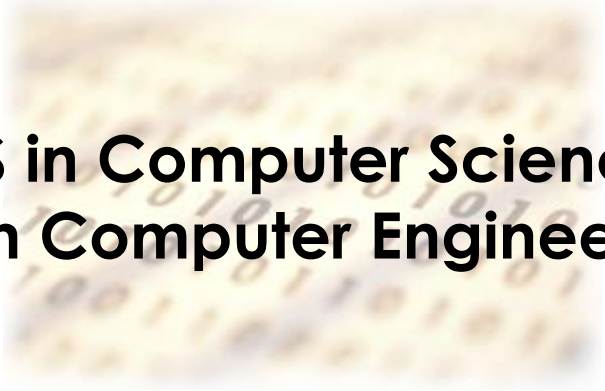
UNT CSE
Tomorrow's Technology through Today's Education

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 beginning Fall 2011

UNIVERSITY of NORTH TEXAS

Computer Science

Computer Science

- 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

College of Engineering Core

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 _____
Must earn at least a "C" in all courses and a 2.5 GPA

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) _____
Must earn at least a "C" in all courses and a 2.5 GPA

ORAL / ADVANCED WRITTEN COMMUNICATIONS (3 Hours)
TECM 2700 _____(satisfies second English requirement)
Must earn at least a "C" in TECM 2700

CSE Department Required Courses

COMPUTER SCIENCE (54 Hours minimum with 32 advanced hours, 12 of which must be at UNT)

CSCE Required Courses (27 hours)
1030 (4 Hours) _____
1040 (3 Hours) _____
2100 (3 Hours) _____
2110 (3 Hours) _____
2610 (3 Hours) _____
3110 (3 Hours) _____
3600 (3 Hours) _____
4010 (2 Hours) _____
4110 (3 Hours) _____

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)

*If no AP credit, approved transfer course, or dept. exam (if available) in a second programming language, one elective course **must** be CSCE 2410, 3410, or other approved course.

ELECTRICAL ENGINEERING (3 Hours)
EENG 2710 _____ Digital Logic

ADVANCED TECHNICAL WRITING (3 Hours)
1 of TECM 4180, TECM 4190, or TECM 4250. _____

ELECTIVE COURSES (To reach 122 Hrs with 45 Advanced Hrs.)
Students should seek advanced core courses to satisfy the 45 advanced hours requirement within the 123 hour minimum.

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 _____

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) _____

TAKE UPPER DIVISION (3xxx & 4xxx) COURSES WHERE POSSIBLE

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

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

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 (the Big Green Book) prevails. This guide is for catalog year 2011-12 and does not apply to other catalog years.

Bachelor of Science Major in Computer Science

Course rotation schedule.

	Course Title	Fall	Spring
1010	Introduction to Computer Science Non Majors	x	x
1020	Program Development Non Majors	x	x
1030	Computer Science I	x	x
1035	Information Systems I	x	x
1040	Computer Science II	x	x
1045	Information Systems II	x	x
2100	Computing Foundations I	x	x
2110	Computing Foundations II	x	x
2410	Programming Laboratory	x	
2610	Computer Organization	x	x
2615	Enterprise Architecture and Design		x
2900	Special Problems in CSE	x	x
3010	Signals & Systems	x	EE
3020	Fundamentals of Communication Theory	EE	x
3030	Parallel Programmimg		x
3055	IT Project Management	x	
3110	Data Structures & Algorithms	x	x
3210	Symbolic Processing	x	
3300	File Organization/Process	x	
3410	Advanced Programming	x	x
3510	Introduction to Wireless Communication		x
3520	Data Communications		x
3530	Introduction to Computer Networks	x	
3535	Network and Security Management		x
3600	Principles of Systems Programming	x	x
3605	IT Systems/Management	x	
3612	Embedded System Design	x	
3650	Introduction to Compilation Techniques		x
3730	Reconfigurable Logic	x	
4010	Engineering Ethics (2 hr)	x	x
4110	Algorithms	x	x
4210	Game Programming I	x	
4215	Programming Math and Physics for Games	x	
4220	Game Programming II		x
4230	Introduction Computer Graphics		x
4250	Topics in Game Development		x
4310	Introduction to Artifical Intelligence		x
4350	Introduction to Daabase Systems Design	x	
4355	Database Design and Information Integration	x	
4410	Software Develop I	x	x
4420	Software Develop II		x
4430	Programming Languages		x
4440	Real-Time Software Development		x
4520	Wireless Networks & Protocols	x	
4530	Computer Network Design		x
4540	TCP / IP Protocols		x
4550	Introduction to Computer Security	x	
4560	Secure E Commerce		x
4600	Introduction to Operating Systems		x
4610	Computer Architecture		x
4620	Real-Time Operating Systems	x	
4730	VLSI Design		x
4750	VLSI Testing	x	
4905	IT Capstone I	x	
4910	Computer Engineering Design I	x	
4915	Computer Engineering Design II		x
4925	IT Capstone II		x

