Electric Utility Technology Program A.A.S Degree

Overhead Lines

The Associate in Applied Science degree program in Electric Utility Technology is offered in partnership with FirstEnergy Corp. This program prepares students for employment opportunities in the electric utility technology industry with a specific focus on line worker training. The coursework in this program is designed to provide students the opportunity to develop both the academic skills and technical skills needed for employment in this field. Students must satisfy specific requirements in order to be admitted to this program. See page 17 of the catalog.

Graduates of this program will be able to:

- Operate standard analog laboratory instruments such as the oscilloscope, VOM, DVM, audio generator and frequency counter to measure and verify calculated values
- Analyze and measure circuit currents, resistance and voltages using Kirchhoff's laws, Mesh Analysis, Nodal Analysis, Thevenin's Theorem, and Norton's Theorem
- Calculate impedance, currents, voltages, and phase angles for AC circuits
- Perform work on secondary voltage circuits
- Safely and properly install three-phase primary conductors
- Operate transmission line installation equipment
- Safely install and operate line fuses, reclosers, transformer power banks, capacitors and line voltage regulators
- Identify, install and maintain primary underground residential distribution (URD) equipment
- Apply proper cable pulling/bus work techniques
- Safely climb transmission support towers and H-structures
- Recognize energized equipment and minimum approach distances and demonstrate safe work practices

Requirements

General Education – 22 credits as described on

page 51 of the Catalog.
The following general education courses are
required for students choosing this program.
(Credit hours listed with each course)
ENGL 121 English Composition: 3
Writing Process
ENGL 122 English Composition 3
Writing and Research
SPCH 130 Interpersonal Communications 3
HIST 105 World Civilization I 3
COMP 129 Information Technology 3
ECON 107 Economics 3
MATH 145 Algebraic Modeling 4
Career Studies – 26 credits
ELEC 101 Computer Aided Circuit Analysis 3
ELEC 103 Electrical Skills and Techniques 4
ELEC 131 Electrical Circuits for Power 4
Distribution I
ELEC 132 Electrical Circuits for Power 4
Distribution II
ELEC 133 Electrical System Design and 3
the National Electric Code
ELEC 201 Electrical Transmission and 3
Distribution
ELEC 202 Switchgears, Transformers and 3
Controls
FITN 177 Community First Aid and 2
Professional CPR

Suggested Sequence – Electric Utility Technology
Program A.A.S.

The following sequence is an example of how this degree can be completed in two years. This sequence is based on satisfaction of all Basic Skills requirements and prerequisites and presumes a Fall Term start date. Students must satisfy specific requirements in order to be admitted to this program. See page 17 of the catalog.

Course Code Credits Course Code Credits
SEMESTER 1 SEMESTER 2
ENGL 121 3 MATH 145 4
ELEC 101 3 ELEC 131 4
COMP 129 3 ENGL 122 3
ELEC 103 4 UTIL 102 4
UTIL 101 4
17 15
SUMMER SEMESTER
UTIL 299 2
SEMESTER 3 SEMESTER 4
HIST 105 3 ECON 107 3

ELEC 132 4 SPCH 130 3
ELEC 133 3 ELEC 202 3
ELEC 201 3 UTIL 202 4
UTIL 201 4 FITN 177 2
17 15
Total Credits for Degree 66
Technical Studies – 18 credits
UTIL 101 Overhead Lines Technology I 4
UTIL 102 Overhead Lines Technology II 4
UTIL 201 Overhead Lines Technology III 4
UTIL 202 Overhead Lines Technology IV 4
UTIL 299 Internship in Electric Utility 2

Electric Utility Technology Program
A.A.S Degree

Substation Option
The Associate in Applied Science degree program in Electric Utility Technology is offered in partnership with FirstEnergy Corp. This program prepares students for employment opportunities in the electric utility industry with a specific focus on electrical substation and switchyards. The coursework in this program is designed to provide students the opportunity to develop both the academic skills and technical skills needed for employment in this field. Students must satisfy specific requirements in order to be admitted to this program. See page 17 of the catalog.
Graduates of this program will be able to:
 Operate standard analog laboratory instruments such as the oscilloscope, VOM, DVM, audio generator and frequency counter to measure and verify calculated values
 Analyze and measure circuit currents, resistance and voltages using Kirchhoff's laws, Mesh Analysis, Nodal Analysis, Thevenin's Theorem and Norton's Theorem

 Calculate impedance, currents, voltages, and phase angles for AC circuits
 Perform high-level maintenance in electrical substation and switchyards
 Apply proper cable/pulling bus work techniques
 Safety install and use batteries, fuses, transformers, regulators/reclosers, circuit breakers and capacitors

Requirements

General Education – 22 credits as described on page 51 of the Catalog.
The following general education courses are required for students choosing this program. (Credit hours listed with each course)
ENGL 121 English Composition: 3
Writing Process 3
ENGL 122 English Composition 3
Writing and Research
SPCH 130 Interpersonal Communications 3
HIST 105 World Civilization I 3
COMP 129 Information Technology 3
ECON 107 Economics 3
MATH 145 Algebraic Modeling 4
Career Studies – 26 credits
ELEC 101 Computer Aided Circuit Analysis 3
ELEC 103 Electrical Skills and Techniques 4
ELEC 131 Electrical Circuits for Power 4
Distribution I
ELEC 132 Electrical Circuits for Power 4
Distribution II
ELEC 133 Electrical System Design and 3
the National Electric Code
ELEC 201 Electrical Transmission and 3
Distribution
ELEC 202 Switchgears, Transformers and 3
Controls
FITN 177 Community First Aid and 2
Professional CPR
Technical Studies – 18 credits
UTIL 111 Substation Technology I 4
UTIL 112 Substation Technology II 4
UTIL 211 Substation Technology III 4
UTIL 212 Substation Technology IV 4
UTIL 299 Internship in Electric Utility 2

Suggested Sequence – Electric Utility Technology

Program A.A.S.
Substation Option
The following sequence is an example of how this degree can be completed in two years. This sequence is based on satisfaction of all Basic Skills requirements and prerequisites
and presumes a Fall Term start date. Students must satisfy specific requirements in order to be admitted to this program. See page 17 of the catalog.
Course Code Credits Course Code Credits
SEMESTER 1 SEMESTER 2
ENGL 121 3 MATH 145 4
ELEC 101 3 ELEC 131 4
COMP 129 3 ENGL 122 3
ELEC 103 4 UTIL 112 4
UTIL 111 4
17 15
SUMMER SEMESTER
UTIL 299 2
SEMESTER 3 SEMESTER 4
HIST 105 3 ECON 107 3
ELEC 132 4 SPCH 130 3
ELEC 133 3 ELEC 202 3
ELEC 201 3 UTIL 212 4
UTIL 211 4 FITN 177 2
17 15
Total Credits for Degree 66
Programs of Study **89**