



Wayne County Community College District

COURSE SYLLABUS

RET 143 Advanced Photovoltaic Concepts and Commercial Applications

CREDIT HOURS: 4.00

CONTACT HOURS: 60.00

COURSE DESCRIPTION:

This is an advanced course in solar energy which expands upon the use of photovoltaic commercial and utility scale systems. Included are troubleshooting and maintenance practices, as well as battery back-up and off-grid applications. The course satisfies the contact hour requirement for taking the North American Board of Certified Energy Practitioners (NABCEP) exam for PV installers in combination with other requirements.

PREREQUISITE: EE 101, EE 102, RET 144

EXPECTED COMPETENCIES:

Upon completion of this course, students will be able to:

- Know how to calculate the available solar energy resource at various global locations for specific photovoltaic installations.
- Understand semiconductor physics relevant to photovoltaic devices.
- Understand the major commercial and developing technologies for solar cells.
- Understand advanced characterization techniques for solar cells.
- Understand the economic and environmental issues relevant to photovoltaic systems, and know how to calculate the cost, environmental impact, and energy payback time of a photovoltaic system.

ASSESSMENT METHODS:

Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:

90%-100% = A

80%-89.9%= B

70%-79.9%= C

60%-69.9%= D

<60% = E