



Appendix A

*ELECTRI International and
the National Electrical Contractors Association (NECA)*

**WORK PROCESS SCHEDULE
AND
RELATED INSTRUCTION OUTLINE**



Appendix A
WORK PROCESS SCHEDULE
PROJECT MANAGEMENT SPECIALIST
(Existing Title: Project Manager)
O*NET-SOC CODE: 13-1082.00 RAPIDS CODE: 3019

This schedule is attached to and a part of these Standards for the above identified occupation.

1. APPRENTICESHIP APPROACH

- Time-based Competency-based Hybrid

2. TERM OF APPRENTICESHIP

The term of the apprenticeship is **1** years with an OJL attainment of **2,000 hours** supplemented by the minimum required **180** hours of related instruction.

Apprentices may complete the program in a minimum of one year but may take up to two years to complete the required related instruction.

3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: **1** Apprentice to **1** Journeyworker.

No more apprentices will be employed than can be properly trained and afforded reasonable opportunity for future employment.

4. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate, which is:

\$35.73.

Based on the International Brotherhood of Electrical Workers (IBEW) journeyworker wage information collected in 2021-2023, the average national journeyworker wage is \$35.73/hour.

Period	Steps	Wage	% of Journeyworker Rate
1	0-1,000 OTJ Hours	\$17.87	50%
2	1,001-2,000 OTJ Hours	\$19.65	55%
Completion	Completion of Program	\$21.44	60%

Period 1: 50%, Period 2: 55%, Completion of Program: 60%



5. PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period of 13 weeks (25% of the program based on a one-year competition date).

6. SELECTION PROCEDURES

Please see page A-9 .



Appendix A
ON-THE-JOB LEARNING OUTLINE
PROJECT MANAGEMENT SPECIALIST
(Existing Title: Project Manager)
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On-the-Job Training

The apprentice will develop a solid understanding of the overall business and gain specific insight into Project Management. Apprenticeship opportunities provide challenging, real-world projects specific to each apprentice's career path. Working within the various departments on day-to-day and long-term projects, the apprentice will be involved in activities related to process improvement, project management, data support, reporting, documentation, and other assigned responsibilities.

Work Process Schedule:

Approximate Hours:

ORIENTATION

20 Hours

- a. General, introduction to company, projects, and facilities
- b. Employee Handbook
- c. Company policies
- d. Company operations
- e. Roles and responsibilities of team members

SAFETY PROCEDURES –

40 Hours

- a. Worker rights
- b. Legal responsibilities of employers, employees
- c. OSHA requirements
- d. Jobsite safety plan
- e. Emergency response procedures
- f. Hazard identification and protection
- g. Home office and project office protocol

BUILDING METHODS AND SYSTEMS

375 Hours

- a. Sources, properties, and applications of building materials
- b. Materials testing, ASTM, and AASHTO standards
- c. Structural components
- d. Structural theory and building enclosure design
- e. Structural systems
- f. Building codes and design standards
- g. Delivery methods
- h. CAD systems and building information modeling
- i. Sustainability

SURVEYING

65 Hours

- a. General site and building layout
- b. Instrument calibration and use
- c. Horizontal and vertical controls (elevation)



- d. Horizontal and vertical curves

MANAGEMENT

1,500 Hours

Project Management

- a. Planning, scheduling, and goal setting
- b. Communication with staff, owners, developers
- c. Determining labor requirements
- d. Determining appropriate construction methods
- e. Supply selection, inventory tracking
- f. Determining and obtaining appropriate permits and licenses
- g. Directing and supervising workers
- h. Developing and implementing quality control systems
- i. Reviewing and reporting progress
- j. Coordinating subcontractors
- k. Investigating and adapting to delays, accidents, emergencies, etc.
- l. Resolving employee disputes, complaints, construction problems

Cost Management

- a. Evaluating cost effectiveness of plans and construction methods
- b. Preparing and submitting budget estimates
- c. Preparing and submitting progress and cost tracking reports
- d. Creating and sending purchase orders/contracts to subcontractors
- e. Payroll