Prerequisite Structure
BS in Computer Science

CSCE 4920 Co-op — See Undergraduate catalog for requirements

CSCE 2900 Special Problems — Elective credit only

CSCE 1010 Intro to CS — Not for CSCE major credit

Special Problems / Directed Study
See Undergraduate catalog for requirements

CSCE 4950 | CSCE 4950

CSCE 4940 | CSCE 4890

Maximum 6 hours credit in these courses

CSCE Core
Choose 9 hours from these courses
Pre-req's vary

- CSCE 4600 Intro. to Operating Sys
- CSCE 4115 Formal Languages
- CSCE 4430 Programming Languages
- CSCE 4610 Computer Architecture
- CSCE 3650 Intro Compil. Techniques
- CSCE 4410 Software Develop. I
- CSCE 4999 Senior Thesis

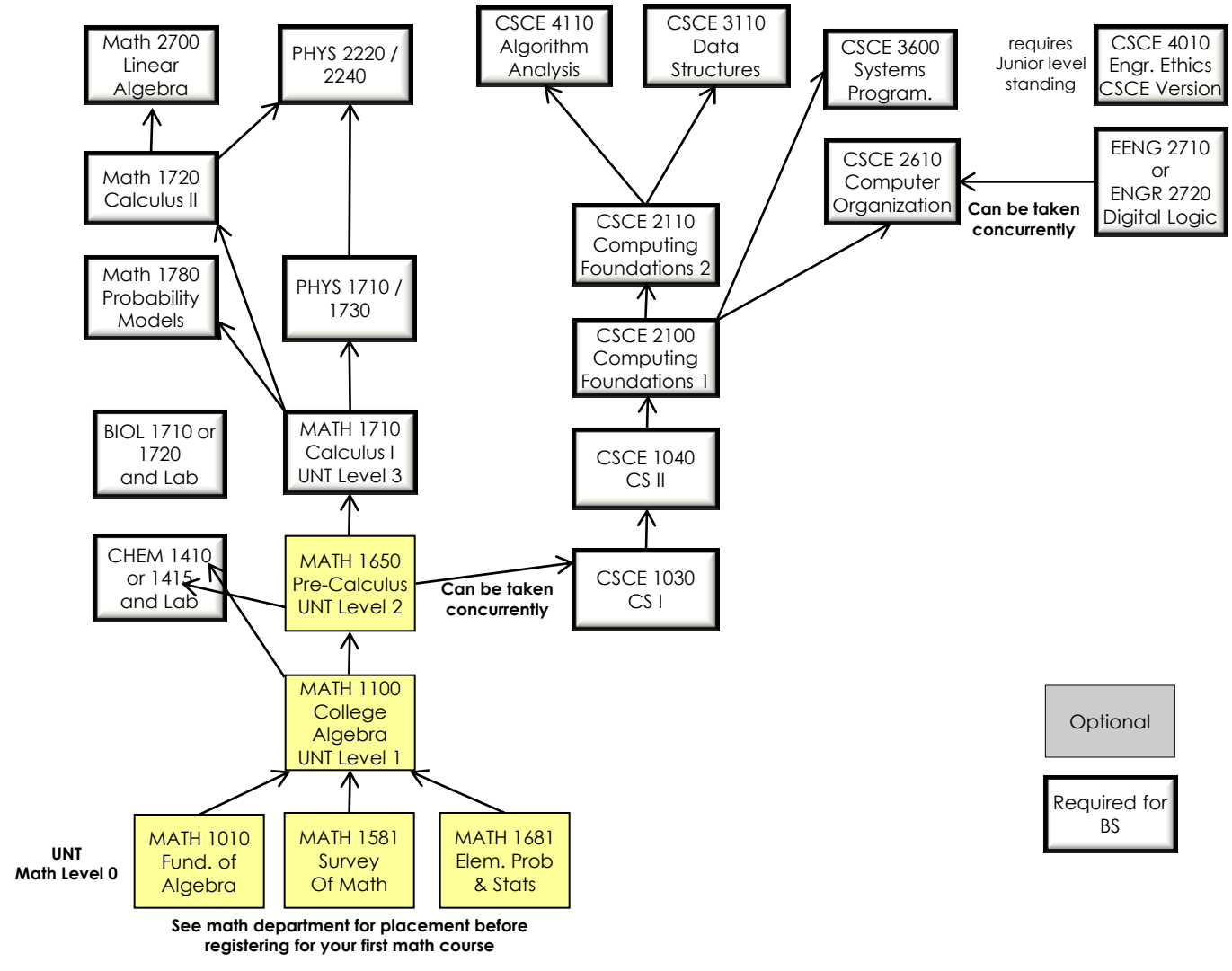
CSCE Electives
Choose 9 hours from these courses
Pre-req's vary

