

**Department of Computer Science and Engineering****Rules of the program leading to Bachelor of Science in Computer Science and Engineering**

*These degree requirements are in effect starting from 2009-10 Admission.*

**Applying to the College of Engineering and Applied Science:**

One applies directly to the College of Engineering by submitting an Intra University Transfer (IUT) application and a copy of your UCD transcript to NC 3028. The IUT application can be picked up from the Student Service Center (NC 1001) or from the Office of Engineering Student Services (NC 3028).

**Prior to applying to the College of Engineering and Applied Science:**

Contact the Advising Center for an appointment at 303-352-3520.

**After having been admitted into the College of Engineering and Applied Science:**

You should meet with an advisor if you have been admitted into the College:  
Call the Dean's Office for an appointment at 303-556-4768.

**Curriculum**

All newly admitted students are obligated to follow the curriculum that is in place at the time they are admitted into the College of Engineering. It is a possible option to switch to the requirements of a new curriculum if its revision occurred after admittance.

Prerequisite requirements will be strictly enforced for all C SC courses. Each student entering the C.S.E. program must sign a prerequisite form that stipulates that the student is aware of the prerequisite requirements and agrees to abide by them.

**Denied entrance into the College**

Applicants that have been denied entrance are encouraged to meet with the Assistant Dean of Student Affairs: call 303-556-4768 to make an appointment.

The Dean will explain the reasons behind your denial and what you can do to improve your application.

### Faculty Advisor

Regular visits with faculty advisor help to verify satisfactory progress toward the B.S. in C.S.E. degree. It is advised that students get to know additional faculty well enough that they can serve as references in the future for employment or when applying to a graduate school.

### 30 Hours Senior Checkout

After completing approximately 100 semester hours toward the B.S. C.S.E. degree, each student must request a 30-hour senior checkout.

A student must have no more than 35 credit hours remaining to graduate before requesting the 30-hour senior checkout.

During this checkout, the courses that still need to be completed are identified.

The study program sheet serves as a record of a 30-hour senior checkout.

Call the Dean's Office at 303-556-4768 for an appointment.

### Graduation Agreement

Prior to the last semester before graduation each student must request a Graduation Agreement. This is to identify the courses that need to be satisfactorily completed during the final semester of the student's program. Appointments for the graduation agreement are made through the CSE Department office.

Call the Computer Science and Engineering Office at 303-556-4314 for an appointment.

### UC-Denver Students Taking Courses Elsewhere

Students admitted to the College of Engineering and Applied Science must obtain prior departmental approval via an approved petition if they wish to take courses outside UC-Denver to be used to meet graduation requirements. The credit hours so earned are included in the students' programs via requests for formal transfer advising.

Transfer 40 hours or less : Call Advising Center appointments: 303-352-3520

Transfer over 40 hours : Call the Dean's Office at 303-556-4768 for an appointment.

Two levels of transfer advising are available:

Informal transfer advising is done on an ad-hoc basis using transcripts and previous school catalogs.

Formal transfer advising can be done only after the UC-Denver Admissions Office has issued an "Applicant Transfer Credit Evaluation" and the student has been admitted to the College of Engineering and Applied Science

## Petitions

Any deviations from the published curriculum must be approved before taking the alternate course or taking courses concurrently that are normally taken in sequence. Approval is obtained via an approved CSE Department petition. Petitions requesting a curricular deviation must be submitted to the CSE Department located at NC 2605. Please note that it takes about two weeks to process any petition, especially at the beginning of the semester. Forms for petitions are posted online at the CSE Department's website.

## Drop policy

If a student wishes to drop a class after the official deadline, he/she must file a petition with an attached and signed drop/add form. However, no student may drop a class within a three-week period prior to the beginning of final exams.

## Required Cumulative GPA

To remain in good standing with the College of Engineering and Applied Science each student must maintain a 2.00 cumulative grade point average or greater for all courses.

## Required Study-Program GPA

In order to graduate with a degree from the College of Engineering and Applied Science each student must have a 2.00 grade point average or greater for all courses which are counted as part of the study program.

