

Introduction to Overhead Contact Systems Maintenance

4.5 Days, 3.2 CEUs

This course is designed to provide an introductory study of overhead contact systems to enable workers to identify parts of components of the systems and how to protect themselves while working on the system.

Maintenance technicians and linemen involved in energized catenary work will find this course invaluable.

Lab and Classroom Attire

AVO Training Institute is committed to the personal safety of each participant and require long pants and ANSI rated "safety-toe" work shoes for lab activities. Lecture courses may involve a tour of a work or shop area and for this reason open-toe shoes and shorts are not considered appropriate attire for the classroom.

Learning Objectives

To receive 3.2 CEUs, participants must attend 4.5 days of class (32 contact hours) and attain a minimum average grade of 80% (overall grade will consist of 50% lab practice and 50% final exam). Upon completion of this course the participants will demonstrate that they are able to:

- Explain safety measures to use while working on overhead contact systems.
- Identify operation, maintenance, and troubleshooting procedures for overhead contact systems.

SCOPE

Day 1* (7 contact hours)

- I. Introduction (0.5 hr)
- II. Personal Protective Grounding (3 hrs)
 - A. Regulatory Requirements for Grounding
 - B. Purpose of Protective Grounds
 - C. Sizing of Protective Grounds
 - D. Effects of Current and PPE Grounding
 - E. Grounding Equipment
 - F. Personal Protective Ground Jumper Testing
 - G. Grounding Equipment Manufacturers/Suppliers

- H. Application of Protective Grounds
 - I. Induced Voltages and Currents on Deenergized Circuits and Equipment
- III. Personal Protective Equipment (3.5 hrs)
 - A. Protective Techniques
 - B. Electrical Protective Equipment
 - C. Arc Flash Protective Equipment
 - D. Arc Blast Protective Equipment
 - E. Other Protective Equipment
 - F. Energy Detection Equipment

Day 2 (7 contact hours)

- IV. Terminology (2.5 hrs)
- V. Components (3 hrs)
 - A. Pole Attachments
 - B. Cantilevers
 - C. Head Spans
 - D. Bridle Spans
 - E. Pull-Off
 - F. Single Wire Fixed Termination
 - G. Contact Wire Bridge
 - H. Section Insulator
 - I. Disconnect Switch Attachments, Jumpers and Arresters

*Class scheduling times may vary based on discussions and size of class

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SCOPE (cont'd)

- VI. Overview (1.5 hrs)
 - A. System Description
 - B. OCS Basics

Day 3 (7 contact hours)

- VII. Preventive Maintenance and Troubleshooting (3.5 hrs)
 - A. Inspection Procedures
 - B. Troubleshooting
 - D. Insulators
 - E. When Things Go Wrong

- VIII. Corrective Maintenance Procedures (3.5 hrs)
 - A. Description
 - B. Troubleshooting
 - C. Emergency Measures

Day 4 (7 contact hours)

- IX. Lab - Hands on portion (7 hrs)

Day 5 (4 contact hours)

- X. Conclusion
 - A. Review
 - B. Exam

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STANDARD EQUIPMENT LIST
Introduction to Overhead Contact Systems Maintenance
COURSE NO. 558

REVISED: March 2022

BY: C. MARCHANT

DAYS: 4.5 DAYS

*To be provided by client

TEXT (PER 1 STUDENT)	
1	Introduction to Overhead Contact Systems Maintenance, Course 558, May 2023

MATERIALS NEEDED (PER CLASSROOM)	
QUANTITY	ITEM
*1	PROJECTOR OR TV WITH PROJECTION CAPABILITIES
*1	DRY ERASE BOARD WITH MARKERS AND ERASERS
*10	STUDENT TABLES
*10	STUDENT CHAIRS

EQUIPMENT (PER CLASSROOM)	
QUANTITY	ITEM
*1	Grounding stick
*1	Deenergized section of conductor
*1	Rubber insulated gloves - appropriate class
*1	Rubber insulated sleeves
*1	Insulating blanket
*1	Insulating line hose
*1	Available hot line tools
*1	Temporary grounds
*1	Scotch Brite
*1	Fall protection gear
*1	Web hoist
*1	Conductor grip
*1	Tools or equipment specific for OCS work, including but not limited to: hanger wire benders, slings, ratcheting straps, contact wire tools
*1	Bucket truck