SECTION HEADING

SOLR 1020: Introduction to Solar Assessment

Description

Introduction to Solar Assessment introduces students to basics of solar energy and solar site assessment for solar photovoltaic and thermal systems. Students will measure the solar window with a solar Pathfinder (TM) and estimate the effects of climate, system design, and vegetation growth (and removal) on energy production. Using industry-standard hardware, mounting options and equipment, students will propose system designs, model economic and environmental cost and benefits, and report their findings.

Credits

3

Prerequisite

None

Corequisite

None

Topics to be Covered

1. Solar assessment and design of an array.

2. Building and electrical permit process procedures.

3. Full site assessment design tools.

Learning Outcomes

1. Explain strengths and weaknesses of solar photovoltaic and thermal panels in

2. different orientations.

3. Describe factors that affect the efficiency of both thermal and electric solar systems.

4. Explain strengths and limitations of the solar resource.

5. Calculate cost, simple payback, return on investment and cash flow for solar energy

6. systems.

7. Estimate the installed cost of a solar electric or thermal system, including materials,

8. labor, subcontractors and permits when given a design.

9. Identify roof attachment hardware and their applications and limitations.

10. Write solar site assessments including costs, benefits, and customer goals.

11. Estimate the installed cost of a solar electric or thermal system, including materials,

12. labor, subcontractors and permits when given a design.

13. Model solar space heating and hot water output.

Credit Details

Lecture: 3

Lab: 0

OJT: 0

MnTC Goal Area(s): None