## Required Departmental GPA

In order to graduate with a degree from the CSE Department each student must have a 2.00 grade point average or greater for all CSC courses attempted.

## University and College Requirements

These rules of the undergraduate program of the CSE Department are complementary to the policies, regulations and requirements of the University of Colorado Denver and the College of Engineering and Applied Science. The relevant information about these rules and policies is published annually in the University of Colorado Denver Catalog.

## Curriculum for B.S. in C.S.E.

The required minimum number of hours is 128. The student must satisfactorily complete all the course work in the curriculum shown below, satisfy all the graduation requirements, and maintain at least a 2.0 grade-point average in all courses. The courses below are listed together with their prerequisites. Prerequisite courses must be completed with a letter grade of C- or better.

### REQUIRED COMPUTER SCIENCE AND ENGINEERING COURSES (54 SEMESTER HOURS)

C SC 1410-3 Fundamentals of Computing	freshman status
C SC/EE 1510-3 Logic Design	Pre = MATH 1120
C SC/EE 2132-3 Circuit Analysis I	Co = MATH 2411 & PHYS 2331
C SC 2312-3 Intermediate Programming	Pre = C SC 1410
C SC 2421-3 Data Structures & Program Design	Pre = C SC 1410
C SC 2525-3 Assembly Language & Computer Organization	Pre = C SC 1410 & 1510
C SC 3412-3 Algorithms	Pre = C SC 2421 & 2511
C SC 3415-3 Principles of Programming Languages	Pre = C SC 2421 & 2525
C SC 3453-3 Operating Systems Concepts	Pre = C SC 3412 & 3415
C SC 3511-3 Hardware/Software Interface	Pre = C SC 2525
C SC 3630-3 Advanced Programming	Pre = C SC 2312
C SC 4034-3 Theoretical Foundations of Computer Science	Pre = C SC 3412 & 3415
C SC 4287-3 Database Systems	Pre = C SC 2511
C SC 4508-3 Introduction to Software Engineering	Pre = C SC 3412
C SC 4591-3 Computer Architecture	Pre = C SC 2525 or EE 2651
C SC 4738-3 Senior Design Project I	Pre = C SC 3412 & 4508
C SC 4739-3 Senior Design Project II	Pre = C SC 4738
C SC 4761-3 Introduction to Computer Networks	Pre = C SC 3412

### COMPUTER SCIENCE AND ENGINEERING TECHNICAL ELECTIVES (15 SEMESTER HOURS)

CSC courses and EE computer engineering courses and Math courses, all above 4000, that are not part of the required curriculum. EE and Math courses taken as CSE technical electives need to be approved in advance by a CSE academic advisor.

### MATHEMATICS (25 SEMESTER HOURS)

MATH 1401-4 Calculus I	Pre = MATH 1120 or 1130; placement exam; Co = MATH 1999
MATH 2411-4 Calculus II	Pre = MATH 1401; Co = MATH 1999
MATH 2421-4 Calculus III	Pre = MATH 2411
MATH 3195-4 Linear Algebra and Differential Equations	Pre = MATH 2411
C SC 2511-3 Discrete Structures	Pre = MATH 2411
C SC 3560-3 Probability and Computing	Pre = MATH 2421
C SC 4650-3 Numerical Analysis I	Pre = MATH 2411

### SCIENCE (10 SEMESTER HOURS)

PHYS 2311-4 General Physics I: Calculus-based	Pre = MATH 1401
PHYS 2321-1 General Physics lab I	Co = PHYS 2311
PHYS 2331-4 General Physics II: Calculus-based	Pre = PHYS 2311 & MATH 2411
PHYS 2341-1 General Physics lab II	Pre = PHYS 2321; Co = PHYS 2331

### UNDERGRADUATE CORE CURRICULUM IN ENGINEERING: SOCIAL SCIENCES, HUMANITIES, ARTS, ETC. (24 SEMESTER HOURS)

The undergraduate core curriculum for engineering includes: social sciences 3 hrs, humanities 3 hrs, arts 3 hrs, international perspectives 3 hrs, cultural diversity 3 hrs, behavioral sciences 3 hrs, and intellectual competencies (English 1020 and English 2030), for a total of 24 hours. Refer to the current UC-Denver catalog for available courses and their prerequisite requirements.

