resident undergraduates may be subject to a higher tuition rate for attempting excessive hours at any public institution.

If you initially enrolled in the fall 1999 semester (or later), you cannot exceed more than 45 credit hours of the number of hours required for the completion of your degree plan. Any hours beyond 45 are considered excessive & will result in additional tuition charges. If you initially enrolled in the fall 2006 semester (or later), you cannot exceed more than 30 credit hours of the number of hours required for the completion of your degree plan. Any hours beyond 30 are considered excessive & will result in additional tuition charges. Refer to information at [studentaccounting.unt.edu](http://studentaccounting.unt.edu).

### **Excessive 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.

## Taking Courses at Another Institution: Concurrent Enrollment

You **may** take courses at another institution to apply at UNT if you meet all of the following conditions:

- The course(s) you plan to enroll in have been preapproved by the Engineering Advising Office.
- 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 concurrently enrolled course(s) to the UNT Registrar's Office in the ESSC within 1 month of course completion/grade posting.

*Enrollment in course(s) at another institution during your last/graduating semester will result in postponement of your graduation. This applies to summer enrollment as well as fall or spring enrollment.*

## Degree Audit (Plan)

The degree audit is an official document that lists all the courses & requirements you need to complete to earn your degree. It also shows the application of completed courses, credits, & requirements toward graduation. A degree audit must be created for you in order to progress toward graduation. Your degree audit will be created & emailed to your UNT email account orientation once you have completed sufficient coursework and degree requirements. Please contact the Advising Office for any questions or concerns regarding your degree audit.



## Graduation

You must make an appointment with the Advising Office the semester before you plan to graduate to confirm that you are on track for graduation. Graduation can usually be achieved 4 years after you are enrolled in Calculus I (MATH 1710) & 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 to progress to a timely graduation date. Please note that you cannot enroll in another institution during your final semester/term or else your graduation will be delayed. 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 at [my.unt.edu](http://my.unt.edu). Refer to [registrar.unt.edu](http://registrar.unt.edu) for more information & the application deadline. Failure to apply by the deadline listed in your final semester will result in your failure to graduate or earn your degree even if you complete of your degree requirements.

## Graduation Ceremony

Commencement is UNT's formal graduation ceremony. UNT offers 1 commencement in May for students who graduated in December, May, or August. In addition to commencement, the College of Engineering offers a college recognition ceremony in December & May for engineering students who graduated in December, May or August. In order to attend commencement and/or the college recognition ceremony, 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.

## Advising

### Academic Advisors:

Academic advisors are full-time advisors who focus on academic information & educational goal planning. These advisors are available to meet with students by appointment. Please allow at least 3 weeks for an available appointment opening. Please note that you will lose your appointment meeting if you arrive late. You can schedule an appointment via the Engineering Advising Office in Discovery Park A-101 or by calling 940-565-4201.

Services provided to students include (but are not limited to):

Clarify UNT policies & procedures	Clarify degree requirements
Confirm application of earned credit	Plan appropriate semester/term schedules
Clarify course prerequisites & corequisites	Clarify course sequencing
Approve or deny pass/no pass grading option	Approve or deny concurrent enrollment
Create & update your degree audit	Approve your graduation application
Make appropriate on or off campus referrals	Support long-term academic goals

Academic advisors can provide courtesy paperwork such as recommendation letters, sponsored letters, verification letters, etc. based on their discretion & time availability. Please note that courtesy paperwork requires a minimum of 2 weeks for completion after initial student request.

Services that **CANNOT** be provided include:

Access your in progress grades during the semester	Advise you on aid or scholarship eligibility
Create semester course offerings or time selections	Add you to a course waitlist
Override your registration holds	Override you into a full course
Override you into a course for which you do not meet prerequisite and/or corequisite	

### Faculty Advisors:

Faculty advisors are full-time professors who assist with advising. Contact information for faculty advisors can be found on the following curriculum checklist pages.

### Career Advisors:

Career advisors are full-time advisors who help you with career planning, resume writing, interviewing skills, internship securement, & full-time employment securement. You can schedule an appointment with a career advisor via the Career Center in Discovery Park C-111 or Chestnut Hall 103 or 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  
Faculty Advisor: Dr. Vijay Vaidyanathan  
vijay.vaidyanathan@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisor: TBD by Track Selection

## University Core

### COMMUNICATION

- 3 Hours approved course

**Grade of "C" or better is required.**

### AMERICAN HISTORY

- HIST 2610, U.S. History To 1865 (3 Hours)
- HIST 2620, U.S. History From 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- Fulfilled by BMEN 1300

## 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 & Vector Geometry (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 UNT Math 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 2210, DAQ Practices (3 Hours)
- BMEN 2320, Biomedical Instrumentation I (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 Hours)
- 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)
- BMEN Course TBD

### COMPUTER PROGRAMMING

- CSCI 1030, Computer Science I (4 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, 2620, 2710, 2910 or 2920, 3510, and 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:**

CSCI 1040, 2100, 2110, & three CSCI 3\*\*\* and/or 4\*\*\* level courses.

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

### **Biomaterials Elective Track:**

MTSE 3000, 3010, 3030, 3050, 3070, and MTSE 3\*\*\* or 4\*\*\* level course.

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

### 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
CSCE 1030, Computer Science I (see note 3)	4
TECM 2700, Tech. Writing (Communication Core)	3
University Core course	<u>3</u>
Total Hours	17

### 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 (BMEN 1300)	3
Elective Track Course (see note 6)	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 4)	3
Elective Track Course (see note 6)	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 5)	3
BMEN 3311, Signal Analysis (BMEN 2320)	3
BMEN 3350, Transp. Phenom. (BMEN 2320, MATH 3410)	3
Elective Track course (see note 6)	3
University Core course	<u>3</u>
Total Hours	15

#### SPRING

MATH 3680, Statistics and Probability (MATH 1720)	3
BMEN 3312, Intro. to Biomech. (BMEN 2320, PHYS 1710)	3
BMEN 3321, Biomaterials (coreq BMEN 3312)	3
BMEN Course TBD	3
Elective Track course (see note 6)	<u>3</u>
Total Hours	15

### SENIOR YEAR

#### FALL

BMEN 4310, Biomedical Modeling (BMEN 3321)	3
BMEN 4212, Senior Design I (Coreq BMEN 4310)	1
BMEN 4***, Advanced Elective (BMEN 3311, 3312)	3
Elective Track course (see note 6)	3
University Core course	<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 6)	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 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: CSCE 1030 requires completion of or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.

