University of New Hampshire at Manchester

ET696 Special Topics in MET

Syllabus Spring 2018

OVERALL COURSE OBJECTIVE: To develop proficiency in applying principles of thermal and fluid analysis to situations commonly found in industry. Areas of application include piping systems, heat exchangers, turbomachinery, refrigeration & power cycles, and aerodynamics of structures and vehicles.

CLASS MEETING INFO:

Section	Day	Start Time	End Time	Room
Lecture	Tuesday Thursday	2:01PM	3:20PM	Pandora 101
Lab	Tuesday	3:30PM	5:30PM	Pandora 116

INSTRUCTORS:

Prof. Robert Arredondo, Lecture and Lab
Pandora Rm. 109
e-mail: robert.arredondo@unh.edu
Office: 603-641-4109
Cell: 603-660-4832

REQUIRED TEXT:

Introduction to Thermal and Fluids Engineering, Deborah A. Kaminski and Michael K. Jensen, Wiley 2005. ISBN: 978-1-118-10348-7

REFERENCE TEXT:

Experimental Methods for Engineers, 8th edition, J.P. Holman, McGraw Hill 2012, ISBN 978-0-07-352930-1 (useful reference book for labs – also earlier editions)

OFFICE HOURS: Monday 2:00 - 3:50PM; Wednesday 1:00-1:50PM; Thursday 1:00 - 1:50 PM; also by appointment. Please contact by e-mail (preferred) or phone. Students are encouraged to seek help before falling too far behind.

CLASS FORMAT: Classes will consist of lectures and labs.

ONLINE RESOURCE: **https://mycourses.unh.edu/**

GRADING POLICIES: Breakdown will be as follows:

Homework	25%	Tests (3)	30%
Labs	25%	Final Exam	20%

Homework solutions will be given out (at least) one class period after the due date. Homework turned in after solutions are handed out will not receive credit.

ASSIGNMENT SUBMISSION REQUIREMENTS: For homework assignments, lab reports, tests, and final exam:

(1) Show your work. (No partial credit can be given unless steps are clearly shown.)
(2) Clearly identify your final answers.
(3) Work should be legible and performed in a clear organized manner. Use sketches, define variables (known and unknown), state assumptions, show equations, show appropriate steps in problem solving progress, clearly identify answer using appropriate significant digits and units, etc.
(4) Turn in homework and in hard copy form. If you miss turning a homework assignment in during class send an email copy before the grace period expires as a single coherent legible document and bring hard copy to next class.
(5) Affix a copy of the problem statement sheet with your name written on it legibly to the front of all HW assignments.
(6) Securely staple together all pages of submitted assignments.
(7) Turn in lab reports in format requested (format will vary per lab exercise).

These items facilitate fair grading of the assignment and granting of partial credit where warranted. Working on homework and lab assignments in groups is permitted but each person will submit individual homework assignments. Lab assignments may be individual or group depending on lab exercise.

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IMPORTANT INFORMATION ABOUT LABS:

1. Safety Glasses and Closed Toe Shoes are REQUIRED in the lab. Any student not adhering to this requirement will NOT be allowed to participate in the lab.
2. Format for lab reports will be specified for each lab. One or more labs may have an oral presentation.

ATTENDANCE: The University level absent policy can be found in the handbook here: http://unh.edu/vpsas/handbook/attendance-and-class-requirements
Lectures: Students are responsible for all material covered in class. Regular class attendance and participation in discussions is strongly encouraged.
Tests and Final Exam: Tests will typically take place during scheduled class time and lab time. **(**If circumstances dictate it, part or all of one or more tests may be given in Take Home format.) If a student needs to miss a test for any reason, the instructor must be notified prior to the session in which it is given. If an exam is missed without prior notification the student will receive a grade of zero. In extreme circumstances and if no prior notification is possible, the student must contact the instructor within 24 hours of the missed test or exam and submit in writing why the scheduled test period was missed. A modified exam may be given on a case by case basis. See the Student with Disabilities section if modified exams are required.
Labs: It is the student's responsibility to make up missed labs. Please notify the instructor prior to a lab if you will be absent.

ACADEMIC HONESTY: In the preparation and presentation of any assigned work – including examinations, tests, quizzes, term papers, reports, themes and other written or oral exercises –

every student shall conform to a strict standard of academic honesty. Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard. In all assignments, students must acknowledge the words and/or ideas of others taken from print or electronic media, whether a direct quotation or a paraphrase; any omission of this is dishonest. Cheating on examinations or tests consists of knowingly giving, receiving, or using – or attempting to give, receive, or use – unauthorized assistance during an examination or test. A faculty member may record a grade of "zero" for any assignment on which a student has plagiarized or cheated. For repeat offenses within a single course, the faculty member may record a grade of "F" for the course. Violations of this policy in multiple courses may result in dismissal from the college.

FOR STUDENTS WITH DISABILITIES: *The University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you think you have a disability requiring accommodations, you must register with the Disability Services Office. The Disability Services Coordinator at UNHM is Jenessa Zurek. Jenessa can be contacted at (603) 641-4383, jenessa.zurek@unh.edu or in person in the Student Services Suite, Room (#410H).*

ABET ENGINEERING TECHNOLOGY ACCREDITATION COMMISSION CRITERIA

GENERAL ENGINEERING TECHNOLOGY BACCALAUREATE OUTCOMES

This course is designed to help achieve the outcomes detailed in items b, c, e, and f, of the ABET Criterion #3 Section B.:

B. For baccalaureate degree programs, these student outcomes must include, but are not limited to, the following learned capabilities:

b. an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
c. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
e. an ability to function effectively as a member or leader on a technical team;
f. an ability to identify, analyze, and solve broadly-defined engineering technology problems;

MECHANICAL ENGINEERING TECHNOLOGY BACCALAUREATE OUTCOMES

This course is designed to assess following the UNH Manchester Mechanical Engineering Program specific criterion:

Category d. – Fluid/Thermal System Analysis