SIERRA COLLEGE

Welcome!

Lesson Plan – Class 1

- Welcome
- Course Overview
- Ground Rules / Housekeeping
- Syllabus and Calendar
- Introductions

Lesson Plan – Class 1

- Class Schedule
  - Mon. and Wed. Jan 28 – May 22
  - Mon. and Wed.: 4:30pm – 7:15pm
  - Spring Break is the week of Mar. 25-29

- Two Saturday sessions
  - Mar. 16 8:00a – 2:00p
  - Apr. 13 8:00a – 2:00p

Lesson Plan – Class 1

- Resources
  - http://www.energyinstructor.info/ess32
  - http://www.nabcep.org/

NABCEP Entry-level Learning Objectives

Category	Course Time By %	Exam Items	Level of Testing	Study Materials
1. PV Markets & Applications	5%	3	Comprehension	References 1 and 5 below
2. Safety Basics	5%	3	Comprehension Application	References 1, 2 and 3 below
3. Electricity Basics	10%	6	Comprehension Problem Solving	References 1 and 5 below
4. Solar Energy Fundamentals	10%	6	Comprehension Application Problem Solving	References 1, 4 and 5 below
5. PV Module Fundamentals	10%	6	Comprehension Application Problem Solving	References 1, 4 and 5 below
6. System Components	15%	9	Comprehension Application Problem Solving	References 1, 4 and 5 below
7. PV System Sizing Principles	10%	6	Application Problem Solving Design	References 1, 4 and 5 below
8. PV System Electrical Design	15%	9	Application Problem Solving Design	References 1, 2, 4 and 5 below
9. PV System Mechanical Design	10%	6	Application Problem Solving Design	References 1, 4 and 5 below
10. Performance Analysis, Maintenance and Troubleshooting	10%	6	Analysis Problem Solving	References 1, 4 and 5 below
Totals	**100%**	**60**		

NABCEP Entry-level Learning Objectives

Notes:

Prerequisite or bridge training and/or experience in electrical systems, mathematics, and other subjects may be required for some students to fully comprehend and satisfactorily demonstrate knowledge of all of the learning objectives. Also, for intensive short courses (e.g., 40-hour, one-week workshops) students should be encouraged to spend approximately 2-3 additional hours outside of class (for each hour in class) to review the subject matter, solve problems, and study reference materials prior to taking the PV Entry Level Exam. This will usually require the student to take the exam at a later date rather than immediately following the course.

Suggested References and Study Materials

1. *Photovoltaic Systems, 2nd Edition*, by James P. Dunlop, ISBN 978-0-8269-1287-9. ©July 2009 National Joint Apprenticeship and Training Committee and American Technical Publishers: www.jimdunlopsolar.com

2. *Code of Federal Regulations, Chapter 29 Part 1926 - Safety and Health Regulations for Construction*, Occupational Safety and Health Administration: www.osha.gov

3. *2008 National Electrical Code®, NFPA 70 or 2008 National Electrical Code® Handbook,* National Fire Protection Association®: www.nfpa.org

4. *Study Guide for Photovoltaic System Installers*, North American Board of Certified Energy Practitioners, Version 4.2, April 2009: www.nabcep.org

5. Photovoltaics Design and Installation Manual, ISBN 978-0-86571-520-2. ©2007 Solar Energy International, New Society Publishers (available in both English and Spanish): www.solarenergy.org