CSCE 4560 Secure E-Commerce
CSCE 4420 Software Development 2
CSCE 3210 Symbolic Processing
CSCE 3410 Advanced Programming
CSCE 4620 Real Time O/S
CSCE 4730 VLSI Design
CSCE 4440 Real Time Software Dev.
CSCE 4750 VLSI Testing
CSCE 3510 Intro to Wireless Comm.
CSCE 4520 Wireless Protocols
CSCE 4530 Network Design
CSCE 4560 Secure e-Commerce
CSCE 4550 Computer Security
CSCE 3030 Parallel Programming

If you haven't had a second programming language through AP credit, approved transfer, or electives, 3 hours of these electives MUST be CSCE 3410 or other approved 2nd language course.

CSCE Breadth
Choose 9 hours from these courses
Pre-req's vary

- CSCE 4210 Game Programming
- CSCE 4444 Software Engineering
- CSCE 4310 Intro to AI
- CSCE 3530 Into to Networks
- CSCE 4230 Computer Graphics
- CSCE 4901 CS Capstone
- CSCE 4350 Database Systems



CORE CURRICULUM FOR **BS** IN **COMPUTER ENGINEERING**

Computer Engineering

Computer Engineering

- A Minimum of 123 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

College of 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) _____

Must earn at least a "C" in all courses and a 2.5 GPA

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
Must earn at least a "C" in All courses and a 2.5 GPA

ORAL / ADVANCED WRITTEN COMMUNICATIONS (3 Hours)

TECM 2700 _____(satisfies second English req.)

Must earn at least a "C" in TECM 2700

CSE Department Required Courses

COMPUTER SCIENCE and ENGINEERING (45 Hours)

CSCE 1030 – CS1 (4 Hours) _____
CSCE 1040 – CS2 (3 Hours) _____
CSCE 2100 – Foundations I (3 Hours) _____
CSCE 2110 – Foundations II (3 Hours) _____
CSCE 2610 – Comp. Org (3 Hours) _____
CSCE 3010 – Signals & Sys (3 Hours) _____ or EENG 2620
CSCE 3020 – Comm Theory (3 Hours) _____ or EENG 3810
CSCE 3612 – Embed Systems(3 Hours)_____
CSCE 3730 – Reconfig Logic (3 Hours)_____
CSCE 4910 – Senior Design 1(3 Hours) _____
CSCE 4915 – Senior Design 2(3 Hours) _____
CSCE 4010 - Ethics (2 Hours) _____

CSCE Specialty Elective _____
CSCE Specialty Elective _____
CSCE Specialty Elective _____
See next page for details

Advanced Technical Elective _____
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 123 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 123 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) _____

TAKE UPPER DIVISION (3xxx & 4xxx) COURSES WHERE POSSIBLE

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 (the Big Green Book) prevails. This guide is for catalog year 2010-11 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

