

Memo

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APPROVED FEB 22 2006

To: Undergraduate Council

Brian McKinney

From: Fred Lewallen 

Assoc. Dean, College of Technology

Date: 9/30/2002

Re: Changes to Computer Engineering Technology degree plan

As a result of the recent TAC/ABET accreditation review, MECT 1364 (3 hours) is no longer required. Hence the three hours released by deleting MECT 1364 are replaced by:

- One hour in ELET 3403, currently ELET 3303
- One hour in ELET 3425, currently ELET 3325
- One hour in ELET 4208, currently ELET 4108

The degree plan has been updated to reflect the deletion of MECT 1364 and the increase in the of hours in these classes.

COMPUTER ENGINEERING TECHNOLOGY (CETE)

Current

UNIVERSITY OF HOUSTON
COLLEGE OF TECHNOLOGY

ENGINEERING TECHNOLOGY
BACHELOR OF SCIENCE

NAME _____ UHID _____

UNIVERSITY CORE REQUIREMENTS (42 SH)

	GR	SH	AH
<u>Communication (6 SH)</u>			
ENGL 1303 English Composition I	_____	_____	_____
ENGL 1304 English Composition II OR TELS 3372 Comm in Sci, Eng & Tech	_____	_____	_____

<u>History/Government (12 SH)</u>			
HIST 1376 or 1377 US History to 1867	_____	_____	_____
HIST 1378 or 1379 US History since 1867	_____	_____	_____
POLS 1336 US & TX Const/Politics	_____	_____	_____
POLS 1337 US Government	_____	_____	_____

<u>Humanities* (3 SH)</u>			
_____	_____	_____	_____

<u>Visual/Performing Arts* (3 SH)</u>			
_____	_____	_____	_____

<u>Social/Behavioral Science* (3 SH)</u>			
_____	_____	_____	_____

<u>Social/Behavioral Science, Writing Intensive* (3 SH)</u>			
_____	_____	_____	_____

<u>Math/Reasoning (17 SH)</u>			
MATH 1310 College Algebra	_____	_____	_____
MATH 1330 Elem. Functions	_____	_____	_____
MATH 1431 Calculus I	_____	_____	_____
MATH 1432 Calculus II	_____	_____	_____
TECH 3366 Appl. Numerical Methods	_____	_____	_____

<u>Natural Sciences (11 SH)</u>			
PHYS 1301/1101 Intro. Gen. Phys I & Lab	_____	_____	_____
PHYS 1302/1102 Intro. Gen. Phys II & Lab	_____	_____	_____
CHEM 1301 Foundations of Chemistry	_____	_____	_____

DEPARTMENTAL AND COLLEGE REQUIREMENTS

<u>General Technology and College Core (15 SH)</u>			
ELET 2300 Intro. C++ Programming	_____	_____	_____
TELS 3340 Org Leadership & Supervision or HDCS 3300 Orgnztl Decisions in Tech.	_____	_____	_____
TELS 3363 Technical Comm.	_____	_____	_____
MECT 1364 Materials and Processes I	_____	_____	_____
MECT 3341 Computer Aided Drafting Or Approved MECT elective	_____	_____	_____

refer to class schedule for lists of courses which satisfy University requirements.

* graduation with Honors, see Undergraduate Catalog.

MAJOR REQUIREMENTS (41 SH)

	GR	SH	AH
ELET 1300 Electrical Ckts I	_____	_____	_____
ELET 1100 Electrical Ckts I Lab	_____	_____	_____
ELET 1301 Electrical Ckts II	_____	_____	_____
ELET 1101 Electrical Ckts II Lab	_____	_____	_____
ELET 2303 Digital Systems	_____	_____	_____
ELET 2103 Digital Systems Lab	_____	_____	_____
ELET 2305 Semiconductor Devices & Ckts	_____	_____	_____
ELET 2105 Semiconductor Dev & Ckts Lab	_____	_____	_____
ELET 3301 Linear Systems Analysis	_____	_____	_____
ELET 3302 Communication Ckts.	_____	_____	_____
ELET 3102 Comm. Ckts. Lab	_____	_____	_____
ELET 3303 Op.-Amp. Appl.	_____	_____	_____
ELET 3305 Microprocessor Arch	_____	_____	_____
ELET 3105 Microprocessor Arch Lab	_____	_____	_____
ELET 3325 Embedded Systems	_____	_____	_____
ELET 4308 Senior Project	_____	_____	_____
ELET 4108 Senior Project Lab	_____	_____	_____
ELET 4321 Computer Networks	_____	_____	_____
ELET 4121 Computer Networks Lab	_____	_____	_____

