

Core Curriculum

3rd Year Syllabus

None



Core Curriculum: Course Selection Per Year

3rd Year Core	
Preparing for Leadership: Personal Qualities - 2nd Ed.	2
Rigging for the Electrical Industry - CML	3.5
** Coming Soon ** Construction Documentation - CML	3.5
Code, Standards, and Practices 3, Based on the 2023 NEC - CML	2.5
** Coming Soon ** Code, Standards, and Practices 6, Based on the 2023 NEC - CML	1.5
Applied Grounding and Bonding, Based on the 2023 NEC - CML	5
Fire Alarm Systems, Based on the 2023 NEC - CML	4
Test Instruments, Level I	2
Transformers, Level II, Based on the 2023 NEC - 3rd Ed.	2
Transformers, Level III - 3rd Ed.	1
** Coming Soon ** Electrical Safety-Related Work Practices, Based on the 2024 70E - CML	4
Lighting Essentials, Level I - 2nd Ed.	1.5
Lighting Essentials, Level II - 2nd Ed.	1.5

Core Curriculum: 3rd Year Core Courses

	Credits	Page	Date
Preparing for Leadership: Personal Qualities - 2nd Ed.			
J900LM.A	2.0	1	
Rigging for the Electrical Industry - CML			
J241LM.K1	3.5	2	
** Coming Soon ** Construction Documentation - CML			
J244LM.J2	3.5	3	
Code, Standards, and Practices 3, Based on the 2023 NEC - CML			
J233LM.N	2.5	4	
** Coming Soon ** Code, Standards, and Practices 6, Based on the 2023 NEC - CML			
J236LM.N	1.5	5	
Applied Grounding and Bonding, Based on the 2023 NEC - CML			
J210LM.N1	5.0	6	
Fire Alarm Systems, Based on the 2023 NEC - CML			
J211LM.N	4.0	7	
Test Instruments, Level I			
J285LM.H1	2.0	8	
Transformers, Level II, Based on the 2023 NEC - 3rd Ed.			
J205LM.I2_23	2.0	9	
Transformers, Level III - 3rd Ed.			
J205LM.I3a	1.0	9	
** Coming Soon ** Electrical Safety-Related Work Practices, Based on the 2024 70E -			
J444LM.N	4.0	10	

Core Curriculum: 3rd Year Core Courses

	Credits	Page	Date
Lighting Essentials, Level I - 2nd Ed.			
J259LM.K1	1.5	11	
Lighting Essentials, Level II - 2nd Ed.			
J259LM.K2	1.5	12	

Core Curriculum: Course Level and Credit Summary

Preparing for Leadership: Personal Qualities - 2nd Ed.

Item Code: J900LM.A

Core Curriculum Year: 3

Core Credits

Advanced Credits

2.0

Course Prerequisite(s): None

Other Prerequisites: None

Notifications:

Instructors must have satisfactorily completed the TTT version of this course to be enrolled into this

Required Material(s):

- *Effective Leadership Skills Textbook (\$197)*

- Lesson 1 The Contracting Business
- Lesson 2 Personal Qualities: Professionalism And Respect
- Lesson 3 Personal Qualities: Credibility and Character
- Lesson 4 Personal Qualities: Ethics and Integrity
- Lesson 5 Personal Qualities: Teaching and Learning
- Lesson 6 Communications: Effective Communication
- Lesson 7 Planning: The Importance of Planning
- Lesson 8 Planning: Planning Challenges
- Lesson 9 Communications: Crew Support and Morale
- Lesson 10 Communications: Disruptive Behaviors

Core Curriculum: Course Level and Credit Summary

Rigging for the Electrical Industry - CML

Item Code: J241LM.K1

Core Curriculum Year: 3

Core Credits

Advanced Credits

3.5

Course Prerequisite(s): None

Other Prerequisites: None

Required Material(s):

- ***Rigging for the Electrical Industry Textbook (S761)***

- Lesson 1 Hoisting Safety
- Lesson 2 Cranes
- Lesson 3 Lift Planning
- Lesson 4 Signaling
- Lesson 5 Load Weight and Balance
- Lesson 6 Slings and Sling Hitches
- Lesson 7 Rigging Equipment Maintenance
- Lesson 8 Rigging Hardware
- Lesson 9 Chains and Chain Slings
- Lesson 10 Synthetic Slings
- Lesson 11 Wire Rope and Wire Rope Slings
- Lesson 12 Fiber Rope and Knots
- Lesson 13 Block and Tackle
- Lesson 14 Hoists

Core Curriculum: Course Level and Credit Summary

**** Coming Soon ** Construction Documentation - CML**

Item Code: J244LM.J2

Core Curriculum Year: 3

Core Credits

Advanced Credits

3.5

Course Prerequisite(s): Construction Drawings

Other Prerequisites: 4000 Hours of OJT

Notifications:

Course expected 2024-2025.

