MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Workshop**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**TEMO 102**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Deliver**		1
Administering Department		PM	**College**	TEMO	
Module Leader	Abdullah Adel Badr		**e-mail**	abdulladel06@ntu.edu.iq	
Module Leader's Acad. Title		Assist. Lecturer	**Module Leader's Qualification**		M.Sc.
Module Tutor	Mohamed Nazar Yahya		**e-mail**	mohammed.nazar.yahya@ntu.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		01/6/2023	**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Maintenance of Refrigeration & Air Conditioning Systems**	**Semester**	**six**
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teach students the basic principles of the compression refrigeration cycle. 2. Identify the tools used in the field of refrigeration and air-conditioning in general. 3. Training students on the operations carried out on pipes used in the field of refrigeration and air-conditioning. 4. Teaching students the basic operations of refrigeration and air-conditioning equipment. 5. Introducing students to the main parts that make up refrigeration and air-conditioning equipment of all kinds. 6. Teaching students about the electrical and mechanical parts of household refrigeration and air-conditioning devices. 7. Learn about the types of furnaces for melting metals, and how to pour molten metal into sand molds. 8. Identify the types of filings and their shapes. 9. Learn about all types of lathes and how to use them. 10. Learn how to deal with sheet metal. 11. Learn about the most important methods of welding and the machines and tools needed for that. 12. Learn about the most important tools and machines for dealing with wood, in addition to identifying the most popular and common types of wood.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. The student learned the processes of cutting, flaring and expanding pipes. 2. The student learned the processes of welding pipes of all kinds. 3. The student learned about the processes that take place on refrigeration and air-conditioning equipment, such as checking for leaks, vacuum and charging. 4. Students' ability to know the refrigerant fluids used in refrigeration and air-conditioning devices. 5. The student learned to connect electrical circuits for refrigeration and air-conditioning equipment. 6. The student's ability to distinguish the pressures used in the field of refrigeration and air conditioning from leakage checks, discharge and charging of all devices. 7. The student's ability to melt metals, how to pour the molten metal into sand molds, how to deal with the mold and fix it with sand, and how to get it out of the sand. 8. The student's ability to work with each type of file and how to choose it according to the type of material being worked on.

	9. The ability of the student to scrape and perforate the parts to be formed by each of the turning machines, milling machines, scrapers, as well as all kinds of gutters. 10. The student's ability to deal with metal sheets in terms of cutting, hammering, perforating, bending and humping, and the most important tools needed for that and how to work with them. 11. The student's ability to perform welding operations in all ways and for various types of metals. 12. The student's ability to deal with wood in addition to identifying the most popular and common types of wood.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Compression cycles and their applications by using visual devices. [15 hrs] Types of environmentally friendly and harmful gasses and the ozone layer and how to deal with them. [15 hrs] Awareness and important instructions for occupational safety. [10 hrs] Noise and source. [15 hrs] Awareness of the dangers of industrial machines and caution against them. [10 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	No	No	No	No
	Assignments	No	No	No	No
	Projects / Lab.	14	10% (10)	Continuous	All
	Report	14	30% (30)	Continuous	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري والعملي	
	Material Covered
Week 1	Introduction - Difference the basic principles of the compression refrigeration cycle.
Week 2	Learn about the types of furnaces for melting metals, and how to pour molten metal into sand molds.
Week 3	Identify the tools used in the field of refrigeration and air-conditioning in general.
Week 4	Identify the types of filings and their shapes
Week 5	Training students on the operations carried out on pipes used in the field of refrigeration and air-conditioning.

Week 6	Learn about all types of lathes and how to use them.
Week 7	Mid-term Exam
Week 8	Learn how to deal with sheet metal.
Week 9	Introducing students to the main parts that make up refrigeration and air-conditioning equipment of all kinds.
Week 10	Learn about the most important methods of welding and the machines and tools needed for that.
Week 11	Teaching students the basic operations of refrigeration and air-conditioning equipment.
Week 12	Learn about the most important tools and machines for dealing with wood, in addition to identifying the most popular and common types of wood.
Week 13	Teaching students about the electrical and mechanical parts of household refrigeration and air-conditioning devices.
Week 14	Carrying out operations to find and repair leakages and charge gas for air-conditioning devices.
Week 15	Conducting a practical exercise chosen by the course Lecturer as a test before the final exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	No

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Modern Refrigeration and Air-conditioning.	Yes
Recommended Texts	Hand Book Of Air Condition and Refrigeration.	Yes
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Code	Course/Module Title	ECTS	Semester
TEMO 102	**WORKSHOP**	**6**	**1**
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
0	**6**	**93**	**57**

The workshop in an engineering college provides students with a valuable opportunity to acquire knowledge and practical skills in specific engineering fields. The workshop aims to enhance the application of theoretical concepts learned in classrooms and provides an interactive learning environment. It includes instructional sessions, hands-on exercises, problem-solving, and practical application projects. Students collaborate in teams to achieve specific goals and develop effective projects. The workshop promotes communication and collaboration among students, encourages critical thinking, and problem-solving in an engineering simulation environment. The workshop is a valuable chance for students to develop their technical and practical skills and enhance their engineering capabilities for the future.