

UC 10485 09F



UNIVERSITY OF HOUSTON
COLLEGE OF TECHNOLOGY
ENGINEERING TECHNOLOGY DEPARTMENT

APPROVED FEB 24 2010
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MEMORANDUM

RECEIVED OCT 15 2009
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TO: University Undergraduate Council

FROM: Dr. Heidar Malki 
Chair, Engineering Technology Department 

DATE: October 5, 2009

RE: Changes to Electrical Power Engineering Technology Degree Plan

Electrical Power Engineering Technology: EPTE is submitting a curriculum change. This is in response to the state mandated 120 credit hours. ABET, the accrediting body for EPTE, specifies a minimum of 124 credit hours. The curriculum submitted for approval drops the number of required credits from 126 to 124. This was accomplished by moving TELS 3363 - Technical Communication from departmental/college requirements to university core requirements as it has been submitted for approval as a "Writing in the Discipline" course. This drops the number of hours from 126 to 123. The faculty have created a new lab, ELET 4126 – Power Converter Circuits to allow a more in-depth study of power converters, which will bring the total credits required to 124.

Electrical Power Engineering Technology Major

The goal of the Electrical Power Engineering 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 Engineering 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 Engineering 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 Engineering 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 Engineering Technology must complete the following requirements, in addition to university core and general college requirements:

Electrical Power Engineering Technology Major Requirements

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 3405. Microprocessor Architecture
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
ELET 4326, ELET 4126. Power Converter Circuits , Laboratory

APPROVED ELECTIVES

(5 semester hours)

ELET 4304. Control Systems
ELET 4310. Alternative Electrical Energy Sources and Power Quality issues
ELET 4311. Computer-Based Communications and Security Issues for Electrical Power Systems
Approved ELET elective (3 advanced semester hours)

PROGRAM REQUIREMENTS

Mathematics (14 semester hours which includes university core)

Students are required to have credit for MATH 1310, College Algebra, by Math Placement Exam, CLEP, or completion of course.

MATH 1330. Precalculus

MATH 1431. Calculus I

MATH 1432. Calculus II

Natural Sciences (8 semester hours which includes university core)

PHYS 1301, 1101. Introductory General Physics I, Laboratory

PHYS 1302, 1102. Introductory General Physics II, Laboratory

Social Sciences (3 semester hours)

Selected from core approved list.

Writing in the Discipline (3 semester hours)

~~TELS 3363. Technical Communications~~

Deleted: Selected from core approved list.

General Technology Requirements

ELET 2300. Introduction to C++ Language Programming

TELS 3340. Organizational Leadership and Supervision

or

HDCS 3300. Organizational Decisions in Technology

~~MECT 1364. Materials and Processes I~~

Deleted: TELS 3363. Technical Communications

ITEC 2334. Information Systems Applications

Free electives (3 semester credit hours)

Degree awarded: Bachelor of Science

Major: Electrical Power Engineering Technology

ELECTRICAL POWER ENGINEERING TECHNOLOGY (EPET)

UNIVERSITY OF HOUSTON
COLLEGE OF TECHNOLOGY

ENGINEERING TECHNOLOGY
BACHELOR OF SCIENCE

NAME _____ UHID _____

UNIVERSITY CORE REQUIREMENTS (55 SH)

	GR	SH	AH
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Communication (9 SH)

ENGL 1303 English Composition I	_____	_____	_____
ENGL 1304 English Composition II	_____	_____	_____

Writing in the Discipline* (3 SH)

_____	_____	_____	_____
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History/Government (12 SH)

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	_____	_____	_____

Humanities* (3 SH)

_____	_____	_____	_____
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Visual/Performing Arts* (3 SH)

_____	_____	_____	_____
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Social/Behavioral Science* (3 SH)

_____	_____	_____	_____
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Math/Reasoning (14 SH) <<

MATH 1330 Precalculus	_____	_____	_____
MATH 1431 Calculus I	_____	_____	_____
MATH 1432 Calculus II	_____	_____	_____
TMTH 3360 Applied Statistics	_____	_____	_____
or MATH 3307 Statistical Applications	_____	_____	_____

<< Students will be expected to place out of MATH 1310 by either Math Placement Exam, CLEP or have taken MATH 1310.

Natural Sciences (8 SH)

PHYS 1301/1101 Intro. Gen. Physics I & Lab	_____	_____	_____
PHYS 1302/1102 Intro. Gen. Physics II & Lab	_____	_____	_____

DEPARTMENTAL AND COLLEGE REQUIREMENTS

General Technology and College Core (15 SH)

ELET 2300 Intro. C++ Lang Programming [†]	_____	_____	_____
TELS 3340 Org Leadership & Supervision	_____	_____	_____
or HDCS 3300 Orgnztnl Decisions in Tech.	_____	_____	_____
TELS 3363 Technical Comm.	_____	_____	_____
MECT 1364 Materials and Processes I	_____	_____	_____
ITEC 2334 Information Systems Appl.	_____	_____	_____

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

Texas Success Initiative requirements must be met.