Required Material(s):

• *Construction Documentation Textbook (S749)*

• *electrical training ALLIANCE Architectural Scale (S187)*

Lesson 1 Moving Beyond Construction Drawings

Lesson 2 Introduction to Construction Estimating

Lesson 3 Project Delivery Methodologies

Lesson 4 Construction Project Communication

Lesson 5 Project Detailing

Lesson 6 Prefabrication

Lesson 7 Project Closeout and Building Operation

Core Curriculum: Course Level and Credit Summary

Code, Standards, and Practices 3, Based on the 2023 NEC - CML

Item Code: J233LM.N

Core Curriculum Year: 3

Core Credits

Advanced Credits

2.5

Course Prerequisite(s): Elect. Code Calc., Lvl I or FCC CML; Code, Standards, and Practices 2, Level II

Other Prerequisites: None

Required Material(s):

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

- Lesson 1 Purpose of Overcurrent Protection and Types of Overcurrents
- Lesson 2 Overcurrent Protective Device Categories
- Lesson 3 Overcurrent Protective Device Ratings
- Lesson 4 Types of OCPDs—Circuit Breakers
- Lesson 5 Types of OCPDs—Fuses
- Lesson 6 Practical Guidelines for OCPD Ampere Rating Sizing
- Lesson 7 Special Conductor Overcurrent Protection Permitted, Including Taps
- Lesson 8 Calculation of Available Fault Current

Core Curriculum: Course Level and Credit Summary

**** Coming Soon ** Code, Standards, and Practices 6, Based on the 2023**

Item Code: J236LM.N

Core Curriculum Year: Advanced

Core Credits

Advanced Credits

1.5

Course Prerequisite(s): Code, Standards, and Practices 3

Other Prerequisites: None

Notifications:

Course coming soon.

Required Material(s):

- *National Electrical Code - 2023 (S1150)*

Lesson 1 Motor Branch-Circuit Devices and Protection – NEC Article 430

Lesson 2 Motor Branch Circuits and Air-Conditioning and Refrigeration Equipment

Lesson 3 Transformer Protection—Article 450

Lesson 4 Interrupting Rating: Fully Rated and Series Rated Systems

Lesson 5 Equipment Short-Circuit Protection

Lesson 6 Selective Coordination

Lesson 7 Ground-Fault Protection of Equipment

Core Curriculum: Course Level and Credit Summary

Applied Grounding and Bonding, Based on the 2023 NEC - CML

Item Code: J210LM.N1

Core Curriculum Year: 3

Core Credits

Advanced Credits

5.0

Course Prerequisite(s): AC Theory, Level II/III

Other Prerequisites: None

Notifications:

Course coming soon.

Required Material(s):

• ***Grounding and Bonding Textbook (S36823)***

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

- Lesson 1 Introduction to Grounding
- Lesson 2 Grounding Electrodes and the Grounding Electrode System
- Lesson 3 Grounding Requirements for Services and Grounded Conductors
- Lesson 4 Grounding Electrode Conductors
- Lesson 5 Bonding Requirements
- Lesson 6 Equipment Grounding Conductors
- Lesson 7 Grounding Electrical Equipment
- Lesson 8 Isolated/Insulated Grounding Circuits and Receptacles
- Lesson 9 Grounding at Separate Buildings or Structures
- Lesson 10 Grounding Electrical Systems
- Lesson 11 Grounding and Bonding for Separately Derived Systems
- Lesson 12 Grounding and Bonding for Special Occupancies
- Lesson 13 Grounding and Bonding for Special Equipment
- Lesson 14 Grounding and Bonding for Special Systems

Core Curriculum: Course Level and Credit Summary

Fire Alarm Systems, Based on the 2023 NEC - CML

Item Code: J211LM.N

Core Curriculum Year: Advanced

Core Credits

Advanced Credits

4.0

Course Prerequisite(s): DC Theory, Level I/IV; Job Information, Level I

Other Prerequisites: None

Required Material(s):

• *Fire Alarm Systems Textbook (S1046)*

• *National Electrical Code - 2023 (S1150)*

Lesson 1	Introduction to Fire Alarm Systems
Lesson 2	Fundamentals and System Requirements
Lesson 3	Initiating Devices
Lesson 4	Notification Appliances
Lesson 5	Wiring and Wiring Methods
Lesson 6	System Interfaces and Safety Control Functions
Lesson 7	Advanced Detection Topics
Lesson 8	Emergency Communications Systems and Emergency Voice/Alarm Communications Systems
Lesson 9	Public Emergency Alarm Reporting Systems and Supervising Stations
Lesson 10	Single- and Multiple-Station Alarms and Household Fire Alarm Systems
Lesson 11	Plans and Specifications
Lesson 12	Inspection, Testing, and Maintenance
Lesson 13	IPSI Sample Exam Fire Alarm Certification Program Level 1 Interior
Lesson 14	Sample NICET Exam