Contract Administration

- a. Preparing contracts with various audiences (e.g., architects, consultants, clients, subcontractors)
- b. Negotiating revisions, changes, and additions to contractual agreements

Safety Management

- a. Ensuring compliance with building and safety codes and regulations
- b. Analyzing, managing, and mitigating risks

Equipment Management

- a. Earthmoving equipment
- b. Heavy transportation equipment
- c. Crane selection, setup and safety regulations
- d. Analysis and selection of equipment fleet

Sustainability & Green Construction

- a. LEED certification compliance
- b. Environment friendly & recycled materials

PROJECT MANAGEMENT RESPONSIBILITIES

Beginner-Intermediate

- Attend in-office job turnovers
- Walkthroughs with foreman
- Drawing/Specification review
- Log and manage drawings
- Assist with generating submittal schedule



- Log RFI's
- Manage meeting minutes
- Ensure foreman has all up to date submittals, drawings & RFI's
- Assist with gathering closeout documentation
- Create valve tag maps & schedules
- Takeoff equipment & material counts
- Keep equipment logs with release dates

Intermediate-Advanced

- Review submittals against drawings/specs prior to submitting
- Set up projects in your company's file management system
- Develop RFI's with PM - learn the process & how to write them
- Distribute bulletins to subs/vendors for pricing
- Issue POs to vendors
- Assist with project change order requests
- Schedule closeout activities (O&M training, spare parts turnover)
- Assist with generating schedule of values
- Coordinate red line drawings with foreman
- Assist with scheduling milestones (shutdowns, cutovers, startups)
- Generate 2 week look ahead schedules with foreman
- Assist with billing customers

Advanced

- On site QA/QC
- Release and track material/equipment
- Generate change order requests and submit to customer
- Approval of vendor/sub invoices
- Issue subcontracts
- Turn projects over to foreman
- Scheduling of subcontractors
- Schedule startups, shutdowns, and cutovers with customer

TOTAL MINIMUM HOURS 2,000 Hours



Appendix A
RELATED INSTRUCTION OUTLINE
PROJECT MANAGEMENT SPECIALIST
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Instructions for entering the Related Instruction Outline for all occupation approaches:

Please provide the Related Instruction Outline to include a list of the anticipated courses, the learning objectives, and the estimated number of hours that each course will last.

Online Professional Certificate in Construction Project Management

In order to earn the Professional Certificate in Construction Project Management, students need to complete five (5) core courses and one (1) elective course. Each course costs \$690 and is worth three (3) Professional Development Units (PDUs).

Course assignments are self-paced; students generally complete course objectives and assignments within 30-50 hours. Each course is hosted online and includes 10 weeks of instruction. Students can complete the program in a minimum of five months and a maximum of two years.

Related Instruction Descriptions:

Approximate Hours:

ENGR 0032 - Planning and Scheduling (Required):

30-50 hours

Students will learn how to plan, prepare, and update construction project schedules in this online course. Through the use of case studies, learn how to define construction activities, determine activity duration, and assemble the activities into a logical construction schedule. Learn to create and use bar charts and critical path schedules.

ENGR 0038 - Building Green Buildings - The Contractor's Perspective (Required):

30-50 hours

The purpose of this course is to provide construction professionals with information that will help them to effectively bid, contract, build, and close out green building projects. We will explore the green building process from the contractor's and subcontractor's point of view. You will learn how to work with an outside commissioning authority to complete the job.

Format: Online

ENGR 0043 - Construction Equipment and Methods (Required):

30-50 hours

Students will learn skills and methods to help advance their career in civil construction, advance your understanding in how to utilize equipment, identify and understand construction methods used to increase productivity on the job site, increase awareness in how to budget for and utilize equipment efficiently. Students will better understand safety procedures associated with different equipment, learn how to select and budget for the best equipment needed for the job and understand and apply methods used in utilizing construction equipment.

