

## MODULE DESCRIPTION FORM

Module Information			
Module Title	<b>ENGINEERING DRAWING</b>	Module Delivery	
Module Type	Support or related learning activity	<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	END1030-AM		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	<b>UGI</b>	Semester of Delivery	1
Administering Department	AGME1986	College	<b>AGFO1964</b>
Module Leader	YOUSIF YAKOUB HILAL	e-mail	yousif.yakoub@uomosul.edu.iq
Module Leader's Acad. Title	<b>Assistant Professor</b>	Module Leader's Qualification	PhD
Module Tutor	Hussain abed hammod	e-mail	hu_hammod@uomosul.edu.iq
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	1/9/2025	Version Number	1.0

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	<ol style="list-style-type: none"> <li>1. To develop the Agricultural student's ability to imagine projections and their models.</li> <li>2. Exercising hand movement in engineering drawing to complete quick sketches.</li> <li>3. This course deals with the theory of Orthographic Projection and the basic subject of isometric drawing.</li> <li>4. To teach students engineering drawings using the AutoCAD program, which includes both theoretical lectures and labs.</li> </ol>
Module Learning Outcomes	<p><b>LO#1:</b> Absorbing all the engineering characteristics of an object or a product in a clear manner.</p> <p><b>LO#2:</b> Know the tools used in engineering drawing and how to use them correctly,</p> <p><b>LO#3:</b> Understand and apply the basics of engineering processes.</p> <p><b>LO#4:</b> Conclude projections and isometrics for each geometric figure and recognize its dimensions.</p>
Indicative Contents	<p>Indicative content includes the following.</p> <p><b>Part A: Engineering Drawing Basics and Tools</b></p> <ul style="list-style-type: none"> <li>• Introduction and Definition of Engineering Drawing</li> <li>• Engineering Drawing Tools and Their Uses</li> </ul>

	<p>Explanation of Sheet Dimensions, Information Table, and Letter Writing. • Types of Lines and Basic Geometric Operations: Introduction to different types of lines (continuous, dashed, center lines) and their specific uses in drawings. Performing basic geometric operations such as measuring, dividing, and marking. • Arcs and Tangents: Defining and drawing arcs and tangents in engineering drawings, including field applications. [20 hrs.]</p> <ul style="list-style-type: none"> <li>• <b>Classwork: Practical Applications of Previous Topics</b> Hands-on practice applying learned techniques (lines, arcs, sheet setup) [4 hrs.]</li> </ul> <p><b>Part B: Engineering Projections and Operations:</b></p> <ul style="list-style-type: none"> <li>• <b>Engineering Projections:</b> Understanding projection techniques, especially orthographic projections. Learning how to project an object's views from different angles. • <b>Mid-term Exam: Assessment</b> covering the topics learned in Part A and initial projection skills. • <b>Deducing the Third Projection Based on Two Projections:</b> Skill development in visualizing and drawing the third projection when given two views of an object. [12 hrs.]</li> <li>• <b>Classwork: Practical Applications of Deducing the Third Projection:</b> Applying concepts learned in projection drawing. [4 hrs.]</li> </ul> <p><b>Part C: Advanced Drawing Techniques and CAD Software</b></p> <ul style="list-style-type: none"> <li>• <b>Drawing Engineering Perspective (Isometric):</b> Introduction to isometric drawing techniques. Drawing objects in isometric view for accurate 3D representation. • <b>Review of Isometric Engineering Perspective:</b> Revisiting the principles of isometric drawing and its application in technical drawings. Understanding the connection between isometric drawings and orthographic projections. [8 hrs.]</li> <li>• <b>Introduction to Computer-Aided Drawing (CAD):</b> Overview of computer-aided drawing, emphasizing its importance in modern engineering. Introduction to software tools like AutoCAD and SolidWorks, including their hardware components and versions. • <b>AutoCAD Interface and Main Commands:</b> Learning the basic interface of AutoCAD, including the drawing and modification toolbar. Explanation of key commands and their uses. • <b>Drawing Simple Geometric Shapes Using AutoCAD:</b> Hands-on practice with AutoCAD to draw basic geometric shapes. [12 hrs]</li> </ul> <p>Total hrs = 63 = SSWL - (Exam hrs) = 63 - 3 = 60 hr (Time table hrs x 15 weeks)</p>
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Learning and Teaching Strategies	
<b>Strategies</b>	<ol style="list-style-type: none"> <li><b>1. Lecture-based Teaching:</b> <ul style="list-style-type: none"> <li>• Explaining concepts and demonstrating tools, techniques, and software in real time allows students to observe the process before applying it.</li> </ul> </li> <li><b>2. Hands-on Practice:</b> <ul style="list-style-type: none"> <li>• <b>Lab Sessions:</b> Providing practical sessions where students use drawing tools and software like AutoCAD or SolidWorks to develop their skills.</li> <li>• <b>Guided Exercises:</b> Offering step-by-step instructions to complete tasks such as drawing isometric views or projections.</li> </ul> </li> <li><b>3. Interactive Class Discussions:</b> <ul style="list-style-type: none"> <li>• <b>Question and Answer Sessions:</b> Actively engage students in discussions where they can ask questions and clarify doubts about topics like projection techniques or CAD tools.</li> </ul> </li> <li><b>4. Assessment and Evaluation:</b> <ul style="list-style-type: none"> <li>• <b>Project-based Assessments:</b> Assigning projects requiring students to apply the concepts they've learned, like creating detailed engineering drawings using manual and software-based techniques.</li> </ul> </li> </ol>
Student Workload (SWL)	

