



Course Specifications of: Project MEP 595

Program(s) on which the course is given: Diploma in Power Engineering
(Refrigeration and Air Conditioning Technology)

Compulsory or Elective element of program: Compulsory

Department offering the program: Mechanical Engineering/ Power

Academic year / Level: year/ 2014/2015

Date of specification approval: 2012

A. Basic Information

Title: Air Conditioning Systems and Equipment

Code: MEP 595

Credit Hours: 3

Lecture: 3

Tutorial:

Practical:

Total: 3

B- Professional Information

1- Overall aims of course:

This course helps students to use his acquired knowledge and skills to solve any engineering problems in his field.

2- Intended learning outcomes of course (ILOs)

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

2.1 Knowledge and understanding

- a1 Recognize theories, fundamentals and specialized knowledge in the area of refrigeration and air conditioning study and categorize sciences related to the professional practice. (2.1.1)
- a2 List ethical and legal principles of professional practice in the area of refrigeration and air conditioning. (2.1.2)
- a3 discuss Current problems, in refrigeration and air conditioning field, being treated in a critical and evaluative manner. (2.1.3)
- a4 Explain the effect of professional practice on the environment and work towards its conservation and maintenance. (2.1.4)
- a5 Demonstrate methodologies and computer tools available for analysis, design and operation of HVAC systems. (2.1.5)

2.2 Intellectual skills

- b1 Discern and analyze the problems in the area of refrigeration and air conditioning and categorize them according to their priority. (2.2.1)
- b2 Solve design, installation and operation problems in his/her profession. (2.2.2)
- b3 Critically and analytically read research papers and topics related to his/her area of refrigeration and air conditioning. (2.2.3)
- b4 Assess the risks and hazards in refrigeration and air conditioning practices. (2.2.4)
- b5 Make professional decisions in the light of available information. (2.2.5)



b6 Evaluate data sources and make sound judgments in the absence of complete data. (2.2.6)

2.3 Professional and practical skills

- c1 Apply professional skills to solve problems in the area of refrigeration and air conditioning. (2.3.1)
c2 Prepare professional reports. (2.3.2)
c3 Plan and implement experiment design and evaluate testing. (2.3.3)

2.4 General and transferable skills

- d1 Communicate effectively using different means. (2.4.1)
d2 Use information technology in order to serve the development of professional practice. (2.4.2)
d3 Assess him/her self and identify his/her own personal learning needs. (2.4.3)
d4 Use different sources for obtaining information and knowledge. (2.4.4)
d5 Work in a group and manage time effectively. (2.4.5)
d6 Lead a team in familiar professional contexts. (2.4.6)
d7 Conduct self learning and continuous education practices. (2.4.7)

3- Contents

Topic No.	Topic	No. of weeks	Total no. of hours
1	Complete design of central air conditioning system	27	108
	Total	27	108

4- Course Matrix

ILO's code number	Teaching/learning methods and strategies	Assessment methods and strategies
2.1.1 2.1.2 2.1.3 2.1.4 2.1.5	Formal lectures, seminars, tutorials, directed reading, project work and independent study.	Individual coursework assignments, quizzes, oral discussions and reports. Mid term and /or final written examination is given.
2.2.1 2.2.2 2.2.3 2.2.4 2.2.5	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.
2.3.1 2.3.2 2.3.3 2.3.4	Experiments demonstrations, practical work, laboratory visits.	Practical skills are assessed through laboratory experimental write-ups, coursework exercises



2.3.5		and reports, project reports and presentations.
2.4.1 2.4.2 2.4.3 2.4.4 2.4.5 2.4.6 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 help the student in developing those skills. Presentation by students (either group or individual) will train students for those skills.	Project presentation

5- Assessment schedule

Assessment 1	Assignments	on weeks	4, 9, 14, 21
Assessment 2	Quizzes	on weeks	8, 10, 20, 25
Assessment 3	Mid-term exam	on weeks	15
Assessment 3	Oral exam	on week	29
Assessment 4	Final exam	on week	30

6- Weighting of assessments

10%	Home assignments
05%	Quizzes
20%	Mid-term examination
05%	Oral examination
60%	Final-term examination
100%	Total

7- List of References**7.1 Essential books (Text books)**

Handbook of HEATING, VENTILATION, and AIR CONDITIONING
Ed. Jan F. Kreider, Boca Raton, CRC Press LLC. 2001

7.2 Recommended books; Periodicals & Websites.

ASHRAE 2000 HVAC Systems and Equipment Handbook
ASHRAE 2005 Fundamentals Handbook

8- Facilities required for teaching and learning

Lecture room equipped with overhead projector
Presentation board, computer and **data show**

Course coordinator: Prof. Dr. Sherif Hady Taher

Prof. Dr. Ramadan M. Amer

Prof. Dr. Ramadan Y. Sakr

Course instructors: Prof. Dr. Sherif Hady Taher
Prof. Dr. Ramadan M. Amer
Prof. Dr. Ramadan Y. Sakr

Head of department: Prof. Dr. Osama Ezzat Abdellatif