MEC 520: Engineering Technology Thermodynamics
Course Syllabus
Fall 2015

Credit: 3 credits
Lectures: Mon 7:00 – 9:50 PM, Melville Library W4550 WESTCAMPUS
Instructor: Mahder Tewolde, (mahder.tewolde@stonybrook.edu), Arzu Kurt, Sotirios Mamalis
Add MEC520 in the subject line with emails sent
Office Hours: Tues/Wed 03:00-04:00 PM or by appointment
Textbook: No textbooks required for this class. All course lectures will be posted on blackboard prior to the lecture. The following books will be helpful as reference

Course Description:
Following a review of engineering thermodynamics principles, the thermodynamics of power generation, heat pumps, electro-chemical systems, chemical reactions and combustion are explored in the context of sustainable energy development lecture, group reports, and presentation skills will be practiced and evaluated.

Topics:
1. Infrared Imaging and Sensors
2. Spectrometers
3. Insulation and Thermal Conductivity
4. Electric Motors and Generators
5. Batteries
6. Heat Pumps
7. DC to AC Inverters
8. Radiation
9. Solar Thermal Collectors
10. Solar walls
11. Internal combustion engines
12. Fuel cells
13. Wind power

Homework: About one homework assignment will be assigned for two class lectures. All homework will be due by the end of class two weeks after they are assigned, unless otherwise noted. Solution will be posted on blackboard after homework is due. Late homework will not be accepted after the solutions are posted on blackboard.

Grading: Homework: 20%
Midterm Exam: 40%
Final Exam: 40%

Blackboard: All homework assignments and solutions will be posted on the Blackboard course account (http://blackboard.sunysb.edu). For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site, you can also call 631-632-9602 or e-mail: helpme@ic.sunysb.edu
All communication off class/office hours will be done exclusively through Blackboard. Blackboard uses your official Stony Brook e-mail address. It is your responsibility to check this e-mail address regularly, so that you do not miss any important announcements.

**Americans with Disability Act & University Policy**

If you have a physical, psychological, medical or learning disability that may impact on your ability to carry out assigned course work, I would urge that you contact the staff in the Disable Student Services office (DSS), Room 133 Humanities, 632-6748/TDD. DSS will review your concerns and determine, with you, what accommodations are necessary and appropriate. All information and documentation of disability is confidential.

**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 is not originally yours. Examples include, *but are not limited to*, copying or plagiarizing class assignments including homework, reports, design, computer programs, 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.”

**Calculator Policy**

Only the following calculators will be permitted for use on all midterm and final exams in the Department of Mechanical Engineering. There will be no exceptions! This list of calculators is identical to that allowed for the National Council for Examiners for Engineering and Surveying (NCEES) Fundamentals of Engineering (FE) exam that many of you will take in your senior year, as well as Professional Engineering (PE exam) that you may take several years from now. NCEES allowed calculators:

- **Casio**: All fx-115 models. Any Casio calculator must contain fx-115 in its model name.
- **Hewlett Packard**: The HP 33s and HP 35s models, but no others.
- **Texas Instruments**: All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

From [www.ncees.org/exams/calculators/](http://www.ncees.org/exams/calculators/)