Department of Computer Science and Engineering

BS in Computer Science
BS in Computer Engineering

- Advising Information
- Core Curriculum
- Course Descriptions
- Degree Plan Information

UNT Discovery Park (NTDP) F201
(940) 565-2767
www.cse.unt.edu

Valid only for those on Catalog Year 2012-13
This is a simplified guide to selecting courses – please meet with your advisor and check the undergraduate catalog for all course options in each category.

**Computer Science**

- A Minimum of 120 semester hours required for graduation.
- 42 advanced (3000-4000 level) hours required for degree (minimum of 24 must be taken at UNT).
- A minimum of 31 semester hours must be completed at UNT.

**Computer Science**

**Elective Courses**

(To reach 120 Hrs with 45 Advanced Hrs.)

Students should seek advanced core courses to satisfy the 45 advanced hours requirement within the 120 hour minimum.

**Math, Science & Engineering Core**

- Must earn at least a “C” in all courses and a 2.5 GPA
- **Laboratory Sciences** (16 Hours; 4 courses [with labs])
  - PHYS 1710 - 1730 (4 hours)
  - PHYS 2220 - 2240 (4 hours)
  - CHEM 1410 or 1415 & lab
  - BIOL 1710 / 1730, 1720 / 1740

- **Mathematics** (13 Hours)
  - MATH 1710 – Calculus I (4 hours)
  - MATH 1720 – Calculus II (3 hours)
  - MATH 1780 – Probability (3 hours)
  - MATH 2700 – Linear Algebra (3 hours)

- **Oral / Advanced Written Communications** (3 Hours)
  - TECM 2700 (satisfies second English requirement)

**Computer Science**

**CSE Department Required Courses**

- **CSCE Required Courses (28 Hours)**
  - CSCE 1030 – CS1 (4 Hrs)
  - CSCE 1040 – CS2 (3 Hrs)
  - CSCE 2100 – Foundations I (3 Hrs)
  - CSCE 2110 – Foundations II (3 Hrs)
  - CSCE 2610 – Comp. Org (3 Hrs)
  - CSCE 3110 – Data Structures (3 Hrs)
  - CSCE 3600 – Systems Prog (3 Hrs)
  - CSCE 4010 – Ethics (3 Hrs)
  - CSCE 4110 – Algorithms (3 Hrs)

- **CSCE Core Courses (9 hours)**
  - Choose 9 hours from CSCE 3650, 4410, 4115, 4430, 4600, 4610, 4999
  - (3 Hours) (advanced)
  - (3 Hours) (advanced)
  - (3 Hours) (advanced)

- **CSCE Breadth Courses (9 hours)**
  - Choose 9 hours from CSCE 3530, 4210, 4230, 4310, 4350, 4444, 4901
  - (3 Hours) (advanced)
  - (3 Hours) (advanced)
  - (3 Hours) (advanced)

- **CSCE Elective Courses (9 hours)**
  - Choose 9 hours of upper div. CSCE courses (not from above)
  - (3 hours) (advanced)
  - (3 hours) (advanced)
  - (3 hours) (advanced)

- **Electrical Engineering** (3 Hours)
  - EENG 2710 (Digital Logic)

- **Advanced Technical Writing** (3 Hours)
  - Any 4000 Level TECM Course.

**University Core**

- **English** (3 Hours)
  - ENGL 1310, 1311, 1312, or 1313
  - Grade of “C” or better required
  - Second English fulfilled by TECM 2700

- **United States History** (6 Hours)
  - HIST 2610 or 2620
  - HIST 4700

- **Political Science** (6 Hours)
  - PSCI 1040
  - PSCI 1050

**CSE Department Required Courses**

- **Elective Courses** (To reach 120 Hrs with 45 Advanced Hrs.)

**Certificates**

- CSCE 3530, 4550 & 4560 = Committee on Nat’l Security Sys. Cert.
- CSCE 4210, 4215, 4220, & 4250 = Game Programming Cert.
- 2nd & 3rd advanced Tech Writing = Tech Writing Certificate

**Elective Courses**

Check with your advisor concerning elective courses

Max 6 hours of credit in CSCE 4890, 4920, 4940, 4950 or 4980.

