MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

DEPT. SOLR **COURSE NUMBER:1020**

NUMBER OF CREDITS: 3 **Lecture: 3 Lab: 0 OJT 0**

Course Title:
Introduction to Solar Assessment

Catalog 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.

Prerequisites or Necessary Entry Skills/Knowledge:
None

FULFILLS MN TRANSFER CURRICULUM AREA(S) ***(Leave blank if not applicable)***

Goal 1: Communication: ____ by meeting the following competencies:
Goal 2: Critical Thinking: ____ by meeting the following competencies:
Goal 3: Natural Sciences: ____ by meeting the following competencies:
Goal 4: Mathematics/Logical Reasoning: ____ by meeting the following competencies:
Goal 5: History and the Social and Behavioral Sciences: ____ by meeting the following competencies:
Goal 6: The Humanities and Fine Arts: ____ by meeting the following competencies:
Goal 7: Human Diversity: ____ by meeting the following competencies:
Goal 8: Global Perspective: ____ by meeting the following competencies:
Goal 9: Ethical and Civic Responsibility: ____ by meeting the following competencies:
Goal 10: People and the Environment: ____ by meeting the following competencies:

Topics to be Covered
Solar assessment and design of an array.
Building and electrical permit process procedures.
Full site assessment design tools.

Student Learning Outcomes
Explain strengths and weaknesses of solar photovoltaic and thermal panels in different orientations.
Describe factors that affect the efficiency of both thermal and electric solar systems.
Explain strengths and limitations of the solar resource.

Calculate cost, simple payback, return on investment and cash flow for solar energy systems.
Estimate the installed cost of a solar electric or thermal system, including materials, labor, subcontractors and permits when given a design.
Identify roof attachment hardware and their applications and limitations.
Write solar site assessments including costs, benefits, and customer goals.
Estimate the installed cost of a solar electric or thermal system, including materials, labor, subcontractors and permits when given a design.
Model solar space heating and hot water output.

Is this course part of a transfer pathway: Yes ☐ No ☒
***If yes, please list the competencies below**

Revised Date: 2/2020