ME556 EXPERIMENTAL STRESS ANALYSIS I
Autumn Quarter 2011

COURSE SCHEDULE: Lecture: T, Th 8:30-9:50AM, Loew Rm 202
Labs: Nominally MEB 123 (further details below)

COURSE INSTRUCTOR

Prof. Mark E. Tuttle
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Office Hours: Tues, Thus: 10:00 – 11:00 AM
(or by appointment)

COURSE WEBSITE: http://courses.washington.edu/mengr556/

COURSE TEXTBOOK: Shukla, A., and Dally, J.W., Experimental Solid Mechanics, College House Enterprises LLC, 10-digit ISBN: 0-9792581-8-9 (13-digit ISBN: 978-0-9792581-8-3)

COURSE DESCRIPTION

ME 556 is devoted to a general introduction to experimental stress analysis, and is intended primarily for graduate students who wish to emphasize Mechanics, Materials, and Manufacturing during their studies (although all graduate students within the College of Engineering are welcome!). Major topics discussed are itemized below. The "core" of the course consists of topics (1) through (4). Additional topics are covered according to the time available and student interest.

Major Topics Discussed

1) Review of fundamental "mechanics of materials" concepts
2) Electrical resistance strain gages & related technologies
3) Transducer design
4) Digital Data Acquisition
5) Measurement of Mechanical Properties*
6) Linear Variable Differential Transformers (LVDT's)*
7) Temperature Measurement*

* As time permits

COURSE LABORATORY EXPERIMENTS

An "open" lab format is used in ME556, i.e., each student can perform the lab experiments individually, or as informal teams, at a convenient time. (Note: Although the labs may be performed in teams, *all lab reports must be written and created by each individual student*). Labs experiments will normally be set up in Rm 123 of the Mechanical Engineering Building. This room can be accessed anytime between 6:30am-9pm, Mon-Sat (i.e., whenever the ME building is open). There will be between 5 and 7 lab sessions during the quarter.

ME 556 GRADING POLICY:

Midterm	- 25%
Final	- 25%
Lab Reports	- 25%
Homework	- 25%

Homework: Homework will be posted on the class website every Thursday and is due the following Thursday (beginning of class). Late homework will not be accepted.
Homework should be turned in using one of the following methods:

1. Turned in in-person at the beginning of class
2. Computer generated or scanned and emailed to tuttle@uw.edu

Grading of Homework: Only one or two questions (chosen by M. Tuttle) from the homework assigned for each week will be graded – the resulting grade will constitute the final grade for that weekly homework assignment. Therefore, answer all questions correctly to receive full credit.

Grading of Lab-reports: Lab-report assigned the previous week is due the following Tuesday (beginning of class). Late reports will not be accepted.

Exams: Exams will be open book and open notes. Exams will include materials covered in the text, class, laboratory, and homework.