Pre-Approved Electives (9 SH)

ELET 4300 Unix Operating Systems	_____	_____	_____
ELET 4302 Data Communications Systems	_____	_____	_____
ELET 4309 Object Oriented Appl Prog	_____	_____	_____
ELET 4315 Telecommunications	_____	_____	_____
ELET 4325 Adv Micro Networks	_____	_____	_____
** Approved Elective	_____	_____	_____

** Any 3 credit 3000/4000 level ELET, ECF, COSC course not equivalent to any course on degree plan. (maximum of 1 course)

Free Elective (3 SH)

_____	_____	_____	_____
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Total hours required: 126 semester hours

36 advanced (3000- or 4000-level) semester hours must be completed.

TSI requirements must be met.

Student _____ Date _____

Advisor _____ Date _____

Department Chair _____ Date _____

COMPUTER ENGINEERING TECHNOLOGY (CETE)

*Proposed
2006*

UNIVERSITY OF HOUSTON
COLLEGE OF TECHNOLOGY

ENGINEERING TECHNOLOGY
BACHELOR OF SCIENCE

NAME _____ UHID _____

UNIVERSITY CORE REQUIREMENTS (58 SH)

	GR	SH	AH
<u>Communication (9 SH)</u>			
ENGL 1303 English Composition I	_____	_____	_____
ENGL 1304 English Composition II OR	_____	_____	_____
TELS 3372 Comm in Sci, Eng & Tech	_____	_____	_____
Intensive Writing Experiences in the Discipline*	_____	_____	_____

<u>History/Government (12 SH)</u>			
HIST 1376 or 1377 US History to 1867	_____	_____	_____
HIST 1378 or 1379 US History since 1867	_____	_____	_____
POLS 1336 US & TX Const/Politics	_____	_____	_____
POLS 1337 US Government	_____	_____	_____

<u>Humanities* (3 SH)</u>			
_____	_____	_____	_____

<u>Visual/Performing Arts* (3 SH)</u>			
_____	_____	_____	_____

<u>Social/Behavioral Science* (3 SH)</u>			
_____	_____	_____	_____

<u>Math/Reasoning (17 SH)</u>			
MATH 1310 College Algebra	_____	_____	_____
MATH 1330 Pre-calculus	_____	_____	_____
MATH 1431 Calculus I	_____	_____	_____
MATH 1432 Calculus II	_____	_____	_____
TECH 3366 Appl. Numerical Methods	_____	_____	_____

<u>Natural Sciences (11 SH)</u>			
PHYS 1301/1101 Intro. Gen. Phys I & Lab	_____	_____	_____
PHYS 1302/1102 Intro. Gen. Phys II & Lab	_____	_____	_____
CHEM 1301 Foundations of Chemistry	_____	_____	_____

DEPARTMENTAL AND COLLEGE REQUIREMENTS

<u>General Technology and College Core (12 SH)</u>			
ELET 2300 Intro. C++ Programming	_____	_____	_____
TELS 3340 Org Leadership & Supervision	_____	_____	_____
<u>or</u> HDCS 3300 Organizational Decisions in Tech.	_____	_____	_____
TELS 3363 Technical Comm.	_____	_____	_____
MECT 3341 Computer Aided Drafting	_____	_____	_____
<u>Or</u> Approved MECT elective	_____	_____	_____

refer to class schedule for lists of courses which satisfy University requirements.

for graduation with Honors, see Undergraduate Catalog.

MAJOR REQUIREMENTS (44 SH)

	GR	SH	AH
ELET 1300 Electrical Ckts I	_____	_____	_____
ELET 1100 Electrical Ckts I Lab	_____	_____	_____
ELET 1301 Electrical Ckts II	_____	_____	_____
ELET 1101 Electrical Ckts II Lab	_____	_____	_____
ELET 2303 Digital Systems	_____	_____	_____
ELET 2103 Digital Systems Lab	_____	_____	_____
ELET 2305 Semiconductor Devices & Ckts	_____	_____	_____
ELET 2105 Semiconductor Dev & Ckts Lab	_____	_____	_____
ELET 3301 Linear Systems Analysis	_____	_____	_____
ELET 3402 Communication Ckts.	_____	_____	_____
ELET 3403 Sensors Applications	_____	_____	_____
ELET 3405 Microprocessor Arch	_____	_____	_____
ELET 3425 Embedded Systems	_____	_____	_____
ELET 4308 Senior Project	_____	_____	_____
ELET 4208 Senior Project Lab	_____	_____	_____
ELET 4421 Computer Networks	_____	_____	_____