Note 4: BMEN 2320 requires completion of BMEN 1300, BMEN 2210, CSCE 1030.

Note 5: MATH 2730 requires completion of MATH 1720. MATH 3350 requires completion of MATH 2700 and CSCE 1030.

Note 7: Elective Track Courses depend on your chosen BMEN track. See BMEN curriculum page and/or BMEN Booklet and/or check with your advisor for options.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, BMEN 1300, BMEN 2210, BMEN 2320, MATH 1710, MATH 1720, PHYS 1710, PHYS 1730, & CSCE 1030 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.**

**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  
Faculty Advisors: Dr. Robin Pottathuparambil  
Robin.Pottathuparambil@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisors: Errica Smith,  
Errica.smith@unt.edu

## University Core

## Major Requirements

Grades of C or better.

### COMMUNICATON

- 3 Hours approved course

**Grade of "C" or better is required.**

### AMERICAN HISTORY

- HIST 2610, U.S. History To 1865 (3 Hours)
- HIST 2620, U.S. History From 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- 3 Hours approved course

## 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 & Vector Geometry (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)

### 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, Computing Foundations I (3 Hours)
- CSCE 2110, Computing Foundations II (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 taken from CSCE 4890, 4920, 4930, 4940, 4950.

# COMPUTER ENGINEERING

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

### 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, Computing Foundations I (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, Computing Foundations II (CSCE 2100)	3
CSCE 2610, Assembly & Org. (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 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: CSCE 1030 requires completion of or co-enrollment in MATH 1710, Calculus I (or higher) as prerequisite.

Note 4: EENG 2610 or ENGR 2405 & ENGR 2415 lab requires completion of MATH 1720 and either completion of or co-enrollment in PHYS 2220 & 2240 as prerequisite.

Note 5: Must complete prerequisite(s) for each CSCE Specialty Area Elective course.

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 Communications Core, TECM 2700, MATH 1710, ENGR 2720/2730, CSCE 1030, CSCE 1040, CSCE 2100 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.**

**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  
Faculty Advisors: Dr. Mark Thompson  
mark.thompson@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisors: Heather Burrow, Beverly Wilks  
heather.burrow@unt.edu, beverly.wilks@unt.edu

## University Core

### COMMUNICATION

- 3 Hours approved course

**Grade of "C" or better is required.**

### AMERICAN HISTORY

- HIST 2610, U.S. History To 1865 (3 Hours)
- HIST 2620, U.S. History From 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S. Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- 3 Hours approved course

## 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, Computing Foundations I (3 Hours)
- CSCE 2110, Computing Foundations II (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, Introduction to Database Systems Design (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

### 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, Computing Foundations I (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, Computing Foundations II (CSCE 2100)	3
CSCE 2610, Assembly & Org. (CSCE 2100, EENG 2710)	3
University Core course	<u>3</u>
Total Hours	16

### JUNIOR YEAR

#### FALL

CSCE 3110, Data Structures (CSCE 2110)	3
CSCE 3600, Systems Programming (CSCE 2100)	3
CSCE Elective course (see note 5)	3
TECM 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 (CSCE 2110)	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 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 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: Must complete appropriate prerequisite(s) for each CSCE Core, Breadth and/or Free elective course.

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.

**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.**

**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  
Faculty Advisor: TBD

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisor: Mia Dallas, Rachel Smith, Adrian Stephens  
mia.dallas@unt.edu, rachel.smith@unt.edu, adrian.stephens@unt.edu

## University Core

### COMMUNICATION

- 3 Hours approved course

**Grade of "C" or better required.**

### AMERICAN HISTORY

- HIST 2610, U.S. History to 1865 (3 Hours)
- HIST 2620, U.S. History from 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- Fulfilled by ECON 1100, Microeconomics

### COMPONENT AREA

- Fulfilled by ENGR 1030, Technological Systems

## 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 1 (3 Hours) &
- CHEM 1430, General Chemistry 1 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, Architectural Drawing (2 Hours)
- CNET 3150, Construction Contract Documents (2 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)
- Any level course chosen from appropriate elective options (3 Hours)
- Any level course chosen from appropriate elective options (2 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 2017. 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

### 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>
Total Hours	17

#### 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>
Total Hours	17

### 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, Arch. Drawing	2
ENGR 2301, Statics (MATH 1710, PHYS 1710, 1730)	3
ECON 1100, Microeconomics	3
University Core course	<u>3</u>
Total Hours	15

#### 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>
Total	16

### JUNIOR YEAR

#### 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
University Core course	<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	3
University Core course	<u>3</u>
Total Hours	15

### 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	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.**

**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  
Faculty Advisor: Dr. Murali Varanasi  
murali.varanasi@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisor: Errica Smith  
errica.smith@unt.edu

## University Requirements

### COMMUNICATION

- 3 Hours approved course
- Grade of "C" or better is required.**

### AMERICAN HISTORY

- HIST 2610, U.S. History To 1865 (3 Hours)
- HIST 2620, U.S. History From 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- Fulfilled by EENG 1910, Learning to Learn

## 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.

## Major Requirements

Grades of C or better.

