

MAE 3311-001, Fall 2009

MoWeFr 11:00AM - 11:50AM, Geoscience 109

Textbook: *Thermodynamics: An Engineering Approach, 6th edition.*

Author: Cengel, Y. and M.A. Boles, Editor: McGraw Hill 2006

Instructor: Professor Dereje Agonafer

Phone: metro 817-272-7377

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Office & Office Hours: Woolf Hall Room 211A, M & W 3:00 p.m. - 4:30 p.m.

Course Syllabus

Irreversibility and availability, power and refrigeration cycles, property relations and equations of state, ideal gas mixtures, mixtures of gases and vapors, combustion stoichiometry, thermodynamics of combustion, and compressible flow.

Prerequisites: MATH 3319; CHEM 1302; MAE 3310, MAE 2314 or concurrent enrollment.

Textbook: (Required) Title: "Thermodynamics: An Engineering Approach, 6th edition.

Author: Cengel, Y. and M.A. Boles, Editor: McGraw Hill 2006

Course Learning Goals/Objective:

To introduce the basic principles of thermodynamics with more emphasis on engineering applications.

Key Assignments:

There will be key assignments given during the semester. In order to pass the course you must pass all key assignments.

Attendance and Drop Policy:

Attendance will be taken at the beginning of each class. Students who come in late and miss signing the attendance sheet will be considered as absent. It will be used for grade consideration in the borderline situation. The university policy on drop will be followed.

Course Content:

1. Review of Second Law & Entropy
2. Availability Analysis (Ch. 8)
3. Gas Power Systems (Ch. 9)
4. Vapor Power Systems (Ch. 10)
5. Refrigeration and Heat Pump Systems (Ch. 11)
6. Thermodynamics Relations (Ch. 12)
7. Nonreacting Ideal Gas Mixtures (Ch. 13)
8. Psychrometrics (Ch. 14)
9. Chemical Reactions and Combustion (Ch. 15 (limited))
10. Chemical and Phase Equilibrium (Ch. 16 (limited))
11. High Speed Gas Flow (Ch. 17 (limited))

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Examinations and Grade:

- Assignments: 25%
- Tests: 15%
- Special Project: 20%
- Mid Term: 15%
- Final Exam: 25%

Student Evaluation of Teaching

Will be given at the end of the semester.

Americans With Disabilities Act (Required by University as below):

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112-The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of The Rehabilitation Act, here is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide reasonable accommodation to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels. If you require an accommodation based on disability, I would like to meet with you in the privacy of my office during the first week of the semester to make sure that you are properly accommodated.

Academic Dishonesty (Required by University as below):

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspensions or expulsion from the University. Scholastic dishonesty includes but is not limited to cheating, plagiarism collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. (Regents Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22)