Course Specification
(Bachelor)

Course Title:	Computer Aided Drawing (CAD)
Course Code:	CE 2006
Program: :	Bachelor of Science in Civil Engi
Department:	Civil Engineering Department
College:	College of Engineering and Architecture
Institution:	Umm Al-Qura University
Version:	1
Last Revision Date:	31 January 2025

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A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	☐ University	☐ College	☒ Department	☐ Track	☐ Others
B.	☒ Required		☐ Elective		
3. Level/year at which this course is offered: (level -/- year)					
4. Course General Description:					
This course provides a comprehensive introduction to civil engineering drawings and their standards. It covers the fundamental principles of reinforced concrete and steel structures, emphasizing their representation in engineering drawings. Throughout the course, students will gain hands-on experience using AutoCAD software for the creation, modification, and interpretation of civil engineering drawings.					
5. Pre-requirements for this course (if any)**:**					
Engineering Graphics					
6. Co-requisites for this course (if any)**:**					
Not Applicable					
7. Course Main Objective(s):					
The course aims to prepare students technical skills and proficiency required to create, modify, and interpret professional civil engineering drawings using AutoCAD software, ensuring accuracy and adherence to professional standards.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	15
2.	**Laboratory/Studio**	45
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Demonstrate fundamentals of civil engineering drawings.	K.1	• Lectures • Lab	• Assignments • Quizzes • Mid Term exam • Final Term exam
1.2	Demonstrate fundamentals of Computer Aided Drafting (CAD).	K.1	• Lectures • Lab	• Assignments • Quizzes • Mid Term exam • Final Term exam
2.0	**Skills**			
2.1	Effectively use AutoCAD software as a modern tool for engineering drawings.	S.3	• Lectures • Lab	• Assignments • Quizzes • Mid Term exam • Final Term exam • Term project
2.2	Construct professional civil engineering drawing.	S.3	• Lectures • Lab • Small group work	• Assignments • Quizzes • Mid Term

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
				exam • Final Term exam • Term Project
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate commitment to professional values and standards of civil engineering drawing.	V.1& V.3	• Lectures • Lab • Small group work	• Final Term exam • Term Project

C. Course Content

No	List of Topics	Contact Hours
1.	Coordinate Systems, CAD Menus, and commands, drawing entities, Drawing Aids in AutoCAD.	4
2.	Introduction to line types.	4
3.	Lab practicing on hatching and colors with Civil Engineering examples.	4
4.	Dimensioning and drawing entities with Civil Engineering examples.	4
5.	Advanced Editing with measurements calculations such as distance and area	4
6.	Layers and Blocks and its use in Column layout drawings.	4
7.	Advanced Drawing Control using Paper Space.	4
8.	Qualities of professional drawing, Conventions and Practices with examples.	4
9	- Drawing of Reinforce concrete beam showing reinforcement	4
10	- Mid-term exam	4
11	- Reinforced concrete column detailed drwawings with reinforcement	4
12	- Reinfoced concrete slabs drafting	4
13	- Steel structures members beam/ column drawings	4
14	Preparing complete structural drawings of a small R.C. building with reinforcement details.	4
15	Final Exam Review	4
Total		**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignments	Weekly	10%
2.	Quizzes	3 & 6 & 9 &12	15%
3.	Term project	13	10%
4.	Mid-Term Exam	8	25%
6.	Final-Term Exam	16/17	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	David A. Chin, "Water-Resources Engineering" 3rd Edition (2012), Prentice Hall, ISBN-10: 0132833212, ISBN-13: 9780132833219
Supportive References	• James D. Bethune, (2015) "Engineering graphics with AutoCAD 2015", 1st edition, Prentice-Hall. • A Course in Civil Engineering Drawing, Author, V.B. Sikka, 7th edition, 2015, Jain Books, India.
Electronic Materials	• AUTOCAD User's Manual", Autodesk Publication.
Other Learning Materials	• AutoCAD software package

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and laboratories for lectures and exams with students working on computers for 30 students during the scheduled class and laboratories hours.
Technology equipment (projector, smart board, software)	- AUTOCAD Software -Data show
Other equipment (depending on the nature of the specialty)	- 30 Desktop computers - 3 color Laser Jet Printer (size A3) -3 Black-and-White Laser Jet Printer (size A3)

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	• Students • Instructor • Program leader	• Indirect • Direct • Direct

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of Students assessment	• Independent member teaching staff	Direct
Quality of learning resources	• Students • Instructor	• Indirect • Indirect
The extent to which CLOs have been achieved	• Instructor • Students • Program leader	• Direct • Indirect • Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**CIVIL ENGINEERING COUNCIL**
REFERENCE NO.	**THE FIFTEENTH SESSION OF THE ACADEMIC YEAR 1446**
DATE	**30 APRIL 2025**