### 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)

### ELECTRICAL ENGINEERING

- EENG 1910, Learning to Learn (3 Hours)
- EENG 1920, Introduction to Electrical Engineering (3 Hours)
- EENG 2610, Circuit Analysis (3 Hours)
- EENG 2620, Signals & Systems (3 Hours)
- EENG 2710, Digital Logic Design (3 Hours)
- EENG 2910, Digital System Design (3 Hours)
- EENG 2920, Analog Circuit Design (3 Hours)
- EENG 3410, Engineering Electromagnetics (3 Hours)
- EENG 3510, Electronics I (3 Hours)
- EENG 3520, Electronics II (3 Hours)
- EENG 3710, Computer Organization (3 Hours)
- EENG 3810, Communications Systems (3 Hours)
- 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

- OPSP 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

### 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, Project I	3
Communication Core course	3
CSCE 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 1920, Intro. to EE (EENG 1910, MATH 1710)	3
EENG 2710, Digital Logic	3
TECM 2700, Tech. Writing (Communication Core)	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
EENG 2610, Circ. (MATH 1720, coreq PHYS 2220, 2240)	3
EENG 2910, Digital System (EENG 2710)	3
University Core course	3
Total Hours	16

#### SPRING

MATH 2700, Linear Algebra (MATH 1720)	3
MATH 3410, Diff. Equ. (MATH 1720 coreq MATH 2700)	3
EENG 2620, Signals & Systems (EENG 2610, MATH 2730)	3
EENG 2920, Analog Circ. Des. (EENG 1920, EENG 2610)	3
University Core course	3
Total Hours	15

### JUNIOR YEAR

#### FALL

MATH 3680, Statistics (MATH 1710, coreq MATH 1720)	3
EENG 3410, Electromagnetics (EENG 2610, MATH 3410)	3
EENG 3510, Electronics I (EENG 2610)	3
EENG 3910, DSP System Design (EENG 2620)	3
University Core course	3
University Core course	3
Total Hours	18

#### SPRING

EENG 3520, Electronics II (EENG 3510)	3
EENG 3710, Computer Org. (EENG 2710, CSCE 1030)	3
EENG 3810, Comm. Sys. (EENG 2620, 3510, MATH 3680)	3
EENG 3920, Modern Comm. Sys. (coreq EENG 3520)	3
University Core course	3
Total Hours	15

### SENIOR YEAR

#### FALL

EENG Elective (see note 4)	3
EENG Elective (see note 4)	3
EENG 4910, Senior Design I (EENG 3810, 3910, 3920)	3
OPSM 3830, Operations Management	3
University Core course	3
Total Hours	15

#### SPRING

EENG Elective (see note 4)	3
EENG Elective (see note 4)	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 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: Must complete prerequisite(s) for each EENG Elective course.

**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, PHYS 2220, PHYS 2240, EENG 1910, & EENG 2610 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.**

**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 TECHNOLOGY

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

Department of Engineering Technology  
Discovery Park F-115; (940) 565-2022  
Faculty Advisor: Dr. Robert Hayes  
robert.hayes@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisor: Errica Smith  
errica.smith@unt.edu

## University Core

### COMMUNICATION

- 3 Hours approved course

Grade of "C" or better required.

### AMERICAN HISTORY

- HIST 2610, U.S. History to 1865 (3 Hours)
- HIST 2620, U.S. History from 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S. Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- Fulfilled by ENGR 1030, Technological Systems

## 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)

## Major Requirements

Grades of C or better.

### ELECTRICAL ENGINEERING TECHNOLOGY

- ENGR 1030, Technological Systems (3 Hours)
- ENGR 2405, Circuit Analysis (3 Hours) & ENGR 2415, Circuit Analysis Lab (1 Hour)
- ENGR 2720, Digital Logic (3 Hours) & ENGR 2730, Digital Logic Lab (1 Hour)
- ENGR 2750, Introduction to Microprocessors (4 Hours)
  
- ELET 1720, Introduction to Electronics (3 Hours)
- ELET 2740, Special Electronic Devices (4 Hours)
- ELET 3700, Advanced Circuit Analysis (4 Hours)
- ELET 3750, Embedded C-Programming (4 Hours)
- ELET 3760, Design of DSP Systems (4 Hours)
- ELET 3980, Digital Control of Industrial Processes (3 Hours)
- ELET 4300, Embedded System Organization (3 Hours)
- ELET 4320, Electronic Communications II (3 Hours)
- ELET 4330, Instrumentation System Design (3 Hours)
- ELET 4340, Digital Logic Design Techniques (3 Hours)
- ELET 4710, Electronic Communications I (4 Hours)
- ELET 4720, Control Systems (3 Hours)
- ELET 4780, Senior Design I (1 Hour)
- ELET 4790, Senior Design II (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)  
*ELET 3220 is recommended for all students for this elective.*
- Advanced level (3\*\*\* or 4\*\*\* level) course chosen from appropriate elective options (3 Hours)
- Any level course chosen from appropriate elective options (3 Hours)
- Any level course chosen from appropriate elective options (3 Hours)
- Any level course chosen from appropriate elective options (2 Hours)

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

MATH 1600	ECON 1100	MKTG 3010
MATH 1610	ECON 1110	MKTG 3650
MATH 1650	MGMT 3330	MFET 3110
MATH 3410	MGMT 3720	EENG 3710
MATH 3680	MGMT 3820	ENGR 1304
ACCT 2010	OPSM 3830	ENGR 2301
BLAW 3430	MGMT 3850	CHEM 1410
BLAW 4770	MGMT 4470	PHYS 3010

# ELECTRICAL ENGINEERING TECHNOLOGY

## Sample Four-Year Schedule

Required prerequisite(s) indicated in parentheses & notes

### FRESHMAN YEAR

#### FALL

MATH 1710, Calculus I (see note 1)	4
ENGR 2720, Digital Logic	3
ENGR 2730, Digital Logic Lab	1
ELET 1720, Intro. to Electronics (see note 2)	3
ENGR 1030, Technological Systems	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
ELET 2740, Elect. Devices (ELET 1720, coreq MATH 1710)	4
TECM 2700, Technical Writing (Communication Core)	<u>3</u>
Total Hours	14

