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ME/CEE 2331
Thermodynamics
SMU-in-Plano

J-Term - 2013
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Mo/Fr: 9 am to noon, 1 pm to 4 pm (Jan 07 – Jan 16)

Objectives: Demonstrate ability to perform energetic and entropic analysis of energy processes (e.g., compressing, heating), devices (e.g., boilers, turbines, pumps, heat exchangers) and systems (e.g., heat engines, refrigerators/heat pumps) running simple substances (e.g., water, ammonia, helium).

Catalogue: The first and second laws of thermodynamics and thermodynamic properties of ideal gases, pure substances, and gaseous mixtures are applied to power production and refrigeration cycles.

Prerequisite: MATH2339, CHEM1303, ME/CEE2310, PHYS1303

Textbook: *Fundamentals of Thermodynamics*, C. Borgnakke, R.E. Sonntag 7th Ed, Wiley, 2009.

Topics:

- Applications of Thermodynamics, macroscopic vs. microscopic view, continuum concept
- Fundamentals: Control Mass vs. Control Volume; Property, State & Process
- Thermal equilibrium; Zeroth law; Temperature and scales; P-v and T-S diagrams; Steam tables; Definition of h , u , C_p and C_v
- Constitutive Equations: Ideal Gases; Incompressible Substances
- Balance Equations: First Law - Work & Heat; Second law - Entropy, Entropy Generation
- Non-cyclic, Flow, Cyclic Processes

Grading:

Attendance	10%
Test 1 (Jan 8)	10%
Test 2 (Jan 10)	20%
Test 3 (Jan 14)	30%
Test 4 (Jan 16)	40%
Total:	110%

A \geq 3.8	C+ \geq 2.8
A- \geq 3.6	C \geq 2.6
B+ \geq 3.4	C- \geq 2.4
B \geq 3.2	D+ \geq 2.2
B- \geq 3.0	D \geq 2.0
	F \geq 0.0

Course Policies:

1. You must be able to access your SMU email and the web
2. Class attendance is mandatory: grade “F” if less than 75% attendance (waived if tests averaged $> 85/100$)
3. Attend class to learn: come well fed, rested, attentive; “say no” to distractions: iPhone, newspaper, etc.
3. Deadlines are strictly enforced – no extensions;
4. Use of name card is mandatory during lectures
5. No make-up tests are given – no exceptions!
6. Office hours: Mo-Fr from noon to 1 pm; or by appointment
7. The SMU Honor Code is strictly enforced

Disability Accommodations: Students needing academic accommodations for a disability must first contact Ms. Rebecca Marin, Coordinator, Services for Students with Disabilities (214-768-4557) to verify the disability and establish eligibility for accommodations. They should then schedule an appointment with the professor to make appropriate arrangements. (University Policy No. 2.4.)

Religious Observance: Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities: Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)