In case of conflicting information, the catalog (catalog.unt.edu) prevails. This guide is for catalog year 2012-13 and does not apply to other catalog years.
Computer Engineering

- A Minimum of 122 semester hours required for graduation.
- 45 advanced (3000-4000 level) hours required for degree (minimum of 24 must be taken at UNT).
- A minimum of 31 semester hours must be completed at UNT.

**THIS IS A SIMPLIFIED GUIDE TO SELECTING COURSES – PLEASE MEET WITH YOUR ADVISOR AND CHECK THE UNDERGRADUATE CATALOG FOR ALL COURSE OPTIONS IN EACH CATEGORY**

### Math, Science & Engineering Core

**LABORATORY SCIENCES** (12 Hours; 3 courses)
- PHYS 1710-1730 (4 hours)
- PHYS 2220-2240 (4 hours)
- CHEM 1410 or 1415 and lab (4 hours)

**MATHEMATICS** (19 Hours)
- MATH 1710 – Calculus I (4 hours)
- MATH 1720 – Calculus II (3 hours)
- MATH 1780 – Probability (3 hours)
- MATH 2700 – Linear Algebra (3 hours)
- MATH 2730 – MultiVar Calc. (3 hours)

Adv. MATH or SCIENCE ELECTIVE

Choose a 3000 or 4000 level course from Math, Physics, Chemistry, Biology, Geology, or Geography

### Oral / Advanced Written Communications (3 Hours)

TECM 2700 (satisfies second English req.)

### CSE Department Required Courses

**COMPUTER SCIENCE and ENGINEERING**
- CSCE 1030 – CST (4 Hrs)
- CSCE 1040 – CS2 (3 Hrs)
- CSCE 2110 – Foundations I (3 Hrs)
- CSCE 2110 – Foundations II (3 Hrs)
- CSCE 2610 – Comp Org (3 Hrs)
- CSCE 3010 – Signals & Sys (3 Hrs) or EENG 2620
- CSCE 3020 – Comm Theory (3 Hrs) or EENG 3810
- CSCE 3600 – Systems Progr (3 Hrs)
- CSCE 3612 – Embed Systems (3 Hrs)
- CSCE 3730 – Reconfig Logic (3 Hrs)
- CSCE 4011 – Engineering Ethics (3 Hrs)
- CSCE 4910 – Senior Design I (3 Hrs)
- CSCE 4915 – Senior Design 2 (3 Hrs)

CSCE Specialty Elective

See next page for details

Advanced Technical Elective

Tech Electives may be any upper-division courses from the College of Engineering, College of Business, or the departments of Biology, Chemistry, Economics, Mathematics, or Physics. Advisor approval needed.

**ELECTRICAL ENGINEERING** (9 Hours)
- EENG 2710 Digital Logic
- EENG 3510 Electronics I
- EENG 2610 Circuit Analysis

**ELECTIVE COURSES** (To reach 122 Hrs with 45 Advanced Hrs.)

It is strongly recommended that students take advanced courses in the core areas to satisfy the 45 advanced hours requirement within the 122 hour minimum.

### University Core

#### ENGLISH (3 Hours)
- ENGL 1310, 1311, 1312, or 1313
- Grade of “C” or better is required
- Second English fulfilled by TECM 2700

#### UNITED STATES HISTORY (6 Hours)
- HIST 2610 or 2620
- HIST 4700

**NOTE:** Honors equivalents or History 4700 (Texas History) or any advanced US Topic History course(s) may substitute for either of the US History survey courses.

**POLITICAL SCIENCE** (6 Hours)
- PSCI 1040
- PSCI 1050

**NOTE:** If you are transferring credit for either PSCI course, please check with your advisor. Do not assume that your “first” course elsewhere is the same as PSCI 1040. An out-of-state American Government course cannot be equivalent to PSCI 1040 but may be equivalent to PSCI 1050. Any advanced US Topic Political Science course may substitute for PSCI 1050 only.

