ME 379 Thermal-Fluids Laboratory

Winter 2009

Instructor:

Prof. Tariq Shamim
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Office hours: 12:00 – 1:00PM Monday & 3:00 – 4:30PM Friday

Objectives:

- To study through experimentation the principles of fluid mechanics, thermodynamics, and heat transfer within the context of engineering applications
- To develop laboratory procedures, measurement techniques, safety, and skills
- To apply knowledge of engineering thermal-fluid principles and instrumentation to new problems

Prerequisites/Corequisites:

- COMP 270 Tech Writing for Engineers (prerequisite)
- ME 330/325 Applied Thermodynamics / Thermal Fluid Sciences I (prerequisite)
- ME 348/349 Instrument and Measurement Systems (prerequisite)
- ME 371/375 Heat Transfer / Thermal Fluid Sciences II (corequisite)

Text:

Lab Manual

Writing Style and Standards in Undergraduate Reports by S. Jeter and J. Donnell, College Publishing, 2004

Grading:

Weekly Laboratory Reports	40%
Measurement Reports	5%
Exam	15%
Project	35%
Attendance	5%

General Rules:

- Attendance at lab sessions is essential and students are expected to have read the material before each laboratory.
- Each lab group will be composed of four/five students and each member of the group is expected to contribute equally to the collective efforts. *The reports must mention the description and percent efforts of each group member.*
- Electronic copies of all reports must be submitted with hard copies through VLT website.

- Exam will be related to the experiments performed.
- The honor code will be in effect throughout the course.
- Some of the above rules may be changed during the term by a vote of the class.

Statement on Academic Integrity:

The University of Michigan-Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University's standards of academic conduct as set forth by the Code of Academic Conduct, as well as policies established by the schools and colleges. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses. Violations will not be tolerated and may result in penalties up to and including expulsion from the University.

Class Syllabus

Lec.	Date	Topics
1	1/16	Introduction (Laboratory Procedures / Safety), Project Discussion
2	1/23	Laboratory I
		Submit Project Proposal
3	1/30	Laboratory II
		Submit Revised Project Proposal
4	2/06	Laboratory III
		Temperature Measurement Report
		Selection of Projects
5	2/13	Laboratory IV
		Pressure Measurement Report
		Submit CAD Drawing and Material / Equipment List
6	2/20	Laboratory V
		Fluid Flow Measurement Report
7	2/27	Laboratory VI
8	3/13	Exam
		Project Progress Report / Oral Presentation
9	3/20	Project
		Project
10	3/27	Project
11	4/03	Project
12	4/10	Project
13	4/17	Project Draft Report Due
14	4/24	Formal Project Report and the Oral Presentation