SOLR2201 - Photovoltaics System Design I

Credits:	2 (2/0/0)
Description:	This course introduces the step-by-step process of designing a photovoltaic (PV) system. Participants learn about electrical and solar characteristics, system sizing strategies based on multiple variables, how to select appropriate equipment for each system type, and how to analyze site assessment data as part of the design process.
Prerequisites:	• SOLR1101 • SOLR1102
Corequisites:	
Pre/Corequisites*:	
Competencies:	1. Evaluate design priorities and goals for PV systems in different types of applications. 2. Demonstrate how solar radiation data is used in sizing. 3. Create accurate estimates for PV system performance. 4. Identify factors to consider in a site assessment, including the solar resource, environmental conditions, building and electrical codes, and utility interconnection requirements. 5. Apply data for suitability and condition of existing roof and electrical service. 6. Compare and select the features, requirements and applications of various PV systems. 7. Explain the current-voltage (I-V) characteristics for PV devices and define key I-V parameters. 8. Explain how solar radiation and operating temperatures affect PV system output. 9. Describe maximum power point tracking (MPPT) in PV equipment. 10. Calculate voltage, current and power of PV modules and batteries connected in series/parallel. 11. Describe the various performance ratings and test conditions for PV modules.
MnTC goal areas:	None

**Can be taking as a Prerequisite or Corequisite.*