

## Proposed CompE Technical Elective Requirements

### Technical program breadth and depth requirements (CompE):

- 1) At least 28 technical elective credits are required.
- 2) At least 22 credits must be taken from CSci or EE 4XXX or 5XXX\* courses; the remaining 6 credits may be taken from CSci or EE 4XXX or 5XXX\* courses or from an approved list of technical electives from other departments.
- 4) Either Senior Design 4951W (counts as one lab course) or Senior Honors EE 4981H & EE 4982V (count as two lab courses) is required.
- 5) A total of 3 courses having a lab component are required.
- 6) Must take a minimum of 1 course from 4 different core areas (12-16 credits).
- 7) Must take a minimum of 2 courses from one area (6-8 credits).

### Core areas:

#### Computer Architecture

- EE 4389 (3 cr) Empirical Inference and Soft Computing
- CSci 5204 (3 cr) Advanced Computer Architecture  
Same as EE 5364 (3 cr) Advanced Computer Architecture\*
- EE 5371 (3 cr) Computer Systems Performance Measurement and Evaluation\*
- EE 5393 (3 crJ) Circuits, Computation & Biology
- CSci 5104 (3 cr) System Modeling and Performance Evaluation

#### Robotics and Embedded System Design

- EE 4233/7 (3-4 cr) State Space Control System Design
- EE 4231/5 (3-4 cr) Linear Control Systems: Designed by Input/Output Methods
- EE 4341 (4 cr) Microprocessor and Microcontroller System Design
- CSci 5143 (3 cr) Real-Time and Embedded Systems
- CSci 5551 (3 cr) Introduction to Intelligent Robotic Systems
- CSci 5552 (3 cr) Sensing and Estimation in Robotics

#### VLSI and CAD

- EE 4301 (4 cr) Digital Design with Programmable Logic
- CSci 5283 (3 cr) Computer-Aided Design I
- EE 5301 (3 cr) VLSI Design Automation I
- EE 5302 (3 cr) VLSI Design Automation II
- EE 5323 (3 cr) VLSI Design I
- EE 5324 (3 cr) VLSI Design II
- EE 5329 (3 cr) VLSI Digital Signal Processing Systems
- EE 5333 (3 cr) Analog Integrated Circuit Design

### Networks and Communication

- CSci 4131 (3 cr) Internet Programming
- CSci 4211 (3 cr) Intro to Computer Networks
- CSci 5131 (3 cr) Advanced Internet Programming
- CSci 5211 (3 cr) Data Communication and Computer Networks
- CSci 5221 (3 cr) Foundations of Advanced Networking
- EE 5381 (3 cr) Telecommunication Networks
- EE 5583 (3 cr) Error Control Coding

### Systems and Software Design

- Csci 4707 (3 cr) Practice of Database Systems
- Csci 5103 (3 cr) Operating Systems
- CSci 5105 (3 cr) Foundations of Modern Operating Systems
- CSci 5106 (3 cr) Programming Languages
- CSci 5115 (3 cr) User Interface Design, Implementation and Evaluation
- CSci 5161 (3 cr) Intro to Compilers
- CSci 5451 (3 cr) Intro to Parallel Computing
- CSci 5708 (3 cr) Architecture and Implementation of Database Management Systems
- CSci 5801 (3 cr) Software Engineering I
- CSci 5802 (3 cr) Software Engineering II

\*EE 5XXX level courses are graduate level courses; they can be taken by an undergraduate student if the student has a gpa of at least 3.2 or if the student obtains the permission of the course instructor and the ECE Scholastic Standards Committee.

## **Current CompE Technical Elective Requirements**

**8.6. CompE Technical Program (28 cr required)** (26 for students entering prior to Fall 2006)

**8.6.1 CompE Senior Technical Electives (22 cr minimum required)** (20 for students entering prior to Fall 2006)

**1) One of the following projects courses:**

EE 4951W (4 cr) Senior Design Project (1 Lab) **OR**  
EE 4981H-4982V (4 cr) Senior Honors Project (2 Labs)

**2) At least one of the following design courses:**

EE 4301 (4 cr) Digital Design w/Programmable Logic (1 Lab)  
EE 4341 (4 cr) Microprocessor & Microcontroller Sys. Design (1 Lab)

**3) 4xxx or 5xxx EE or CSci Courses that, in combination with above, total at least 22 semester credits** (20 for students entering prior to Fall 2006), **and obtain three EE 4xxx or 5xxx level courses which contain a laboratory component.**

**8.6.2. Additional Electives (0-6 credits):**

If needed, select from the approved list of courses below so that, in combination with 8.6.1 above, the total number of credits is obtained. **When courses are listed in pairs, both must be taken to receive credit as technical electives. Availability of courses may depend upon prerequisites; some that require prerequisites are marked below.**