

Core Curriculum

1st Session Syllabus

2025-2026 except 2nd year



Core Curriculum: Course Selection Per Session

1st Session Core	
PTSI Online Learning System Review	0
Harassment Prevention: Awareness and Responsibilities - 2025 - CML	0
Constructing Your Future - CML	0.5
Introduction to Apprenticeship - CML	3
Electrical Job Information 1 - CML	7.5
Conduit System Fabrication 1 - CML	4
Applied Codeology, Navigating the 2023 NEC - CML	4
Electrical Theory 1: Direct Current - CML	15
Code, Standards, and Practices 1, Based on the 2023 NEC - CML	1.5
Construction Drawings - CML	3.5
Code, Standards, and Practices 2, Based on the 2023 NEC - CML	4
Electrical Industry Applications Manual, Lesson 1 - Splicing Conductors	0.25
Electrical Industry Applications Manual, Lesson 2 - Installing a Duplex Receptacle	0.25
Electrical Industry Applications Manual, Lesson 3 - Installing a Single Pole Switch	0.25
Electrical Industry Applications Manual, Lesson 4 - Installing a Switched Duplex Receptacle	0.25
Electrical Industry Applications Manual, Lesson 8 - Using a Hacksaw	0.25
Electrical Industry Applications Manual, Lesson 9 - Lifting and Carrying Conduit	0.25
Electrical Industry Applications Manual, Lesson 11 - Hand Bending a 90° Stub-up	0.25
Electrical Industry Applications Manual, Lesson 12 - Hand Bending a Box Offset	0.25

Core Curriculum: 1st Session Core Courses

	Credits	Page	Date
PTSI Online Learning System Review			
PTSI001	0.0	1	
Harassment Prevention: Awareness and Responsibilities - 2025 - CML			
J158LM.F	0.0	2	
Constructing Your Future - CML			
J200LM.J1	0.5	2	
Introduction to Apprenticeship - CML			
J200LM.J2	3.0	3	
Electrical Job Information 1 - CML			
J221LM.P	7.5	3	
Conduit System Fabrication 1 - CML			
J204LM.I1	4.0	4	
Applied Codeology, Navigating the 2023 NEC - CML			
J207LM.N	4.0	5	
Electrical Theory 1: Direct Current - CML			
J202LM.M	15.0	6	
Code, Standards, and Practices 1, Based on the 2023 NEC - CML			
J231LM.N	1.5	7	
Construction Drawings - CML			
J244LM.J1	3.5	8	
Code, Standards, and Practices 2, Based on the 2023 NEC - CML			
J232LM.N1	4.0	8	

Core Curriculum: 1st Session Core Courses

	Credits	Page	Date
Electrical Industry Applications Manual, Lesson 1 - Splicing Conductors			
≡ J300.K	0.25	9	
Electrical Industry Applications Manual, Lesson 2 - Installing a Duplex Receptacle			
≡ J300.K	0.25	9	
Electrical Industry Applications Manual, Lesson 3 - Installing a Single Pole Switch			
≡ J300.K	0.25	9	
Electrical Industry Applications Manual, Lesson 4 - Installing a Switched Duplex			
≡ J300.K	0.25	9	
Electrical Industry Applications Manual, Lesson 8 - Using a Hacksaw			
≡ J300.K	0.25	9	
Electrical Industry Applications Manual, Lesson 9 - Lifting and Carrying Conduit			
≡ J300.K	0.25	9	
Electrical Industry Applications Manual, Lesson 11 - Hand Bending a 90° Stub-up			
≡ J300.K	0.25	9	
Electrical Industry Applications Manual, Lesson 12 - Hand Bending a Box Offset			
≡ J300.K	0.25	9	

Core Curriculum: Course Level and Credit Summary

PTSI Online Learning System Review

Item Code: PTSI001

Core Curriculum Year: 1

Core Credits

Advanced Credits

0.0

Course Prerequisite(s): None

Other Prerequisites: None

Notifications:

This course is designed to inform the users of the ProTech Skills Institute (PTSI) Online Learning System and its associated resources with the basics of how to interact with the tools. This course shows the user how the system is laid out and provides insight into how to get the most out of this

Required Material(s):

Lesson 1 Online Learning System Layout

Lesson 2 My Records

Lesson 3 PTSI Mobile App

Harassment Prevention: Awareness and Responsibilities - 2025 - CML

Item Code: J158LM.F

Core Curriculum Year: 1

Core Credits

Advanced Credits

0.0

Course Prerequisite(s): None

Other Prerequisites: None

Notifications:

This course meets DOL and Committee requirements to provide anti-harassment training to apprentices