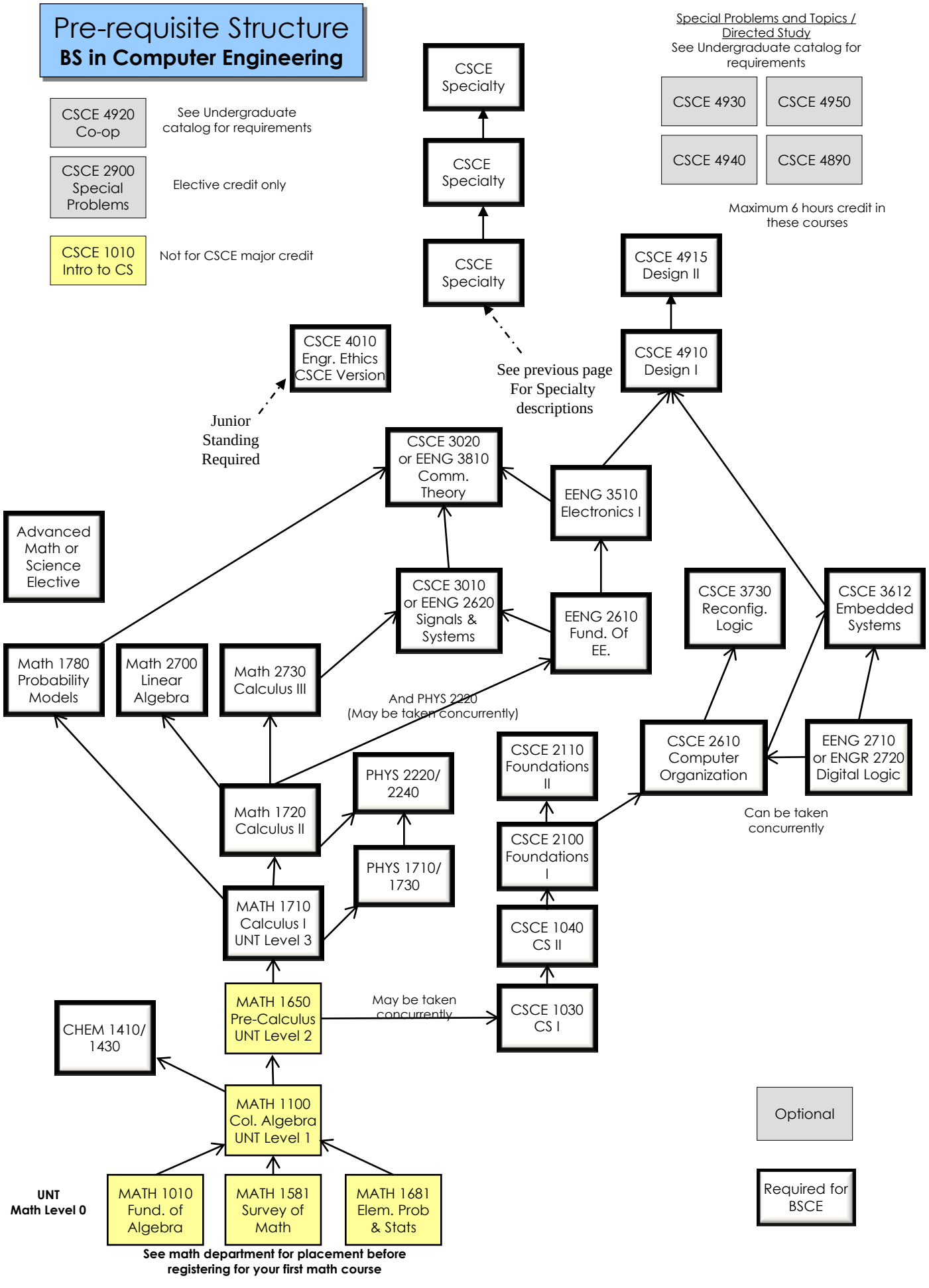
Specialization Area: Communications and Networks (choose 3 courses)

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

Pre-requisite Structure
BS in Computer Engineering



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

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
CJUS 2100, Crime and Justice in the U.S.
COMM2020, Interpersonal Comm.
DFST 1013, Human Development
EADP 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.

