



# Philadelphia University

Faculty of Engineering - Department of Mechanical Engineering  
2019-2020

## Course Information

**Title:** Thermodynamics II (620324)

**Prerequisite:** Thermodynamics I (620323)

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

**Textbook:** **Text Books (title , author (s), publisher, year of publication)**  
Thermodynamics, an Engineering approach. By Y.Cengel, 8th edition

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

**Description:** In this course students will be presented to the applications of thermodynamics I, which are the well-known thermal cycles. These cycles include the gas power cycles, steam power and combined cycles and refrigeration cycles.

**Instructor:** **Eng. Nadia Badarneh**  
**Email:** nbadarneh@philadelphia.edu.jo  
**Office:** Mechanical Engineering building, room E61308 , ext. : 2125  
**Office hours:** Mon&Wed: 11:00-12:00

## Course Topics:

Week	Topic
1,2,3	Exergy Chapter 8
4,5,6	Gas power Cycles Chapter 9
7,8,9	Vapor power cycles Chapter 10
10,11,12	Vapor compression cycles Chapter 11
13,14,15	Gas Mixtures Chapter 13
16	Review, and final exam

## Course Learning Outcomes and Relation to ABET Student Outcomes:

Upon successful completion of this course, a student should be able to:

1.	The student should be able to analyze any thermal cycle and know how to deal with the actual cycles. Also, the students should be able to discuss any problems encountered in reducing the thermal efficiency and suggest a practical solution.	[a, e, k]
2.	The comprehension of thermodynamics cycles is a key to understand all thermal devices and applications of them in practical life.	[a, e, k]
3.	The students should link the concepts that they are learning with the real applications available in Jordan through a suggested projects by the supervisor or even by the students who have a practical background in the field.	[a, e, k]
4.	Discussing the required projects with the students via oral presentations and open the door for free discussion and suggestion session run by the supervisor and the students	[g]

### 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%
Home works, Quizzes and participation	20%
Final Exam	40%

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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.