Required Material(s):

Lesson 1 Prohibited Harassment

Lesson 2 Sexual Harassment

Lesson 3 Reporting Harassment

Core Curriculum: Course Level and Credit Summary

Constructing Your Future - CML

Item Code: J200LM.J1

Core Curriculum Year: 1

Core Credits

Advanced Credits

0.5

Course Prerequisite(s): None

Other Prerequisites: None

Required Material(s):

- Lesson 1 What to Expect
- Lesson 2 Opportunities Abound
- Lesson 3 Personal Responsibilities & Expectations
- Lesson 4 Safety Never Takes a Break
- Lesson 5 What it Takes to Succeed

Introduction to Apprenticeship - CML

Item Code: J200LM.J2

Core Curriculum Year: 1

Core Credits

Advanced Credits

3.0

Course Prerequisite(s): Constructing Your Future

Other Prerequisites: None

Required Material(s):

- Lesson 1 Welcome to the Beginning of Your Electrical Career!
- Lesson 2 Preparing for Your Apprenticeship
- Lesson 3 The Economics of Working in Construction
- Lesson 4 The Organized Electrical Industry
- Lesson 5 Reaping the Rewards of the IBEW-NECA Partnership

Core Curriculum: Course Level and Credit Summary

Electrical Job Information 1 - CML

Item Code: **J221LM.P**

Core Curriculum Year: 1

Core Credits

Advanced Credits

7.5

Course Prerequisite(s): None

Other Prerequisites: None

Required Material(s):

- Lesson 1 Safety and Awareness in the Workplace of an Electrical Worker
- Lesson 2 Identifying Some Basic Tools and Common Materials of the Electrical Trade
- Lesson 3 Basics of Insulated Conductors
- Lesson 4 Choosing and Installing Anchors and Fasteners
- Lesson 5 Types of Building Construction
- Lesson 6 Conductor Installation
- Lesson 7 Devices and Switches
- Lesson 8 Introduction to Firestopping
- Lesson 9 Sizing Building Wire
- Lesson 10 Topic Review

Core Curriculum: Course Level and Credit Summary

Conduit System Fabrication 1 - CML

Item Code: J204LM.I1

Core Curriculum Year: 1

Core Credits

Advanced Credits

4.0

Course Prerequisite(s): Electrical Job Information 1

Other Prerequisites: None

Required Material(s):

• *Conduit Bending and Fabrication Textbook (\$495)*

• *TI-30X IIS Solar Calculator (\$159)*

- Lesson 1 Raceways and Conduit Systems
- Lesson 2 Cutting and Threading Conduit
- Lesson 3 Hand Bending 90° Bends
- Lesson 4 Hand Bending Offsets and Kicks
- Lesson 5 Hand Bending Saddles and Corner Offsets
- Lesson 6 Underground Conduit Installation
- Lesson 7 Resources
- Lesson 8 Support - Labs

Core Curriculum: Course Level and Credit Summary

Applied Codeology, Navigating the 2023 NEC - CML

Item Code: J207LM.N

Core Curriculum Year: 1

Core Credits

Advanced Credits

4.0

Course Prerequisite(s): Electrical Job Information 1

Other Prerequisites: None

Required Material(s):

• ***Applied Codeology Textbook (S01723)***

• ***National Electrical Code - 2023 (S1150)***

- Lesson 1 Overview, Organization, and Chapter 1 of the *National Electrical Code*
- Lesson 2 Planning the Installation
- Lesson 3 Building the Installation
- Lesson 4 Using the Electricity
- Lesson 5 Special Occupancies
- Lesson 6 Special Equipment
- Lesson 7 Special Conditions
- Lesson 8 Communications
- Lesson 9 Tables and the Informative Annexes
- Lesson 10 The Codeology Method
- Lesson 11 Post-Course Assessment

Core Curriculum: Course Level and Credit Summary

Electrical Theory 1: Direct Current - CML

Item Code: J202LM.M

Core Curriculum Year: 1

Core Credits

Advanced Credits

15.0

Course Prerequisite(s): None

Other Prerequisites: None

Required Material(s):

- *DC Theory Textbook (S640)*
- *TI-30X IIS Solar Calculator (S159)*
- *Test Instruments and Applications Textbook (S571)*
- *Student Notebook 1 (N202)*
- *Building a Foundation in Mathematics (S665)*
- *Ugly's Electrical References (S1154)*