### SOPHOMORE YEAR

#### FALL

PHYS 2220, E. & M. (MATH 1720, PHYS 1710, 1730)	3
PHYS 2240, E. & M. Lab (MATH 1720, PHYS 1710, 1730)	1
CSCE 1030, Computer Science 1 (MATH 1650)	4
ENGR 2750, Intro to Microprocessors (see note 3)	4
University Core course	<u>3</u>
Total Hours	15

#### SPRING

ENGR 2405, Circuits (MATH 1720, co/pre PHYS 2220)	3
ENGR 2415, Circuits Lab (see above)	1
ELET 3750, Embedded C-Prog. (ENGR 2750)	4
ELET 3980, Dig. Control (MATH 1650 or higher)	3
University Core course	3
University Core course	<u>3</u>
Total Hours	17

### JUNIOR YEAR

#### FALL

ELET 3700, Adv. Circuit Analysis (ENGR 2405, 2415)	4
ELET 3220, Intro to Power Sys. Analysis (ENGR 2405, 2415)	3
Technical Elective course	3
University Core course	<u>3</u>
Total Hours	14

#### SPRING

ELET 3760, Design of DSP Systems (ELET 3700, ELET 3750)	4
ELET 4340, Digital Logic Design Tech. (ELET 3750)	3
Technical Elective course	3
Technical Elective course	2
University Core course	<u>3</u>
Total Hours	15

### SENIOR YEAR

#### FALL

ELET 4300, Embedded System Org. (ELET 4340)	3
ELET 4710, Electronic Comm I (ELET 3700)	4
ELET 4720, Control Systems (ELET 3760)	3
ELET 4780, Senior Design I (ELET 3760, Senior Standing)	1
University Core course	<u>3</u>
Total Hours	14

#### SPRING

ELET 4320, Electronic Comm II (ELET 4710)	3
ELET 4330, Instrumentation Sys. Design (ELET 3760)	3
ELET 4790, Senior Design II (ELET 4780)	3
Advanced Technical Elective	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 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: ELET 1720 requires MATH 1100, College Algebra, or a higher MATH course as prerequisite.

Note 3: ENGR 2750 requires ENGR 2720, 2730 and completion of or co-enrollment in CSCE 1030 as prerequisite.

**Must earn at least a grade of "C" and a minimum 2.5 GPA in Communications Core, TECM 2700, MATH 1710, ENGR 1030, ENGR 2720, ENGR 2730, ELET 1720, & ELET 2740 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.**

**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  
Faculty Advisors: Dr. Ryan Garlick, Mr. David Keathly  
ryan.garlick@unt.edu, david.keathly@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisor: Heather Burrow, Beverly Wilks  
heather.burrow@unt.edu, beverly.wilks@unt.edu

## University Core

## Major Requirements

Grades of C or better.

### COMMUNICATION

- 3 Hours approved course
- Grade of "C" or better is required.

### AMERICAN HISTORY

- HIST 2610, U.S. History To 1865 (3 Hours)
- HIST 2620, U.S. History From 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- 3 Hours approved course

## 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)

### COMPUTER SCIENCE and ENGINEERING

- CSCE 1030, Computer Science I (4 Hours)
- CSCE 1040, Computer Science II (3 Hours)
- CSCE 2100, Computing Foundations I (3 Hours)
- CSCE 2110, Computing Foundations II (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 3535, Network Administration (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, Introduction to Database Systems Design (3 Hours)
- CSCE 4355, Database 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

### 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>
<b>Total Hours</b>	<b>15</b>

#### 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>
<b>Total Hours</b>	<b>16</b>

### SOPHOMORE YEAR

#### FALL

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

#### SPRING

CSCE 2110, Computing Foundations II (CSCE 2100)	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>
<b>Total Hours</b>	<b>15</b>

### 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>
<b>Total Hours</b>	<b>15</b>

#### 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>
<b>Total Hours</b>	<b>15</b>

### SENIOR YEAR

#### FALL

CSCE 3535, 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>
<b>Total Hours</b>	<b>15</b>

#### 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>
<b>Total Hours</b>	<b>15</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 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 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.**

**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  
Faculty Advisor: Dr. Marcus Young  
marcus.young@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisor: Nancy Van Hoy  
nancy.vanhoy@unt.edu

## University Core

### COMMUNICATION

- 3 Hours approved course

**Grade of "C" or better is required.**

### AMERICAN HISTORY

- HIST 2610, U.S. History To 1865 (3 Hours)
- HIST 2620, U.S. History From 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- Fulfilled by MTSE 1100, Discover How & Why Materials Matter

## 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 & Vector Geometry (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

### 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 2700, Linear Algebra (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 (see note 3)	3
University Core course	3
Total Hours	16

#### SPRING

MATH 3410, Diff. Equ. (MATH 1720, coreq MATH 2700)	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

### JUNIOR YEAR

#### FALL

MTSE 3010, Bonding & Structure (MTSE 3001)	3
MTSE 3020, Micro & Characterization (MTSE 3001)	3
MTSE 3030, Thermo & Phase Diagrams (MTSE 3001)	3
MTSE 3040, Transport Phen. (MTSE 3001, MATH 3410)	3
MTSE 3090, Laboratory I (MTSE 3001)	1
University Core course	3
Total Hours	16

#### SPRING

MTSE 3050, Mechanical Properties (MTSE 3001)	3
MTSE 3060, Phase Transform. (MTSE 3010, 3030, 3040)	3
MTSE 3070, Elect., Opt., & Mag. Properties (MTSE 3001)	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 3001)	3
MTSE 4090, Senior Design I (see note 4)	3
University Core course	3
Total Hours	15

#### SPRING

MTSE Advanced Level MTSE Elective (see note 5)	3
MTSE Advanced Level MTSE Elective (see note 5)	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 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.

Note 3: MTSE 3000 requires completion of MATH 1710, CHEM 1410, 1430, PHYS 1710, 1730 as prerequisite.

