MEEN 3110  
Thermodynamics II  
Spring 2017

Instructor:  
Hyeonu Heo
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NTDP F101R
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940-565-2742
Email:  
Hyeonu.Heo@unt.edu

Lecture Time:  
Section 1. Mon & Wed. 2:30 - 3:50 pm room D201
Section 2. Tue. & Thu.10:00 - 11:20 am room B142

Instructor Office Hours:  
Tue. & Thu. 1 – 2 pm or by appointment.

Required Textbook:  
M. J. Moran and H. N. Shapiro,  
Fundamentals of Engineering Thermodynamics, 8th edition

Course Description:
Exergy analysis, Gas power cycles, Gas mixtures, reacting mixtures and combustion, chemical reactions, and chemical equilibrium. The basic laws and concepts of classical thermodynamics are reviewed as their use is encountered in the course.

Pre-requisites: MEEN 2210 Thermodynamics I.

Course Learning Outcomes (CLO):
Upon successful completion of this course, students will able to:
1. Demonstrate an ability to correctly apply the 1st and 2nd laws of thermodynamics
2. Demonstrate an ability to analyze exergy and exergy destruction for different thermodynamics systems
3. Demonstrate an understanding on how to improve thermal efficiency for different thermodynamics systems based on 1st and 2nd law of thermodynamics
4. Demonstrate an ability to model and analyze various gas power cycles/systems
5. Demonstrate an understanding of gas mixtures and psychrometrics, and be able to analyze A/C systems
6. Demonstrate an ability to analyze reacting mixtures and simple combustion processes

ABET Student Learning Outcomes (SO)
a  Ability to apply mathematics, science and engineering principles.
b  Ability to design and conduct experiments, analyze and interpret data. 
c  Ability to design a system, component, or process to meet desired needs.
d  Ability to function on multidisciplinary teams.
e  Ability to identify, formulate and solve engineering problems.
f  Understanding of professional and ethical responsibility.
g  Ability to communicate effectively.
h  The broad education necessary to understand the impact of engineering solutions in a global and societal context.
i  Recognition of the need for and an ability to engage in life-long learning.
j  Knowledge of contemporary issues.
k  Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.
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<tr>
<th>CLO</th>
<th>ABET Student Outcomes (SO)</th>
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**Grades:**
- Class Participation: 5%
- Homework: 10%
- Midterm 1: 25%
- Midterm 2: 25%
- Final: 35%
- Total: 100%

**Homework:**
1. Please turn in your homework on the due date before 5 pm. **NO late homework will be collected.**
2. Homework dropped to instructor’s department mail box will NOT be collected.
3. Definition of “late”: when the homework is turned in after 5 pm on due date.
4. Having no textbook is not a valid excuse for not doing your homework. It is the student’s responsibility to acquire textbook for his/her study.
5. Exceptions (late homework will be collected): medical emergency (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. Evidences must be submitted.
6. Homework can be turned in before the due date.
7. Homework can be turned in by your friend or classmate.
8. Homework may be turned in electric format (not preferred though). In this case send the scanned copy directly to TA.
9. Homework should be stapled; instructor or TA will not be responsible for lost homework.
Exam and Quiz:

1. **Quizzes and Exams are closed book closed notes with formula sheets.**
   - Quizzes and Exams are closed book closed notes with formula sheets.
   - Formula sheets for midterms can be maximum 1 page, A4 or letter size, single side.
   - For final exam, students can bring 2 pages (single side) of formula sheets.
2. Each student is responsible for preparing his/her own formula sheets
3. Formula sheets could include anything but solutions to homework or examples. Student who failed to follow this rule will score zero in the exam and this cheating matter will be reported to the department and university.
4. Formula sheets must be turned in with the exam papers. Students who failed to follow this rule will score zero in the exam and this cheating matter will be reported to the department and university.
5. No cell phone usage during the exam.
6. There will be NO make-up quizzes. **Exceptions:** medical emergency (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. Evidences must be submitted.
7. There will be NO make-up exams. **Exceptions:** medical emergency (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. Evidences must be submitted.

Disability Accommodations: If you need academic accommodations for disability you must have document which verifies the disability and makes you eligible for accommodations, then you can schedule an appointment with the instructor to make appropriate arrangements.

Academic Dishonesty:
There is a zero tolerance policy for academic dishonesty. Cheating of whatsoever will result in an automatic ‘F’ in this course and the matter will be turned over to the appropriate student disciplinary committee.

**IMPORTANT EXAM DATES**

**Midterm Exam #1:**
Section 1: Feb. 22nd, 2017 (Wed), in class;
Section 2: Feb. 23rd, 2017 (Thu), in class

**Midterm Exam #2:**
Section 1: Apr. 10th, 2017 (Mon), in class;
Section 2: Apr. 11th, 2017 (Tue), in class

**Final exam:**
Section 1, 2:30 pm - 4:30 pm on Wed, May 3rd;
Section 2, 10:00 am - 12:00 pm on Thu, May 4th
## MEEN 3110 Thermodynamics II

Schedule Overview *(Subject to change)*

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<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>HW Due</th>
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<tr>
<td>#1</td>
<td>Jan. 17th - Jan. 19th</td>
<td>Course Overview, Thermo I review;</td>
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<td>#2</td>
<td>Jan. 23rd – Jan. 26th</td>
<td>Ch 7.1, 7.2, 7.3</td>
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<td>Feb. 27th – Mar. 2nd</td>
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<td>Ch: 12.6, 12.7;</td>
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<td>Ch 12.8.1-12.8.4; Ch 12.8.5, 12.8.6, 12.9</td>
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<td>Ch 13.1, 13.2, 13.3; Ch 13.4, 13.5, 13.6</td>
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<td>#16</td>
<td>May 1st – May 4th</td>
<td>Course Review</td>
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<td>Final Exam</td>
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