- Lesson 1 Introduction to DC Theory: Terminology and the Basics
- Lesson 2 Series Circuits
- Lesson 3 Parallel Circuits
- Lesson 4 Combination Circuits
- Lesson 5 DC Circuit Analysis
- Lesson 6 Switches and Conductors
- Lesson 7 Magnetism and Electromagnetism
- Lesson 8 Resources
- Lesson 9 Support - Labs
- Lesson 10 Final Circuit Assessment

Core Curriculum: Course Level and Credit Summary

Code, Standards, and Practices 1, Based on the 2023 NEC - CML

Item Code: J231LM.N

Core Curriculum Year: 1

Core Credits

Advanced Credits

1.5

Course Prerequisite(s): None

Other Prerequisites: None

Required Material(s):

• *National Electrical Code - 2023 (S1150)*

• *Electrical Systems Textbook (S1170)*

Lesson 1 Introduction to the NEC

Lesson 2 Interpreting Language of the NEC

Lesson 3 Understanding and Applying Article 110

Construction Drawings - CML

Item Code: J244LM.J1

Core Curriculum Year: 1

Core Credits

Advanced Credits

3.5

Course Prerequisite(s): None

Other Prerequisites: None

Required Material(s):

• *Construction Drawings Textbook (S748)*

• *electrical training ALLIANCE Architectural Scale (S187)*

• *Commercial Blueprints (S136.H)*

• *Student Notebook 1 (N202)*

Lesson 1 Introduction to Blueprints and the Design Process

Lesson 2 Scaling and Dimensions

Lesson 3 Plan Views

Lesson 4 Elevations

Lesson 5 Details and Sections

Lesson 6 Schedules and Specifications

Core Curriculum: Course Level and Credit Summary

Code, Standards, and Practices 2, Based on the 2023 NEC - CML

Item Code: J232LM.N1

Core Curriculum Year: 1

Core Credits

Advanced Credits

4.0

Course Prerequisite(s): Code, Standards, and Practices 1, Level I

Other Prerequisites: None

Required Material(s):

• *National Electrical Code - 2023 (S1150)*

• *Electrical Systems Textbook (S1170)*

- Lesson 1 An Introduction to Branch Circuits
- Lesson 2 Feeders and Outside Branch Circuits
- Lesson 3 Services
- Lesson 4 Conduit Raceway Basics
- Lesson 5 *NEC* Requirements for Cable Assemblies
- Lesson 6 General Requirements for Wiring Methods and Materials
- Lesson 7 Conductors for General Wiring

Core Curriculum: Course Level and Credit Summary

Applications Manual

Item Code: J300.K

Core Curriculum Year: 1 and 2

Core Credits

Advanced Credits

Level I/II

Course Prerequisite(s): None

Required Material(s): None

Lesson 1	Splicing Conductors	0.25
Lesson 2	Installing a Duplex Receptacle	0.25
Lesson 3	Installing a Single Pole Switch	0.25
Lesson 4	Installing a Switched Duplex Receptacle	0.25
Lesson 5	Proper Device Installation Techniques, GFCI Rough-In	0.25
Lesson 6	Using Anchors to Install a Metal Enclosure	0.25
Lesson 7	Installing a Retrofit "Old Work" Electrical Box	0.25
Lesson 8	Using a Hacksaw	0.25
Lesson 9	Lifting and Carrying Conduit	0.25
Lesson 10	Erecting an Extension Ladder	0.25
Lesson 11	Hand Bending a 90° Stub-up	0.25
Lesson 12	Hand Bending a Box Offset	0.25
Lesson 13	Cutting a Hole in a Metal Enclosure for an EMT Connector	0.25
Lesson 14	Installing a Raceway Support System (Trapeze)	0.25
Lesson 15	Threading Conduit (Tapered Thread)	0.25
Lesson 16	Installing Flexible Metallic Conduit	0.25
Lesson 17	Installing Armor Clad and Metal Clad Cables	0.25
Lesson 18	Installing a Luminaire (Recessed "Can" Fixture)	0.25
Lesson 19	Installing a Luminaire (2' x 4' Fluorescent)	0.25
Lesson 20	Wire Pulling Techniques	0.25
Lesson 21	Terminating a Category 5e or 6/6A Work Area Outlet	0.25
Lesson 22	Labeling and Marking	0.25
Lesson 23	"Trimming Out" an Electrical Panel	0.25
Lesson 24	Exothermic Welding of Copper Conductors	0.25
Lesson 25	Connecting a Dual-Voltage, Wye-Wound Motor	0.25

ATTENTION: Your JATC will choose four out of the 25 Applications Manual lessons to be presented to students during the first session, and four out of the remaining Applications to be presented to students during the second session. Any Applications presented above the four per session must be matched with additional classroom time beyond 180 hours.