Ministry of Higher Education and Scientific Research - Iraq

University of Warith Al-Anbiyaa
College of Engineering
Civil Engineering Department

MODULE DESCRIPTION FORM

Module Information					
Module Title	ENGINEERING DRAWING BY AUTOCAD			**Module Delivery**	
Module Type	BASIC			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV046				
ECTS Credits	3				
SWL (hr/sem)	75				
Module Level		2	**Semester of Delivery**		2
Administering Department		Civil engineering	**College**		Engineering
Module Leader	Hibatallah abd alameer		**e-mail**	Hiba.allah@uowa.edu.iq	
Module Leader's Acad. Title		Assistant Lecturer	**Module Leader's Qualification**		Ms.C
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date		20/10/2024	**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 Aims	1. Develop proficiency in using AutoCAD software for creating accurate and precise engineering drawings in civil engineering projects. 2. Familiarize students with the fundamental principles and standards of engineering drawing and their application in civil engineering design and construction. 3. Enhance students' understanding of different types of civil engineering drawings, including architectural plans, structural drawings, site plans, and details, and enable them to create these drawings using AutoCAD. 4. Enable students to interpret and analyze engineering drawings, including dimensioning, scaling, and annotation, to accurately convey design and construction information. 5. Develop students' ability to collaborate effectively with other professionals, such as architects and structural engineers, through the exchange of engineering drawings in a standardized format using AutoCAD.
Module Learning Outcomes	1. Demonstrate proficiency in using AutoCAD software to create accurate and precise engineering drawings in civil engineering projects. 2. Apply the fundamental principles and standards of engineering drawing to produce high-quality civil engineering drawings using AutoCAD. 3. Interpret and analyze engineering drawings, including dimensioning, scaling, and annotation, to accurately convey design and construction information. 4. Create different types of civil engineering drawings, such as architectural plans, structural drawings, site plans, and details, using AutoCAD. 5. Collaborate effectively with other professionals, such as architects and structural engineers, by exchanging engineering drawings in a standardized format using AutoCAD.
Indicative Contents	Introduction to AutoCAD: Overview of AutoCAD software and its applications in civil engineering User interface and basic commands in AutoCAD File management and project organization in AutoCAD Engineering Drawing Principles and Standards:

	Introduction to engineering drawing principles and standards Drawing conventions, line types, and line weights Standard symbols and notations used in civil engineering drawings Creating 2D Civil Engineering Drawings: Creating and editing basic geometric shapes in AutoCAD Drawing techniques for architectural plans, structural drawings, and site plans Incorporating dimensions, scales, and annotations in engineering drawings Advanced Drawing Techniques: Working with layers and layer management in AutoCAD Advanced editing tools and techniques for modifying drawings Creating and managing blocks and attributes for efficient drawing production Civil Engineering Drawing Types: Detailed exploration of architectural plans, including floor plans, elevations, and sections Structural drawings, including foundation plans, framing plans, and reinforcement details Site plans and land development drawings, including grading plans and utility layouts Dimensioning and Scaling: Dimensioning techniques and best practices in civil engineering drawings Scaling and plotting drawings to various scales for printing and presentation purposes Using dimension styles and annotation tools for consistent and clear communication Collaboration and Standards: Understanding engineering drawing standards and practices Importing and exporting drawings between different software and file formats Collaborating with other professionals through the exchange of standardized engineering drawings Practical Applications and Case Studies: Applying AutoCAD and engineering drawing skills to real-world civil engineering projects Analyzing and interpreting existing engineering drawings for design modifications or construction purposes

	Case studies highlighting the importance of accurate and precise engineering drawings in civil engineering projects Project Work: Applying the acquired skills and knowledge to a comprehensive engineering drawing project Creating a set of civil engineering drawings using AutoCAD, following the appropriate standards and practices Presenting the project work and discussing the rationale behind design decisions

Learning and Teaching Strategies	
Strategies	The module employs a range of strategies to facilitate effective learning and teaching of engineering drawing using AutoCAD in the civil engineering department. These strategies include engaging lectures and demonstrations, hands-on practice sessions, group discussions and peer learning, practical workshops and tutorials, industry guest lectures and site visits, utilization of online resources and virtual learning, assessments with timely feedback, and promoting continuous learning and updates. By integrating these strategies, the module aims to provide students with a comprehensive understanding of AutoCAD and its application in creating accurate and precise engineering drawings, while fostering collaboration, critical thinking, and practical skills development in the civil engineering context.

Student Workload (SWL)			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3.2
Unstructured USWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation					
		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)	3, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	2	10% (10)	Continuous	All
	Report	0	0% (0)	none	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	20% (20)	7	LO # 1- 7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Introduction to program (Start Program; Interface; Command Enter; Start New Draw& Save File, Model & Layout, Command Window, Mouse Options, Keyboard, Helpers, Select object, Status Bar Enhancements, Workspace)
Week 2	Draw Command **part-one** (Line, Circle, Line & Circle **Practice**)
Week 3	Modifying on drawing **part-one** (Erase, Ray, Move, Copy, **Practice**)
Week 4	Draw Command **part-two** (Arc, Construction Line, Rectangle, Polyline, Polygon, Donut, Spline, **practice**)
Week 5	Modifying on drawing **part-two** (Rotate, Trim, Offset, Extend, **practice**)
Week 6	Draw Command **part-three** (Multiline, Point, Revcloud, Ellipse, **practice**)
Week 7	Modifying on drawing **part-three** (Fillet, Chamfer, Mirror, **practice)**
Week 8	Draw Command **part-four** (Hatch, **practice)**
Week 9	Modifying on drawing **part-four** (Array, Stretch, Scale, **practice)**
Week 10	Table, Text Command
Week 11	Block characteristics, Annotation

Week 12	Drawings properties
Week 13	Layers principles
Week 14	Annotation formation and editing
Week 15	Output properties and print options (Model & Layout)

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Lab 1: General Principles and draw commend
Week 2,3	Lab 2: Draw option and modify options (part one)
Week 4,5	Lab 3: Draw option and modify options (part-two)
Week 6,7	Lab 4: Draw option and modify options (part-three)
Week 8,9	Lab 5: Draw option and modify options (part-four)
Week 10,11	Lab 6: Table, Text Command, Block characteristics, Annotation
Week 12,13	Lab 7: Drawings properties, Layers principles
Week 14,15	Lab 8: Annotation formation and editing ,Output properties and print options

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts		No
Recommended Texts		No
Websites	https://www.autodesk.com/training	

Appendix

Grading Scheme				
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.