Structured SWL (h/sem)	63	Structured SWL (h/w)	4
Unstructured SWL (h/sem)	87	Unstructured SWL (h/w)	5.8
Total SWL (h/sem)	150		

Module Evaluation					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	7	
	Assignments	10	20% (20)	3 to 14	
	Projects / Lab.	1	5% (5)	Continuous	All
	Reports	1	5% (5)	----	-----
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1, #2
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly, Syllabus)	
	Material Covered
Week 1	Introduction and definition of engineering drawing
Week 2	Engineering drawing tools and their uses, knowing types of pens used, Drawing board layout.
Week 3	Explanation of sheet dimensions, information table, and letter writing
Week 4	Types of lines, their applications, and basic geometric operations
Week 5	Arcs and tangents
Week 6	Classwork: Practical applications of previous topics
Week 7	Engineering projections
Week 8	Mid-term Exam
Week 9	Deducing the third projection based on the other two
Week 10	Classwork: Practical applications of deducing the third projection
Week 11	Drawing engineering perspective (isometric)
Week 12	Review of isometric engineering perspective and its relation to deducing the third projection
Week 13	Introduction to the importance of computer-aided drawing and the types of software used for engineering drawing, such as AutoCAD and SolidWorks, including their components and versions.
Week 14	Introduction to the AutoCAD interface and main commands: (Drawing toolbar and its uses, modification toolbar and its uses).
Week 15	Drawing simple geometric shapes using AutoCAD.
Week 16	Preparatory week before the Final Exam

Delivery Plan (Weekly Practical Syllabus)	
	Material Covered
Week 1	Familiarization with different drawing tools, including pens, and setting up the drawing

	board layout.
<b>Week 2</b>	Practice drawing sheets according to standard dimensions, setting up an information table, and writing technical letters.
<b>Week 3</b>	Identify different line types and execute basic geometric operations (e.g., drawing straight lines, circles).
<b>Week 4</b>	Practice drawing arcs and tangents using drawing tools .
<b>Week 5</b>	Consolidate skills by applying learned techniques (lines, arcs, tangents) in a project or assignment.
<b>Week 6</b>	Start drawing orthographic projections of simple objects, projecting different views.
<b>Week 7</b>	Assessment based on skills acquired in previous weeks, focusing on projections, lines, and geometric operations.
<b>Week 8</b>	Visualize and draw the third projection based on two given views.
<b>Week 9</b>	Work on exercises that reinforce the ability to deduce the third projection, applying this to different objects.
<b>Week 10</b>	Learn to draw isometric projections, emphasizing proper axis alignment and scaling.
<b>Week 11</b>	Review and reinforce isometric drawing techniques and their connection to orthographic projections.
<b>Week 12</b>	Introduction to AutoCAD and SolidWorks; learning the basic interface, including drawing and modification toolbars.
<b>Week 13</b>	Practice using the AutoCAD interface, focusing on drawing commands (e.g., lines, circles) and modification commands (e.g., trim, extend).
<b>Week 14</b>	Create simple geometric drawings using AutoCAD, including 2D shapes like squares, rectangles, and circles.
<b>Week 15</b>	Work on exercises that reinforce the ability to Create simple geometric drawings using AutoCAD.

Learning and Teaching Resources		
	Text	Available in the Library?
<b>Required Texts</b>	الرسم الهندسي لطلبة كليات الزراعة، د. ناطق صبري حسن، 1990	Yes
<b>Recommended Texts</b>	Textbook of Engineering Drawing k. Venkata Reddy, 2008	No
<b>Websites</b>	-	

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



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