**SOCIAL AND BEHAVIORAL SCIENCES** (3 Hours)

**VISUAL / PERFORMING ARTS** (3 Hours)
- (MUMH 3000 or 3010 recommended)

**HUMANITIES** (3 Hours)

**DISCOVERY** (3 Hours)

**CAPSTONE** (3 Hours)
- CSCE 4011 Satisfies

**NOTE:** The student is required to maintain a 2.75 GPA in all upper division CSCE courses.

Taking CSCE 3530, CSCE 4550, and CSCE 4560 earns a certificate from the Committee on National Security Systems Completing the four-course sequence CSCE 4210, 4215, 4220, and 4250 earns a Certificate in Game Programming

Check with your advisor concerning elective courses

In case of conflicting information, the catalog (catalog.unt.edu) prevails. This guide is for catalog year 2012-13 and does not apply to other catalog years.
Computer Engineering Specialty Area Electives

Specialization Area: Real-time and Embedded Systems (choose 3 courses)

- ELET 3750: Digital Systems
- CSCE 4620: Real-Time Operating systems
- CSCE 4730: VLSI Design
- CSCE 4440: Real-Time Software Development
- CSCE 4610: Computer Systems Architecture
- CSCE 4890: Directed Study in a Real-Time / Embedded Topic

Specialization Area: VLSI and Electronics (choose 3 courses)

- CSCE 4730: VLSI Design
- CSCE 4750: VLSI Testing
- CSCE 4610: Computer Systems Architecture
- ELET 3750: Digital Systems
- PHYS 4500: Introduction to Solid State Physics
- CSCE 4890: Directed Study in a VLSI / Electronics Topic

Specialization Area: Communications and Networks (choose 3 courses)

- CSCE 3510: Introduction to Wireless Communication
- CSCE 3530: Introduction to Computer Networks
- CSCE 4520: Wireless Networks and Protocols
- CSCE 4530: Computer Network Design
- CSCE 4560: Secure e-Commerce
- CSCE 4550: Introduction to Computer Security
- CSCE 4890: Directed Study in a Networking Topic

Specialization Area: Computer Systems (choose 3 courses)

- CSCE 3650: Introduction to Compilation Techniques
- CSCE 4610: Computer Systems Architecture
- CSCE 3030: Parallel Programming
- CSCE 4600: Intro to Operating Systems
- CSCE 4620: Real-Time Operating Systems
- CSCE 4890: Directed Study in a Systems Topic
Course Offering for UNT Core Requirements

**ENGLISH COMPOSITION** (3 Hours)
ENGL 1310, College Writing I
ENGL 1311, Honors Composition I
ENGL 1313, Computer Assisted College Writing I
ENGL 1315, Writing about Literature I
TECM 1312, Gram. & Comp. For International Students
TECM 1700, Intro. to Professional, Science, & Tech. Writing

**HUMANITIES** (3 Hours)
AGER 2250, Images of Aging in Film & Lit.
ENGL 2210, World Literature I
ENGL 2211, Honors World Literature I
ENGL 2220, World Literature
ENGL 2221, Honors World Literature
ENGL 2322, British Literature to 1780
ENGL 2323, British Literature from 1780
ENGL 2327, American Literature to 1870
ENGL 2328, American Literature from 1870
FRBN 3040, Adv. Reading French Culture
FRBN 4070, French Culture & Lit. thru Film
FRBN 4310, Contemp. French Civilization
MUET 3030, Music Cultures of the World
PHIL 1800, Philosophy of Self
PHIL 2070, Great Religions
PHIL 2100, Intro. To Judaism
PHIL 2310, Intro. To Ancient Philosophy
PHIL 2400, Religion in American Society
PHIL 2500, Contemp. Environ. Issues
PHIL 2600, Ethics in Science

