

(Computer Aided) Course Catalogue

2022-2023

College	Erbil Technology	
Department	Construction and Materials Technology	
Module Name	Computer Aided	
Module Code	COA122	
Semester	2	
Credit	6	
Module type	Prerequisite <input type="checkbox"/>	Core <input type="checkbox"/> Assist. <input checked="" type="checkbox"/>
Weekly hours	3	
Weekly hours (Theory)	(/)hr Class	(/) hr Workload
Weekly hours (Practical)	(3)hr Class	(36) hr Workload
Lecturer (Theory)	/	
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Lecturer (Practical)	Firas Muhammad Saeb	
Email	firas.saib@epu.edu.iq	

Course Book

Course overview:

AutoCAD classes provide learning in software used for product and home design. Classes in Auto CAD are typically offered for students seeking careers in drafting or technical drawings.

The AutoCAD course will give students foundation knowledge in the use of this powerful drafting software that is used across multiple designs, architectural and engineering companies worldwide. Building up knowledge about the essential drawing and drafting tools enables students to leave the AutoCAD course with a confident foundation knowledge that will allow them to explore the higher functionality this software. Students attending the course need to have an understanding of basic Microsoft operating systems but do not need any previous CAD drafting.

Course objective:

The primary objective of this courseware is to teach the student the basic commands necessary for 2D drawing, design, and drafting using AutoCAD. Upon completion of the course, the student will:

- Become familiar with the AutoCAD user interface.
- Understand the fundamental concepts and features of AutoCAD.
- Use the precision drafting tools in AutoCAD to develop accurate technical drawings.
- Present drawings in a detailed and visually impressive manner.
- Develop a level of comfort and confidence with AutoCAD through hands-on experience.

Student's obligation

The student should attend the class so as to practice the software, absent student will lose activity marks, he/she must draw different drawings as a homework whenever required.

Forms of teaching

The form of teaching will be through using data show and white board for explanation, students will follow steps to use specific commands in the software to draw any sketch or model.

Assessment scheme

Breakdown of overall assessment and examination

Quiz (4 Quiz):4%

Home Work (5 Home Work): 14%

Reports& Seminar (5 Reports):16%

Absences: 2 %

Mid-Term :24%

Pre-Final:60 m

Final: 40 m

Student learning outcome:

1. Demonstrate basic concepts of the AutoCAD software.
2. Apply basic concepts to develop construction (drawing) techniques.
3. Ability to manipulate drawings through editing and plotting techniques.
4. Understand geometric construction.
5. Produce template drawings.

6. Produce 2D Orthographic Projections. 7. Understand and demonstrate dimensioning concepts and techniques. 8. Understand Section and Auxiliary Views. 9. Become familiar with the use of Blocks, Design Center, and Tool Palettes. 10. Become familiar with Solid Modelling concepts and techniques.	
Course Reading List and References: <ul style="list-style-type: none"> • AutoCAD users guide. • AutoCAD command reference guide. 	
The Topics:	Lecturer's name
Practical Topics (If there is any)	
<ul style="list-style-type: none"> • Introduction to CAD <ul style="list-style-type: none"> • Introduction • What is CAD? • Fundamentals of Engineering Drawing • Taking a Guided Tour • Working with AutoCAD 	Week 1
<ul style="list-style-type: none"> • Inserting Charts <ul style="list-style-type: none"> • Starting Your First Drawing • Setting up a Work Area • Specifying Distances with Coordinates • Getting to know the Draw Toolbar 	Week 2
<ul style="list-style-type: none"> • Drawing in 2D <ul style="list-style-type: none"> • Detailed Usage of Draw Tools (Polylines, Polygons, Circles, Arcs, Multiline, Donuts, Ellipse, etc.) • Using the AutoCAD Modes as Drafting Tools • Learning the Tools of the Trade • Planning and Laying Out a Drawing • Viewing your Drawing 	Week 3
<ul style="list-style-type: none"> • Modifying in 2D <ul style="list-style-type: none"> • Basic Modify Tools (Erase, Copy, Move, Rotate, Scale, Align, Offset, Mirror, Stretch, Lengthen, Break, Trim, Extend), etc. 	Week 4
<ul style="list-style-type: none"> • Power Editing <ul style="list-style-type: none"> • Editing More Efficiently (Usage of Advanced Editing Commands like Fillet, Chamfer, Array, Pedit, etc.) • Using Grips to Simplify Editing 	Week 5

