



Philadelphia University

Faculty of Engineering - Department of Electrical Engineering
Second Semester 2016/2017

Course Details:

Title: Energy Economics and management (611312)

Prerequisite: Energy Conversion and efficiency (611311)

Credit Hours: 3 credit hours (16 weeks per semester, approximately 45 contact hours)

Textbook: Energy Economics: Concepts, Issues, Markets and Governance by Bhattacharyya, Subhes C.

References: Energy Finance and Economics: Analysis and Valuation, Risk Management, and the Future of Energy by Betty Simkins and Russell Simkins.

Course Description: The course is a requirement for level 4 renewable energy engineering students. It introduces design and analysis of wind energy systems.

Website: <http://www.philadelphia.edu.jo/academics/fobeidat>

Instructor: Dr. Firas Obeidat
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Office: Engineering building, room 6714, ext: 2450
Office hours: Sun, Tues, Thurs: 10:00-11:00 and 12:00-02:00.
Thu and Wed: 09:00-11:15 and 12:45-02:00

Course Outlines:

Week	Topic
1, 2	Principles of energy management
3	Energy conservation
4, 5	Energy auditing and analysis
6, 7	Formulation of energy management options. Economic assessment and conservation technology of energy. Energy saving in big industries.
9	Steam generation
9, 10	Electric and distribution energy systems management
11	Integral planning for the resources
12	Demand management
13	Cogeneration
14	Total power schemes
15	Thermal insulation
16	Energy storage

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to know the principles and effective energy management	[f]
2.	Be able to know the different types of auditing	[b, c]
3.	Be able to know economic energy analysis	[h]
4.	Understand how can save and manage the power in the electrical system	[e , k]
5.	Be able to know fundamentals of thermal insulation design theory, insulation materials, insulation selection, insulation thickness, etc.	[h]
6.	Understand cogeneration system design and analysis	[a, b]
7	Be able to know energy storage systems, storage capacity and storage economics	[a, k]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

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

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.