Philadelphia University

Faculty of Engineering - Department of Mechanical Engineering
First Semester 2017/2018

Course Information

Title: Thermodynamics 2 (0630324)

Prerequisite: Thermodynamics 1

Credit Hours: 3 credit hours (16 weeks per semester, approximately 44 contact hours)

Textbook: "Çengel, Y. A. and Boles, M. A., Thermodynamics: an Engineering Approach, 8th ed., The McGraw-Hill Companies, New York, © 2015.

References: : Fundamentals of Engineering thermodynamics, Moran and Shapiro 1998.

Instructor:
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Course Topics

Week	Topic
1,2, 3	Exergy
4,5 ,6	Gas Power Cycles
7, 8, 9	Steam Power cycles
10, 11, 12	Refrigeration cycles
13,14	Gas Mixtures
15	Air Conditioning
16	Review, and final exam

Course Learning Outcomes and Relation to ABET Student Outcomes:

Upon successful completion of this course, a student should:

1.	Analyze ideal gas and steam power cycles and refrigeration cycles to determine system components and process diagrams, perform energy balances, determine heat and work transfers, calculate the cycle efficiency or coefficient of performance and design power/refrigeration cycles or processes for cycle components;	[a, c, e, k]
2.	Calculate properties of ideal gas mixtures	[e , a, b]
3.	determine the properties of dry air-water vapor mixtures, plot processes on a psychrometric chart, and analyze process involving dry air-water vapor mixtures to perform energy and mass balances for the processes.	[a , e, k]

Assessment Instruments:

Evaluation of students' performance (final grade) will be based on the following categories:

Exams: Two written exams will be given. Each will cover about 3-weeks of lectures

Quizzes: 10-minute quizzes will be given to the students during the semester. These quizzes will cover material discussed during the previous lecture(s).

Homework: Problem sets will be given to students. Homework should be solved individually and submitted before the due date.

Copying homework is forbidden, any student caught copying the homework or any part of the homework will receive zero mark for that homework

Participation: Questions will be asked during lecture and the student is assessed based on his/her response

Final Exam: The final exam will cover all the class material.

Grading policy:

First Exam	20%
Second Exam	20%
Homework	12%
Quizzes and participation	8%
Final Exam	40%
Total:	100%

Attendance policy:

Absence from classes and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse, acceptable to and approved by the Dean of the relevant college/faculty, shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.