VISUAL AND PERFORMING ARTS (3 Hours)
ART 1300, Art Appreciation
ART 1301, Honors Art Appreciation
ART 2350, Art History Survey I
ART 2360, Art History Survey II
COMM 2060, Performance of Literature
DANC 1200, Appreciation of Dance
DANC 2800, Survey of Dance
MUMH 1600, Music in Human Imagination
MUMH 2040, Music Appreciation
MUMH 3000, Nineteenth-Century Music
MUMH 3010, Twentieth-Century Music
THEA 1340, Aesthetics of the Theatre
THEA 2340, Theater Appreciation
THEA 3030, World Theatre to 1700
THEA 3040, World Theatre from 1700

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
FREN 3040, Adv. Reading French Culture
FREN 4070, French Culture & Lit. thru Film
FREN 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

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
BCIS 3615, 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
DFST 2033, Parenting in Diverse Families
ENGR 1030, Technological Systems
FREN 1610, French Influence in North Am.
FREN 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
HMGT 1450, Principles of Nutrition
HNRS 1100, The Good Society
HNRS 1500, Intro. to Research
INST 2100, Intro. to International Studies
LING 2050, Pop Culture, Tech. & Society
MDSE 2750, Consumers in a Global Market
MEEN 1000, Discover Mech. & Energy Engr.
MGMT 3330, Communicating in Business
MKTG 3010, Professional Selling
MUAG 1500, 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.

Revised April 15, 2011

Computer Science / Computer Engineering
University of North Texas

Transfer Student Guide

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

UNT Course	Title	DCCCD	CCCC	TCC	NCTC	Notes
ENGL 1310	Composition I	ENGL 1301	ENGL 1301	ENGL 1301	ENGL 1301	
TECM 2700	Technical Writing	ENGL 2311	ENGL 2311	ENGL 2311	ENGL 2311	
HIST 2610	US History I	HIST 1301	HIST 1301	HIST 1301	HIST 1301	
HIST 2620	US History II	HIST 1302	HIST 1302	HIST 1302	HIST 1302	
PSCI 1040	State and Local Govt.	GOVT 2301	GOVT 2301	GOVT 2306	GOVT 2306	
PSCI 1050	US Govt.	GOVT 2302	GOVT 2302	GOVT 2305	GOVT 2305	
Social & Behavioral Science	From approved list	From approved list	From approved list	From approved list	From approved list	
Visual/Performing Arts	From approved list	From approved list	From approved list	From approved list	From approved list	
Humanities	From approved list	From approved list	From approved list	From approved list	From approved list	
Discovery	From approved list	From approved list	From approved list	From approved list	From approved list	

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

UNT Course	Title	DCCCD	CCCC	TCC	NCTC	Notes
BIOL 1710/1730	General Biology I	BIOL 1406	BIOL 1406	BIOL 1406	BIOL 1406	
PHYS 1710/1730	Physics I – Mechanics	PHYS 2425	PHYS 2425	PHYS 2425	PHYS 2425	
PHYS 2220/2240	Physics II – Electricity and Magnetism	PHYS 2426	PHYS 2426	PHYS 2426	PHYS 2426	
CHEM 1410/1430	Gen Chemistry I	CHEM 1411	CHEM 1411	CHEM 1411	CHEM 1411	
BIOL 1720/1740	Gen Biology II	BIOL 1407	BIOL 1407	BIOL 1407	BIOL 1407	
MATH 1710	Calculus I	MATH 2513	MATH 2413	MATH 2513	MATH 2413	
CSCE 2100 or CSCE 2110 if CS2100 complete	Discrete Mathematics / Computing Foundations	MATH 2305	MATH 2305	MATH 2305	MATH 2305	

UNT Course	Title	DCCCD	CCCC	TCC	NCTC	Notes
CSCE 1030	Programming Fundamentals I	COSC 1436	COSC 1436	COSC 1436	COSC 1436	
CSCE 1040	Programming Fundamentals II	COSC 1437	COSC 1437	COSC 1437	COSC 1437	
CSCE 2100 or CSCE 2110 if CS2100 complete	Programming Fundaments III / Computing Foundations	COSC 2436	COSC 2436	COSC 2436	COSC 2436	
CSCE 2610	Computer Organization	COSC 2425	COSC 2425	COSC 2425	COSC 2425	