Core Curriculum: Course Level and Credit Summary

Test Instruments, Level I

Item Code: J285LM.H1

Core Curriculum Year: Advanced

Core Credits

Advanced Credits

2.0

Course Prerequisite(s): AC Systems, Level I

Other Prerequisites: None

Required Material(s):

- *Test Instruments and Applications Textbook (S571)*

Lesson 1	Voice-Data-Video (VDV) Test Instruments
Lesson 2	Power Quality Test Instruments
Lesson 3	Medium (and High) Voltage and Insulation Test Instruments
Lesson 4	Instrumentation and Process Control Test Instruments
Lesson 5	Special Maintenance Test Instruments
Lesson 6	Troubleshooting

Transformers, Level II, Based on the 2023 NEC - 3rd Ed.

Item Code: J205LM.I2_23

Core Curriculum Year: 3

Core Credits

Advanced Credits

2.0

Course Prerequisite(s): Code Calc Lvl II OR Elec Code Calc Lvl I; Transformers, Level I

Other Prerequisites: None

Required Material(s):

- *Transformer Principles and Applications Textbook (S476)*
- *National Electrical Code - 2023 (S1150)*
- *Code Calculations Textbook - 2023 (S00823)*

Lesson 1	Reactors and Isolation Transformers
Lesson 2	Autotransformers
Lesson 3	Buck-Boost Transformers
Lesson 4	Understanding Transformer Overcurrent Protection
Lesson 5	Transformer Overcurrent Protection with Associated Secondary Conductor Rules

Core Curriculum: Course Level and Credit Summary

Transformers, Level III - 3rd Ed.

Item Code: J205LM.I3a

Core Curriculum Year: Advanced

Core Credits

Advanced Credits

1.0

Course Prerequisite(s): Transformers, Level I

Other Prerequisites: None

Required Material(s):

- *Transformer Principles and Applications Textbook (S476)*

Lesson 1	Electrical Safety
Lesson 2	Special Transformers
Lesson 3	Special Connections
Lesson 4	Selection and Installation
Lesson 5	Maintenance and Troubleshooting

Core Curriculum: Course Level and Credit Summary

**** Coming Soon ** Electrical Safety-Related Work Practices, Based on the**

Item Code: J444LM.N

Core Curriculum Year: 3

Core Credits

Advanced Credits

4.0

Course Prerequisite(s): None

Other Prerequisites: None

Notifications:

Course coming soon.

Required Material(s):

- **Electrical Safety-Related Work Practices Textbook (S1044)**

- Lesson 1 Electrical Safety Culture
- Lesson 2 Electrical Hazard Awareness
- Lesson 3 Introduction to OSHA and the Control of Hazardous Energy
- Lesson 4 Introduction to *NFPA 70E*[®]
- Lesson 5 Work Involving Electrical Hazards
- Lesson 6 Fault Current Fundamentals
- Lesson 7 Identifying Overcurrent Protective Device Types
- Lesson 8 Methods to Select Arc Flash PPE
- Lesson 9 Maintenance Considerations
- Lesson 10 Eliminating or Reducing Hazards by Design and Upgrades

Core Curriculum: Course Level and Credit Summary

Lighting Essentials, Level I - 2nd Ed.

Item Code: J259LM.K1

Core Curriculum Year: Advanced

Core Credits

Advanced Credits

1.5

Course Prerequisite(s): None

Other Prerequisites: 4000 Hours of OJT

Required Material(s):

- *Lighting Design Basics Textbook (S699)*

Lesson 1	Basic Concepts in Lighting
Lesson 2	The Science of Light
Lesson 3	Qualities of Light Sources
Lesson 4	Daylighting
Lesson 5	Lamps
Lesson 6	Luminaires
Lesson 7	Lighting Controls
Lesson 8	Quantity and Quality of Light

Core Curriculum: Course Level and Credit Summary

Lighting Essentials, Level II - 2nd Ed.

Item Code: J259LM.K2

Core Curriculum Year: Advanced

Core Credits

Advanced Credits

1.5

Course Prerequisite(s): Lighting Essentials, Level I - 2nd Ed.

Other Prerequisites: None

Required Material(s):

- ***Lighting Design Basics Textbook (S699)***

Lesson 1	Basic Lighting Retrofit and Energy Codes
Lesson 2	Understanding Fluorescent and HID Lighting Terminology
Lesson 3	The ABCs of Electronic Fluorescent Ballasts
Lesson 4	The ABCs of High Intensity Discharge (HID) Ballasts I
Lesson 5	The ABCs of High Intensity Discharge (HID) Ballasts II
Lesson 6	Introduction to LED Lighting and Technology
Lesson 7	LED Lighting in Detail
Lesson 8	LED Lighting Applications