

السيد رئيس قسم هندسة تقنيات التبريد والتكييف

م/ وصف المقررات الدراسية

تحية طيبة....

نرفق لكم ربطاً وصف المقررات الدراسية للمواد الدراسية في القسم للتفضل بالمصادقة عليها.

مع فائق الاحترام والتقدير.....

السيد رئيس اللجنة العليا

تدقيقه، لورين ... مع لتقدير

كوليت (٢٠٢٤) ع.ع.ع
رئيس اللجنة



م.م. ولاء ناصر عباس

مسؤول ضمان الجودة في الكلية

19/3/2024

السيد رئيس القسم المحترم .

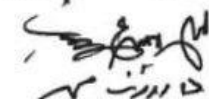
السيد محترم

تم مناقشة الامتحان اللجنة الكلية

وصلى الأندم مع مصادرة مذوع

وصف المقررات والمبجج مع لجنة المواد .

مع الشكر



١٥/٣/٢٠٢٤

Course Description Form

1. Course Name:	
Fundamental Air Conditioning and Refrigeration	
2. Course Code:	
PMAC205	
3. Semester / Year:	
Annual	
4. Description Preparation Date:	
Sep.2023	
5. Available Attendance Forms:	
Weekly(theoretical and practical)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90 hour theoretical and 60 hour practical	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Mohammed Hassan Abbood Email: mohammed.hassan@uowa.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none">1-The student's familiarity with the properties of the air required in the places to be air-conditioned2- Use the psychrometer chart to find the air properties and mix the air to provide healthy and comfortable air for the user.3-Study the effect of internal and external conditions on human comfort4- Knowing the role of solar radiation in the amount of external thermal loads and the role of the building's location in increasing and decreasing the size of the required air conditioning system.5- Identify the quality of air that is comfortable for humans and methods of ventilation and infiltration in air-conditioned places6- Learn about freezing cycles and methods and how to calculate their performance coefficient.7- Identify the types of freezing fluids and their characteristics.

9. Teaching and Learning Strategies

Strategy	<ul style="list-style-type: none"> - In-person lectures, Data Show clarifications, live discussions, and solutions to questions 2- Practical experiments on laboratory equipment 3- Electronic lectures, the Internet, and short films (you tube) 4-Home work
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10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1 st &2 nd	10		Air properties and psychometric chart	Theoretical ,practical and experimental	Multiple theoretical and practical exams in addition to the semester exams
3 rd	5		Psychometric processes	Theoretical and practical	
4 th &5 th	10		Air condition & evaporating cooling	Theoretical ,practical, and experimental	
6 th	5		Inside and out side conditions	Theoretical& practical	
7 th &8 th	10		Analysis of heat transfer through building structures	Theoretical and practical	
9 th &10 th	10		Solar radiation through fenestration and shading system	Theoretical& practical	
11 th	5		Ventilation and infiltration	Theoretical	
12 th &13 th	10		Methods of cooling and heating load calculation	Theoretical& practical	
14 th &15 th	10		Selection air conditioning system	Theoretical& practical	
16 th &17 th	10		Evaluation of friction and dynamics pressure losses in air duct and fitting	Theoretical& practical	

18 th & 19 th	10		Duct design methods	Theoretical & practical	
20 th & 21 th	10		Fundamental refrigeration system and cycles	Theoretical & practical	
22 th & 23 th	10		Vapour compression refrigeration system	Theoretical, practical and experimental	
24 th & 25 th	10		Refrigerants Fluid	Theoretical & practical	
26 th & 27 th	10		Compound refrigeration cycles	Theoretical & practical	
28 th & 29 th	10		Absorption refrigeration cycles	Theoretical & practical	
30 th	5		Utilization solar energy in refrigeration system	Theoretical & practical	

11. Course Evaluation

Daily quiz, Home Work, monthly examination, seminar, final semester examination, final year examination.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	<ol style="list-style-type: none"> 1- Faye C. McQuiston Heating, Ventilating, and Air Conditioning Analysis and Design 2- C.P. Arora Refrigeration and air conditioning 3- Refrigeration and air conditioning from IIT Kharagpur
Recommended books and references (scientific journals, reports...)	ASHRE
Electronic References, Websites	YOU TUBE