

# Providence Career & Technical Academy

## ELECTRICAL TECHNOLOGY 3 Syllabus

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**Time Frame:**  
2024-2025

### Course Description:

This course will serve as an introduction into the highly technical and demanding Electrical field. Safety is our top priority and will be emphasized throughout each lesson. This trade requires an in depth knowledge of key scientific theories and principals specific to and prominent in Electrical as well as cognitive mathematical problem solving.

### Students will obtain basic knowledge of the following, in no specific order:

- NEC (National Electrical Code)
- Shop Practices
- Electric Motors
- Pipe Bending
- Renewable Energy Applications
- Employability Skills
- Safety, Tools & Equipment
- Electrical Safety
- Basic Wiring
- Ohms Law
- Basic Engineering & System Design
- Basic Blueprint Reading

### Common Core Standards Addressed:

- GMP 1.6: Connect mathematical ideas and representations to one another.
- GMP 2.2: Explain the meanings of the numbers, words, pictures, symbol, gestures, tables, graphs, and concrete objects you and others use.
- GMP 3.1: Explain both what to do and why it works.
- GMP 4.1: Apply mathematical ideas to real-world situations.
- GMP 5.3: Estimate and use what you know to check the answers you find using tools.
- GMP 6.1: Communicate your mathematical thinking clearly and precisely.
- GMP 8.3: Reflect on your thinking before, during, and after you solve a problem.
- W.11-12.2: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- W.11-12.3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
- W.11-12.7: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

*An example of electrical procedural writing would be, explain the steps for installing a set of 3-way switches per the National Electrical Code.*

### Required Websites, Textbooks, Reading and Supplementary Materials:

Textbook: National Electrical code 2020, HBI Workbook, HBI-LMS Website, MC-3 curriculum, Canvas, Google Classroom, RCA House Wiring 5<sup>th</sup> Edition, Benfield conduit bending Manual, Modern Residential wiring 8th edition

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### Assignment and Examination Schedule:

Term	Credential/Outcome	Assessment (link)	Learning Activities & Resources
Junior, Term 1	Diversity in the construction industry HBI Electrical Unit 7	MC3 Associated assessment HBI Associated Assessment	In person or online class
Junior, Term 2	OSHA 10 HBI Electrical Unit 7	Career Safe HBI Associated Assessment	Online program HBI-LMS
Junior, Term 3	Heritage of the American worker/ Labor Studies Module HBI Electrical Unit 7 Skills USA	Completion of The Men Who Built America project / MC-3 HBI Associated Assessment Participation in Skills USA competition or membership activities	The Men Who Built America Project Multiple Field trips to Historic sites. HBI-LMS
Junior, Term 4	30 hours of practical / Hands-on Lab Work HBI Electrical Unit 7 Skills USA	HBI instructor created real world application HBI Associated Assessment Participation in Skills USA competition or membership activities	Hands on applications HBI-LMS

### Grading Policy:

We encourage all students to come to class prepared, do their homework and participate in all class activities. However in an effort to measure students true knowledge only assessments, tests and quizzes will be factored in the score of all students. Summative assessments are worth 50% and formative assessments are 50% of students' final grade. Any student who obtains a score of less than 70% in any classroom summative assessment will be qualified to retake the assessment only after he/she completes all necessary preparatory assignments.

### EXPECTATIONS:

#### Safety

We expect all students to thoroughly understand and observe any and all possible safety issues inside and outside the classroom. Due to the inherent and associated risks, safety training will take place at the beginning of each school year. Horseplay and not adhering to proper safety will affect not only the "Shop Safety" portion of the grade, but will also limit the amount of "Class Work" this student is able to perform.

**We strongly caution students from performing any work observed and/or learned from this class without supervision of a licensed professional until professionally and legally certified.**

#### Effort

We expect all students to give 100% and always try their hardest. Our responsibility is to make sure this effort is rewarded with learning.

#### Conduct

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We expect all students to adhere to the school's handbook regarding classroom conduct. We believe a student performs at their best in a comfortable, safe environment on the physical and emotional levels. Teasing, bullying, hurtful and disrespectful behavior will NOT be tolerated.

#### **PCTA Electrical Technology Prior to RTI**

1. The electrical department shall identify on a monthly basis any student who has frequent absences, several missed assignments, and lack of productivity in the lab area.
2. Upon identifying student with needs a meeting shall be made with the student, guidance and the Cluster Administrator to evaluate the student's lack of performance when attending electrical class. This meeting will allow the student and instructor to produce a comprehensive plan with the help of a guidance counselor and the Cluster Administrator to get the student to the appropriate performance level. This gives the student the opportunity to be a part of his or her education and redirection of their Career and Technical Education Training.
3. If the student does not comply with the agreement within 2 weeks, a representative from the electrical department will contact the guidance department to make an appointment for a second conference including the parent to discuss any issues or concerns about their child.
4. If student performance continues to decline the student will be referred to RTI (see below for RTI plan)

#### **RTI Plan**

1. The electrical department will meet once a month to discuss any potential students who are in the "at risk" category. The "at risk" category is defined as any freshmen or sophomore student missing more than 22 days in one quarter, also any student who fails one full module from the curriculum. The above will apply to juniors and seniors with the exception of if the student misses 11 days or more per a quarter.
2. Once any "at risk" students have been identified a spreadsheet shall be forwarded to guidance and special education. The spread sheet will be filed permanently in the electrical department.
3. A meeting shall be scheduled with the RTI team to discuss further actions to create a comprehensive plan for the student's to succeed.
4. Upon the student's completion of RTI the Electrical department shall contact the RTI team to discuss whether the student shall be referred to special education or if they can be dismissed from the Intervention plan.