Pre-Approved Electives (9 SH)

ELET 4300 Unix Operating Systems	_____	_____	_____
ELET 4302 Data Communications Systems	_____	_____	_____
ELET 4309 Object Oriented Appl Prog	_____	_____	_____
ELET 4315 Telecommunications	_____	_____	_____
ELET 4325 Adv Micro Networks	_____	_____	_____
** Approved Elective	_____	_____	_____

** Any 3 credit 3000/4000 level ELET, ECF, COSC course not equivalent to any course on degree plan. (maximum of 1 course)

Free Elective (3 SH)

Total hours required: 126 semester hours

36 advanced (3000- or 4000-level) semester hours must be completed.

TSI requirements must be met.

Student Date

Advisor Date

Department Chair Date

New Catalog Language (changes are italicized)

Computer Engineering Technology (CETE)

The goal of the Computer Engineering Technology program is to provide students with a high quality applications-oriented undergraduate education based on state-of-the-art technology as a preparation for productive employment in the broad field of microcomputer applications. This goal is achieved through several objectives such as continuing to update specific courses in the program to ensure relevance to the latest industrial changes, supporting the development of appropriate computer facilities, promoting the integration of advanced computer technology in all courses, and encouraging professional growth and development of the faculty. The program is designed to satisfy the educational needs of the urban Houston community by providing a climate that fosters self-awareness, personal growth, and a desire for life-long learning.

Computers are used to control processes in manufacturing, chemical production, and oil refining. They are used to route data and conversations in telephone communication; provide the best shipping, billing, routing, and inventory information for shipping and trucking; and passenger ticketing and routing information for airlines. Computers and appropriate software packages are also used to solve scientific and engineering problems, to aid in medical tests and diagnoses, and to help design structures and buildings.

With computers assisting nearly every professional and leisure activity of modern life, people who can design, install, configure, network, and maintain computer systems can make a valuable contribution to business and industry. People familiar with both the hardware and software requirements of computers are especially valuable.

Computer Engineering Technology majors study the application of state-of-the-art hardware and software in contemporary computer systems. Students are given a solid foundation in mathematics, basic sciences, and electronics. A thorough study is made of digital circuits and systems, and computer circuits and systems. Hardware and software aspects of computers are covered in detail. Graduates of Computer Engineering Technology are qualified for immediate employment in a variety of industries as sales representatives, field specialists, interface designers, software specialists, and digital applications specialists.

Majors in Computer Engineering Technology may use no grade below C- in junior and senior level ELET courses to satisfy major degree requirements.

Students pursuing the Computer Engineering Technology major must complete the following requirements, in addition to university core and general college requirements.

**Major Requirements -
Computer Engineering Technology**

ELET 1300, 1100. Electrical Circuits I, Laboratory

ELET 1301, 1101. Electrical Circuits II, Laboratory

ELET 2303, 2103. Digital Systems, Laboratory

ELET 2305, 2105. Semiconductor Devices and Circuits ,
Laboratory

ELET 3301. Linear Systems Analysis

ELET 3302, 3102. Communications Circuits, Laboratory

ELET 3403. **Sensors** Applications

ELET 3305, 3105. Microprocessor Architecture, Laboratory

ELET 3425. Embedded Systems

ELET 4308, 4208. Senior Project, Laboratory

ELET 4321, 4121. Computer Networks, Laboratory

Pre-approved Electives. Select 9 semester hours from the
following:

ELET 4300. Unix Operating
Systems

ELET 4302. Data Communication
Systems

ELET 4309. Object-Oriented
Applications Programming

ELET 4315. Telecommunications

ELET 4325. Advanced
Microcomputer Networks

Approved ELET elective
(3 advanced semester hours)

General Technology:

ELET 2300. Introduction to C ++ Language Programming

TELS 3340. Organizational Leadership and Supervision

or

HDCS 3300. Organizational Decisions in Technology

TELS 3363. Technical Communications

MECT 3341. Computer-Aided Drafting I

or

approved MECT elective

Free electives (3 semester hours)

Technology and Other Requirements

Mathematics (17 semester hours)

MATH 1310. College Algebra

MATH 1330. Precalculus

MATH 1431. Calculus I

MATH 1432. Calculus II

TECH 3366. Applied Numerical Methods

Natural Sciences (11 semester hours which includes university core)

