

Green Technologies Institute

PHOTOVOLTAIC SYSTEMS

Introduction Designing Grid-Connected PV systems (7 Hours)

Program developed for contractors, electricians, utilities, engineers and other practitioners, with an overall goal of developing "system-knowledgeable" professionals to help ensure the safety and quality of PV system design.

Advanced Designing Grid-Connected PV Systems (7 Hours)

Advanced program designed for those who have completed the introductory PV systems design. Developed for contractors, electricians, utilities, engineers and other practitioners, with an overall goal of developing more advanced "system-knowledgeable" in the design of PV systems.

Introduction Installing Grid-Connected PV Systems (7 Hours)

Program developed for contractors, electricians, utilities, engineers and other practitioners, with an overall goal of developing "system-knowledgeable" professionals to help ensure the safety and quality of PV system installation.

Advanced Installing Grid-Connected PV Systems (7 Hours)

Advanced program designed for those who have completed the introductory PV systems installation. Developed for contractors, electricians, utilities, engineers and other practitioners, with an overall goal of developing more advanced "system-knowledgeable" in the installation of PV systems.

Designing Grid-Connected Solar Panels (Photovoltaic) Systems (7 CEUs)

ECLB# 0001050 (0800070 and 0800069) (7 CEUs): For all that have not encountered one, the first look at grid-connected PV systems can seem simple or confusing. Whether you are a novice or an expert not totally familiar with this system, you will learn about the more common solar technology that is currently being financially subsidized to produce electrical energy. The concepts of On-Grid, Off-Grid, Battery Back-up, and Grid-Tie-Only will be explained, as well as an introduction to common terms and equipment.

Installing Grid-Connected Solar Panels (Photovoltaic) Systems (7 CEUs)

ECLB# 0001050 (0800072) (7 CEUs): Learn to install grid-connected PV systems. Once you have learned how to design the system the next step is to learn the operating characteristics of PV cells, modules, arrays and power conditioning equipment, mounting/wiring the array, installing the equipment and connecting it to the utility. While designed primarily for electrical and solar contractors, this course should also be of interest to design professionals and code officials.

Understanding Electricity and Electrical Components for Photovoltaic Systems (7 CEUs)

ECLB# 0001050 (0800071): Introduces basic electrical concepts for those who wish to obtain a basic understanding of electricity before taking more advanced courses in designing and installing photovoltaic systems. Covers DC and AC electrical theory with an emphasis on the concepts that are most useful in understanding how to use the sun to make electricity and how to harness this energy source in a code-compliant manner. The course has also been designed for 6 credits of continuing education through the North American Board of Certified Energy Practitioners (NABCEP).

Inspection of Solar Panels (Photovoltaic) Systems: Criteria for Photovoltaic and Thermal Solar (4 Hours)

Whether a given system will run a television or make water hot, it must be installed properly! This course is an advanced course designed to train installers and inspectors how to ensure the safety and longevity of Solar Systems. Common mistakes that violate code compliance and affect system performance will be examined. Topics from roof penetrations to proper grounding will be covered.

Solar Photovoltaic Systems- Electricity from the Sun

For all that have not encountered one, the first look at a Solar Photovoltaic System can seem simple or confusing. This course is designed for novices to experts who are not totally familiar with the more common solar technology that is currently being financially subsidized to produce electrical energy. The concepts of on-grid, off-grid, and battery back-up and grid-tie-only will be introduced as well as an introduction to common terms and equipment.

Solar Thermal- Water Heating by the Sun

Heat water for (almost) free! Solar water heating works! This course will introduce concepts and equipment used in common residential solar water heating and explores differing types of systems. Concepts of pool heating as well as domestic water heating will be covered.

Solar Inspection- Inspection Criteria for Photovoltaic and Thermal Solar Systems

Whether a given system will run a television or make water hot, it must be installed properly. This course is designed for those that install or inspect solar systems to ensure safety and longevity. Common mistakes that violate code compliance as well as those that affect system performance will be examined. Topics from roof penetrations to proper grounding will be covered.

Solar Electric Training (Entry Level) (40 Hours)

This course provides an introduction to the fundamentals of solar technologies and a study of the history and current state of the solar photovoltaic industry. Course content includes an introduction to solar radiation, photovoltaic technologies and systems, characteristics and considerations of various system types, site selection and overview of various systems and system components.

Entry-Level NABCEP Solar Installer Exam Review (4 Hours)

This course is a supplemental 4 hour review session designed to give thorough insight and understanding of the basic concepts that are covered in the Entry-Level NABCEP Solar Installer exam, and aid in the chances of successful completion of the exam.

Advanced Solar Design (32 Hours)

This course is designed for advanced solar energy experts who need to produce high quality specifications and documentation required by architectural design teams, engineering firms, developers and discerning property owners. This course covers design drawings, feasibility reports, stringent building department reviews, the bid process, and construction administration for small to large scale, grid-tied photovoltaic (PV) systems.

NABCEP Certified PV Installer Exam Preparation (16 Hours)

This intensive two-day course is the PV industry's most thorough preparatory class for the NABCEP® photovoltaic (PV) Installer Certification exam. Students review advanced PV, electrical and safety topics, and discuss test-taking strategy. Individual assessment of strengths and weaknesses and a study plan is provided.

Solar Thermal Design & Installation (40 Hours)

This course provides students with basic knowledge of solar thermal system design, installation, troubleshooting and operation procedures for residential and commercial water and pool heating. The course is designed for all learners and includes classroom instruction, component demonstration, and a hands-on installations lab.