



NEC- Solar PV Installations

Course Outline

Course Description: This 13-module course, followed by a two-hour practice examination, is based on the 2014 National Electrical Code (NEC). It teaches the practical application of requirements specific to photovoltaic (PV) systems. Each of the first 13 modules consists of an integrated video presentation, including presentation slides, explanation, examples, and review quizzes. Modules are designed to be roughly 10-75 min. in length., with over 6 hrs. of detailed instruction.

Course Objectives: This course is designed to help provide the essentials for a better understanding of how and where the codes address solar photovoltaic (PV) systems. This course will cover the fundamental code requirements of both residential and commercial PV systems. It is designed to start with the basics of Photovoltaic requirements and lead the attendees step by step into more difficult concepts while simplifying the requirements. Hands on example components will be presented to help explain some of the code requirements concerning PV systems. This class is designed to aid inspectors, electricians, and design professionals in the plan review process of PV systems.

Texts and Readings: The 2014 National Electrical Code is the textbooks for this course. It is highly recommended that you purchase a paper-back copy of these codes, which are available online at www.iccsafe.org. A physical copy can be utilized during the actual exams, which are open book, and serves as a valuable reference for in the field inspections.

Course Outline of Topics:

Module:	Topics:	Readings:	Quiz:	Duration:
1	Solar PV Modules		Y	11 min.
2	Inverters		Y	8 min.
3	Grounded Conductors and DC Combiners		Y	17 min.
4	Types of Non-Battery PV Systems		Y	34 min.
5	PV Systems with Battery Backup		Y	50 min.
6	Disconnects and Rapid Shutdown		Y	40 min.
7	Figuring DC Voltages for String Inverters		Y	10 min.
8	Overcurrent Protection Devices & Wire Sizing		Y	32 min.
9	AC Combiners and Point of Interconnection Requirements		Y	75 min.
10	Wire Types and Wire Installation		Y	21 min.
11	Grounding & Bonding		Y	41 min.
12	Roof Installations		Y	27 min.
13	Signage		Y	11 min.
	13 Quizzes			
	69 Questions, 2 min. each	2014 NEC		138 min.
	Practice Exam	2014 NEC		120 min.
	Total Course Hours			10.5 hours



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Quizzes and Exams: Each module associated with this course will be followed by an assessment quiz of varying length. A passing score of 75% is required in order to advance to the next module. At the conclusion of the course is a timed practice exam. The exam is similar in length, content, and duration as the actual ICC exams. A passing score of 75% is required in order to obtain a certificate of completion from WC3 for this course. Topics in both the exam and the quizzes may or may not have been covered in the video modules. A thorough reading of the code may be necessary in order to progress through this course.

Expectation of Participants: This course requires that you to watch each training video, complete each quiz, as well as the exam. You are expected to read portions of the applicable code, and become familiar with its layout and organization. We recommend 2 hrs. of personal study, for each module. Marking, tabbing, and highlighting in the code book is highly recommended. We have layout out a plan and method to help you learn the material, but it's up to you to put in the work necessary for you to mater the material. You can progress through this course at your own pace; however, you only have access for 120 days.

Continuing Education Credits: Completion of this course results in **1.05 CEU's** being provided by ICC, as West Coast Code Consultants is a Preferred Provider.



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Instructor:



Doug Smith, MCP, CBO serves as both a plans examiner and building inspector for WC3. He has been an inspector since 2005 and has more than 20 years of experience in the building safety and construction industries. He has obtained over 18 ICC certifications including Certified Master Code Professional. He specializes in the requirements of the electrical code and is especially knowledgeable on the topic of solar photovoltaic systems.