




TOPIC OF STUDY

Solar Project
Management and Design

 4.5 HOURS
(3 SESSIONS)

KEY TERMS

rail
railless system
ballast
inter-row shading
mid-clamp
end-clamp
ballast mount
ground mount
single axis tracker
dual axis tracker
tracker

LESSON

Mounting and Structural Considerations

OBJECTIVES

Students will:

- Deep dive into racking manufacturer product specifications
- Identify components that comprise the racking

TASK LIST SUBCATEGORY

- 407 Describe the main types of solar mounting systems
- 408 Identify the factors establishing structural suitability for solar panels
- 409 Identify the impact of building design on solar installation

OVERVIEW

Solar project management and design encompasses responsibility to design efficient solar systems. This is achieved through understanding the steps of a solar installation and what causes designs to fail.

STANDARDS

PA/SDP

3.4.10.E7. Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.

Pathway AC-CST: Construction Career: Compare and contrast the building systems and components required for a construction project.

INSTRUCTIONAL

TEXTS/REFERENCES

Solar Electric Handbook: Photovoltaic Fundamentals and Applications; Solar Energy International; Pearson 2013

MATERIALS NEEDED

Teacher Presentation: [400-2 Presentation](#)

Content: Handouts, Installation Manuals, Plan Sets, Three Line Diagrams, Online Resources / Videos / Manufacturer's Websites, Books, PowerPoint Presentation, Installation Pictures, Lab / Hands-On, Field Trips

IMPLEMENTATION (LESSON PLAN)


1. Powerpoint - Review different types of racking. How do these differ from each other?
2. Supplement the class with product videos
 - a. <https://unirac.com/solarmount/>





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IMPLEMENTATION (LESSON PLAN) - CONTINUED

3. Review Chapter 9 - Mounting - *Solar Electric Handbook: Photovoltaic Fundamentals and Applications; Solar Energy International; Pearson 2013*. This chapter provides students with a wider perspective of the different types of racking applications.
4. Review Chapter 10 - Roofing Systems - *Solar Electric Handbook: Photovoltaic Fundamentals and Applications; Solar Energy International; Pearson 2013*. This chapter will help students understand the structural considerations of solar.