For graduation with Honors, see Undergraduate Catalog.

MAJOR REQUIREMENTS (50 SH)

	GR	SH	AH
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ELET 1300	Electrical Ckts I	_____	_____	_____
ELET 1100	Electrical Ckts I Lab	_____	_____	_____
ELET 1301	Electrical Ckts II	_____	_____	_____
ELET 1101	Electrical Ckts II Lab	_____	_____	_____
ELET 2301	Poly-Phase Ckts & Transform	_____	_____	_____
ELET 2101	Poly-Phase Circuits lab	_____	_____	_____
ELET 2303	Digital Ckts & Sys	_____	_____	_____
ELET 2103	Digital Ckts & Sys Lab	_____	_____	_____
ELET 2305	Discrete & IC Ckts	_____	_____	_____
ELET 2105	Discrete & IC Ckts Lab	_____	_____	_____
ELET 3301	Linear Systems Analysis©	_____	_____	_____
ELET 3405	Microprocessor Arch©	_____	_____	_____
ELET 3307	Electrical Machines©	_____	_____	_____
ELET 3107	Elec. Machine Lab©	_____	_____	_____
ELET 3312	PLC's & Motor Cont. ©	_____	_____	_____
ELET 3112	PLC's & Motor Cont. Lab©	_____	_____	_____
ELET 4303	Power Distribution & Trans. ©	_____	_____	_____
ELET 4305	Proj. Mang. & Economic Cons©	_____	_____	_____
ELET 4317	Elec Sys Protection & Safety©	_____	_____	_____
ELET 4319	Elec Pwr Sys /Industry Prac ©	_____	_____	_____
ELET 4326	Power Converter Circuits©	_____	_____	_____

Approved Electives (6 SH)

ELET 4304	Control Systems ©	_____	_____	_____
ELET 4310	Alt. Electrical Energy Sources©	_____	_____	_____
ELET 4311	Comm. & Security Issues©	_____	_____	_____
ELET 3	Approved ELET Elective**©	_____	_____	_____

** Elective courses not listed by number must be approved by an EPET faculty member.

© No grade lower than C- will be accepted for these courses.

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.

Student _____ Date _____

Advisor _____ Date _____

Department Chair _____ Date _____

ELECTRICAL POWER ENGINEERING TECHNOLOGY (EPET)

UNIVERSITY OF HOUSTON
COLLEGE OF TECHNOLOGY

ENGINEERING TECHNOLOGY
BACHELOR OF SCIENCE

NAME _____ UHID _____

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ENGL 1304 English Composition II	_____	_____	_____
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TELS 3363 Technical Comm.	_____	_____	_____
<u>History/Government (12 SH)</u>			
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POLS 1336 US & TX Const/Politics	_____	_____	_____
POLS 1337 US Government	_____	_____	_____

Humanities* (3 SH)

Visual/Performing Arts* (3 SH)

Social/Behavioral Science* (3 SH)

Math/Reasoning (14 SH) «

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MATH 1431 Calculus I	_____	_____	_____
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MECT 1364 Materials and Processes I	_____	_____	_____
ITEC 2334 Information Systems Appl.	_____	_____	_____

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MAJOR REQUIREMENTS (51 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 2301 Poly-Phase Ckts & Transform	_____	_____	_____
ELET 2101 Poly-Phase Circuits lab	_____	_____	_____
ELET 2303 Digital Ckts & Sys	_____	_____	_____
ELET 2103 Digital Ckts & Sys Lab	_____	_____	_____
ELET 2305 Discrete & IC Ckts	_____	_____	_____
ELET 2105 Discrete & IC Ckts Lab	_____	_____	_____
ELET 3301 Linear Systems Analysis©	_____	_____	_____
ELET 3405 Microprocessor Arch©	_____	_____	_____
ELET 3307 Electrical Machines©	_____	_____	_____
ELET 3107 Elec. Machine Lab©	_____	_____	_____
ELET 3312 PLC's & Motor Cont. ©	_____	_____	_____
ELET 3112 PLC's & Motor Cont. Lab©	_____	_____	_____
ELET 4303 Power Distribution & Trans. ©	_____	_____	_____
ELET 4305 Proj. Mang. & Economic Cons©	_____	_____	_____
ELET 4317 Elec Sys Protection & Safety©	_____	_____	_____
ELET 4319 Elec Pwr Sys /Industry Prac ©	_____	_____	_____
ELET 4326 Power Converter Circuits©	_____	_____	_____
ELET 4126 Power Converter Circuits lab©	_____	_____	_____

Approved Electives (6 SH)

ELET 4304 Control Systems ©	_____	_____	_____
ELET 4310 Alt. Electrical Energy Sources©	_____	_____	_____
ELET 4311 Comm. & Security Issues©	_____	_____	_____
ELET 3__ Approved ELET Elective**©	_____	_____	_____

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Free Elective (3 SH)

Total hours required: 124 semester hours

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