



Presentation to EE 302 on June 5, 2002

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

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BSEE Curriculum Committee

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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)

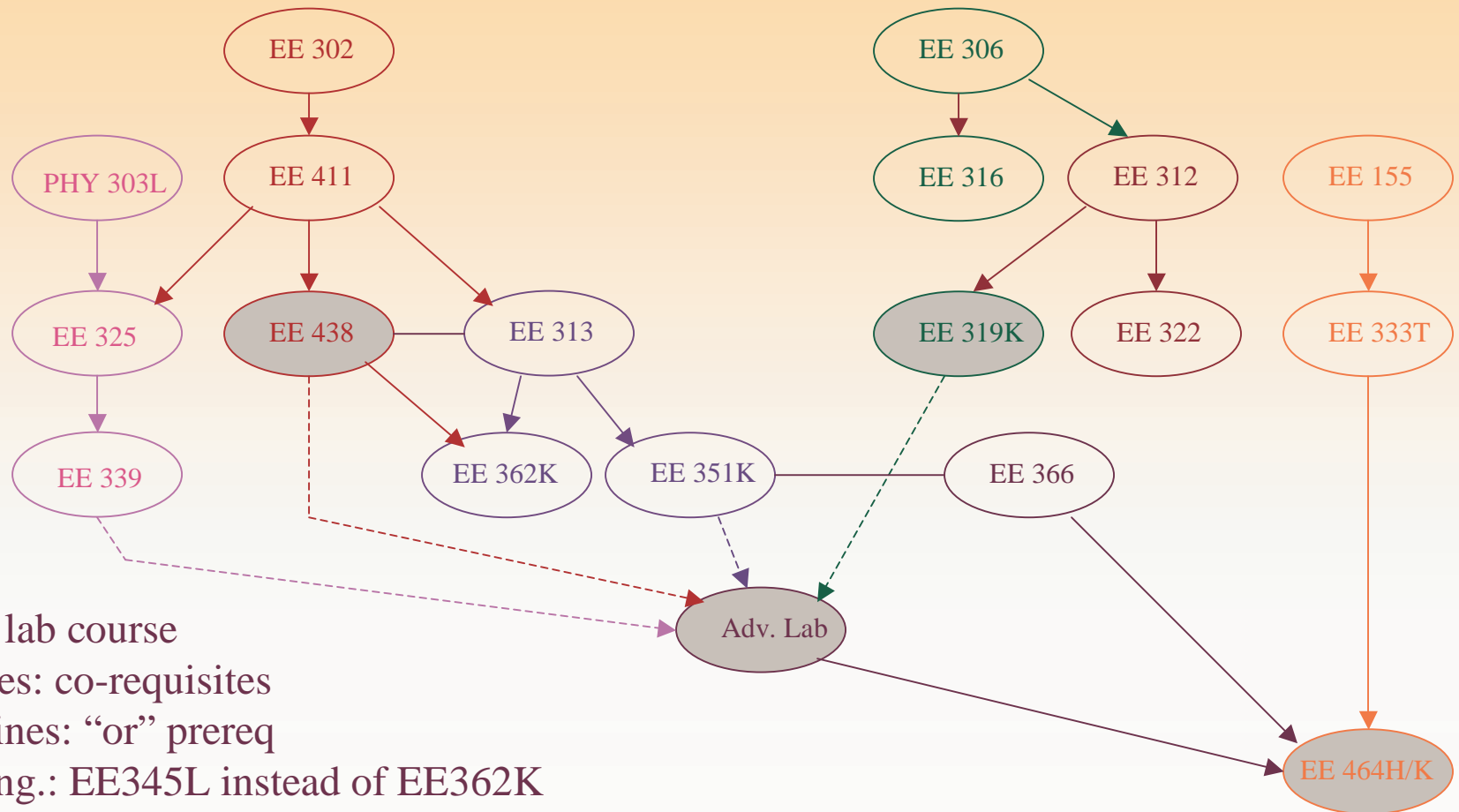
Circuits
(3 courses)

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

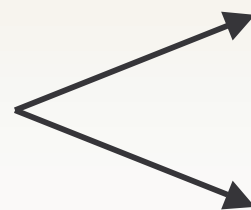
2000-2002

**Biomedical Eng. /
Premedical**

Info. Sys. Eng.

**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**



2002-2004

**Software
Engineering**



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