



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Mechanical drawing		Module Delivery	
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	PM 202			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	2	Semester of Delivery		3
Administering Department	PM	College	TEMO	
Module Leader	Asmaa taha Hussein		e-mail	Asmaa.taha@ntu.edu.iq
Module Leader's Acad. Title	Ass. Lecturer		Module Leader's Qualification	M.Sc.
Module Tutor			e-mail	E-mail
Peer Reviewer Name	Name		e-mail	E-mail
Scientific Committee Approval Date	01/06/2023		Version Number	1.0

Relation with other Modules				
العلاقة مع المواد الدراسية الأخرى				
Prerequisite module	None		Semester	
Co-requisites module	None		Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p style="text-align: center;">Module Objectives أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. to train students: to read the technical drawings through the application of techniques. 2. Learn students to read symbols, technical terms, standard specifications. 3. To understand the basic principle for descriptive geometry.. 4. This course deals with the basic concept of the computer in mechanical drawing. 5. To be able to communicate with manufacturers of mechanical systems. 6. To understand standard specifications, draw simple and complex assembly drawings. 7. To be able to communicate with other mechanical engineering professionals regardless of their spoken language.
<p style="text-align: center;">Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<p>Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.</p> <ol style="list-style-type: none"> 1. Capability to use AutoCAD for 2-D representations. 2. To make the students understand all about the screw threads and their definitions also to teach the students all common types for screw threads and the common types for bolts and nuts with overview in details. 3. To make the students understand all about the Keys, types of keys, spline shaft and hub concept, and the basic definitions for Keys also the correct manner for Keys drawing. 4. Enables the students to learn the techniques and standard practices of technical graphics. 5. To make the students understand all about the riveting and types of rivets. 6. Read a working or assembly drawing (blueprint) 7. Represent mechanical components in multi view orthographic representation 8. understanding all about the welding, types of weld joints and the basic definitions for welding also the correct manner for all types of welding symbol drawing. 9. To help students understand all about the Gears classification, draw spur gear, definitions, formulas and calculations.
<p style="text-align: center;">Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p><u>Part A -</u> Introduction to (CAD), components of computer aided drawing (CAD), Exercises. [4 hrs] Screw threads, forms of screw thread, international metric threads (ISO screw), Common types of fasteners. [8hrs]</p>



	<p>Method of drawing (Hexagonal & Square headed bolts and nuts) Screw threads, Nuts, Forms and types of screw threads and types of nuts, ISO. Also method of drawing (Hexagonal & Square headed bolts and nuts), with an exercise for these objects. [8 hrs]</p> <p>general introduction for Keys, types of keys, spline shaft and hub Drawing, and the basic definitions for Keys also the correct manner for Keys drawing. The common types for Keys also an explanation in detail. Also the pin and cotter joint [12hrs]</p> <p>Revision and quiz [8hrs]</p> <p><u>Part B -</u></p> <p>Fundamentals of rivets and riveted joints, types of riveted joints, Conventional rivet symbol, and the basic definitions for riveting also the correct manner for all types of rivets drawing, also an explanation in details for all types. [10 hrs]</p> <p>general introduction for Welding, type of welding, welding symbols standard. [4 hrs]</p> <p>general introduction for Pulleys, types of pulleys. location and dimension of Pulleys, and the basic definitions for Pulleys also the correct manner for all types of Pulleys drawing, also an explanation in details for all types. [10 hrs]</p> <p>Gears classification of gears, Assembly and details of common mechanical unit [15 hrs]</p> <p>Pipes and pipe joints, piping fittings, pipe symbols standard. [10 hrs]</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>Type something like: The major approach used to offer this module will be to promote student engagement in the exercises while also enhancing and broadening their critical thinking abilities. This will be accomplished through lectures, interactive tutorials, and the consideration of various sorts of easy experiments incorporating some engaging sampling exercises for the students.</p>

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
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	3	10% (10)	3, 6 and 12	LO #1, #2, #4, #6 and
	Assignments	5	10% (10)	2, 5, 9, 11 and 14	LO #3, #5, #7, #8 and #9
	Projects / Lab.	14	20% (20)	Continuous	All
	Report				
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المناهج الاسبوعي النظري

	Material Covered
Week 1	Introduction to (CAD), components of computer aided drawing (CAD), Exercises
Week 2	Screw threads, forms of screw thread, international metric threads (ISO screw), Common types of fasteners.
Week 3	Method of drawing (Hexagonal & Square headed bolts and nuts)
Week 4	Keys, types of keys.
Week 5	Pins and Cotters.
Week 6	Rivets and riveted joints.



Week 7	Types of riveted joints, Conventional rivet symbol, working drawing.
Week 8	Welding, type of weld joints, welding symbols standard, location and dimension of weld.
Week 9	Pulleys, types of pulleys.
Week 10	Gears classification of gears, spur gear, definitions, formulas and calculations.
Week 11	Gear tooth profile, working drawing.
Week 12	Assembly and details of common mechanical units. Screw Jack (Assembly and details).
Week 13	Power screw (Assemble and details)
Week 14	Coupling, Types of coupling, Bearings, types of bearings.
Week 15	Pipes and pipe joints, piping fittings, pipe symbols standard.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	k. l. Narayana p. kannaiiah k. venketa reddy mechanical engineering.	Yes
Recommended Texts	Up.and.Running.with.AutoCAD.2012.2D.and.3D.Drawing.a nd.Modeling	yes
Websites	https://learnengineering.in/mechanical-drawing-books/	

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
PM 202	Mechanical drawing	6	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	3	63	87

Description

The course on Mechanical Drafting provides comprehensive training on various aspects of drafting and design in mechanical engineering. It covers topics such as the use of AutoCAD system for mechanical drafting, screw threads, bolts, nuts, keys, pin and cotter joints, riveting joints, welding symbols, gear drawings, assembly drawings, detail drawings, and coupling, bearing, and pipe joints. The course includes practical examples and exercises that allow students to gain hands-on experience in drawing each component. By completing this course, students can enhance their knowledge and skills in mechanical engineering drafting, enabling them to create accurate and detailed drawings for various mechanical components and systems.