## Sample Academic Plan consistent with the prerequisite requirements

### FIRST YEAR

fall semester			spring semester		
class	hrs		class	hrs	
C SC 1410 FUNDAMENTALS OF COMPUTING	3		C SC 2312 INTERMEDIATE PROGRAMMING	3	
C SC 1510 LOGIC DESIGN	3		MATH 2411 CALCULUS II	4	
MATH 1401 CALCULUS I	4		PHYS 2311 GENERAL PHYSICS I	4	
ENGL 1020 CORE COMPOSITION I	3		PHYS 2321 GENERAL PHYSICS LAB I	1	
CC ELECTIVE	3		ENGL 2030 CORE COMPOSITION II	3	
<b>TOTAL</b>	<b>16</b>		<b>TOTAL</b>	<b>15</b>	

### SECOND YEAR

fall semester			spring semester		
class	hrs		class	hrs	
C SC 2421 DATA STRUCTURES & PROG. DES.	3		C SC 2132 CIRCUIT ANALYSIS I	3	
C SC 2511 DISCRETE STRUCTURES	3		C SC 3412 ALGORITHMS	3	
C SC 2525 ASSEMBLY LANG. & COMP. ORG.	3		C SC 3630 ADVANCED PROGRAMMING	3	
PHYS 2331 GENERAL PHYSICS II	4		MATH 2421 CALCULUS III	4	
PHYS 2341 GENERAL PHYSICS LAB II	1		CC ELECTIVE	3	
CC ELECTIVE	3				
<b>TOTAL</b>	<b>17</b>		<b>TOTAL</b>	<b>16</b>	

### THIRD YEAR

fall semester			spring semester		
class	hrs		class	hrs	
C SC 4287 DATABASE SYSTEMS	3		C SC 4508 SOFTWARE ENGINEERING	3	
C SC 3415 PRIN. PROGRAMMING LANGUAGES	3		CSE ELECTIVE	3	
C SC 3511 HARDWARE-SOFTWARE INTERF.	3		CSE ELECTIVE	3	
C SC 3560 PROBABILITY AND COMPUTING	3		MATH 3195 LINEAR ALGEBRA/DIFF EQUA	4	
CSE ELECTIVE	3		CC ELECTIVE	3	
CC ELECTIVE	3				
<b>TOTAL</b>	<b>18</b>		<b>TOTAL</b>	<b>16</b>	

### FOURTH YEAR

fall semester			spring semester		
class	hrs.		class	hrs.	
C SC 3453 OPERATING SYSTEMS	3		C SC 4591 COMPUTER ARCHITECTURE	3	
C SC 4034 THEORETICAL FOUND. OF CS	3		C SC 4739 SENIOR DESIGN PROJECT II	3	
C SC 4650 NUMERICAL ANALYSIS I	3		C SC 4761 INTRO COMPUTER NETWORKS	3	
C SC 4738 SENIOR DESIGN PROJECT I	3		CSE ELECTIVE	3	
CSE ELECTIVE	3		CC ELECTIVE	3	
<b>TOTAL</b>	<b>15</b>		<b>TOTAL</b>	<b>15</b>	

CSE ELECTIVE is to be selected from among CSC courses and EE computer engineering courses and Math courses, all above 4000, that are not part of the required curriculum.

EE and Math courses taken as CSE technical electives need to be approved in advance by a CSE academic advisor.

CC Elective is to be selected from the undergraduate Core Curriculum in engineering.

*ENGL 1020 and ENGL 2030 are the only approved composition courses for the UC Denver Core Curriculum. ENGL 1020 should be taken the first semester a student is enrolled at UC Denver.*