

# MEC 517: Energy Technologies Laboratory II

## Catalog Description:

Experiments in the areas of thermoelectric power, fuel cells, hydrogen generation, wind turbines, photovoltaics, and power electronics. The focus is on system efficiencies, system integration, and design for residential markets.

## Reference books:

- *Fuel Cell Systems Explained, Larminie and Dicks*
- *Fundamentals of Eng. Thermodynamics, Morran and Shapiro*
- *Heat Transfer, Holman*
- *Heat Transfer: a practical approach, Yunus A. Cengel*
- *Principles of Solar Engineering, Goswami, Kreith, and Kreider*

## Activities:

1. Thermoelectric Labs 1, 2, 3, & 4
2. Fuel Cell Labs 1 & 2
3. Electrolysis Lab
4. Inverter Lab
5. Generator Lab 1
6. Wind Turbine Lab 1
7. Photovoltaics Labs 1 & 2
8. Power Electronics Lab 1

## Grades:

- Each of the labs will be graded out of 10 points. Being a graduate level class, 1 of the 10 points is reserved for producing a graduate level report. This point will be given at the graders discretion. Combined, the labs are worth 70% of the semester grade.
- A group project report will be assigned and due mid-semester and will be worth 15% of the semester grade. Further details will be given in class and on Blackboard.
- An end of semester exam will be given worth 15% of the semester grade. This will include questions from each experiment performed during the semester.

## Americans with Disabilities Act

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services at (631) 632-6748 or <http://studentaffairs.stonybrook.edu/dss/>. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: <http://www.sunysb.edu/ehs/fire/disabilities.shtml>

## Statement on Academic Dishonesty

Academic dishonesty is an extremely serious offense and will not be tolerated in any form. Academic dishonesty in general is the presentation of intellectual work that is not originally yours. Examples include, *but are not limited to*, copying or plagiarizing class assignments including homework, reports, designs, and other submitted materials; copying or otherwise communicating answers on exams with other students; bringing unapproved aids, either in physical (written) or electronic form to an exam; obtaining copies of an exam prior to its administration, etc. Academic dishonesty violates both the ethical and moral standards of the Engineering profession and all infractions related to academic dishonesty will be prosecuted to the fullest via the CEAS CASA committee. For you, the honest student, academic dishonesty results in lower class curves, hence a depression in your GPA and class standing, while cheapening the degree you earn.