

Electrical Maintenance Technician Bootcamp

Sample Course Outline

12 Weeks/24 Classes/72 Hours

Textbooks: *Industrial Maintenance and Mechatronics* by Shawn A. Ballee and Gary R. Shearer (ISBN: 978-1-63563-427-3) and *Introductory Technical Mathematics* by John C. Peterson and Robert D. Smith (ISBN: 978-1-33739-767-4)

Week	Content
1 - Class 1	Chapter 1 Careers in Industrial Maintenance Activity: Workbook pages 1-4
1 - Class 2	Start basic math <ul style="list-style-type: none">• Working with fractions: adding, subtracting, multiplying, dividing• Unit conversions (inches to feet to yards to miles as one example)• Engineering units (milli, micro, nano, kilo, mega, giga, peta, etc.)
2 - Class 3	Precision Measurement
2 - Class 4	Industrial safety and OSHA PPE and its usage in the workplace Eye protection - face shields and goggles Aprons and gloves Footwear Arc flash protection Hazardous material suits and respirators
3 - Class 5	LOTO and its use in the workplace - guest presenter Reasons for LOTO Define "zero energy" and how it can be achieved
3 - Class 6	LOTO Certification Session
4 - Class 7	Magnetism <ul style="list-style-type: none">• How to read an inch micrometer• How to read a metric vernier caliper• Learning to measure to 1/16 of an inch• How to measure and read a dial caliper
4 - Class 8	Math test/precision measurement lab
5 - Class 9	Electrical measuring tools DMM Circuit testers
5 - Class 10	Introduction to DC Circuits Lab - measure resistance

6 - Class 11	Introduction to AC Circuits
6 - Class 12	Series and Parallel DC Circuits Power in DC Circuits Lab
7 - Class 13	Lamp Lab/Single Phase/Three Phase Motors
7 - Class 14	Math Conversions
8 - Class 15	Introduction to Pneumatics and Hydraulics
8 - Class 16	Test
9 - Class 17	Overview of PLC and ladder logic
9 - Class 18	Ladder Logic Review
10 - Class 19	First two labs of TEC250
10 - Class 20	Work ethic and employer expectations - Career Seeker Presentation
11 - Class 21	Introduction to Quality and Continuous Improvement/Industrial Process Control (ch 34)
11 - Class 22	Total Quality Management/Lean Manufacturing
12 - Class 23	Continuous Improvement/Quality models - 6 sigma, ISO 9000 Soldering Project
12 - Class 24	Employer Showcase and Job Fair