

# CraftED

## Pre-Apprenticeship: Energy and Utility Technicians — Course Syllabus

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**Instructor:** Dr. Colby Webb

**Delivery Mode:** Online (LearnDash + Weekly Teams Meetings)

**Duration:** 6 Weeks

**Meeting Time:** Saturdays at 5:00 PM (PST)

**Teams Meeting Link:** [Insert Microsoft Teams Link Here]

### Course Overview

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The Pre-Apprenticeship: Energy and Utility Technicians program prepares learners to enter apprenticeship programs or careers in power generation, process operations, and utility systems maintenance with a foundation of safety awareness, technical reasoning, and professional readiness. Over six weeks, participants will explore the energy workforce, develop mechanical and electrical fundamentals, build systems-level thinking, and assemble a professional portfolio to document their competencies. This course aligns with WIOA career readiness standards and DOL-recognized O\*NET pathways, and serves as a structured bridge to Registered Apprenticeship Programs or industry employment across the energy and industrial sectors.

### Course Objectives

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- Identify energy sector career pathways and assess personal aptitude and interest alignment.
- Demonstrate OSHA-aligned safety practices, PPE selection, and lockout/tagout procedures.
- Apply foundational mechanical and electrical skills — including Ohm’s Law, pump systems, motor control, and precision measurement.
- Read and interpret electrical schematics, wiring diagrams, and automation logic sequences.
- Apply systems-level thinking to evaluate efficiency, diagnose faults, and document root cause analysis.
- Write professional technical documentation using observation-first language across all six required elements.
- Compile a professional portfolio demonstrating readiness for energy sector employment or apprenticeship.
- Develop a career roadmap with immediate, mid-term, and long-term goals aligned to a specific energy pathway.

### Weekly Breakdown

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Week	Focus Area	Key Lessons & Tasks	Apply & Reflect
1	The Energy Workforce & Industrial Systems Overview	Energy sector overview; career pathways and O*NET codes; local utility systems mapping	Career pathway research activity; local energy systems mapping

2	Industrial Safety, Tools, and Work Practices	OSHA-compliant safety, PPE, and industrial hazard awareness; tools and worksite readiness	Safety training evidence and tools & equipment assignment
3	Electrical and Mechanical Fundamentals	Mechanical systems, pumps, and material handling; electrical theory and motor control basics	Precision measurement and Ohm's Law exercises; electrical metrology bench test
4	Systems Thinking and Automation Awareness	Reading electrical schematics and wiring diagrams; PLC logic, interlocks, and PDCA cycle	Schematic interpretation and LOTO planning; systems logic root cause analysis
5	Energy Efficiency, Sustainability, and Troubleshooting	System efficiency evaluation and root cause analysis; technical documentation and reporting	Efficiency observation and diagnostic workflow; professional incident report writing
6	Career Launch and Professional Portfolio	Resume building and certification alignment; career roadmap and immediate launch steps	Tailored resume draft; career roadmap with 0–12 month action plan

## Assignment Submission Requirements

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Each week, students are required to submit two completed documents for each lesson:

**Apply Submission Document** — a structured response form demonstrating comprehension and skill application for that lesson. Students complete all tables, response boxes, diagnostic exercises, and field observation entries directly in the document.

File naming format: Lastname\_Week#.LessonNumber.pdf (e.g., Smith\_Week4.8.pdf)

**Student Reflection Form** — a self-assessment tool covering concept confidence ratings, open questions, and connection to career goals. Completed honestly — not for the instructor, but for the student.

File naming format: Lastname\_Week#.LessonNumber\_Reflection.pdf (e.g., Smith\_Week4.8\_Reflection.pdf)

Both documents must be submitted as PDFs to the assignment portal each week. Students should also save copies to their Career Portfolio Google Drive folder in the corresponding ApplyAndReflect subfolder.

Late submissions will be accepted up to 72 hours after the deadline with a 10% deduction. Submissions beyond 72 hours require instructor approval and may affect portfolio completion standing.

## Self-Starter Expectations

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This is a self-directed online program. Success depends on your ability to take initiative, manage your time, and hold yourself accountable — skills that are equally valued on any job site.

Students are expected to:

- Log in and engage with each lesson before the Saturday Teams meeting — come prepared with questions.
- Complete all Apply Submission Documents and Reflection Forms by the posted weekly deadline without reminders.
- Treat each assignment as a professional deliverable, not a worksheet — formatting, accuracy, and care reflect your readiness to enter the energy workforce.
- Reach out proactively if you are falling behind — do not wait until the end of the week.

