BSEE and BS Comp. Eng. Curriculum for the 2002-2004 Catalog

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http://www.ece.utexas.edu/~bevans/eereform/
Summary

• Curriculum: More choices, faster finish
  Engineering electives increase from 6 to 8
  Choice of two specializations not one
  Non-EE technical courses part of specialization
  Total hours reduced from 128 to 123
  4-year degree: transfers can finish in 2 years
  Content of 60 of 90 courses changed

• Process: Multiple sources, documented
  Input from faculty, staff, students
  http://www.ece.utexas.edu/~bevans/eereform
Trends in Consumer Electronics

- Increasing amount of communications, signal processing, networking capabilities
- Increasingly digital: software larger role
- Analog, RF, optical subsystems needed to interface systems to physical world
- Devices & semiconductor manufacturing
  - Shrinking area, volume & power consumption
  - Exponential increase in processor speeds
- Moore’s Law: number of transistors on a chip doubles every 18 months
Dressed for Success *Tomorrow*

- **Mastery of “hard” skills**
  - Fundamentals of mathematics, physics, *biology*
  - Theory and practice of electromagnetics, devices, circuits, systems, software, *networking*
  - *Design principles, abstraction, and complexity*

- **Mastery of “soft” skills**
  - Oral and written engineering communication
  - Business practice of *marketing, budgeting, product development, and ethics*
2002-2004 BSEE Core Courses

Electromag. and Devices (3 courses)

Circuits (3 courses)

Systems (3 courses)

Digital Hardware (3 courses)

Software (2 courses)

Engineering Comm. (3 courses)

- Shading: lab course
- Black lines: co-requisites
- Dashed lines: “or” prereq
- Comp. Eng.: EE345L instead of EE362K
More Choices, Faster Access

• Students choose two technical areas
  – BSEE students could only choose one before
  – BS Comp. Eng. students had no choice before
  – One technical elective supports technical areas

• More choices of technical areas
  – 15 technical areas instead of 9
  – Each technical area has 4-8 courses
  – First semester juniors can access technical area
Tech Areas: EE Emphasis, Part 1

• Unchanged technical areas
  – Electromagnetic Engineering
  – Management and Production
  – Power Systems and Energy Conversion

• New Electronics technical area
  – Eight courses
  – Includes EE321 Electronics Lab, EE321K Mixed-Signal Lab, and EE338K Electronic II
  – Allows smooth transition from previous catalogs
Tech Areas: EE Emphasis, Part 2

**2000-2002**
- Biomedical Eng. / Premedical
- Electronic Devices, Materials, and Int. Electronics
- Telecomm./Signal Processing

**2002-2004**
- Biomedical Eng.
- Premedical
- Robotics/Controls
- Electronic Materials/Devices
- Comm./Networking
- Signal and Image Processing
Tech Areas: CompEng Emphasis

2000-2002
- Computer Engineering
- Software Engineering

2002-2004
- Computer Design
- Embedded Systems
- VLSI Design
- Software Development
- System Software
Faster Finish

• Total credit hours reduced by five to 123
  – Four years to complete 123 hours
  – Transfer students could finish in two years if they have completed two years elsewhere

• Transfer students in 1999-2000
  – 18.9% of new ECE students in 1999-2000
  – 11 fresh., 39 soph., 24 juniors, 12 seniors
Changes for Both Degrees

• Three required courses added
  – EE306 Introduction to Computing
  – EE322 Data Structures
  – EE366 Engineering Economics I

• CH301 Chemistry not required but proficiency in chemistry is required

• Four courses become tech area electives
  – Electronics: EE321, EE321K, and EE338K
  – Physics 355 Modern Physics

• Changes to 60 course abstracts
Other Changes for Comp. Eng.

• Fourth newly required course
  – EE345L Microprocessor Interfacing Lab.

• Three other courses become technical area electives and their content changes
  – EE360C Algorithms
  – EE360N Computer Architecture
  – EE360P Concurrent and Distributed Systems