ELECTRICAL CONSTRUCTION DESIGN & MANAGEMENT

Program Description
The Electrical Construction Design & Management program provides graduates with the knowledge and skills necessary for entry-level employment in the electrical engineering/construction industry.

Graduates of the program start a career as drafters, designers, estimators, or project managers at engineering firms or electrical contractor companies. Students receive training in fundamental electrical theory and application; motors, transformers and generators; electrical control systems; electrical installations and wiring; electrical safety; drafting and designing power, lighting and low voltage systems; lighting calculations; power system analysis; cost estimation; CSI specifications; and project management.

The National Electrical Code (NEC) is studied extensively. Students learn crucial problem-solving skills as they advance through the program. Arts & Sciences curriculum supports the technical skills students learn as well as enhance oral and written communication skills, fundamental math skills, and critical thinking ability.

Students also complete a capstone electrical engineering/construction project that integrates and documents all aspects of drafting, designing, specifying, analyzing, estimating, and managing.

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

<table>
<thead>
<tr>
<th>Common Job Titles</th>
<th>Recent Employers</th>
<th>Salary Data</th>
<th>Placement Rate</th>
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</thead>
<tbody>
<tr>
<td>Electrical Project Manager</td>
<td>Hunt Electric Corporation</td>
<td>$57,030* Annual Average Salary</td>
<td>100%**</td>
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<tr>
<td>Electrical Designer</td>
<td>Black &amp; Veatch</td>
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<td>Electrical Estimator</td>
<td>Egan Companies</td>
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<tr>
<td>Electrical Drafter</td>
<td>Gausman &amp; Moore</td>
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<tr>
<td>BIM Specialist</td>
<td>Steen Engineering</td>
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Degree Requirements
- ELEC1111 AC & DC Electrical Lab
- ELEC1112 AC & DC Electrical Principles
- ECDM2101 Electrical Theory & Practice - Delta
- ECDM2102 Design Lab - Delta
- ECDM2103 Illumination Technology & Design
- ECDM2201 Electrical Theory & Practice - Omega
- ECDM2202 Design Lab - Omega
- ECDM2203 Electrical Estimating
- ECDM2204* Electrical Field Studies
- CMGT1231 Construction Planning & Scheduling I
- ECDM2301 Advanced Topics & Technology
- ECDM2302** Design Capstone
- CSBT2110 Building Codes
- CMGT1313 Construction Contracts
- MATH1500 Algebra, Trigonometry & Boolean Algebra
- Humanities Elective
- Communications Elective
- Social Sciences Elective
- Diversity Elective
- Arts & Sciences Electives

- Or take CMGT1901 International AEC Fields & Practices
- Or take ECDM2303 ECDM Co-op/Internship

Credential Earned: AAS Degree
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

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

**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: 7.30.18
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.

ECDM2101 Electrical Theory & Practice - Delta, 3 cr.
Principles and practices of electrical system design. Design and calculations involved in electrical construction. Apply occupant perspectives, construction techniques, and relevant codes. Examine the entire electrical system, with a focus on branch circuits and low voltage systems.

ECDM2102 Design Lab - Delta, 3 cr.
Electrical design of a simulated building project. This project covers utility to outlets, with a focus on branch circuits and low voltage systems. Practical design implementation is emphasized. Detailed documentation of all aspects of the project. CAD, Revit, and other modeling and analysis software is used to produce a final portfolio.

ECDM2103 Illumination Technology & Design, 4 cr.
Interior and exterior applications of lighting. Discussion of energy code, including control system implementation and lighting power density. Analyze photometric data and their application. Use 3D modeling to design layouts, taking into account fixture selection and basic aesthetic considerations.

ECDM2201 Electrical Theory & Practice - Omega, 3 cr.
Principles and practices of electrical system design. Design and calculations involved in electrical construction. Apply occupant perspectives, construction techniques, and relevant codes. Examine the entire electrical system, with a focus on distribution, such as transformers, generators, panels, and feeders.

ECDM2202 Design Lab - Omega, 3 cr.
Electrical design of simulated building project. This project covers utility to outlets, with a focus on distribution, such as transformers, generators, panels and feeders. Practical design implementation is emphasized. Detailed documentation of all aspects of the project. Use contemporary 2D, 3D, and other modeling and analysis software to produce a final portfolio.

ECDM2203 Electrical Estimating, 3 cr.
Detailed estimation and project management of electrical construction projects using industry software. Scheduling and bidding of construction projects and project documentation.

ECDM2204 Electrical Field Studies, 1 cr.
Explore electrical systems in completed construction, and converse with owners and facility managers to discuss implications of design. Tour in-progress projects, and discuss project management obstacles and best practices.

CMGT1901 International AEC Fields & Practices, 1 cr.
Introduction to the international aspects of architecture, engineering, and construction industries. Emphasis on inter-cultural communication, cultural intelligence, and globalization of technology. Four traditional classroom sessions (held before travel) include lectures, seminar discussions, case studies, participatory activities, and guest speaker presentations. Coursework during travel is primarily experiential based and includes fieldwork, group projects and community based service-learning. Travel expenses are incurred by the student.

CMGT1231 Construction Planning & Scheduling I, 3 cr.
Analyze a sequence of construction tasks using network diagrams, Gantt charts, and the critical path method to create a project schedule.

ECDM2301 Advanced Topics & Technology, 3 cr.
Building on the design theory and labs, in depth analysis of specific electrical design applications, such as residential, medical, data centers, industrial, and other construction. Examine emerging technologies, such as renewable energy and building automation.

ECDM2302 Design Capstone, 3 cr.
Integration of all aspects of electrical construction design and management, including drafting, designing, estimating, and managing projects, to create a complete comprehensive capstone project. The capstone project is presented and reviewed by industry experts and leaders, providing valuable feedback from their own experiences.

ECDM2303 ECDM Co-op/Internship, 3 cr.
The Co-op or Internship course allows students to gain credit for work experience. In either option, students must have faculty approval before registering for this course. The Co-op Track is an educational experience combining academic and career interests with industry experience, offering the opportunity to test career interests, such as design, estimating, or project management. Students are paired with one or two companies over the course of a semester. Through the Co-op Option students are empowered to create a career plan enabling them to make well-informed choices for early career success. The Internship Track is a work experience in a typical company scenario. Students work on real and current projects that allow them to explore the difference in scope and types of work that exist outside the academic classroom.

CSBT2110 Building Codes, 3 cr.
Select and apply appropriate federal, state/provincial and municipal codes, standards and accessibility guidelines using industry standards with an emphasis on Life Safety Codes and the ADA to prepare for licensing exams, meet with codes officials, and to design spaces that enhance the health, safety and welfare of the general public.

CMGT1313 Construction Contracts, 1 cr.
Introduction to construction administration documents, systems, and procedures to understand the construction contracting process including planning and scheduling the job, bidding through closeout to meet project requirements.

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.