Note 4: MTSE 4090 requires completion of MTSE 3010, 3020, 3030, 3040, 3050, 3070, 3080 as prerequisite.

Note 5: Must complete prerequisite(s) for each Advanced Elective MTSE course. See your advisor for approved course options.

**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.**

**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  
Faculty Advisors:  
Dr. Mark Wasikowski, Dr. Xiaohua Li,  
Dr. Sheila Williams, Dr. Cherish Qualls  
mark.wasikowski@unt.edu, xiaohua.li@unt.edu,  
Sheila.williams@unt.edu, cherish.qualls@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisors:  
Mia Dallas, Rachel Smith, Adrian Stephens  
mia.dallas@unt.edu, rachel.smith@unt.edu,  
adrian.stephens@unt.edu

## University Core

## Major Requirements

Grades of C or better.

### COMMUNICATION

- 3 Hours approved course
- Grade of "C" or better is required.**

### AMERICAN HISTORY

- HIST 2610, U.S. History To 1865 (3 Hours)
- HIST 2620, U.S. History From 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- 3 Hours approved course

### COMPONENT AREA

- Fulfilled by MEEN 1000, Discover Mechanical & Energy

## 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)

### 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

### 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, Thermodynamics I (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 (see note 5)	3
MTSE 3003, Materials Lab (see note 5)	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 6)	3
Energy Elective (see note 7)	3
Technical Elective (see note 7)	3
University Core course	3
Total Hours	15

#### SPRING

MEEN 4250, Capstone Design (MEEN 4150)	3
Energy Elective (see note 7)	3
Technical Elective (see note 7)	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 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. Please check with an advisor.

**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.**

**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  
Faculty Advisor: Dr. Leticia Anaya  
leticia.anaya@unt.edu

Engineering Advising Office  
Discovery Park A-101; (940) 565-4201  
Academic Advisors: Mia Dallas, Rachel Smith, Adrian Stephens  
mia.dallas@unt.edu, rachel.smith@unt.edu, adrian.stephens@unt.edu

## University Core

## Major Requirements

Grades of C or better.

### COMMUNICATION

- ☐ 3 Hours approved course
- Grade of "C" or better required.**

### AMERICAN HISTORY

- ☐ HIST 2610, U.S. History to 1865 (3 Hours)
- ☐ HIST 2620, U.S. History from 1865 (3 Hours)

### GOVERNMENT/POLITICAL SCIENCE

- ☐ PSCI 2305, U.S Political Behavior & Policy (3 Hours)
- ☐ PSCI 2306, U.S. & Texas Constitution & Institution (3 Hours)

### CREATIVE ARTS

- ☐ 3 Hours approved course

### LANGUAGE, PHILOSOPHY, & CULTURE

- ☐ 3 Hours approved course

### SOCIAL & BEHAVIORAL SCIENCE

- ☐ 3 Hours approved course

### COMPONENT AREA

- ☐ Fulfilled by ENGR 1030, Technological Systems

## 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 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)

### 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 (3 Hours) & ENGR 3451, Engineering Materials Lab (1 Hour)
  
- ☐ 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 (4 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

### 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 Req.)	3
ENGR 3451, Materials Lab (PHYS 1710, CHEM Req.)	1
MEET 3940, Fluid Mechanics (ENGR 2302, MATH 1720)	3
MEET 3990, Thermo. (ENGR 2332, CHEM Req.)	3
MFET 3110, Mach. Principles & Processes (MATH 1650)	<u>4</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 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.**

**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.**

# University Core Information

## **COMMUNICATION** (3 Hours)

ENGL 1310, College Writing I  
 ENGL 1311, Honors College Writing I  
 ENGL 1315, Writing about Literature I  
 TECM 1312, Intro. to Writing For International Students  
 TECM 1700, Intro. to Professional, Science, & Tech. Writing

*AP English Language & Composition score of 3, 4 or 5*

*IB English A: Language & Literature score of 5, 6, or 7*

## **AMERICAN HISTORY** (6 Hours)

HIST 2610, US to 1865 **or**  
 HIST 2675, Honors US History to 1865  
 HIST 2620, US from 1865 **or**  
 HIST 2685, Honors US History from 1865  
 HIST 4700, Texas History

*AP U.S. History score of 3, 4 or 5*

*CLEP History of United States I*

*CLEP History of United States II*

## **GOVT./POLITICAL SCIENCE** (6 Hours)

PSCI 2305, U.S. Political Behav. & Policy **or**  
 PSCI 2315, Honors U.S. Political Behav.  
 PSCI 2306, U.S. & Texas **or**  
 PSCI 2316, Honors U.S. & Texas

*AP U.S. Gov. & Politics score of 3, 4 or 5*

*CLEP American Government*

*Fulfills PSCI 2305 or 2315*

## **CREATIVE ARTS** (3 Hours)

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. & Lit. to 1750  
 MUMH 3510, Music His. & 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

*AP Art History score of 3, 4 or 5*

*IB Dance score of 4 or higher\**

## **LANGUAGE, PHIL. & CULTURE** (3 Hours)

AGER 2250, Aging in Film & Lit.  
 ANTH 3101 American Culture & 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

## **LANGUAGE, PHIL. & CULTURE Cont'd** (3 Hours)

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 & 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

*AP English Literature & Composition score of 3, 4 or 5*

*AP World History score of 3, 4 or 5*

*IB History score of 4 or higher\**

*IB Philosophy score of 5, 6, or 7*

*IB English Language A: Literature score of 5, 6, or 7*

## **SOCIAL & BEHAVIORAL SCIENCE** (3 Hours)

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 & Human Sexuality  
 JOUR 1210, Mass Comm. & Society  
 MDSE 2750, Consumers in Global Market  
 MKTG 2650 Culture and Consumption  
 MAUG 1500 Occupational Health with Music  
 PADM 2100, Cultural Competency in Urban  
 PSYC 1630, General Psychology I  
 PSYC 1650, General Psychology II  
 PSYC 3620, Developmental Psychology  
 RHAB 3100, Disability & Society  
 SOCI 1510, Intro to Sociology  
 SOCI 2100, Crime & Justice in the U.S.  
 SOWK 1450, Intro. to Social Work