<ul style="list-style-type: none"> • Drawing Skills • Selecting Objects • Using Advanced Selection Tools • Using Hatch Patterns in Your Drawings • Understanding the Boundary Hatch Options • Hatch Editing • Finding Area • Getting General Information 	Week 6
<ul style="list-style-type: none"> • Blocks • Creating and Inserting Blocks • Modifying a Block • Creating Attributes • Editing Attributes 	Week 7
<ul style="list-style-type: none"> • Layers • Creating a new Layers and changing the properties of the layers • Working on Linetypes, Lineweights and Color Controls • Organizing Information with Layers • Managing Layers 	Week 8
<ul style="list-style-type: none"> • Adding Text to Drawings • Adding Text to a Drawing • Understanding Text Formatting in AutoCAD • Organizing Text by Styles • Adding Simple Text Objects • Using Fields to Associate Text with Drawing Properties • Adding tables to your Drawing 	Week 9
<ul style="list-style-type: none"> • Using Dimensions • Understanding the Components of a Dimension • Drawing Linear Dimensions • Dimensioning Non-orthogonal Objects • Adding a Note with an Arrow • Creating a Dimension Style • Editing Dimensions 	Week 10
<ul style="list-style-type: none"> • Introducing 3D • Creating a 3D Drawing • Viewing a 3D Drawing • Drawing Predefined 3D Surfaces 	Week 11

<ul style="list-style-type: none"> • Mastering 3D Solids • Understanding Solid Modeling • Creating Solid Forms • Creating Complex Solids • Editing Solids • Advanced Editing Tools for Solids • Enhancing the 2D Drawing Process • Finding the Properties of a Solid 	Week 12
<ul style="list-style-type: none"> • 3D Surfaces • Creating Complex 3D Surface • Using Other Surface Drawing Tools • Using Advanced 3D Features • Mastering the User Coordinate System • Viewing your Model in Perspective 	Week 13
<ul style="list-style-type: none"> • Plotting drawings • Plotting Drawings in AutoCAD • Plotting Drawings Using the Plot Dialog Box Page Setup Area • Printer/plotter Area • Paper size Area *(Number of copies) • Area Plot area • Plot offset (origin set to printable area) * Area Plot scale Area 	Week 14

19. Examinations:

Q\ Choose the correct answer for the following: (8 m)

1- Polygon allows you to draw polygon up to.....

A- 10 sides
B- 100 sides
C- 1000 sides
D- 1024 sides

2- To turning Ortho. On/ off use the....

A- F7 key
B- F2 key
C- F8 key
D- F9 key

3- Zoom Extents allows you to...

A- Minimize the drawing
B- See all of the drawing at once
C- Close in on a small area
D- Move around the drawing at the same scale

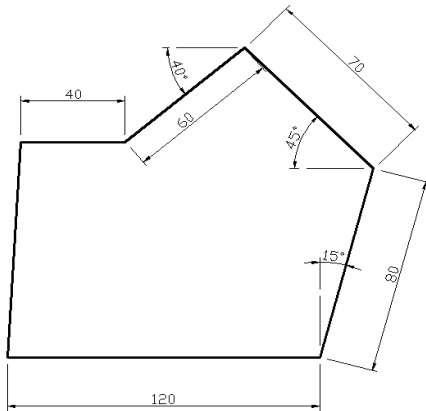
4- Ellipse draws....

A- A Circle whose line thickness you specify by entering it's inside and outside diameter.
B- An ellipse
C- A smooth curve to asset of points

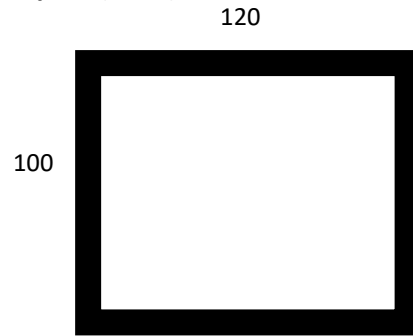
D- A 3D solid cylinder

Answer\ 1- D : 2- C : 3- B : 4- B

Q\ Write the steps necessary to draw the following shapes? (12 m)

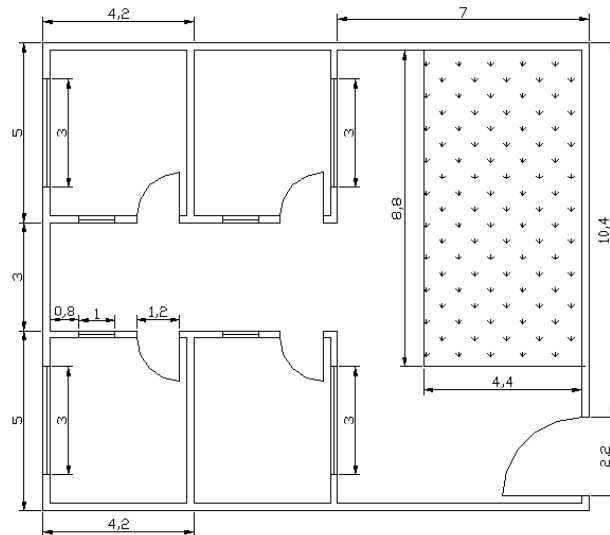


Answer\
L (line)
50,50 (Suppose)
@120<0
@80<75
@70<135
@60<220
@40<180
C



Answer\
rec
20,20 (suppose)
@120,100

Q\ Draw the following by using AutoCAD program in scale 2:1



20. Extra notes:

21. Peer review

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