PHYS 1301, 1101. Introductory General Physics I and Lab

PHYS 1302, 1102. Introductory General Physics II and Lab

CHEM 1301. Foundations of Chemistry

Social Sciences

(3 semester hours *selected from core approved list.*)

Degree awarded: Bachelor of Science

Major: Computer Engineering Technology

Current On-line Catalog Language

Electrical Power Technology (EPT)

The goal of the Electrical Power Technology program is to provide students with a high quality applications-oriented undergraduate education based on state-of-the-art technological equipment associated with electrical technology. This goal is achieved through several objectives such as continuing to update specific courses in the program to ensure relevance to the latest industrial changes, supporting the development of appropriate computer facilities, promoting the integration of advanced technology in all courses, and encouraging professional growth and development of the faculty.

The program is designed to satisfy the educational needs of the urban Houston community by providing a climate that fosters self-awareness, personal growth, and a desire for life-long learning.

Students completing a major in Electrical Power Technology receive a strong foundation in measurement systems, analog and digital signal conditioning, microprocessor hardware and software, industrial electronics, and rotating machinery.

Students have the opportunity to select additional coursework in either control systems, power electronics, or electrical power.

Although analog electronics remain important, one of the newest and fastest growing areas is in the application of computers for control; this may be control within some manufactured product or control of some manufacturing process.

The manufacturers of electrical systems and machines need electrical power technologists who are familiar with machines and machine controls, both traditional and computer-controlled.

The electrical industry provides and controls the transformers, motors, generators, switch gear, and protection equipment required to power homes, businesses, and industries. Electrical power technologists plan electrical systems and modifications to existing electrical systems that generate and use large amounts of electricity required for distribution networks that are economical, safe, and functional.

Graduates of the Electrical Power Technology major understand, design, analyze, and work effectively in industrial settings utilizing product/process control systems and electrical power systems. Graduates are working in petrochemical companies, food

manufacturing, steel processing, utilities, electrical equipment, sales, manufacturing and testing, and a host of other diverse industries.

Majors in Electrical Power Technology may use no grade below **C-** in junior and senior level ELET courses to satisfy major degree requirements.

Students pursuing a major in Electrical Power Technology must complete the following requirements, in addition to university core and general college requirements:

Major Requirements - Electrical Power Technology

ELET 1300, 1100. Electrical Circuits I, Laboratory

ELET 1301, 1101. Electrical Circuits II, Laboratory

ELET 2301, 2101. Poly-Phase Circuits and Transformers,
Laboratory

ELET 2303, 2103. Digital Systems, Laboratory

ELET 2305, 2105. Semiconductor Devices and Circuits,
Laboratory

ELET 3301. Linear Systems Analysis

ELET 3305, 3105. Microprocessor Architecture, Laboratory

ELET 3307, 3107. Electrical Machines, Laboratory

ELET 3312, 3112. Programmable Logic Controllers and Motor
Control Systems , Laboratory

ELET 4303. Computer-Based Power Distribution and
Transmission

ELET 4305. Project Management and Economic Considerations
for Power Systems

ELET 4310. Alternative Electrical Energy Sources and Power
Quality Issues

ELET 4311. Computer-Based Communications and Security
Issues for Electrical Power Systems

ELET 4317. Computer-Based Electrical System Protection and
Safety

ELET 4319. Electrical Power Systems and Industry Practices

Approved Electives

(6 semester hours)

ELET 4304. Control Systems

ELET 4326. Power Converter Circuits

Approved ELET elective (3 advanced semester hours)

General Technology Requirements:

ELET 2300. Introduction to C ++ Language Programming

TELS 3340. Organizational Leadership and Supervision

or

IIDCS 3300. Organizational
 Decisions in Technology

TELS 3363. Technical Communications

MECT 1364. Materials and Processes I

ITEC 1301. Introduction to Computer Application Technology

Free electives (3 semester credit hours)

Technology and Other Requirements

Mathematics (14 semester hours which includes university core)

MATH 1310. College Algebra

MATH 1330. Precalculus

MATH 1431. Calculus I

MATH 1432. Calculus II

Natural Sciences (11 semester hours which includes university core)

PHYS 1301, 1101. Introductory General Physics I, Laboratory

PHYS 1302, 1102. Introductory General Physics II, Laboratory

CHEM 1301. Foundations of Chemistry

Social Sciences

(6 semester hours, 3 must be writing intensive)

Selected from core approved list.

Degree awarded: Bachelor of Science

Major: Electrical Power Technology