UNIVERSITY OF CENTRAL FLORIDA
Mechanical & Aerospace Engineering

EML 4306C Energy Systems Lab
Spring 2014

Instructor: Subith S. Vasu
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Office hours: Mondays 1-4pm

Description: Extension of Measurements I . Design of experiments in Mechanical Thermal Fluid systems with emphasis on project team activity. The student will largely be required to perform their own work individually and with groups with minimal guidance from instructors and TAs. Lectures will revolve around theory required for each particular lab, and various other special topics of interest in the aerospace field of study. The main focus will be on group autonomy and self learning through labs and projects.

Prerequisites: PR: EML 3303C and EML 4142. Measurements in thermo-fluid systems with emphasis on design of experiments

Credit Hours: 3 hours

Lecture Time: Wednesdays 1:30-3:20pm ENGR2-302

Website: Webcourses

Required Text: **None**

Recommended: *Theory and Design for Mechanical Measurements, 5*th Edition
by Richard S. Figliola and Donald E. Beasley
John Wiley & Sons, 2010; ISBN 9780470547410

Reference Text: *Writing Style and Standards in Undergraduate Reports*
by Sheldon Jeter and Jeffrey Donnell, College Publishing, 2004
ISBN 0-9679121-7-2

Grading:

Labs	70%
Mid Term (in class, 2/26)	10%
Final Exam (in class, 4/16)	10%
Professionalism	10%

(Attendance, peer evaluation, quiz, log books, effort, detail, class participation)

Class Learning Objectives

- Student by the end of this class will be able to properly format a journal manuscript for submission to a journal
- Student by the end of this class will be able to conduct an experiment on their own.
- Student by the end of this class will be able to apply engineering theories and concepts to an experiment to accomplish the final goal of that lab.

Evaluations/Assessment

The grades for the lab reports will be determined using the respective lab report grading rubric as posted on Webcourses. The grade from the TA for your participation points will be evaluated based on the respective rubric posted on Webcourses as well.

Professionalism

The professionalism part of your grade will be made up of your attendance in both the lecture and lab section; as well as announced and unannounced Quizzes in the lecture or lab. Your participation is based on your TA and your group mates evaluating you. The specific breakdown of professionalism is as follows.

Laboratories:

Laboratories will be held separately from the lecture per the class schedule. Early in the semester, lab groups of 4 students will be formed for each lab; these groups will be assigned to you. Lab reports are due a week after your lab period. Students must sign the measurements lab policy where they will find all of the details on the procedures of the lab. This policy must be received by your TA before you will be allowed to conduct any labs.

Lab activities and behavior:

Disruptive activities and negligent handling of equipment will result in grade penalty. Participation of each member in a group is required during an experiment. Anyone not participating will be subject to grade penalty.

Each report submitted should have a cover page signed by each member of the group stating that he or she has contributed significantly to the writing of the report and should indicate which parts of the report were his or her contributions.

Make-Up Policy

Make up for labs will be given on case by case bases and will be allowed if a sufficient excuse is presented; i.e. **doctors note, or UCF affiliated function,** etc. If a lab is missed with a valid excuse the student has **2 weeks** from the time the student comes back from the event to complete the lab and turn in the lab report. If the student has prior knowledge of having to miss class/lab it is preferred the student let the professor and lab section TA know. So that if possible the student could be placed in another lab section with a group instead of completing the lab by themself. If the student missed a quiz while on an approved event the student has **1 week** from when they return to make-up the quiz. The quiz will be on the same conduct that the student missed but will be different quiz from what the rest of the class took. It is preferred that the student attempt to make up the quiz before missing the class. The student should be keeping up with their homework as much as possible and get it in on time. In case the student is not able to turn the

homework in on time then the student has **1 week** from when they return to turn in the homework.

Academic Honesty:
Ethical behavior is expected and always required of engineers and scientists. Clear evidence of cheating during an exam will result in failure of the class. While discussion of the laboratories and sharing of the raw data are expected within a group, ***individual write-ups and analyses must be the work of the individual student***.

In this course we will utilize turnitin.com, an automated system which instructors can use to quickly and easily compare each student's assignment with billions of web sites, as well as an enormous database of student papers that grows with each submission. Accordingly, you will be expected to submit all assignments in both hard copy and electronic format. After the assignment is processed, as an instructor I receive a report from turnitin.com that states if and how another author's work was used in the assignment. For a more detailed look at this process, visit **http://www.turnitin.com**

Note(Turnitin.com will be satisfied by submitting the report to Webcourses. YOU DO NOT need to make a turnitin.com account for this class it will all be conduct through Webcourses itself.)

Peer Evaluations
Peer Evaluations will be submitted through Webcourses during the week that the lab report is being turn in. Everyone must submit a peer evaluation in order to get credit on the lab report. If a peer evaluation is not turn in then a **zero will result on that lab report. If the peer evaluation is turned in late 10 points will be taken off the lab report only for the student who turned in the evaluation late.**

Course Outline
Students are largely required to schedule and perform tasks and projects on their own. Instructors and TAs are there only to help facilitate and offer occasional guidance for the course. Below is an rough outline of the flow of the semester and is subject to change.

Tentative Lecture & Lab Schedule [Table 1]**

Week	Lab	Requirement Due Date
1 [Jan 6]	**No Labs This week**	
2 [Jan. 13] 3 [Jan 20]	Lab 1: Heat transfer	Group Report Week of Jan 27
4 [Jan 27] 5 [Feb 3] 6 [Feb 10] 7 [Feb 17]	Lab 2: Wind Tunnel Design, Construction, and Characterization	Group Report Week of Feb 24
8 [Feb 24]	**Midterm in class**	**No Labs**
9 [March 3]	**Spring Break**	
10 [March 10]	TBD	TBD
11 [March 17]	TBD	TBD
12 [March 24]	TBD	TBD
13 [March 31]	TBD	TBD
14 [April 7]	TBD	TBD
15 [April 14]	**Final Exam in class**	TBD

**** Note: The course instructor reserves the right to modify this syllabus.**

Note: ***Students who need special accommodations due to disabilities should talk to the instructor at the very beginning of the semester.***