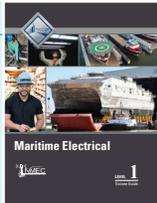


L1 MARITIME ELECTRICAL

LEVEL 1



Curriculum Notes

- 167.5 Hours
- Includes 97.5 hours of *Maritime Industry Fundamentals*, which is a prerequisite for Level One completion and must be purchased separately.
 - Hardcover: ISBN 978-0-13-456850-1
- Published: 2019
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK

ISBN

Trainee Guide: \$69.99

978-0-13-569834-1

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Orientation to the Electrical Trade (2.5 Hours)

ISBN 978-0-13-480474-3

(Module ID 26101-17) Provides an overview of the electrical trade and discusses the career paths available to electricians.

Electrical Safety (10 Hours)

ISBN 978-0-13-480477-4

(Module ID 26102-17) Covers safety rules and regulations for electricians. Teaches the necessary precautions to take for various electrical hazards found on the job. Also covers the OSHA-mandated lockout/tagout procedure.

Electrical Theory (7.5 Hours)

ISBN 978-0-13-480481-1

(Module ID 26104-17) Introduces series, parallel, and series-parallel circuits. Covers resistive circuits, Kirchhoff's voltage and current laws, and circuit analysis.

Introduction to Electrical Circuits (7.5 Hours)

ISBN 978-0-13-480479-8

(Module ID 26103-17) Offers a general introduction to the electrical concepts used in Ohm's law applied to DC circuits. Includes atomic theory, electromotive force, resistance, and electric power equations.

Basic Electrical Construction Drawings (7.5 Hours)

ISBN 978-0-13-480496-5

(Module ID 26110-17) Focuses on electrical prints, drawings, and symbols. Teaches the types of information that can be found on schematics, one-lines, and wiring diagrams.

Electrical Test Equipment (5 Hours)

ISBN 978-0-13-478339-0

(Module ID 26112-17) Focuses on proper selection, inspection, and use of common electrical test equipment, including voltage testers, clamp-on ammeters, ohmmeters, multimeters, phase/motor rotation testers, and data recording equipment. Also covers safety precautions and meter category ratings.

Raceways & Fittings (20 Hours)

ISBN 978-0-13-480488-0

(Module ID 26108-17) Introduces the types and applications of raceways, wireways, and ducts. Stresses the appropriate NEC® requirements.

Device Boxes (10 Hours)

ISBN 978-0-13-480491-0

(Module ID 26106-17) Covers the hardware and systems used by an electrician to mount and support boxes, receptacles, and other electrical components. Covers NEC® fill and pull requirements for device, pull, and junction boxes under 100 cubic inches.

L2 MARITIME ELECTRICAL

LEVEL 2

Curriculum Notes

- 100 Hours
- Published: 2019
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK

ISBN

Trainee Guide: \$99.99

978-0-13-569833-4

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Alternating Current (17.5 Hours)

ISBN 978-0-13-478337-6

(Module ID 26201-17) Focuses on forces that are characteristic of alternating-current systems and the application of Ohm's law to AC circuits.

Grounding and Bonding (15 Hours)

ISBN 978-0-13-480506-1

(Module ID 26209-17) Focuses on the purpose of grounding and bonding electrical systems. Thoroughly covers NEC® requirements.

Conductors and Cables (10 Hours)

ISBN 978-0-13-480494-1

(Module ID 26109-17) Focuses on the types and applications of conductors and covers proper wiring techniques. Stresses the appropriate NEC® requirements.

Conductor Installations (10 Hours)

ISBN 978-0-13-480499-6

(Module ID 26206-17) Covers the transportation, storage, and setup of cable reels; methods of rigging; and procedures for complete cable pulls in raceways and cable trays.

Conductor Terminations and Splices (7.5 Hours)

ISBN 978-0-13-480504-7

(Module ID 26208-17) Describes methods of terminating and splicing conductors of all types and sizes, including preparing and taping conductors.

Pull and Junction Boxes (12.5 Hours)

ISBN 978-0-13-480498-9

(Module ID 26205-17) Driven by the NEC®. Explains how to select and size pull boxes, junction boxes, and handholes.