**UNITED STATES HISTORY** (6 Hours)
HIST 2610, US to 1865
HIST 2675, Honors US History to 1865
HIST 2620, US from 1865
HIST 2685, Honors US History from 1865
HIST 4700, Texas History
Advanced (3*** or 4****) level U.S.
History (Group A)

**POLITICAL SCIENCE** (6 Hours)
PSCI 1040, American Government
1041, Honors Am. Government
1050, American Government
1051, Honors Am. Government

**SOCIAL & BEHAVIORAL SCIENCES** (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
CHJS 2100, Crime and Justice in the U.S.
COMM 2200, Interpersonal Comm.
DPSY 1013, Human Development
EAP 4050, Special Pop. in Disasters
ECON 1100, Microeconomics
ECON 1110, Macroeconomics
HLTH 2200, Family Life & Human Sexuality
JOUR 1210, Mass Comm. & Society
MKTG 2650, Princ. of Global Marketing
PADM 2100, Diversity in Urban Gover.
PSYC 1630, General Psychology I
PSYC 1650, General Psychology II
RHAB 3100, Disability & Society
SOCI 1510, Individuals in Society
SOCI 2100, Crime & Justice in the U.S.

**DISCOVERY** (3 Hours)
ANTH 1100, World Cultures
ANTH 1150, World Cultures Through Film
ANTH 2070, Intro. to Race & Ethnic Studies
ANTH 2200, Gender Across Cultures
BSCI 3618, Visual Display of Business Info.
BIOL 1750/1755, Intro. Research Lab I & II
BUSI 1340, Managing Business Enterprise
COMM 1010, Intro. to Communication
COMM 1440, Honors Classical Argument
COMM 2040, Public Speaking
COUN 2620, Diversity & Cultural Awareness
DANC 1100, Stress Reduct. Thru Movement
DPSY 2033, Parenting in Diverse Families
ENGR 1030, Technological Systems
FRBN 1610, French Influence in North Am.
FRBN 1620, French Language in Canada
GEOG 1170, Culture, Environment & Society
GEOG 1200, World Regional Geography
GEOG 1500, Geography of DFW Metroplex
HIST 1050, World History to 1500
HIST 1060, World History from 1500
HMG 1450, Principles of Nutrition
HNS 1100, The Good Society
HNS 1500, Intro. to Research
INST 2100, Intro. to International Studies
LING 2000, Pop. Culture, Tech. & Society
MEDE 2750, Consumers in a Global Market
MEEN 1000, Discover Mech. & Energy Engr.
MGMT 3330, Communicating in Business
MKTG 3010, Professional Selling
MUAG 1600, Occupational Health:
PHED 1000, Health Related Fitness
PHIL 1050, Introduction to Philosophy
PHIL 1400, Contemporary Moral Issues
PHIL 2050, Introduction to Logic
PSYC 1500, Mythbusting
RHAB 3000, Microcounseling
SOCI 2070, Race & Ethnic Relations
SOWK 4540, Human Diversity
TECM 1500, New Media for College Career
UCRS 1000, Freshman Seminar
WMST 2100, Women & Society

**CAPSTONE** (3 Hours)
ELET 4790, Senior Design II
HNRS 4000, Honors Capstone Seminar
MEET 4790, Senior Design II
MUET 3020, Popular Music in Am. Culture
PHIL 3700, Science, Technology & Society
PHIL 3900, Philosophy of Food

*Additional courses will be added for the 2012-2013 curriculum.
If your degree program doesn't require a major course which
double-dips for this core category,
you should post-pone completing a
course until the updated
curriculum is released.*
The tables below indicate the University Core, College of Engineering and Departmental course requirements that are available to take at area community colleges before transferring to UNT Denton or UNT Dallas. Courses that are taken at area community colleges after transferring to UNT Denton or UNT Dallas must be approved from a UNT advisor and may be different than what is listed on these tables.

Core Classes

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Please see the College of Engineering Advisers in Discovery Park BEFORE enrolling in courses at another institution.
## College of Engineering Core

**Grades of ‘D’ are not accepted**

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