	Ministry of Higher Education and Scientific Research - Iraq University of Technology Biomedical Engineering Department	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering and Computer drawing**			**Module Delivery**	
Module Type	**E**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ENCD114**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Dr. Raid Salih Jawad		**e-mail**	Raid.s.jawad@uotechnology.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**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	
Module Aims أهداف المادة الدراسية	1. To introduce the students to use drawing instruments and to draw polygons, Eng. Curves. Constructing regular polygons by general methods, inscribing and describing polygons on circles. 2. To introduce the students to use scales and orthographic projections, projections of points & simple lines. 3. Is to make the students draw the projections of the lines inclined to both the planes. 4. The objective is to represent the object in 3D view through isometric views. 5. Learn sketching and taking field dimensions. 6. Take data and transform it into graphic drawings. 7. Learn who draw 2D drawings in AutoCad.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Engineering drawing being the principle method of communication for engineers, the objective is to introduce the students, the techniques of constructing the various types of polygons, curves and scales. 2. Constructing regular polygons by general methods, inscribing and describing polygons on circles. 3. Parabola, Ellipse and Hyperbola by general methods, cycloids, involutes, tangents &normals for the curves. 4. Draw the projections of the various types of solids in different positions inclined to one of the planes.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Engineering Drawing, and Descriptive geometry 1. Engineering drawing being the principle method of communication for engineers, the objective is to introduce the students, the techniques of constructing the various types of polygons, curves and scales. The objective is also to visualize and represent the 3D objects in 2D planes with proper dimensioning, scaling etc. [15 hrs] 2. Descriptive geometry is the branch of geometry which allows the representation of three-dimensional objects in two dimensions by using a specific set of procedures. The resulting techniques are important for engineering, architecture, design and in art. [15 hrs] Part B – Auto Cad AutoCAD is computer-aided design (CAD) software that is used for precise 2D and 3D

	drafting, design, and modeling with solids, surfaces, mesh objects, documentation features, and more. It includes features to automate tasks and increase productivity such as comparing drawings, counting, adding objects, and creating tables. It also comes with seven industry-specific toolsets for electrical design, plant design, architecture layout drawings, mechanical design, 3D mapping, adding scanned images, and converting raster images. AutoCAD enables users to create, edit, and annotate drawings via desktop, web, and mobile devices. [15 hrs]

Course Description	
Course Description	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 type of assignments involving some problem solving that are interesting to the students.

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 type 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	32	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction - How to use drawing tools , Descriptive geometry.
Week 2	How to use draw the Line in engineering drawing, and in Descriptive geometry.
Week 3	How to use draw the Dimensions, how to draw the planes.
Week 4	How to use draw the front ,side and top views.
Week 5	How to use draw the front ,side and top views
Week 6	How to use draw the front ,side and top views
Week 7	How to use draw the front ,side and top views
Week 8	1st. Mid-term Exam.
Week 9	How to use draw the Projecting of the third view.

Week 10	How to use draw the Projecting of the third view.
Week 11	How to use draw the Projecting of the third view.
Week 12	How to use draw the Isometric drawing.
Week 13	How to use draw the Isometric drawing.
Week 14	**How to use draw the** Isometric drawing.
Week 15	2nd. Mid-term Exam.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to Autocad
Week 2	Lab 2. Orders drawing (font+ dimensional + thickness type).
Week 3	Lab 3: Coordination ordens
Week 4	Lab 4: Application on computer (drawing of primitives, box, cylinder ,cone...)
Week 5	Lab 5: Features : extrude, revolve ,sweep..with applications.
Week 6	Lab 6: Features : extrude, revolve ,sweep..with applications.
Week 7	Lab 7: Boolean operation-union, subtract and intersect-applications of Boolean operation.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Engineering Drawing N.D.BHATT	Yes
Recommended Texts	AutoCad 2023 software	No
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.