SYLLABUS & COURSE INFORMATION
MEC 317 - MECHANICAL ENGINEERING LABORATORY II
SPRING 2014

Description
Hands-on experience in solid and fluid mechanics, heat transfer, and thermodynamics. Emphasis is on the understanding of fundamental principles as well as familiarity with modern experimentation. Lectures at the beginning of the course provide background information and theories of experimentation. Student groups perform five experiments each in solid mechanics and in thermal/fluid science. Report writing is an integral part of the course, with focus on design of experiment, interpretation and presentation of data, error analysis, and conclusions.

Instructors
Solid section: Prof. Fu-Pen Chiang (2–8311) (fu-pen.chiang@stonybrook.edu)
Fluid/thermal section: Prof. Thomas Cubaud (2–9431) (thomas.cubaud@stonybrook.edu)
Lab. Supervisor: Mr. Ta-Yung Hsu (2–8307) (ta-yung.hsu@stonybrook.edu)

Teaching Assistants
T.A. Office hours = Lab. hours.
Solid section: Muzhaozi Yuan (muzhaozi.yuan@stonybrook.edu)
Fluid/thermal section: Xiaoyi Hu (xiaoyi.hu@stonybrook.edu)

Preparation Lectures for Experiments, Monday & Friday 1:00 – 2:20 PM

First Class
Jan. 31: All students (Light Eng. Bldg. Room 102)
Topics: Course overview, basics of measurement & writing lab reports, group formation

Preparation Lectures
Feb. 3 & Feb. 7:
Solid labs: Groups 1 – 10 (Heavy Eng. Bldg. Room 206)
Fluid/thermal labs: Groups 11 – 20 (Light Eng. Bldg. Room 102)

Mar. 24 & Mar. 28:
Solid labs: Groups 11 – 20 (Heavy Eng. Bldg. Room 206)
Fluid/thermal labs: Groups 1 – 10 (Light Eng. Bldg. Room 102)

Laboratory Location and Time, Tuesday & Thursday 1:30 – 4:30 PM
Fluid section: Heavy Eng. Bldg. Room 101
Solid section: Heavy Eng. Bldg. Room 206 (upstairs)
Tuesday or Thursday 1:30 – 4:30 PM.

Grading Policy
The final grade will be determined from:
Ten (10) lab reports: total 100 % (minimum of 2 reports per student as first author¹)
Lab reports will be graded out of a maximum of 100 points each.

¹ Students will form groups of four or five people to perform all labs. The group will collectively submit a single report for each experiment. Each student must write at least two reports as a first author (one in the Solid section and one in the Fluid/Thermal section) to satisfy the MEC 300 writing requirements (details will be provided in class). All lab partners will receive the same grade for the lab.
**First period:** Groups 1 – 10: Solid Labs (Group 1-5: Tues., Groups 6-10: Thurs.)
Groups 11 – 20: Fluid/thermal Lab (Group 11-15: Tues., Groups 16-20: Thurs.)

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(Spring Break: 3/17 – 3/21)

**Second period:** Groups 1 – 10: Fluid/thermal part.

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**Lab Reports**
You must submit your previous lab report when you *arrive* at the lab for the next lab class.

**Penalty for Late Submission of Reports**
10 points (10%) deducted from final score for each day late. No exceptions will be made.

**Report Content**
1. Title Page (experiment title, *all* names, date due)
2. Abstract
3. Introduction
4. List of Equipment
5. Theory (includes drawings and descriptions)
6. Experimental Procedures
7. Results (includes calculation of experimental results; figures, graphs and tables must be labeled with a number and a caption; units, and all numerical quantities must be included)
8. Discussion (trends in the results, comparison with theoretical predictions)
9. Error Analysis
10. Conclusions
11. References (if you have them)
12. Appendices (handwritten calculations, spreadsheet calculations, and other data)
13. Prelab notebooks from *all* members

Reports must be typed with a 12 pt font and *double-spaced*. Handwritten equations, calculations, and experiment drawings are OK. Graphs of data may be done by hand, but it is not recommended (it is much easier to use a computer, e.g., Excel).
Text Book
A commercial textbook is not used for this course. Rather, we will provide you with two lab manuals, one for solids, and one for thermal systems, the cost of which is included in the lab fee. You will be given both books within the first two weeks of class. The beginning of the thermal lab manual has a section on effective report writing, error analysis, and other items to make life a bit easier when writing the dreaded lab reports. Additional books for reference are listed below.

Reference Books

All reference books above are reserved in the engineering library.

STONY BROOK UNIVERSITY SYLLABUS STATEMENT:
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

STUDENT CONDUCT:
Stony Brook University expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, and/or inhibits students’ ability to learn.

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, 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.