



Course Specifications of: Economics of Power Plants MEP 516

Program(s) on which the course is given: Diploma in Mechanical Power Engineering
(Conventional and Renewable Power Plants)

Compulsory or Elective element of program: Elective

Department offering the program: Mechanical Engineering / Power

Academic year / Level: year/ 2014/2015

Date of specification approval: 2012

A. Basic Information

Title: Economics of Power Plants

Code: *MEP 516*

Credit Hours: 3

Lecture: 3

Tutorial:

Practical:

Total: 3

B- Professional Information

1- Overall aims of course:

This course introduces students to:

- 1- Recognize the fundamentals of economics of power plants.
- 2- Demonstrate principles and practice for the most important techniques in economics of different power plants and it applications.
- 3- Research skills are developed through a small subject oriented research project.

2- Intended learning outcomes of course (ILOs)

By completion of the course, the student should be able to:

2.1 Knowledge and understanding

- a1. Outline the scientific developments economics of power plants. (2.1.2)
- a2. Describe principles of quality in professional practice in economics of power plants. (2.1.3)

2.2 Intellectual skills

- b1. Analyze the problems in the area of study economics of power plants. (2.2.1)
- b2. Solve study of conventional and renewable power plants problems in economics of power plants. (2.2.2)
- b3. Plan for performance development in economics of power plants. (2.2.3)
- b4. Assess the risks and hazards in professional practices. (2.2.4)

2.3 Professional and practical skills

- c1. Assess methods and current tools economics of power plants.(2.3.2)



2.4 General and transferable skills

- d1. Use information technology economics of power plants. (2.4.1)
 d2. Have shown a commitment to life-long learning and continuous self-improvement. (2.4.3)
 d3. Use different sources for obtaining information and knowledge. (2.4.4)
 d4. Work in a group and manage time effectively. (2.4.5)
 d5. Lead a team in familiar professional contexts.(2.4.6)

4- Contents

Topic No.	Topic	No. of weeks	Total no. of hours
1	Introduction	1	3
2	Curves loads - calculation of peak load - the optimal distribution of load on the units of the station	3	9
3	The economic test of power stations	4	12
4	Peak load plants	1	3
5	Cost systems for the production of fixed costs and energy costs and the costs of clients	3	9
6	Accounting rates of energy consumption.	2	6
7	Exam	1	3
	Total	15	45

4- Course Matrix

ILO's code number	Teaching/learning methods and strategies	Assessment methods and strategies
2.1.2 2.1.3	Formal lectures	Individual coursework assignments, quizzes, oral discussions and reports. Mid year and /or final written examination is given.
2.2.1 2.2.2 2.2.3	Analysis and problem-solving skills are developed through tutorial/problem sheets and small group exercises. Research skills are developed through a small subject oriented research project.	Analysis and problem-solving skills are assessed through oral and written examinations. Design and research skills are assessed through project write-ups, coursework and project reports.
2.3.2	Experiments demonstrations, practical work, laboratory visits.	Practical skills are assessed through laboratory experimental write-ups, coursework exercises and reports, project reports and presentations.
2.4.4 2.4.7	Those skills are not explicitly taught; however, along the course of study the student will acquire those skills to be able to perform his obligations. Attendance of seminars, workshops or conferences will	Project presentation



	help the student in developing those skills. Presentation by students (either group or individual) will train students for those skills.	
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5- Assessment schedule

Assessment 1	Assignments	on weeks	1, 3, 6
Assessment 2	Quizzes	on weeks	2, 4, 9, 13
Assessment 3	Mid-term exam	on weeks	8
Assessment 3	Oral exam	on week	14
Assessment 4	Final exam	on week	15

6- Weighting of assessments

20% (60 marks)	Home assignments, Quizzes, and reports
20% (60 marks)	Mid-term examination and Oral examination
60% (180 marks)	Final-term examination
100% (300 marks)	Total

7- List of References

7.1 Text books

- * Course notes Prepared by the instructor:
- * Power Plant Economics , Carl Bozzuto
- Principles of Solar Engineering, Second Edition , by D. Yogi Goswami , Frank Kreith , Jan F. Kreider , Jan 2000
- Power plants engineering by A.K. Raja, 2006

7.2 Websites

- * Yahoo mail group
- * Yahoo scribd.com
- * www.sciencedirect.com

8- Facilities required for teaching and learning

Presentation board, computer and data show
Laboratory

Prepared by: Prof Dr. Samir Sobhy

Head of Department: Prof. Dr. Osama Ezzat Abdellatif



Matrix of course content and ILO's

Course Title: Economics of Power Plants**Code: MEP 516****Lecture: 3 . Tutorial: ---- Practical: ----****Total: 3****Program on which the course is given:** Diploma in Mechanical Power Engineering.**Major or minor element of program:** Elective**Department offering the program:** Mechanical Engineering / Power**Department offering the course:** Mechanical Engineering / Power**Academic year / level:** 2014/2015. **Date of specifications approval:** 2012

Course content	ILO's A	ILO's B	ILO's C	ILO's D
Introduction	a1			
Curves loads - calculation of peak load - the optimal distribution of load on the units of the station	a2	b3		d3, d4
The economic test of power stations	a1	b1	c1	d2
Peak load plants	a2		c1	d1
Cost systems for the production of fixed costs and energy costs and the costs of clients	a2		c1	
Accounting rates of energy consumption.	a1	b2		d5



Matrix of course aims and ILO's

Course Title: Economics of Power Plants**Code: MEP 516****Lecture: 3 .****Tutorial: ----****Practical: ----****Total: 3****Program on which the course is given:** Diploma in Mechanical Power Engineering**Major or minor element of program:** Elective**Department offering the program:** Mechanical Engineering / Power**Department offering the course:** Mechanical Engineering / Power**Academic year / level:** 2014/2015. **Date of specifications approval:** 2012

Course aims	ILO's A	ILO's B	ILO's C	ILO's D
1- Understand the fundamentals of economics of power plants.	a1		c1	
2- Demonstrate principles and practice for the most important techniques in economics of different power plants and it applications.	a1	b1		d1,d3
3- Research skills are developed through a small subject oriented research project.			c1	d2,d3