



Course 250

Installation and Construction Standards in Signal Systems

INSTRUCTOR GUIDE



Table of Contents

COURSE PREPARATION	2
Checklist for Instruction	
Supplies, Audio-Visual Equipment, Internet Access	2
BEST PRACTICES FOR DELIVERING TRAINING	
COURSE DESCRIPTION	5
COURSE MATERIALS	
How to Download Course Materials	
COURSE DE IVERY	
Pre-course	9
Module 1: Overview of Installation and Construction Standards	10
Module 2: Cabling Characteristics	11
Module 2: Cabling Characteristics Module 3: Insulated lonts	12
Module 4: Impedance во ds	13
Module 5: Wayside Signals	14
Module 6: Switch Layouts	15
Module 7: Grade Crossing	
Post-course	17
APPENDIX: HANDS-ON LEARNING ACTIVITY (EMPLATE	18
Hands-On Assessment Form Template	19

Course Preparation

Checklist for Instruction

\checkmark	Confirm the training dates, location, and number of participants
	Ensure you have all materials listed in the section Materials for Instruction
	Ensure you have all that is listed in the section Supplies, Audio-Visual Equipment, and Internet Access
	Have an attendance sign-in sheet printed for each day of class
	Read and study the Instructor Guide, PowerPoint presentation, and any State or local documer tation pertaining to the local environment
	If using case studies, review the case studies ahead of time and, where applicable, select the n ost appropriate cases studies for your audience.
	Familiarize yourself with the Participant Guide
	Collaborate with local host coordinator to determine who will print the Certificate of Completion for each participant

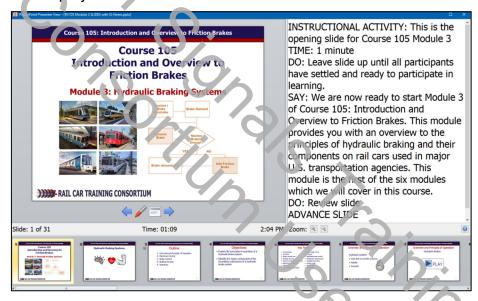
Supplies, Audio-Visual Equipment, Internet Access

The following is important for the adequate delivery of this course:

√	LCD projector compatible with a notebook computer and cables for proper connection
	Computer with software to run Microsoft PowerPoint
	Electronic remote device to advance slides in PowerPoint presentation, if available
	Projection screen (at least 6' x 6')
	Pointer (preferably laser type)
	Twenty-foot or longer extension cord
	Dry erase board with dry erase markers and eraser
	Flip chart with markers
	Supplies such as pencils, note pads, markers, highlighters
	Access to a lab, maintenance facility, signaling equipment for hands-on lessons
	Internet access
	Room audio
	All equipment should be placed and tested in the room. The instructor should check at least one hour prior to the first day of the course.

Best Practices for Delivering Training

- 1. Read through this entire Instructor Guide. Make your own notes as necessary.
- Preview the PowerPoint presentation that comes with this course and practice
 what you will say and do during each slide. Note the ways that you will customize
 how each slide will be delivered to the participants. For example, you may have
 comments to add, additional take-aways, and other ways you can enhance
 learning.
- 3. When presenting, use PowerPoint's **Presenter View option** which allows you to see your notes as you present while the participants see only the slides. When your computer is connected to the projector and you start the slide show, Presenter View appears on your computer's screen, while only the slides appear on the projector screen.



- 4. If you prefer printed instructor notes below each slide, you can create your own notes via PowerPoint's **Create Handouts option**.
- 5. Some modules of this course may contain **Hands-on Learning Activities**. Use the Recommended Hands-on Learning Activities table in the module guide to select activities that are appropriate for your location, and then use the template provided in the end of this Instructor's Guide to build out details of the activity. Use your location's Standard Operating Procedures, Job Cards, or OEM Maintenance Manuals as a reference for the safety precautions, equipment/tools/materials needed, and tasks. Review and rehearse all hands-on demonstrations.
- 6. Make sure that embedded links to videos work.
- 7. Arrive at least an hour early on class day. Give yourself plenty of time to get organized before the participants arrive.

- 8. Circulate the Attendance Sign-in Sheet each day and make sure that all participants sign into the class to mark their attendance.
- 9. Start on time and stay on track. Always start on time, even if only one participant is in the room. Keep exercises within the time limit written in the Power Point presentation.
- 10. End discussions when they cease to be productive to the learning objectives of the module. Lead participants away from digressions and tangents and focus their attention back to the lesson.
- 11. Be available for questions during breaks, after class, and during the lab or hands-on 'carning activities.
- 12. Mentor participants during each Module activity. Walk amongst the groups in class and during the labs as participants work on activities, and answer questions and offer guidance as appropriate. Ensure that participants are on track as they work. Give constructive feedback during the presentations and participant activities.
- 13. Review Questions: Review the content of each lesson throughout the course to reinforce the learning outcomes for that lesson and connect the upcoming material. Avoid YES or NO questions and try to use open-ended questions to draw participants into the material. Sample the review questions that are available in the Instructor's Guide and feel free to develop additional questions, as appropriate. Make sure that all questions directly relate to and support the learning outcomes for the Module.
- 14. Learning Objectives: At the beginning of each Mcdule, review that Module's learning outcomes. Make sure participants are fully aware of the topics in the Module. At the end of each Module, review the outcomes again and use the review questions or an activity/exercise to ensure the outcomes were met.