- Demonstrate the same reliability and initiative in this course that employers will expect on Day 1 of your apprenticeship.

The trades reward people who show up prepared and ready to work. In energy and utility environments, the standard is higher — systems that fail affect infrastructure and communities. That standard begins here.

## Portfolio Requirements & Google Drive Setup

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Each learner will maintain a Google Drive portfolio folder as digital documentation of technical skills, field observations, and growth across the program.

### Setup Instructions:

- Create a folder titled “Lastname\_Firstname\_EnergyPortfolio”.
- Inside, create subfolders:
  1. Resume
  2. Certifications
  3. FieldObservations
  4. ApplyAndReflect
  5. CareerRoadmap
  6. FinalPortfolio
- Set sharing permissions to ‘Anyone with the link: Viewer’.
- Upload weekly assignments to the corresponding folders.
- Submit your Drive link in the Week 6 submission area.

## Certifications

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Credential	Issued By	Description & Purpose
OSHA-10 (Construction or General Industry)	<i>U.S. Department of Labor / OSHA Authorized Trainer</i>	Verifies understanding of basic workplace safety, PPE, hazard identification, and worker rights. One of the most valued entry-level safety credentials across energy and industrial trades. (Delivered via authorized training partner integration or accepted upload of prior certification.)
Pre-Apprenticeship Completion Certificate	<i>CraftED Workforce Solutions (WIOA-aligned)</i>	Confirms completion of a structured pre-apprenticeship meeting DOL and state workforce readiness standards. Can be shared with apprenticeship sponsors or employers to verify preparedness for energy and utility sector entry.
Digital Portfolio & Career Roadmap Validation	<i>Instructor-Signed Credential</i>	Serves as verified documentation of the learner’s technical skills, field observations, reflections, and career plan — a critical tool when applying for energy sector apprenticeships or employer-sponsored training programs.

## Assessment Overview

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Category	Weight	Description
<b>Apply &amp; Reflect Assignments</b>	40%	Weekly skill demonstration tasks — written responses, diagnostic exercises, field observations, and professional documentation entries.
<b>Quizzes (Weeks 1–5 + Capstone Final)</b>	30%	Weekly knowledge checks covering lesson content, plus a 30-question capstone final assessment covering all six weeks.
<b>Portfolio &amp; Career Roadmap</b>	20%	Capstone evidence of readiness — compiled work from Weeks 1–5, career roadmap, and strongest-piece reflection.
<b>Participation &amp; Teams Sessions</b>	10%	Attendance, engagement, and professionalism across weekly synchronous sessions.

## Exit Interview & Graduation Policy

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Completing all six weeks of coursework and submitting your portfolio does not automatically guarantee graduation, program certification, or placement into an apprenticeship or interview.

### Exit Interview

All students who complete their coursework will participate in a structured Exit Interview conducted by the instructor or a designated program reviewer. The purpose of this interview is to assess whether the student is genuinely prepared to represent CraftED in a professional employment or apprenticeship setting. The exit interview evaluates:

- Professional communication and presentation
- Demonstrated understanding of energy and utility technical content from Weeks 1–6
- Quality and completeness of the portfolio, field observation entries, and career roadmap
- Evidence of the self-starter mindset and real career action steps taken
- Overall conduct, reliability, and professionalism throughout the program

### Grade Submission & Placement Readiness

Following the exit interview, the instructor will submit a final grade and a readiness determination. Students should be aware of the following:

- Graduation and program certification are contingent on both academic performance and the instructor’s professional assessment of the student’s readiness.
- Placement into an employer interview or apprenticeship referral is not guaranteed. It is earned through demonstrated commitment, consistent performance, and professional conduct across the full six-week program.
- If the instructor determines that a student is not yet ready for placement — due to incomplete work, insufficient skill demonstration, or professionalism concerns — the student will be so notified in writing following the exit interview.

**Re-Application Policy:** *Students who are not cleared for graduation or placement may re-apply to the program after a minimum waiting period of six (6) months from the date of their exit interview notification. Re-admitted students are expected to demonstrate meaningful growth in the areas identified during their initial review.*

This policy exists to protect the integrity of the CraftED program and the value of its credentials. Energy employers and apprenticeship sponsors rely on our recommendation as a signal of genuine readiness. We take that responsibility seriously — and so should you.

## **Professional Conduct & Communication**

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Learners are expected to maintain professionalism in all meetings and submissions. Communicate respectfully, arrive on time, and complete assignments with integrity. Instructor communication is available via Teams or email, with responses typically within 24 hours Monday–Friday.