

**Southwestern Indian Polytechnic Institute
Advanced Technical Education Department
Pre-Engineering Program**

**ENGR290: Special Topics Course
Renewable Energy and Photovoltaics**

Instructor:

Jonathan West

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Office Hours: Tuesday and Thursday 1:00-6:00 PM

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Course Objectives:

The purpose of this course is to provide the students with the information and experience needed to analyze, design and build renewable energy systems.

Course Specifics:

Textbooks and tools:

Renewable Energy: Power for a Sustainable Future. Second Edition. Edited by Godfrey Boyle

Photovoltaics: Design and Installation Manual. By Solar Energy International.

Homer Energy Modeling Software (free download from www.homerenergy.com)

National Renewable Energy Laboratory Website (www.nrel.gov)

Class Lectures:

Few things in life are more boring than a long-winded lecture, especially late in the afternoon. Students are encouraged to participate actively in all class discussions. I appreciate your input and need your feedback regarding the pace of the course and your interest level in the material. My goal is to keep this class relevant and interesting. When you are done you should know something that you can use in your career and life and your feedback will help keep me on that track. Attendance is critical and no homework or quizzes can be made-up unless by previous arrangement or due to unusual circumstances.

Homework:

The purpose of homework is to provide the student with hands-on experience to solidify their understanding of the concepts presented in class. There will be many homework assignments throughout the term, but they will be sized appropriately to be completed in the allotted time. Homework will be due one week from the day on which it is assigned to allow the student an

opportunity to ask questions in the following class period. In order to provide timely feedback, I will grade and return the homework within one week.

In the workplace we seldom work alone, so I encourage you to work together if you like, but each student must turn in their own assignments. The homework should be a learning experience, not a frustrating one. I will do my best to present assignments that are interesting and relevant and I will be available to help as much as necessary.

Some of the homework, especially in the second half of the term, will be project oriented and will involve hands-on work and real data collection and analysis. I encourage all of the students to think of a project that they would like to work on so that we can do something that is relevant to them.

Quizzes:

There will generally be a quiz each week. The purpose of the quiz is to ascertain each student's individual progress in the course. Since the homework can be done in groups, the quizzes are my (and your) best tool to tell if you as an individual are keeping up with the material. Although they do count toward your final grade, they are primarily for your benefit so that you know if you are keeping up or in need of additional help so that there are no surprises on the exams or the final grades.

Exams:

No one likes exams, myself included. It can be quite discouraging to see that a large fraction of your grade for the entire term is determined by how much (or little) you can remember in one hour. But exams are a part of life in the academic world so you will have two major exams during the term. In order to reduce the pain a little, let me assure you that if you keep up with the homework and understand the materials on the quizzes, you will be well prepared for the exams and I will design them such that they test your cumulative understanding of the material and not just your ability to cram the night before.

Office Hours:

I will generally be in my office or otherwise available on campus on Tuesday and Thursday from 1:00PM to 5:00PM. During those hours I will be more than happy to help you with any homework or other questions you may have. If you need help outside of those hours, you can email, text or call me and I will do my best to accommodate you.

Grading:

The class will use a standard grade scale: A=90-100, B=80-89, C=70-79, D=60-69, F = <60.

A grade of C or better is required to pass this class. Students earning a D or F will be required to repeat the course.

I do not typically believe in “curving” grades at the end of the semester. If you are keeping up with the homework and doing well on the quizzes, then you should have no trouble earning a high grade.

The final grades will be allocated as follows:

40% Homework and projects

30% Quizzes

30% Exams