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 العلمية المحترم
تدقيقه ولوصف .. مع التقدير
[illegible] ٢٠/٣/٢٠٢٤
رئيس القسم

م.م. ولاء ناصر عباس

مسؤول ضمان الجودة في الكلية

19/3/2024

السيد رئيس القسم المحترم.
السلام عليكم
تم مناقشة الامر في اللجنة العلمية
وحصلت الاتفاق على مصادقة نموذج
وصف المقررات والتصميم على هيئة المواد.
مع التقدير

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	1-The student's familiarity with the properties of the air required in the places to be air-conditioned 2- Use the psychometer 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 comfort 4- 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 places 6- 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	- 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

10.Course Structure

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

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