

CENTER FOR PROFESSIONAL DEVELOPMENT**SOLAR POWER PROFESSIONAL**

120 Hours/3 Months/Instructor-Facilitated
Course Code: **CPD120** || Course Cost: **\$1695**

OVERVIEW

Excelsior College has partnered with ed2go to bring you the Solar Power Professional program. Get the renewable energy training you need as you learn the basics of solar systems, their benefits, and their many applications. Examine the history of photovoltaic solar power, and gain a sense for where the PV industry is headed. We'll start with basic safety, including how to avoid potential accidents and how to create a safe work environment as well as the use of protective equipment. You'll master the fundamentals of electricity and solar energy, including how to calculate simple circuit values and predict solar position using solar path diagrams. Upon completion of this program, you'll have a thorough understanding of PV applications, working safety as it pertains to this field, basic electricity, and PV module fundamentals.

OBJECTIVES

Upon successful completion of this program, you'll be able to:

- Describe the history of PV technology and industry
- Describe markets and applications for PV
- Describe types of PV systems and their features and benefits.
- Demonstrate an understanding of electrical and solar terminology
- Identify safety hazards, practices, and protective equipment used during PV system installation and maintenance
- Define basic electrical terms
- Describe the use of a digital multi-meter
- Calculate simple circuit values
- Define basic solar terms
- Describe basic solar movement and effect of earth tilt
- Predict solar position using solar path diagrams
- Describe angular effects on the irradiance of solar array
- Identify factors that reduce or enhance solar irradiation
- Explain how solar cells convert sunlight into electric power
- Label key points on an IV curve
- Illustrate effect of series and parallel connections on IV curve
- Define measurement conditions for solar cells and modules

MATERIALS INCLUDED

Excelsior College / ed2go will provide the required textbook, *Photovoltaic Systems*

OUTLINE

- I. PV markets and applications**
 - A. How to work safely around operational and non-operational PV systems
- II. Basics of electricity**
 - A. Electricity terminology
 - B. Using a digital multi-meter
 - C. How to calculate simple circuit values
- III. Solar energy fundamentals**
 - A. Solar terminology
 - B. Describing solar movement and earth tilt
 - C. Predicting solar position
- IV. PV module fundamentals**
 - A. How sunlight is converted to usable power
 - B. Understanding module output values
- V. Computing electrical output and comparing characteristics of various module technologies**

COMPUTER REQUIREMENTS

High-speed Internet is recommended. This program is compatible with the Windows XP and later operating systems and IE 7 and later browsers.

*Please note: AOL, MSN, Opera, Safari, and Camino browsers are not supported.

You also need to have the latest version of Adobe Flash and Adobe Reader to properly view all course content.

This program cannot be taken on a Mac.

PREREQUISITES

There are no specific prerequisites to take this program, but you should have basic skills or knowledge of keyboarding (typing), using computer programs and the Internet, and a good command of English grammar and punctuation. No previous experience is required.

This program is for you if you want to learn the skills required for an entry level position with a dealer, installer, or other photovoltaic industry company.

INSTRUCTOR BIO

Adam Zellhoefer is a NABCEP certified solar installer and brings a wealth of knowledge in solar design and physics. Adam has spent the past few years working as a teacher's assistant with the solar power program at Cabrillo College in California. Adam served as an assistant to Joe Jordan, a pioneer in renewable energy.