

**COMPUTER ENGINEERING UNDERGRADUATE PROGRAM  
DEPARTMENT OF COMPUTER SCIENCE  
TEXAS A&M UNIVERSITY**

**CURRICULUM.** The curriculum in computer engineering is designed to prepare students to enter into the rapidly expanding computer field. It is based upon the IEEE Computer Society and Association for Computing Machinery recommendations for curricula and courses. A major in computer engineering at Texas A&M University includes specific courses in Electrical Engineering. Students can also complete a minor in Mathematics by taking one additional course. Students can complete minors in several other disciplines.

The four-year undergraduate curriculum in computer engineering includes a sound preparation in science, mathematics, English, statistics and computing. Students select three senior electives from twelve courses. The most popular are offered in multiple sections and semesters. Elective courses are available in the areas of: languages and compilers; software systems; computer systems and architecture; artificial intelligence and cognitive modeling; graphics and robotics; and computational science and engineering. Graduate courses in these areas may be taken by advanced undergraduates.

**FACILITIES.** The Department of Computer Science has significant computer resources of its own, shares resources with other departments, and makes use of University systems. The department has 180 workstations available to students around the clock in instructional and open access laboratories and maintains numerous servers from Sun, Dell, and NetApp that are available to our students. All students have access to several web servers and the department's multiprocessor computational servers. These include three multiprocessor Sun servers running Solaris and a multiprocessor Linux server running Red Hat Enterprise. In addition, each student is allocated storage on the department's 10 TB file server. Wireless network access is provided throughout the department as is remote access via VPN.

**UNIVERSITY AND AREA.** Texas A&M University is located in the Bryan/College Station area.(pop. 137,000, 100 miles north of Houston. The Bryan/College Station area has been recognized as one of the leading growth areas in the nation. A growing industrial base, excellent housing, strong public school systems, and many recreational and entertainment activities characterize the area.

Texas A&M University, a land-grant, sea-grant, and space-grant university, was established in 1876 as the state's first public institution of higher education. The campus covers 5,142 acres and is within easy driving distance of the four largest cities in Texas. Enrollment is more than 44,000 students, and Texas A&M University has one of the largest enrollments in the nation in engineering, veterinary medicine as well as architecture and environmental design.

**FINANCIAL AID.** Presently, the Computer Science Department has no scholarship funds for supporting undergraduates. However there are many sources of support through the TAMU Financial Aid Office for students enrolled in Texas A&M University. In addition, university research projects often require the assistance of programmers, and many Computer Science students are hired to fill these jobs. The Computer Services Center hires some students as student operators, programmers, and analysts. Texas A&M University also has an active Co-operative Education Program with many openings for Computer Science students.

## **DEGREE PLAN INSTRUCTIONS FOR COMPUTER ENGINEERING MAJORS (CS TRACK)**

**2008-2009 Academic year**

The instructions contained in this packet are to be used as a guide in preparing the Departmental Computer Science Degree Plan Form for the Bachelor's Degree in Computer Engineering. After the student completes filling out the degree plan form (available from the Web Page <http://www.cs.tamu.edu/academics/undergraduate>), it is to be submitted to the Computer Engineering Undergraduate Advisor for approval. When the degree plan is approved by the Undergraduate Advisor, it will be returned to the student via an email message and a copy will be placed in the Computer Science Undergraduate Student's file in the Advising Office.

An upper division evaluation form needs to be submitted by the student and approved by the undergraduate advisor prior to enrollment in upper division computer science courses. **Students enrolling in upper division courses without CPSC/CECN designation will be removed from the courses. CPSC courses 300 level and above and ECEN courses 200 level and above are the designated upper level courses.**

Degree audits are produced by the Registrar's Office and can be obtained for a fee of \$1.00. Additionally, degree audits may be obtained at any time, without charge, at [myrecord.tamu.edu](http://myrecord.tamu.edu). The audit should be carefully reviewed by the student and his/her advisor, to determine the progress toward a degree. A final audit will be mailed to the student the semester of anticipated graduation.

### **Total Hours Required**

The total hours on the degree plan must be at least 128.

