

# WEI EET 118 Introduction to Renewable Energy Syllabus

**Date:** May 2011

**Credits:** 5.0

**Prepared By:** Jim Swartos

**Course Description:** Fundamentals of Hydro, Wind and Solar Power.

**Co/Prerequisites:** EET 115

**Text:** Electricity and Electronics, 4<sup>th</sup> Ed, Gibilisco, ISBN 0071459332, and materials/websites supplied by Instructor

**Lab Manual:** Labs supplied by Instructor

**Course Goals:** Upon successful completion of the course, students will be able to sketch basic solar, wind and hydro power systems, be able to explain the basic components of each system outline pro's and con's of each type of renewable energy.

**Course Objectives:** Upon successful completion of the course, students will be able to:

1. Figure out the effects of solar angle & shading
2. Measure voltage from a PV panel
3. Measure current from a PV panel
4. Explain the importance of "head" in a hydro system
5. Explain the basic fundamentals of a hydro turbine
6. Explain the basic fundamentals of a wind turbine
7. Do a site survey for solar power

## **Course Content Outline:**

- A. Overview of Renewable Energy Source
- B. Solar Power Fundamentals
- C. Solar System Equipment
- D. Types of PV Cells, Panels & Modules
- E. Hydro Power Fundamentals
- F. Types of Equipment Used For Hydro
- G. Selecting a Good Location For Hydro
- H. Fundamentals of Wind Power
  - I. Equipment Choices For Wind Power
- J. Testing Solar Panels
- K. Site Surveys
- L. Pro's & Con's of Renewable Energy