

ELECTRICAL CONST DESIGN & MANAGEMENT (ECDM)

ECDM2001 | Electrical Lab | Laboratory (3 Credits)

Investigate and apply electrical principles and theories utilizing electrical math, basic schematics, test equipment, circuit connections, and analysis techniques to identify and predict electrical circuit behaviors for a greater understanding of electricity.

Corequisite(s): ECDM2002

ECDM2002 | Electrical Principles | Lecture (4 Credits)

Examine electrical principles and theories utilizing electrical math, basic schematics, and circuit analysis techniques to identify and predict electrical circuit behaviors and a greater understanding of how electricity works.

Corequisite(s): ECDM2001

ECDM2003 | Introduction to 3D Drafting & Design | Laboratory (2 Credits)

Examine and implement construction graphics and conventions into electrical designs using industry specific 3D drawing software.

ECDM2101 | Electrical Theory & Practice - Delta | Lecture (3 Credits)

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 | Laboratory (3 Credits)

Electrical design of a simulated residential and commercial building project. This project covers utility to outlets, with a focus on branch circuits and low voltage systems utilizing owner specifications and building and electrical codes. 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.

ECDM2104 | Illumination Technology & Design | Lecture/Laboratory (2 Credits)

Interior and exterior applications of lighting. Discussion of energy code, including control system implementation and lighting power density. Analyze photometric data and their application and use 3D modeling to design layouts, taking into account luminaire selection and basic aesthetic considerations.

ECDM2105 | Residential & Commercial Principles | Lecture (3 Credits)

Principles and practices of electrical system design. Design and calculations involved in electrical construction for residential and commercial occupancies. Apply occupant perspectives, construction techniques, and relevant codes. Examine the entire electrical system, with a focus on branch circuits, power distribution and low voltage systems.

ECDM2201 | Electrical Theory & Practice - Omega | Lecture (3 Credits)

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.

Prerequisite(s): ELEC1111

ECDM2202 | Design Lab - Omega | Laboratory (3 Credits)

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

ECDM2204 | Electrical Field Studies | Seminar (1 Credit)

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.

ECDM2205 | Electrical Estimating | Lecture/Laboratory (3 Credits)

Detailed estimation and project management of electrical construction projects using industry software. Scheduling and bidding of construction projects and project documentations.

ECDM2206 | Commercial & Industrial Principles | Lecture (3 Credits)

Principles and practices of electrical system design for commercial and industrial applications. Design and calculations involved in electrical construction will be used. 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 and PLC controls.

ECDM2208 | Project Management | Seminar (2 Credits)

Investigate the roles and responsibilities for construction project managers. Examine the ethics within the decision-making process from the request for proposal through close-out.

ECDM2301 | Advanced Topics & Technology | Lecture (3 Credits)

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.

Prerequisite(s): ELEC1111, ECDM2101, And ECDM2201

ECDM2302 | Design Capstone | Laboratory (3 Credits)

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.

Prerequisite(s): ECDM2102 And ECDM2202

ECDM2303 | ECDM Co-op/Internship | Directed Study (3 Credits)

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.

Prerequisite(s): ECDM2102

ECDM2304 | Design Capstone | Capstone (3 Credits)

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.

ECDM2305 | Electrical Planning & Scheduling | Lecture/Laboratory (3 Credits)

Create a sequence of construction tasks using industry methods to generate construction schedules with preplanned and design build workflow analysis. Examine potential conditions that impact planning of projects including supply chains, logistics of materials and equipment, and the workforce.

ECDM2306 | Risk Management | Seminar (1 Credit)

Investigate the process of identifying, assessing, and managing risks associated with a construction project from the design phase through close-out through analysis of electrical projects.

ECDM2307 | Advanced Estimating | Lecture/Laboratory (2 Credits)

Advanced analysis of cost estimating and bidding methods using industry practices and methods to oversee and manage the successful procurement of electrical construction projects.