*AP Macroeconomics score of 3, 4 or 5*

*AP Microeconomics score of 3, 4 or 5*

*AP Psychology score of 3, 4 or 5*

*IB Economics score of 4 or higher\**

*IB Geography score of 4 or higher\**

*IB Psychology score of 4 or higher\**

*CLEP Macroeconomics*

*CLEP Microeconomics*

*CLEP Human Growth & Development*

*CLEP Introductory Psychology*

*CLEP Introductory Sociology*

## **COMPONENT AREA** (3 Hours)

AGER 2250, Aging in Film & Literature  
 ANTH 1100, World Cultures  
 ANTH 1150, World Cultures Through Film  
 ANTH 2070, Intro. to Race & Ethnic Studies  
 ANTH 2200, Gender Across Cultures  
 ART 1300, Art Appreciation, Non-Majors  
 BCIS 3615, Visual Display of Business Info.  
 BIOL 1000, Discover Life Science  
 BIOL 1750/1755, Intro. Research Lab I & II  
 BMEN 1300, Discover Biomedical Engr.  
 BUSI 1340, Managing Business Enterprise  
 CHEM 1400, Discover Chemistry  
 COMM 1010, Intro. to Communication  
 COMM 1440, Honors Classical Argument  
 COMM 2040, Public Speaking  
 COMM 2140, Advocating in Public  
 COUN 2620, Diversity & Cultural Awareness  
 DANC 1100, Stress Reduct. Thru Movement  
 EENG 1910, Project 1: Learning to Learn  
 ENGL 2400, Literature, Media, & Culture  
 ENGL 2440, Banned Books  
 ENGL 3000, Literary Analysis & Interpretation  
 ENGR 1030, Technological Systems  
 FREN 1610, French Influence in North Am.  
 FREN 1620, French Language in Canada  
 GEOG 1500, Geospacial Tech. Urban Areas  
 HDFS 2033, Parenting in Diverse Families  
 HDFS 3423, Family, Schools, Communities  
 HLTH 2000, Intro. to Public Health  
 HMGT 1450, Principles of Nutrition  
 HNRS 1100, The Good Society  
 HNRS 1500, Intro. to Research  
 INST 2100, Intro. to International Studies  
 INST 2500, Global Perspectives  
 ITAL 1610, Italian Influences in the U.S.  
 JOUR 1210, Mass Communication & Society  
 JOUR 2300, Principles of News  
 LANG 1610, World Ling. Landscapes  
 LING 2050, Language of Now  
 LING 2070, Language & Discrimination  
 MATH 2000, Discrete Mathematics  
 MDSE 2750, Consumers in a Global Market  
 MEEN 1000, Discover Mech. & Energy Engr.  
 MGMT 3330, Communicating in Business  
 MKTG 2650, Culture & Consumption  
 MKTG 3010, Professional Selling  
 MTSE 1100, Discover Materials  
 MUMH 1610, Music as Communications  
 PHED 1000, Health Related Fitness  
 PHIL 1800, Philosophy of Self  
 PHIL 2400, Religion in American Society  
 PHIL 2500, Contemp. Environmental Issues  
 PHIL 4150, Feminism  
 PHIL 4200, Science, Technology, Society  
 PHIL 4300, Philosophy of Food  
 PSCI 1010, Politics and Pop Culture  
 PSYC 1500, Mythbusting  
 RHAB 3000, Microcounseling  
 SOCI 2070, Race & Ethnic Relations  
 SOWK 4540, Human Diversity  
 TECM 1500, New Media for College Career  
 WGST 2100, Women & Society

*\*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.*

# Mathematics, Sciences & Programming Information

## TEXAS SUCCESS INITIATIVE (TSI)

TSI is a program legislated by the State of Texas to improve the success of students in college. Students must prove they are TSI complete in reading, writing, & mathematics via exemptions, SAT, ACT, or transfer credit. If a student is not TSI complete, testing must be completed prior to enrollment in UNT courses. Successful TSI mathematics testing will allow entry into MATH 1100. Meet with the Learning Center in Sage Hall for more information.

## MATH PRE-PLACEMENT FOR FRESHMEN

If you have not earned credit for math courses via AP, IB, CLEP, 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 1600 or 1650
- MATH Level 3: MATH 1710

## MATH 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 into a higher math course via 3 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.
- Accuplacer** – free on campus test. The test is 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.
- 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.

Please see [math.unt.edu](http://math.unt.edu) or contact the Math Department at (940) 565-2155 or General Academic Building (GAB) 440 for more testing information.

## PREREQUISITE MATH COURSES TO ENTER CALCULUS I

- MATH 1100, College Algebra, Minimum C grade ->
  - MATH 1650, Pre-Calculus, Minimum C grade ->
  - MATH 1710, Calculus I
- or
- MATH 1100, College Algebra, Minimum C grade ->
  - MATH 1600, Trigonometry, Minimum C grade ->
  - MATH 1610, Functions, Graphs, Appls, Minimum C grade ->
  - MATH 1710, Calculus I

## MATH CREDITS

AP Statistics score of 3, 4, 5: MATH 1680 (prereq for MATH 1100)  
 AP Calculus AB score of 3, 4, 5: MATH 1710  
 AP Calculus BC score of 3, 4, 5: MATH 1710,1720  
 AP Calculus AB Subscore of BC Exam score 3, 4, or 5: MATH 1710  
 CLEP Mathematics: Elective  
 CLEP College Algebra: MATH 1100  
 CLEP Trigonometry: MATH 1600  
 CLEP Pre-calculus: MATH 1650  
 CLEP Calculus with Elementary Functions: MATH 1710,1720  
 IB Mathematic Studies: Elective  
 IB Mathematics - Calculus: MATH 1710  
 Transfer College Algebra: MATH 1100  
 Transfer Statistics: MATH 1680 (prerequisite for MATH 1100)  
 Transfer Trigonometry credit: MATH 1600  
 Transfer Business Calculus: MATH 1190 (prereq for MATH 1600 or 1650)

