ELECTRICAL CONSTRUCTION & MAINTENANCE

Program Description

Electrical Construction & Maintenance prepares students for a variety of entry-level positions within the electrical industry including construction, maintenance, manufacturing of electrical components, estimating, sales, and other related fields. The program incorporates lecture instruction with application in a laboratory environment to equip graduates with trade knowledge and skills.

Instruction begins with the science of electricity and transitions to various facets in the construction and manufacturing electrical industries. Components of the program include wiring methods, controls, power generation, electrical schematics and blueprints, and electrical and job site safety. Students apply the National Electrical Code to electrical installations and maintenance work while developing critical thinking skills to solve problems and make decisions. Arts & Sciences courses complement the technical major providing technical reading and writing skills, analytic and scientific reasoning, and a global perspective.

The Electrical Construction & Maintenance major is approved by the MN Department of Labor & Industry as a two-year electrical program. Satisfactory completion of an approved two-year electrical program fulfills the one year’s experience credit allowance for a Class A journeyman electrician, power limited technician, or maintenance electrician license applicant according to part 3800.3520, subpart 5, items B, E, and I, and Minnesota Statutes, section 326B.33, subdivisions 2, paragraph (b), and 7, paragraph (b).

Dunwoody College of Technology: a non-profit, private technical college since 1914.

Credential Earned | AAS Degree
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Classes Offered | Day
Length of Program | 2 years (4 semesters)
Available Starts | Fall Semester; Spring Semester
Further Study | Bachelor's Completion Degree in Construction Management
Accreditation | Minnesota Department of Labor & Industry approved two-year electrical program

Common Job Titles
- Apprentice Electrician
- Maintenance Electrician
- Manufacturing Technician

Recent Employers
- IBEW Local Union 292 & 110
- Cal-Tex Electric
- Cedar View Electric
- Laketown Electric

Salary Data
- $64,360* Annual Average Salary

Placement Rate
100%**

Degree Requirements
- ELEC1111 AC & DC Electrical Lab
- ELEC1112 AC & DC Electrical Principles
- ELEC1211 AC & DC Machines & Controls Lab
- ELEC1212 AC & DC Machines Principles
- ELEC2111 Wiring & Electrical Systems Lab 1
- ELEC2112 Wiring & Electrical Systems Principles 1
- ELEC2211 Wiring & Electrical Systems Lab 2
- ELEC2212 Wiring & Electrical Systems Principles 2
- MATH1500 Algebra, Trigonometry & Boolean Algebra
- PHIL1000 Introduction to Logic
- PHYS2400 Physical/Environmental Science w/ Lab
- COMM2000 Communication for Technical Professions
- ECON1000 Introduction to Micro & Macro Economics
- HUMN2400 Ethics

How to Apply
- dunwoody.edu
- 612.374.5800
- info@dunwoody.edu

*Based on May 2016 State Occupational Employment and Wage Estimates for the state of Minnesota published by the Bureau of Labor Statistics, www.bls.gov. **Data reflects placement for AY2016-17 graduates indicating employment in their field of study within 6 months following graduation. Full data calculations are available for review during College open hours Monday through Friday 8 a.m. to 4 p.m. CT at Career Services or contact careerservices@dunwoody.edu.

AY2018-19 Revised: 6.25.18
Course Descriptions

ELEC1111 AC & DC Electrical Lab, 5 cr.
Investigation and application of electronics and electrical alternating and direct current principles and theories utilizing electrical math, basic schematics, test equipment, circuit connections, and analysis techniques to identify and predict electrical and electronic component and circuit behaviors.

ELEC1112 AC & DC Electrical Principles, 8 cr.
Examination of electronics and electrical alternating and direct current principles and theories utilizing electrical math, basic schematics, and circuit analysis techniques to identify and predict electrical and electronic component and circuit behaviors.

ELEC1211 AC & DC Machines & Controls Lab, 5 cr.
Investigation and analysis of AC and DC machines with both industrial and programmable logic control systems utilizing schematics and components to create and build electrical circuits with the inclusion of testing and troubleshooting procedures of equipment for a comprehensive analysis of industrial manufacturing systems.

ELEC1212 AC & DC Machines Principles, 8 cr.
Examination of DC and AC machine principles and theories with an emphasis on industrial manufacturing system calculations and analysis including use of the National Electrical Code regulations for installations.

ELEC2111 Wiring & Electrical Systems Lab 1, 5 cr.
Implementation and installation of electric equipment, wiring methods and print reading for residential, light commercial and limited energy systems performed in a lab environment using proper safety practices and procedures.

ELEC2112 Wiring & Electrical Systems Principles 1, 8 cr.
Interpretation of the National Electrical Code and related calculations are examined and used to determine proper installation and use of wiring methods, devices and equipment in accordance with the National Electrical Code with a focus on residential and limited energy systems.

ELEC2211 Wiring & Electrical Systems Lab 2, 5 cr.
Implementation of wiring methods for the installation of commercial, industrial, and renewable energy applications with an emphasis on various electrical systems utilizing blue prints, electrical schematics, estimating and take-off, and applicable industry standards along with the National Electrical Code within a laboratory environment.

ELEC2212 Wiring & Electrical Systems Principles 2, 8 cr.
Examination of the methods and materials used for the design, operation, estimation, layout and installation of commercial, industrial, and renewable energy electrical systems utilizing applicable industry standards along with the National Electrical Code.

MATH1500 Algebra, Trigonometry & Boolean Algebra, 5 cr.
Polynomials, proportions and linear equations. Trig functions, graphs, and vectors. Binary, octal and hexadecimal number systems. Boolean Algebra and mapping.

PHIL1000 Introduction to Logic, 2 cr.
Introduction to logical reasoning in natural and formal languages. Determine basic distinctions between arguments and non-arguments and between deductive and inductive arguments. Methods for symbolizing and evaluating the validity of arguments and for detecting fallacies in arguments, such as Square of Opposition, Venn Diagrams, and Truth-Tables, will be applied to ordinary language statements as well as to formal languages, in particular Boolean Algebra.

COMM2000 Communication for Technical Professions, 5 cr.
Develop the distinctive reading and writing skills critical to success in technical professions. Examine the role of and techniques used within the writing process; the interrelationship between content, language, and structure; and the relationship between the basic conventions of writing and the construction of meaning. Topics include strategies for collaborative and ethical writing in the workplace, creating and interpreting professional communications, and analyzing field-specific texts for application to a specific task and overall effectual performance.

ECON1000 Introduction to Micro & Macro Economics, 3 cr.
Fundamental economic issues and theories are explored through discussion and research. Current events, policy perspectives, and case studies are used to process and apply economics to everyday life.

HUMN2400 Ethics, 2 cr.
The development of ethical standards as related to the individual, government, business, and society. Current legislation is examined from the perspective of its moral and ethical roots with considerations and standards influencing personal and business decisions.