

UC 8659 05F

**To: Undergraduate Council Degree Programs Committee, Horace Gray, Chair.**

**From: Luke Faulkenberry, Electrical Power Technology Coordinator**

**Date: October 5, 2005**

**Re: Changes in the degree plan for Electrical Power Technology**

The following changes have been made in the EPTE degree plan after discussions with the ET Department (Item 1), new University core requirements (item 2), and EPTE faculty to take advantage of a prerequisite change in the data base course in ILT.

1. The name of the program is Electrical Power Engineering Technology (EPET) in expectation of the name change request being granted.
2. The new core requirements require an "intensive writing experience" course in the Communications area of the core requirements. This has been added.
3. ILT has changed the prerequisite to the data base course, ITEC 2334, Information Systems Applications. This is the course that EPTE originally wanted, but the prerequisite set was too long. The prerequisite now is either ITEC 1300, or COSC 1304, C language programming or equivalent. The CET course in C++, ELET 2300, is an equivalent. Thus ITEC 2334 has replaced ITEC 1300 in the 2006 degree plan.
4. The requirement for Chemistry 1301 has been removed. This course is never offered at night, and EPTE has a considerable contingent of night only students. Applied statistics, either TMTH 3360 or MATH 3307, has been added to the math/reasoning requirement. This topic is very useful for our graduates.

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**ELECTRICAL POWER TECHNOLOGY (EPTE) 2005 Old Degree Plan**

UNIVERSITY OF HOUSTON  
COLLEGE OF TECHNOLOGY

ENGINEERING TECHNOLOGY  
BACHELOR OF SCIENCE

NAME \_\_\_\_\_ UHID \_\_\_\_\_

**UNIVERSITY CORE REQUIREMENTS**

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

<b><u>History/Government (12 SH)</u></b>			
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	___	___	___

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

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

<b><u>Social/Behavioral Sciences* (3 SH)</u></b>			
_____	___	___	___

<b><u>Social/Behavioral Sciences, Writing Intensive* (3 SH)</u></b>			
_____	___	___	___

<b><u>Math/Reasoning (14 SH)</u></b>			
MATH 1310 College Algebra	___	___	___
MATH 1330 Elementary Functions	___	___	___
MATH 1431 Calculus I	___	___	___
MATH 1432 Calculus II	___	___	___

<b><u>Natural Sciences (11 SH)</u></b>			
PHYS 1301/1101 Intro. Gen. Physics I & Lab	___	___	___
PHYS 1302/1102 Intro. Gen. Physics II & Lab	___	___	___
CHEM 1301 Found of Chemistry I	___	___	___

**DEPARTMENTAL AND COLLEGE REQUIREMENTS**

<b><u>General Technology and College Core (15 SH)</u></b>			
ELET 2300 Intro. C++ Lang Programming <sup>†</sup>	___	___	___
TELS 3340 Org Leadership & Supervision	___	___	___
<u>or</u> HDCS 3300 Orgnztnl Decisions in Tech.			
TELS 3363 Technical Comm.	___	___	___
MECT 1364 Materials and Processes I	___	___	___
ITEC 1301 Intro to Comp. App. Tech.	___	___	___

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 (47 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 Network Analysis	___	___	___
ELET 3305 Micro Arch & Sys	___	___	___
ELET 3105 Micro Arch & Sys Lab	___	___	___
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.	___	___	___

**Approved Electives (6 SH)**

ELET 4304 Control Systems	___	___	___
ELET 4310 Alt. Electrical Energy Sources	___	___	___
ELET 4311 Comm. & Security Issues	___	___	___
ELET 4326 Power Converter Circuits	___	___	___
ELET 3__ Approved ELET Elective**	___	___	___

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

**Free Elective (3 SH)**

\_\_\_\_\_

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) Proposed 2006**

UNIVERSITY OF HOUSTON  
COLLEGE OF TECHNOLOGY

ENGINEERING TECHNOLOGY  
BACHELOR OF SCIENCE

NAME \_\_\_\_\_ UHID \_\_\_\_\_

**UNIVERSITY CORE REQUIREMENTS (55 SH)**

	GR	SH	AH
<b><u>Communication (9 SH)</u></b>			
ENGL 1303 English Composition I	___	___	___
ENGL 1304 English Composition II	___	___	___
Intensive Writing Experiences*(3 SH)	___	___	___
<b><u>History/Government (12 SH)</u></b>			
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	___	___	___
<b><u>Humanities* (3 SH)</u></b>			
_____	___	___	___
<b><u>Visual/Performing Arts* (3 SH)</u></b>			
_____	___	___	___
<b><u>Social/Behavioral Sciences* (3 SH)</u></b>			
_____	___	___	___
<b><u>Math/Reasoning (14 SH)</u></b>			
MATH 1310 College Algebra	___	___	___
MATH 1330 Precalculus	___	___	___
MATH 1431 Calculus I	___	___	___
MATH 1432 Calculus II	___	___	___
<b><u>Natural Sciences (8 SH)</u></b>			
PHYS 1301/1101 Intro. Gen. Physics I & Lab	___	___	___
PHYS 1302/1102 Intro. Gen. Physics II & Lab	___	___	___

**DEPARTMENTAL AND COLLEGE REQUIREMENTS**

<b><u>General Technology and College Core (18 SH)</u></b>			
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.	___	___	___
TMTH 3360 Applied Statistics	___	___	___
or MATH 3307 Statistical Applications			

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 (47 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.	___	___	___

**Approved Electives (6 SH)**

ELET 4304 Control Systems	___	___	___
ELET 4310 Alt. Electrical Energy Sources	___	___	___
ELET 4311 Comm. & Security Issues	___	___	___
ELET 4326 Power Converter Circuits	___	___	___
ELET _3_ Approved EL/ET Elective**	___	___	___

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

**Free Elective (3 SH)**

Total hours required: 126 semester hours

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

_____ Student	_____ Date
_____ Advisor	_____ Date
_____ Department Chair	_____ Date

## New Catalog Language (new language italicized)

### **Electrical Power *Engineering* Technology (*EPET*)**

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 *the electrical industry*. 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 *electrical power* 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 *engineering* 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:

**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 3405. Microprocessor Architecture *and* 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 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 4310. Alternative Electrical Energy Sources and Power  
Quality Issues

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

HDCS 3300. Organizational Decisions in Technology

TELS 3363. Technical Communications

MECT 1364. Materials and Processes I

*ITEC 2334. Information Systems Applications*

*TMTH 3360. Applied Statistics or*

*MATH 3307. Statistical Applications*

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

**Social Sciences**

(3 semester hours selected from core approved list.)

**Degree awarded:** Bachelor of Science

**Major:** Electrical Power *Engineering* Technology