

# 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	UOMU0201033			
ECTS Credits	4			
SWL (hr/sem)	100			
Module Level	2	Semester of Delivery		3
Administering Department	PM	College	TE	
Module Leader	Mustafa Raheem Jasim		e-mail	Mustafa.raheem@uomus.edu.iq
Module Leader's Acad. Title	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	01/06/2025	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	
Module Objectives أهداف المادة الدراسية	1. to train students: to read the technical drawings through the application of techniques.

	<ol style="list-style-type: none"> <li>2. Learn students to read symbols, technical terms, standard specifications.</li> <li>3. To understand the basic principle for descriptive geometry..</li> <li>4. This course deals with the basic concept of the computer in mechanical drawing.</li> <li>5. To be able to communicate with manufacturers of mechanical systems.</li> <li>6. To understand standard specifications, draw simple and complex assembly drawings.</li> <li>7. To be able to communicate with other mechanical engineering professionals regardless of their spoken language.</li> </ol>
<p style="text-align: center;"><b>Module Learning Outcomes</b></p> <p>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"> <li>1. Capability to use AutoCAD for 2-D representations.</li> <li>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.</li> <li>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.</li> <li>4. Enables the students to learn the techniques and standard practices of technical graphics.</li> <li>5. To make the students understand all about the riveting and types of rivets.</li> <li>6. Read a working or assembly drawing (blueprint)</li> <li>7. Represent mechanical components in multi view orthographic representation</li> <li>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.</li> <li>9. To help students understand all about the Gears classification, draw spur gear, definitions, formulas and calculations.</li> </ol>
<p style="text-align: center;"><b>Indicative Contents</b></p> <p>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 &amp; Square headed bolts and nuts) Screw threads, Nuts, Forms and types of screw threads and types of nuts, ISO. Also method of drawing (Hexagonal &amp; 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>  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]  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]  Gears classification of gears, Assembly and details of common mechanical unit [15 hrs]  Pipes and pipe joints, piping fittings, pipe symbols standard. [10 hrs]</p>
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<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	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.

<b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	<b>63</b>	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	<b>4</b>
<b>Unstructured SWL (h/sem)</b>	<b>37</b>	<b>Unstructured SWL (h/w)</b>	<b>2</b>

الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعيا	
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>100</b>		

<b>Module Evaluation</b> تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	3	10% (10)	3, 6 and 12	LO #1, #2, #4, #6 and
	<b>Assignments</b>	5	10% (10)	2, 5, 9, 11 and 14	LO #3, #5, #7, #8 and #9
	<b>Projects / Lab. Report</b>	14	20% (20)	Continuous	All
	<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي النظري	
	Material Covered
<b>Week 1</b>	Introduction to (CAD), components of computer aided drawing (CAD), Exercises
<b>Week 2</b>	Screw threads, forms of screw thread, international metric threads (ISO screw), Common types of fasteners.
<b>Week 3</b>	Method of drawing (Hexagonal & Square headed bolts and nuts)
<b>Week 4</b>	Keys, types of keys.
<b>Week 5</b>	Pins and Cotters.
<b>Week 6</b>	Rivets and riveted joints.
<b>Week 7</b>	Types of riveted joints, Conventional rivet symbol, working drawing.
<b>Week 8</b>	Welding, type of weld joints, welding symbols standard, location and dimension of weld.
<b>Week 9</b>	Pulleys, types of pulleys.
<b>Week 10</b>	Gears classification of gears, spur gear, definitions, formulas and calculations.
<b>Week 11</b>	Gear tooth profile, working drawing.
<b>Week 12</b>	Assembly and details of common mechanical units. Screw Jack (Assembly and details).
<b>Week 13</b>	Power screw (Assemble and details)

<b>Week 14</b>	Coupling, Types of coupling, Bearings, types of bearings.
<b>Week 15</b>	Pipes and pipe joints, piping fittings, pipe symbols standard.
<b>Week 16</b>	<b>Preparatory week before the final Exam</b>

<b>Delivery Plan (Weekly Lab. Syllabus)</b> المنهاج الاسبوعي للمختبر	
	Material Covered
<b>Week 1</b>	
<b>Week 2</b>	
<b>Week 3</b>	
<b>Week 4</b>	
<b>Week 5</b>	
<b>Week 6</b>	
<b>Week 7</b>	

<b>Learning and Teaching Resources</b> مصادر التعلم والتدريس		
	Text	Available in the Library?
<b>Required Texts</b>	k. I. Narayana p. kannaiiah k. venketa reddy mechanical engineering.	Yes
<b>Recommended Texts</b>	Up.and.Running.with.AutoCAD.2012.2D.and.3D.Drawing.a nd.Modeling	yes
<b>Websites</b>	<a href="https://learnengineering.in/mechanical-drawing-books/">https://learnengineering.in/mechanical-drawing-books/</a>	

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

<b>Code</b>	<b>Course/Module Title</b>	<b>ECTS</b>	<b>Semester</b>
PM 202	Mechanical drawing	4	3
<b>Class (hr/w)</b>	<b>Lect/Lab./Prac./Tutor</b>	<b>SSWL (hr/sem)</b>	<b>USWL (hr/w)</b>
0	4	63	87
<b>Description</b>			
<p>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.</p>			