# CHANGES TO THE COMPUTER ENGINEERING CURRICULUM

The Computer Engineering program has been revised in large part to ensure that it is at the recommended accreditation levels and to strengthen students' knowledge in core areas. Although these changes are targeted for the new students commencing September 2006, there are a few revised courses that will be implemented for students continuing in the program. Major changes are listed below.

- Total number of credits changes from 111-114 to 110. Students currently in the program will not be affected by this change.

- COMP 431, Algorithms for Engineers has been added to the list of required courses. COMP 302, Programming Languages and Paradigms, is no longer a required course. Students currently in the program will not be affected by this change.

- Three new courses have been added to the list of Departmental required core courses:
  - ECSE 211, Design Methodology and Principles (3 credits)
  - ECSE 306, Fundamentals of Signals and Systems (3 credits) which will replace the combination of ECSE 303 and ECSE 304.
  - COMP 535, Computer Networks 1 or ECSE 414, Intro. to Telecom Networks, has been added as a required course.

  Students currently in the program will not be affected by these changes.

- The existing 5 credit course Introduction to Microelectronics, ECSE 334 has now been split into two courses:
  - ECSE 334, Introduction to Microelectronics (3 credits)
  - ECSE 434, Microelectronics Laboratory (2 credits)

  For the Fall 2006 and Winter 2007 terms, students can choose to take the 434 lab together with the 334 theory or after taking the 334 theory. Those who are currently registered for ECSE 334 will be removed from the lab component section. They must register for ECSE 434 in addition to ECSE 334. Effective Fall 2007, students will only be able to the 434 lab after taking the 334 theory.

  For new students only, ECSE 434 is optional. They may take the lab and count it towards the lab complementary requirements if they wish (see details below).

- Two new design courses have been introduced. These two new courses will replace ECSE 494, Design Project Lab.
  - ECSE 474, Design Project 1 (1 credit)
  - ECSE 475, Design Project 2 (2 credits)

  The course ECSE 494 in its present form will be taught for the last time in Fall 2007. After that, the two new courses will be in effect. Since ECSE 474 is a prerequisite to ECSE 475, students graduating in Winter 2008 must plan to register for the first course, ECSE 474, in Fall 2007.

**<u>Changes to Technical and Laboratory Complementaries</u>**

The major change in this area that technical complementary courses have been divided in 2 groups: the courses in Group A are meant to enhance the body of knowledge while the courses in Group B are meant to provide breadth of knowledge. Students must now choose 1 technical complementary (3 credits) from Group A and 2 technical complementaries (6 credits) from Group B. This change will only be applicable to new students. New students are now required to take only 2 credits of lab courses instead of 4 credits. The details are listed below.

**TECHNICAL COMPLEMENTARIES** **9 credits**

One course must be chosen List A and 2 courses from List B.

LIST A

| | |
|---|---|
| ECSE 424 Human-Computer Interaction | (3 cr, P - ECSE 322) |
| ECSE 428 Software Engineering Practice | (3 cr, P - ECSE 321 or COMP 335) |
| ECSE 431 Introduction to VLSI CAD | (3 cr, P - ECSE 323 & ECSE 330) |

LIST B

| | |
|---|---|
| ECSE 404 Control Systems | (3 cr, C - ECSE 304 or ECSE 306) |
| ECSE 411 Communication Systems 1 | (3 cr, P - ECSE 305 & ECSE 304 or ECSE 306) |
| ECSE 412 Discrete-Time Signal Processing | (3 cr, P - ECSE 304 or ECSE 306) |
| ECSE 420 Parallel Computing | (3 cr, P - ECSE 427) |
| ECSE 421 Embedded Systems | (3 cr, P - ECSE 322, ECSE 323) |
| ECSE 422 Fault Tolerant Computing | (3 cr, P - ECSE 322) |
| ECSE 429 Software Validation | (3 cr, P - ECSE 321) |
| ECSE 436 Signal Processing Hardware | (3 cr, P - ECSE 322, ECSE 323, ECSE 304 or ECSE 306) |
| ECSE 443 Numerical Methods in Electrical Eng. | (3 cr, P - COMP 202, ECSE 330, ECSE 351 or ECSE 353) |
| ECSE 450 Electromagnetic Compatibility | (3 cr, P - ECSE 221, ECSE 334, ECSE 352 or ECSE 353) |
| ECSE 526 Artificial Intelligence | (3 cr, P - ECSE 322) |
| ECSE 530 Logic Synthesis | (3 cr, P - ECSE 323) |
| ECSE 532 Computer Graphics | (3 cr, P - ECSE 322) |
| ECSE 548 Introduction to VLSI Systems | (3 cr, P - ECSE 323 & ECSE 334) |

**LABORATORY COMPLEMENTARY COURSES** **2 credits**

One course must be chosen from the following list.

| | |
|---|---|
| ECSE 434 Microelectronics Laboratory | (2 cr, P - ECSE 334, ECSE 304 or ECSE 306) |
| ECSE 487 Computer Architecture Laboratory | (2 cr, P - EDEC 206; C- ECSE 425 or ECSE 525) |
| ECSE 489 Telecommunication Network Laboratory | (2 cr, P - EDEC 206; C - ECSE 414) |
| ECSE 490 Digital Signal Processing Laboratory | (2 cr, P - ECSE 291 & EDEC 206; C - ECSE 412 or ECSE 512) |
| ECSE 491 Communication Systems Laboratory | (2 cr, P - EDEC 206, ECSE 291; C - ECSE 411 or ECSE 511) |
| ECSE 493 Robotics and Control Laboratory | (2 cr, P - EDEC 206 & ECSE 291; C - ECSE 404 or ECSE 501) |