## BIOLOGY CREDITS

AP Biology score of 3: BIOL 1112,1122  
 AP Biology score of 4, 5: BIOL 1710,1720,1760  
 CLEP General Biology: BIOL 1710,1720  
 IB Biology: BIOL 1710,1720,1760

## CHEMISTRY CREDITS

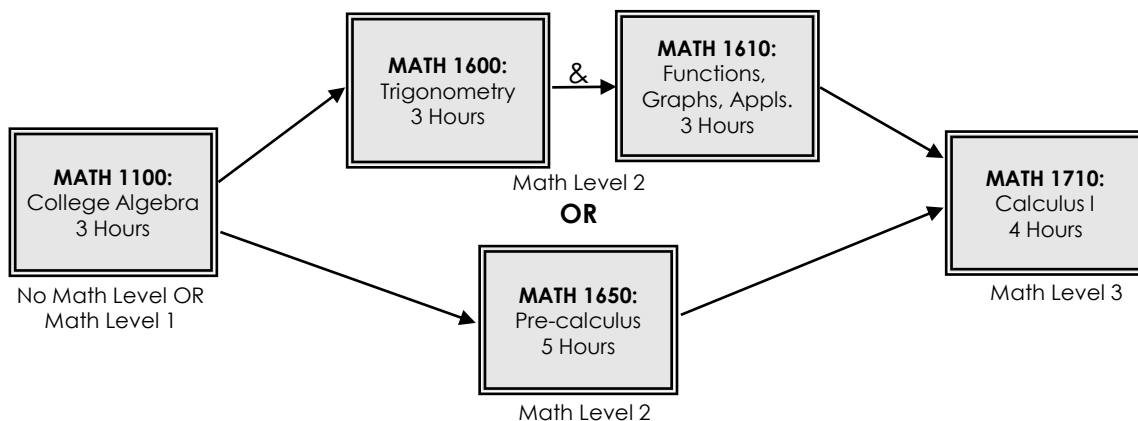
AP Chemistry score of 3: CHEM 1360  
 AP Chemistry score of 4: CHEM 1410,1430  
 AP Chemistry score of 5: CHEM 1410,1430 & 1420,1440  
 CLEP General Chemistry: CHEM 1410,1420  
 IB Chemistry: CHEM 1410,1430 & 1420,1440

## PHYSICS CREDITS

AP Physics 1 score of 3: PHYS 1210  
 AP Physics 1 score of 4, 5: PHYS 1410,1430  
 AP Physics 2 score of 3: PHYS 1315  
 AP Physics 2 score of 4, 5: PHYS 1420,1440  
 AP Physics C (Mechanics) score of 3: PHYS 1410,1430  
 AP Physics C (Mechanics) score 4, 5: PHYS 1710,1730  
 AP Physics C (Electricity & Magnetism) score of 3: PHYS 1420,1440  
 AP Physics C (Electricity & Magnetism) score of 4, 5: PHYS 2220,2240

## COMPUTER SCIENCE/PROGRAMMING CREDITS

AP Computer Science A score of 3: CSCE 1010  
 AP Computer Science A score of 4, 5: CSCE 1030  
 AP Computer Science Principles score of 3, 4, 5: CSCE 1010  
 IB Computer Science: CSCE 1030,1040



Grades of C or better is required in each course.

# Minor 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\*\*\*.

## **BUSINESS FOUNDATIONS GENERAL TRACK MINOR** (18 Hours)

ACCT 2010, Accounting Principles I (3 Hours)  
ACCT 2020, Accounting Principles II (3 Hours)  
FINA 3770, Finance (3 Hours)  
MKTG 3650, Foundations of Marketing (3 Hours)  
MGMT 3720, Organizational Behavior, (3 Hours)  
**or**  
MGMT 3820, Management Concepts (3 Hours)  
Plus 3 advanced hours (1 course) chosen from any 3\*\*\* or 4\*\*\* level business course. Options available in the UNT catalog located at catalog.unt.edu.

## **BUSINESS FOUNDATIONS MBA PREP TRACK MINOR** (18 Hours)

ACCT 2010, Accounting Principles I (3 Hours)  
ACCT 2020, Accounting Principles II (3 Hours)  
Plus 12 advanced hours (4 courses) chosen from:  
    BCIS 3610, Basic Information Systems (3 Hours)  
    BLAW 3430, Legal & Ethical Environment (3 Hours)  
    DSCI 3710, Business Statistics (3 Hours)  
    FINA 3770, Finance (3 Hours)  
    OPSM 3830, Operations Management (3 Hours)  
    MKTG 3650, Foundations of Marketing (3 Hours)

## **CHEMISTRY MINOR** (20 Hours)

CHEM 1410, General Chemistry I (3 Hours)  
CHEM 1430, General Chemistry I Lab (1 Hour)  
CHEM 1420, General Chemistry II (3 Hours)  
CHEM 1440, General Chemistry II Lab (1 Hour)  
CHEM 2370, Organic Chemistry I (3 Hours)  
CHEM 3210, Organic Chemistry I Lab (1 Hour)  
CHEM 2380, Organic Chemistry II (3 Hours)  
CHEM 3220, Organic Chemistry Lab (1 Hour)  
Plus 4 hours chosen from a list of options available in the UNT catalog located at catalog.unt.edu

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

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

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

EENG 2610, Circuit Analysis (3 Hours)  
EENG 2620, Signals & Systems (3 Hours)  
EENG 2710, Digital Logic Design (3 Hours)  
EENG 2910, Digital System Design (3 Hours)  
**or**  
EENG 2920, Analog Circuit Design (3 Hours)  
EENG 3510, Electronics I (3 Hours)  
EENG 4\*\*\*, EENG advanced level course (3 Hours)

## **FOREIGN LANGUAGE MINORS** (18-21 Hours)

Minors are offered in Arabic, Chinese, French, German, Italian, Japanese, Latin, Russian, & Spanish. Some languages require 18 hours (6 courses) whereas some languages require 21 hours (7 courses). Specific course requirements are located in the UNT catalog at catalog.unt.edu. Grades of "C" or better are required.