### **Comments and Observations**

Before visiting the Undergraduate Advisor about a degree plan, the student should make as many decisions as possible. One problem area is transfer credits. It is sometimes difficult to know which courses may be used. Efforts are made to allow 'reasonable' substitutions. A student must submit a copy of his/her transcript evaluation and a completed substitution form along with the degree plan form if credit for transferred courses is desired.

It is the student's responsibility to have a degree plan meet minimum requirements. Everyone involved will check, but if a graduating senior's degree plan is not acceptable (e.g., only 127 hours), the student will not graduate until the problems have been corrected.

### **Required Courses**

Take all courses listed on the Degree Plan. **All courses inside the boxes must be passed with a grade of "C" or better.**

## **CE Area Elective Courses**

Fifteen (15) hours of CE area electives are required (5 courses). In meeting this requirement, students are required to satisfy two depth tracks, each consisting of two courses (four courses total). The listing of depth tracks is provided separately. The remaining course can be chosen from approved CPSC, ECEN, or ENGR 385 classes:

### **Computer Science Courses (CPSC)**

Take any 300+ or 400+ courses from the Computer Science Department that are not included in the required courses list. Students wishing to use CPSC 485, CPSC 489, or CPSC 491 must receive approval from the undergraduate advisor (CPSC dept.).

### **Electrical and Computer Engineering Courses (ECEN)**

Take ECEN 322, ECEN 326, ECEN 338, 351, 370 or any ECEN 400+ course except for those already required (e.g., ECEN 454) or equivalent to one required (e.g., ECEN 405, ECEN 449). Students wishing to take ECEN 485 or ECEN 489 must receive approval from the **CPSC dept.** undergraduate advisor.

### **Engineering Courses**

ENGR 385 (co-op) credits may be used to fulfill CE technical elective credits. You must complete **exactly** 3 credits of ENGR 385 to use them as a CE technical elective—fewer than 3 credits cannot be used, nor can any excess credits above 3. Students *are* allowed to combine ENGR 385 credits with EPICS course credits; see CPSC advising for details.

### **Engineering Technical Elective Course**

A three (3) hour Engineering Technical Elective course is required. See the CPSC advising office for the list of approved courses.

### **Humanities**

ENGR 482 (PHIL 482) is a required course. You must take a writing intensive section (a “900” section) of this course.

### **Visual and Performing Arts Elective**

Three (3) hours of visual and performing arts electives must be selected from the list of College of Engineering directed electives for visual and performing arts—please refer to the undergraduate catalog.

### **Social Science Elective Course**

Three (3) hours of social science electives are required which must be selected from the list of College of Engineering directed electives for social science courses—please refer to the undergraduate catalog.

## **International and Cultural Diversity**

See the list of course choices in the undergraduate catalog. Some of these courses can also be used to satisfy the Visual and Performing Arts, Social Science, or American History requirements. To find International and Cultural Diversity courses that satisfy multiple requirements, see the undergraduate catalog and look for classes that are on both lists.

## **CITIZENSHIP**

### **History Courses**

Six (6) hours of American history are required (three hours of which may be in Texas State history). Students taking advanced ROTC may substitute 6-hours of advanced military science courses for 3 hours of American history.

### **Political Science Courses**

Six (6) credit hours of political science are required which include **POLS 206** and **207**. Students taking advanced ROTC may substitute 6-hours of advanced military science courses for one of these courses. There are restrictions on which courses can be transferred to meet this requirement. See the CPSC undergraduate advising office for details if this applies to you.

### **Physical Education Courses**

Two (2) hours of KINE courses are required. One (1) hour of **KINE 198 -- Health and Fitness** (these courses may be taken pass fail or for a grade); and one (1) hour of **KINE 199 -- Activity** (these courses must be taken pass/fail).

### **English, Speech and Writing Courses**

Six (6) hours of English courses are required which include **ENGL 104** plus **ENGL 210** or **ENGL 301** (technical writing). **English AP credit is not technical writing and does not meet the technical writing requirement.**

### **Foreign Language Requirement**

Proficiency in a foreign language is also required to graduate from Texas A&M University. This requirement can be met by:

- Completing two units (two full years) of high school course work in the same foreign language.
- Completing two semesters (one full year) of course work at the college level in the same foreign language, or
- Demonstrating proficiency in a foreign language by examination. See the undergraduate catalog for additional requirements under graduation requirements and Foreign Language.