

MODULE DESCRIPTION FORM

Module Information			
Module Title	INDUSTRIAL ENGINEERING DROWING	Module Delivery	
Module Type	C	<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	IED3500		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	4	Semester of Delivery	2
Administering Department	AGME1986	College	AGFO1964
Module Leader	Yousif Yakoub Hilal	e-mail	yousif.yakoub@uomosul.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Hussain Abed Hammod	e-mail	hu_hamood@uomosul.edu.iq
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	1/2/2026	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	END1030	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1- Developing the ability of students of the Department of Agricultural Machinery and Equipment to comprehend engineering and industrial drawing using the computer. 2- Training the student to draw using the computer to complete the drawings in a perfect and fast manner. 3- Developing the student's ability to comprehend and visualize to draw shapes of different degrees of difficulty. 4- Using advanced object modeling programs after mastering the use of the AutoCAD program.
Module Learning Outcomes	1: The student should understand all the engineering characteristics of graphical interfaces for drawing using the computer. 2: The student should learn how to use the tools required for two-dimensional and three-dimensional drawing correctly.

	<p>3: The student should understand and apply the drawing, modification, dimensions, layers, printing, etc. commands.</p> <p>4: The student should be able to draw isometric perspectives for each geometric shape in terms of the two-dimensional drawing and draw its three projections.</p>
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p><u>Part A: Computer Aided Drafting Basics</u></p> <ul style="list-style-type: none"> • Introduction to Computer Aided Drafting (CAD): An overview of computer aided drafting, with an emphasis on its importance in modern engineering. An introduction to software commands such as AutoCAD and SolidWorks, including their hardware components and versions. • AutoCAD Interface and Basic Commands: Learn the basic interface of AutoCAD, including the toolbar for drawing and editing, and explain the basic commands and their uses. • Dimensions. <p><u>Part B: Geometric Projections:</u></p> <ul style="list-style-type: none"> • Geometric Projections: Understand projection techniques, especially orthogonal projection. • Midterm Exam: An assessment covering topics learned in Part A and basic projection skills. • Classroom Work: Practical Applications for Deducing the Third Projection: Apply the concepts learned in drawing projections. <p><u>Part C: Advanced Drafting Techniques and Computer Aided Design (CAD) Programs</u></p> <ul style="list-style-type: none"> • Geometric Perspective Drawing (Isometric): An introduction to isometric drawing techniques. Drawing objects in isometric view for a three-dimensional representation. • Isometric Drawing Review: A review of the principles of isometric drawing and its application in technical drawings. • Drawing simple geometric shapes using AutoCAD: Practical practice using AutoCAD to draw simple geometric shapes. <p>Total hrs = 48 = SSWL - (Exam hrs) = 48 - 3 = 45 hr (Time table hrs x 15 weeks)</p>

Learning and Teaching Strategies

<p>Strategies</p>	<ul style="list-style-type: none"> • Lecture-based teaching: Explain concepts and demonstrate tools, techniques and software during lecture time so that students can observe the process before applying it themselves. • Practical training: Practical lectures: Provide practical sessions where students use software such as AutoCAD and SolidWorks to develop their skills. • Guided exercises: Provide step-by-step instructions to complete 2D and 3D drawing tasks such as projections and isometric perspective. • Interactive class discussions: Actively engage students in discussions where they can ask questions and clarify doubts on topics such as projection techniques or computer-aided design (CAD) tools. • Project-based assessments: Assign students projects that require them to apply the concepts they have learned, such as creating detailed engineering drawings using computer-based software.
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Student Workload (SWL)

Structured SWL (h/sem)	48	Structured SWL (h/w)	3
Unstructured SWL (h/sem)	77	Unstructured SWL (h/w)	5
Total SWL (h/sem)	125		

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	1, 2
	Final Exam	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly, Syllabus)

	Material Covered
Week 1	Introduction about computer and AutoCAD Component of AutoCAD screen, Title bar, Menu bar, Tool Bar, properties.
Week 2	Make a new drawing, saving, Unite, boundary of paper ,Command line.
Week 3	Draw list: Line, Xline, circle, arc, polyline.
Week 4	Draw list: point (dividing, measures), Ellipse, Text, block.
Week 5	Modify list: Erase, offset, copy, Rotate, Array, Trim, Extend.
Week 6	Modify list: Mirror, Move, Explode, Fillet, Chamfer+ quiz.
Week 7	Object snap, Polar tracking +mid-term exam.
Week 8	Dimensions.
Week 9	Projections: Introduction about projections, types of projections, projections in third angle, Projections of Object contain perpendicular surface only.
Week 10	projection of object contains include surface, projections of curved surface.
Week 11	finding a missing view, section.
Week 12	Isometric drawing: Introduction about isometric drawing.
Week 13	Isometric drawing: isometric drawing for perpendicular surface include surface, curved surface.
Week 14	3D in AutoCAD: Introduction about three dimensions in AutoCAD.
Week 15	Assembly (finding the 3D viewing from projection) + final-term exam.

Delivery Plan (Weekly Practical Syllabus)

	Material Covered
Week 1	Component of AutoCAD screen, Title bar, Menu bar, Tool Bar, properties.
Week 2	new drawing, saving, Unite, boundary of paper, Command line.
Week 3	Draw Line, Xline, circle, arc, polyline.
Week 4	Draw point (dividing, measures), Ellipse, Text, block.
Week 5	Modify Erase, offset, copy, Rotate, Array, Trim, Extend.

Week 6	Modify Mirror, Move, Explode, Fillet, Chamfer +quiz.
Week 7	Object snap, Polar tracking +mid-term exam.
Week 8	Dimensions.
Week 9	projections, types of projections, projections in third angle, Projections of Object contain perpendicular surface only.
Week 10	projection of object contains include surface, projections of curved surface.
Week 11	finding a missing view, section.
Week 12	isometric drawing.
Week 13	isometric drawing for perpendicular surface includes surface, curved surface.
Week 14	three dimensions in AutoCAD.
Week 15	Assembly (finding the 3D viewing from projection) +final-term ezam.

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Mastering AutoCAD 2010 and AutoCAD LT 2010 1st Edition 1990.	NO
Recommended Texts	AutoCAD 2010 Command Reference, AutoCAD tutorial2011	-
Websites	Getting Started with the Basics in AutoCAD 2017	

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