Circuit Breakers and Fuses (12.5 Hours)

ISBN 978-0-13-480509-2

(Module ID 26210-17) Describes fuses and circuit breakers along with their practical applications. Also covers sizing.

Electric Lighting (15 Hours)

ISBN 978-0-13-478335-2

(Module ID 26203-17) Introduces the basic principles of human vision and the characteristics of light. Focuses on the handling and installation of various types of lamps and lighting fixtures.

Continued on following page

L3 MARITIME ELECTRICAL	
LEVEL 3	
Curriculum Notes	
<ul style="list-style-type: none"> • 97.5 Hours • Published: 2019 • Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc. 	
PAPERBACK	ISBN
Trainee Guide: \$99.99	978-0-13-569835-8

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Rigging Practices (15 Hours)

ISBN 978-0-13-498801-6

(Module ID 38102) Presents basic rigging, which refers to the preparation of a load for movement, as well as the preparation of hardware and other components used to connect the load to the crane. Rigging must be completed safely and effectively, resulting in a reliable connection to the load. An understanding of rigging fundamentals is essential to safely operate cranes and move/position heavy equipment, components, and structures.

Distribution Equipment (12.5 Hours)

ISBN 978-0-13-480524-5

(Module ID 26306-17) Discusses switchboards and switchgear, including installation, grounding, and maintenance requirements. This module also includes electrical drawings of distribution equipment.

Motors: Theory and Application (20 Hours)

ISBN 978-0-13-478336-9

(Module ID 26202-17) Covers AC and DC motors, including the main components, circuits, and connections.

Motor Controls (12.5 Hours)

ISBN 978-0-13-480536-8

(Module ID 26311-17) Provides information on selecting, sizing, and installing motor controllers. Also covers control circuit pilot devices and basic relay logic.

Transformers (12.5 Hours)

ISBN 978-0-13-480527-6

(Module ID 26307-17) Discusses transformer types, construction, connections, protection, and grounding.

Specialty Transformers (10 Hours)

ISBN 978-0-13-480549-8

(Module ID 26406-17) Covers various types of transformers and their applications. Also provides information on selecting, sizing, and installing these devices.

Hazardous Locations (15 Hours)

ISBN 978-0-13-480522-1

(Module ID 26304-17) Covers the NEC® requirements for equipment installed in various hazardous locations.

L4 MARITIME ELECTRICAL	
LEVEL 4	
Curriculum Notes	
<ul style="list-style-type: none"> • 90 Hours • Published: 2019 • Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc. 	
PAPERBACK	ISBN
Trainee Guide: \$99.99	978-0-13-569830-3

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Control Systems and Fundamental Concepts

(12.5 Hours)

ISBN 978-0-13-480511-5

(Module ID 26211-17) Gives basic descriptions of various types of contactors and relays along with their practical applications.

Advanced Controls (20 Hours)

ISBN 978-0-13-480551-1

(Module ID 26407-17) Discusses applications and operating principles of solid-state controls, reduced-voltage starters, and adjustable frequency drives. Also covers basic troubleshooting procedures.

Basic Electronic Theory (10 Hours)

ISBN 978-0-13-480546-7

(Module ID 26404-17) Explains the function and operation of basic electronic devices, including semiconductors, diodes, rectifiers, and transistors.

Fire Alarm Systems (15 Hours)

ISBN 978-0-13-480547-4

(Module ID 26405-17) Covers fire alarm control units, Digital Alarm Communicator Systems (DACS), wiring for alarm initiating and notification devices, and alarm system maintenance.

Standby and Emergency Systems (10 Hours)

ISBN 978-0-13-480543-6

(Module ID 26403-17) Explains the NEC® requirements for electric generators and storage batteries.

Fundamentals of Crew Leadership (22.5 Hours)

ISBN 978-0-13-292245-6

(Module ID 46101) Covers basic leadership skills and explains different leadership styles, communication, delegating, and problem solving. Job-site safety and the crew leader's role in safety are also discussed. Explains details and procedures for project planning, scheduling, and estimating.