



Ministry Of Higher Education and Scientific Research
AL-Mustansiriya University / Faculty of Engineering / Mechanical. Eng. Dept
(الخطة الدراسية للمساق)
Course Plan



Course No.: 506-03-4-04

Course Name: Air-Conditioning & Refrigeration

Academic Year: 2016-2017

Time Division: 3hr. Theoretical - 3hr. Practical.

Course Description

(5 credit hours)

This course will be cover the:

Study the fundamentals of air conditioning, refrigeration and the analysis of heating load, duct design and refrigeration systems and its parts.

Course Intended Outcomes:

At the end of the course, students are provided with a basic knowledge of:

- Study the student the principles of air conditioning, refrigeration,
- Understand the analysis of heating load, duct design and refrigeration systems and its parts.
- Understand the Duct Design.

Course Outline:

Week	Description depends on the Timing table(Theoretical & Limited Practical)
1	Introduction, Moist Air Technology
2	Enthalpy of Air, Dew Point Temperature
3	Psychometric Chart
4	Air Mixing <i>Exam + Review of Exam</i>
5	Humidification & Dehumidification
6	Heat Transfer & Transmission Coefficient
7	Wall-Surface Temperature, Inside Air Temperature
8	Heating Load <i>Exam + Review of Exam</i>
9	Heating Load
10	Cooling Load
11	Cooling Load
12	Cooling Load
13	Duct Design <i>Exam + Review of Exam</i>
14	Duct Design
15	Fan & Air Distribution
16	Refrigeration, Carnot Refrigeration Cycle

17	Carnot Refrigeration Cycle
18	Refrigerants Sub cooling & Superheating
19	Efficiency of reciprocating Compressors
20	Refrigerants, Alternative Refrigerants <i>Exam + Review of Exam</i>
21	Refrigerants and Sustainable Engineering
22	Refrigerants Equipment Compressors
23	Evaporators
24	Expansion & Valve
25	Condensers <i>Exam + Review of Exam</i>
26	Cooling Tower
27	Absorption Refrigeration Systems
28	Absorption Refrigeration Systems
29	Controls & Control Systems
30	Controls & Control Systems <i>Exam + Review of Exam</i>
	FINAL EXAM Durations

Textbooks:

1. *Environmental Engineering Analysis & Practice*, by: Burgess H. Jennings

Suggested references:

ASHRAE 2010

Marking

First Semester				Second Semester				
1 st exam	Three Quiz	Practical	Activity	2nd exam	Three Quiz	Practical	Activity	Final Exam
10	5	7	3	10	5	7	3	50

Regulations

- There will be three term exams given during this semester. The best two out of three will be considered for the First & Second exam. This means there will NO makeup exams. Missing one of the two left exams means a ZERO grade will be given for that exam.
- There is no markup for quizzes.
- Attendance is mandatory and University regulations will be enforced.
- All Cheating incidents will be reported to the chair. The following activities are considered cheating:
 - Turning in assignment that includes parts of someone else work.
 - Turning in someone else assignment as your own.
 - Giving assignment to someone else to turn in as their own.
 - Copying answers in a test or quiz.
 - Taking a test or quiz for someone else.
 - Having someone else take a test or quiz for you.
- See student handbook for other regulations.

Assignments and/or Projects

Assignment/Project	Description	Due Date	Marking
H.W. 1	Report	Deadline 6 th Mar	2 Marks
H.W. 2	Report	Deadline 8 th Apr	2 Marks
Quizzes	Two or more quizzes	During the course	6 Marks

Instructor information:

Lecture Room: [R:06 , R:07]

Time: Tu. :08:30-11:30

Tu.:11:30-02:30.

Instructor's Name: **Dr.Qasim Saleh Mehdi**
Dr. Maathe A. Theeb

Office No.: **15**

Office No.: **02**

E-Mail: qasim602006@yahoo.com maathe_a@yahoo.com

NOTES:

- Office Hours: Other office hours are available by appointment.*
- The content of this syllabus not be changed during the current semester.*

Lecturer Signature

Chairman Signature