

# ELECTRIC UTILITY TECHNOLOGY

Professor Bosela (Program Coordinator) 330-941-3286

This program is offered in partnership with FirstEnergy Corporation. It prepares students to perform basic overhead and underground line work for electric utility, and other related industries. Students gain knowledge in electrical theory and other areas, including college writing, oral communications, and general education. In addition to classroom instruction, students also participate in skills related lab experiences at a local electric utility company facility. Upon successful completion of the program, students are prepared for entry-level employment in the utility industry. Enrollment in the program is restricted.

## Associate of Technical Study Degree Program

### First Year

#### Fall Semester

( ) MATH 1501	Elementary Algebraic Models	5 SH*
( ) STECH 1500	Technical Skills Development	4 SH
( ) EUT 2690	Electric Utility Lab 1	6 SH
		10 SH

#### Spring Semester

( ) MATH 2623	Survey of Math	3 SH
( ) EUT 1500/L	Electrical Fundamentals & Lab	3+1 SH
( ) ENGL 1550	College Writing 1	3 SH
( ) GER	Societies and Institutions (ECON 1501)	3 SH
( ) EUT 2691	Electric Utility Lab 2	6 SH
		19 SH

#### Summer Semester

( ) EUT 2699	Electric Utility Co-op	2 SH
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### Second Year

#### Semester 3

( ) EUT 2600	Electric Utility Distribution Systems	4 SH
( ) ENGL 1551	College Writing 2	3 SH
( ) COMM 1545	Communication Theory and Practice	3 SH
( ) EUT 2692	Electric Utility Lab 3	6 SH
		16 SH

#### Semester 4

( ) EUT 2601	Electrical Codes and Standards	4 SH
( ) GER – PS	Personal & Social Res. (PHIL 2609 or HSC 1568)	3 SH
( ) PHYS 1500/L	Conceptual Physics and Lab	4 SH
( ) EUT 2693	Electric Utility Lab 4	6 SH
		17 SH

Semester Hours for degree 64 SH

\*Note: MATH 1501 may be required based on the results of the Math Placement Test. However, the 5 SH credit for MATH 1501 cannot be counted toward the degree and is therefore not included in the total for Semester 1 or in the total required for the degree.

7/5/05

## Course Descriptions

**EUT 1500. Electrical Fundamentals.** Introduction to direct and alternating current circuits. Study of resistance, capacitance, inductance, Ohm's and Kirchoff's Laws applied to circuits. Three hours lecture per week. Concurrent with EUT 1500L. Prereq. STECH 1500 and MATH 1501 or at least level 3 on the Mathematics Placement Test. 3 s.h.

**EUT 1500L. Electrical Fundamentals Lab.** Lab component of EUT 1500. Provides hands-on instruction in the use of electrical test equipment including digital multimeters, power supplies, oscilloscopes, etc. Three hours per week. Concurrent with EUT 1500. Prereq. STECH 1500 and MATH 1501 or at least level 3 on the Mathematics Placement Test. 1 s.h.

**EUT 2600. Electric Utility Distribution Systems.** Applications of transformers, switchgear, regulators, overhead conductors and underground cable. Power factor correction, voltage regulation, coordination and overcurrent protection of distribution circuits. Four hours lecture per week. Prereq: EUT 1500/L. 4 SH

**EUT 2601. Electrical Codes and Standards.** National Electrical Code and National Electrical Safety Code as applied to overhead and underground electric utility distribution systems. Pole guying, overhead conductor sag and tension, cable pulling, and clearances. Four hours lecture per week. Prereq: EUT 2600. 4 SH

**EUT 2690. Electric Utility Lab 1.** Provides the skill required to work on secondary circuits, transmission support systems, transformers, and services. OSHA regulations and rigging safety awareness. Twenty contact hours per week. Prereq: Acceptance into EUT program. 6 SH

**EUT 2691. Electric Utility Lab 2.** Provides the skill required to install three phase primary conductors, transformers, cable components; operate line fuses, reclosers, power banks, capacitors, and voltage regulators. Twenty contact hours per week. Prereq: EUT 2690. 6 SH

**EUT 2692. Electric Utility Lab 3.** Provides the skill required to install primary URD equipment, and subtransmission structures. Live line maintenance techniques. Troubleshooting of URD primary and secondary circuits. Twenty contact hours per week. Prereq: EUT 2691. 6 SH

**EUT 2693. Electric Utility Lab 4.** Provides the skill required to climb transmission structures and perform intermediate tasks. Substation equipment, minimum approach distances, and substation safety. Twenty contact hours per week. Prereq: EUT 2692. 6 SH

**EUT 2699. Electric Utility Co-op.** Compensated and evaluated work experience with local utility company. Forty contact hours per week. Prereq: Permission of program coordinator. 2 SH

Course descriptions for other courses may be found in the YSU Bulletin.