ENGR 0047 - Construction Project Management (Required):

30-50 hours



This course provides a framework for understanding the project manager's role, responsibilities, processes, and procedures. Students will learn the stages of the project, scheduling, feasibility, bidding and contracting, contracts, risk, claims, maintenance, warranties, and more. This is a paced, asynchronous online course. The course features a high level of student to student and student to instructor interaction.

ENGR 0050 - Practical Applications of Construction Law (Required): **30-50 hours**

Applications of Construction Law online course provides a framework for understanding the legal environment in which construction takes place. Students will learn the stages of contracts, how to avoid litigation, protective methods for the employee/employer in a litigious society, understand the legal liability of construction professionals, avoid disputes using clauses, and be more informed when navigating the legality of the jobsite. Students will learn about the different models of contracts, contract principles, offers, and defenses to the formation of contracts. We will review the Uniform Commercial Code (UCC) and how it is used in sales contracts. Topics also include the roles and responsibilities of the contractor, architect, and the documents that bind them. Bonds, liens, and waivers, the legal liability of construction professionals, avoiding disputes through use of clauses, and how to avoid defects are included in this course.

SELECT 1 OF THE FOLLOWING (Required): **30-50 hours**

ENGR 0031 - Contract Documents and Construction Law

This online course focuses on understanding the relationship between contract documents and the construction process.

ENGR 0048 - Problem Solving and Risk Management

This course will focus on risk identification and assessment. Through practice with skillful problem-solving techniques, students will learn to manage, diminish, or eliminate risks. This is a paced, asynchronous online course. The course features a high level of student-to-student and student-to-teacher interaction.

ENGR 0049 - Construction Productivity and Cost Management

This course will focus on construction cost management and improving productivity with cost management strategies. Through practice with skillful problem-solving techniques, student will learn to manage costs and take proactive measures to increase productivity on their job sites. This is a paced, asynchronous online course. The course features a high level of student-to-student and student-to-teacher interaction.

TOTAL MINIMUM HOURS 180-300 Hours



SELECTION PROCEDURES

Qualifications for Apprenticeship

The Sponsor hereby assures that applicants for the apprenticeship program will meet the required minimum qualifications provided below and additional qualifications that may be enumerated within this document and the corresponding appendices hereto:

- Age: 18 years of age or older
- Education: High School Diploma or GED
- Residence: United States
- Physical Condition: Ability to perform all job duties required by the employer
- Transportation: Valid Driver's License
- Other: N/A

Recruitment, Selection, Employment, and Training of Apprentices

The recruitment, selection, employment, and training of apprentices during the apprenticeship shall be without discrimination based on political, religious opinion or affiliation, marital status, race, color, national origin, sex, or age, unless sex or age constitutes a *bona fide* occupational qualification, or the physical or mental disability of a qualified individual with a disability.

The Sponsor will take affirmative action to provide equal opportunity in apprenticeship and will conduct and operate the apprenticeship program as required under Title 29 of the Code of Federal Regulations.

1. *All candidates will apply through the sponsoring NECA Chapter and/or sponsoring contractor company. If the sponsoring contractor company is involved in the interview process, the company may include additional interview criteria that is regularly used during the interview process for new employees.*
2. *All candidates must be 18 years of age.*
3. *All candidates must provide a copy of a High School Diploma or GED.*
4. *All candidates must provide a copy of a valid Driver's License.*
5. *All candidates will be asked the same series of **Interview Questions (attached)**. These questions will be used to prompt conversation to learn more about the candidate's experience and goals.*
6. *All candidates will be evaluated based on the **Selection Evaluation Form (attached)**. Candidates with evaluation ratings of 3 or higher are recognized as candidates that meet expectations. Candidates with evaluations lower than 3 may still be accepted to the program at the discretion of the interviewers.*
7. *Candidates who are approved by the interviewers will be notified of their acceptance into the program and will discuss start date and any other pending details.*