COMPUTER ENGINEERING UNDERGRADUATE PROGRAM
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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 and Engineering 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 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 (population estimated in 2010 to be 211,096; located 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 48,000 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 and Engineering Department's scholarship funds are limited to returning undergraduates. The main application deadlines are in the Spring semester, although other opportunities may be announced. Additionally, there are many sources of support through the TAMU Financial Aid Office for students enrolled in Texas A&M University. Furthermore, university research projects often require the assistance of programmers, and many Computer Engineering 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 Engineering students.

DEGREE PLAN INSTRUCTIONS FOR
COMPUTER ENGINEERING MAJORS (CS TRACK)

2012-2013 Academic year

The instructions contained in this packet are to be used as a guide in preparing the Departmental of Computer Science and Engineering (CSCE) Degree Plan Form for the Bachelor's Degree in Computer Engineering (CECN). After the student completes filling out the degree plan form (available from the Web Page http://www.cse.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 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. CSCE courses at 300 level and above and ECEN courses at 200 level and above are the designated upper level courses.**

Degree audits are produced by the Registrar's Office and can be viewed on-line at myrecord.tamu.edu. The audit should be carefully reviewed by the student with his/her advisor, to determine the progress toward a degree.

Total Hours Required

The total hours on the degree plan must be at least 128. Note that the 128 hours **does not** include the two International and Cultural Diversity courses. This is because these classes can be used to satisfy both the International and Cultural Diversity requirement **and** another requirement on the degree plan—see the advising office for a list of the courses that can be used in this way. This is the **only** place where one course can be used in two places on the degree plan. **"Please note that the 128 total hours do not include a required foreign language. It is the student's responsibility to meet the University's foreign language requirement."**

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 and Engineering Courses (CSCE)
Take any 300+ or 400+ courses from the Computer Science and Engineering Department that are not included in the required courses list. Students wishing to use CSCE 485, CSCE 489, or CSCE 491 must receive approval from the undergraduate advisor (CSCE 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 **CSCE 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 CSCE advising for details.

Engineering Technical Elective Course

A three (3) hour Engineering Technical Elective course is required. See the CSCE 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 CSCE 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/communications courses are required which include **ENGL 104.** The second choice is one of the following: **ENGL 210** or **ENGL 301** (technical writing), **ENGL 241, COMM 205,** or **COMM 243**. English AP credit will generally provide credit for ENGL 104 and credit from the English Language and Composition AP test may

provide credit for ENGL 241. Please note that ENGL 203, credit, which may be awarded by the English Literature and Composition AP test, is **not** technical writing and does **not** meet the technical writing requirement. Texas A&M University no longer teaches ENGL 201, but credit for this class can be obtained from other institutions (ENGL 2311), so it remains on the approved list.

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.