## **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

## **MATHEMATICS MINOR** (19 Hours)

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

**or**

MATH 2700, Linear Algebra & Vector Geometry (3 Hours)  
MATH 3\*\*\* or MATH 4\*\*\*  
MATH 3\*\*\* or MATH 4\*\*\*

## **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)

## **STATISTICS MINOR** (19 Hours)

MATH 1710, Calculus I (4 Hours)  
MATH 1720, Calculus II (3 Hours)  
MATH 2730, Multivariable Calculus (3 Hours)  
MATH 3680, Applied Statistics (3 Hours)  
MATH 4610, Probability (3 Hours)  
MATH 4650, Statistics (3 Hours)  
Plus 3 advanced hours (1 course) chosen from a list of specific options which is located in the UNT catalog at catalog.unt.edu.

*Must complete appropriate prerequisites for minor courses.*

*Minors are not required in order to graduate with a degree from the College of Engineering at UNT.*

*UNT offers many more minors than those listed on this page. Information on all available minor options & requirements can be found in the UNT catalog located at catalog.unt.edu.*



# Certificate/License Information

## **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, Computational Simulation 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)

## **ENTREPRENEURSHIP CERTIFICATE** (12 Hours)

MGMT 3850, Entrepreneurship (3 Hours)  
Plus 9 advanced hours (3 courses) chosen from  
MGMT 3810, Principles of Family Business (3 Hours)  
MGMT 3915, Creativity & Opportunity Dev. (3 Hours)  
MGMT 4210, E-Management (3 Hours)  
MGMT 4220, Advanced Entrepreneurship (3 Hours)  
MGMT 4235, Social Entrepreneurship (3 Hours)  
MGMT 4335, Technology & Innovation Mgmt. (3 Hours)  
MGMT 4560, Topics in Entrepreneurship (3 Hours)

## **FORENSIC SCIENCE CERTIFICATE** (19 Hours)

CJUS 4360, Criminal Investigation (3 Hours)  
BIOL 3331, Biomedical Criminalistics (3 Hours)  
BIOL 4240, Forensic Microscopy (3 Hours)  
BIOL 4590, Forensic Molecular Biology Lab (3 Hours)  
CHEM 4351, Forensic Chemistry (3 Hours)  
CHEM 4631, Instrumental Analysis (3 Hours)  
CHEM 4632, Instrumental Analysis Lab (1 Hour)  
Plus completion of the Forensic Science Aptitude Test offered through the American Board of Criminalistics.

## **GEOGRAPHIC INFORMATION SYSTEMS CERTIFICATE** (15 Hours)

GEOG 3500, Intro. to Geographic Info. Systems (3 Hours)  
GEOG 4550, Advanced Geographic Info. Systems (3 Hours)  
GEOG 4560, Introduction to GIS Programming (3 Hours)  
GEOG 4570, Special Topics in GIS (3 Hours)  
GEOG 4590, Advanced GIS Programming (3 Hours)

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

CSCE 4210, Game Programming I (3 Hours)  
CSCE 4215, Programming Math & Physics for Games (3 Hours)  
CSCE 4220, Game Programming II (3 Hours)  
CSCE 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)

*Grades of "C" or better required for each course.*

## **MATHEMATICS OF SCIENTIFIC COMPUTATION CERTIFICATE**

(18 Hours)  
CSCE 1030, Computer Science I (4 Hours)  
MATH 3350, Introduction to Numerical Analysis (3 Hours)  
MATH 3410, Differential Equations (3 Hours)  
Plus 9 advanced hours (3 courses) courses chosen from a specific list of options which is located in the UNT catalog at [catalog.unt.edu](http://catalog.unt.edu).

## **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** (21 Hours)

CSCE 2610, Assembly Language & Computer Organization (3 Hours)  
CSCE 3530, Intro. to Computer Networks (3 Hours)  
CSCE 4010, Social Issues in Computing (3 Hours)  
CSCE 4350, Introduction to Database Systems Design (3 Hours)  
CSCE 4550, Intro. to Computer Security (3 hours)  
CSCE 4560, Secure Electronic Commerce (3 Hours)  
CSCE 4600, Operating Systems (3 Hours)

## **STATISTICS CERTIFICATE** (12 Hours)

MATH 3680, Applied Statistics (3 Hours)  
MATH 4610, Probability (3 Hours)  
MATH 4650, Statistics (3 Hours)

Plus 3 advanced hours (1 course) chosen from a specific list of options which is located in the UNT catalog at [catalog.unt.edu](http://catalog.unt.edu).

## **TECHNICAL WRITING CERTIFICATE** (12 Hours)

TECM 2700, Technical Writing (3 Hours)  
TECM 4180, Advanced Technical Writing (3 Hours)  
TECM 4190, Technical Editing (3 Hours)  
TECM 4100, Writing Grants & Proposals (3 Hours)

or

TECM 4250, Writing Technical Procedures & Manuals (3 Hours)

or

TECM 4700, Writing in the Sciences (3 Hours)

*Grades of "B" or better required for each course.*

*Must complete appropriate prerequisites for certificate courses.*

*Certificates are not required in order to graduate with a degree from the College of Engineering at UNT.*

*UNT offers many more certificates than those listed on this page. Information on all available certificate options & requirements can be found in the UNT catalog located at [catalog.unt.edu](http://catalog.unt.edu).*

## **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.

# 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	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
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 nternmatch.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/students/scholarships-and-grants financialaid.unt.edu searchforcolleges.org
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 lrc.unt.edu/labs
Veteran Center & Services	veteranscenter.unt.edu or unt.edu/veterans & registrar.unt.edu