

# Course Card & Weekly Schedule



## Department of Mechanical Engineering University of Engineering and Technology, Peshawar

<b>Course Title</b>	<b>Engineering Drawing &amp; CAD Lab</b>
Course Number	ME-104L
Semester	Spring 2020
Instructor	Engr. Asim Ahmad Riaz
Class Room	CAD lab
Instructor Email	Engr.asim@uetpeshawar.edu.pk
Credit Hours	1
Contact Hours	3
Compulsory/Elective	Compulsory

### Schedule

Theory	N/A
Laboratory	As per time-table <span style="float: right;">Location: CAD Lab</span>
Office Hours	Tuesday, Friday (9-11 am)

### PREVIOUS RELEVANT COURSES

- ME-105	Engineering Drawing and Graphics Theory
- ME-105L	Engineering Drawing and Graphics Lab

### COURSE ASSESSMENT & GRADING BREAKUP

<b>Theory Part</b>  N/A	<b>Laboratory Part</b> Sessional: 25 % Midterm Examination: 25 % Final Examination: 50 %  An attendance of 75% is mandatory to sit in the final examination.
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<b>EXAMINATION DETAIL</b>	
Midterm	Tentative Duration: 30 Minutes Exam Specifications: Closed books/Closed notes
Final Examination	Tentative Duration: 30 Minutes Exam Specifications: Closed books/Closed notes Final exam will include 50-60 % course from pre-midterm lectures.
<b>TEXT BOOK/S</b>	
1. AutoCAD 2007 User's Guide by Autodesk.	

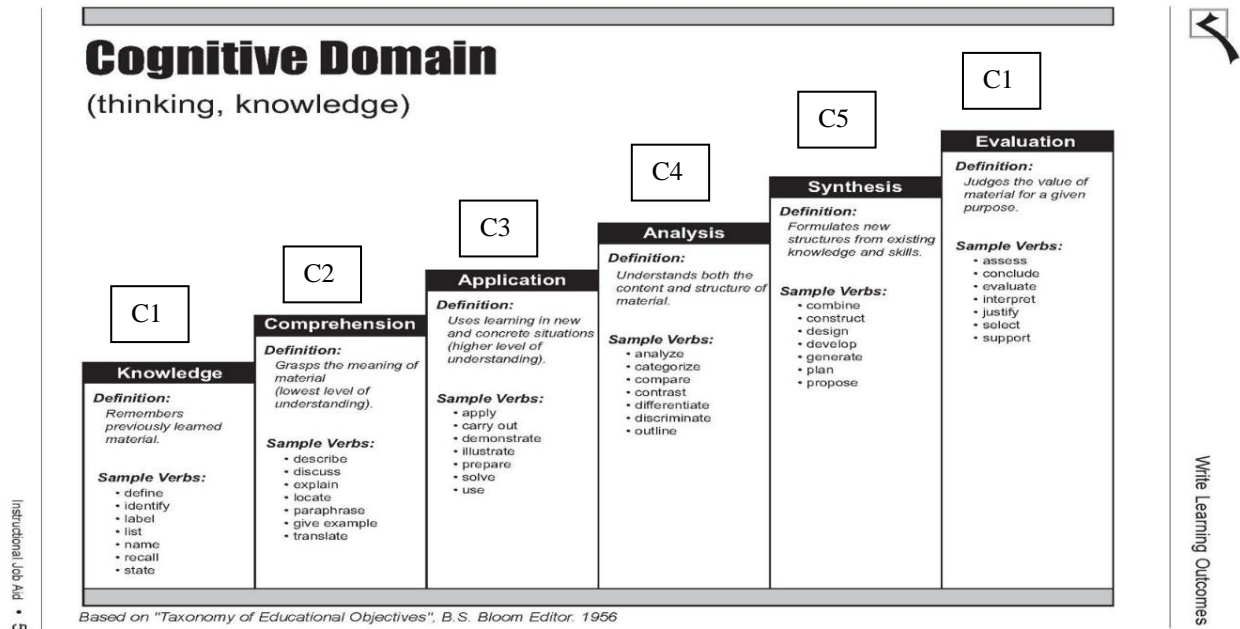
<b>REFERENCE BOOK/S AND OTHER SOURCES</b>
1. Mastering AutoCAD 2007 by George Omura 2. AutoCAD AD Bible by Ellen Finkelstein 3. Online tutorials

<b>COURSE DESCRIPTION</b>
<ul style="list-style-type: none"> <li>•Introduction to AutoCAD, Start, Organize and Save a Drawing,</li> <li>•Moving around in an Existing Drawing.</li> <li>•Understanding and Drawing simple 2D objects, Coordinate systems, Point data entry,</li> <li>•Drawing Point, Line, Circle, Arc, Rectangle, Polygon, Ellipse, Polyline, etc.,</li> <li>•Drawing with Precision.</li> <li>•Modifying Drawing Objects. Creating Copies of Objects. Drawing in Layers, Object Properties</li> <li>•Creating complex drawings, hatching, text</li> <li>•Dimensions, blocks (with and without attributes, external references, AutoCAD Design Center.</li> <li>•Creating simple 3D Objects, Solids and Surfaces.</li> <li>•Extracting views from model space into paper space.</li> <li>•Plotting a drawing. Plotting from Model Space. Creating Layouts in Paper Space</li> </ul>

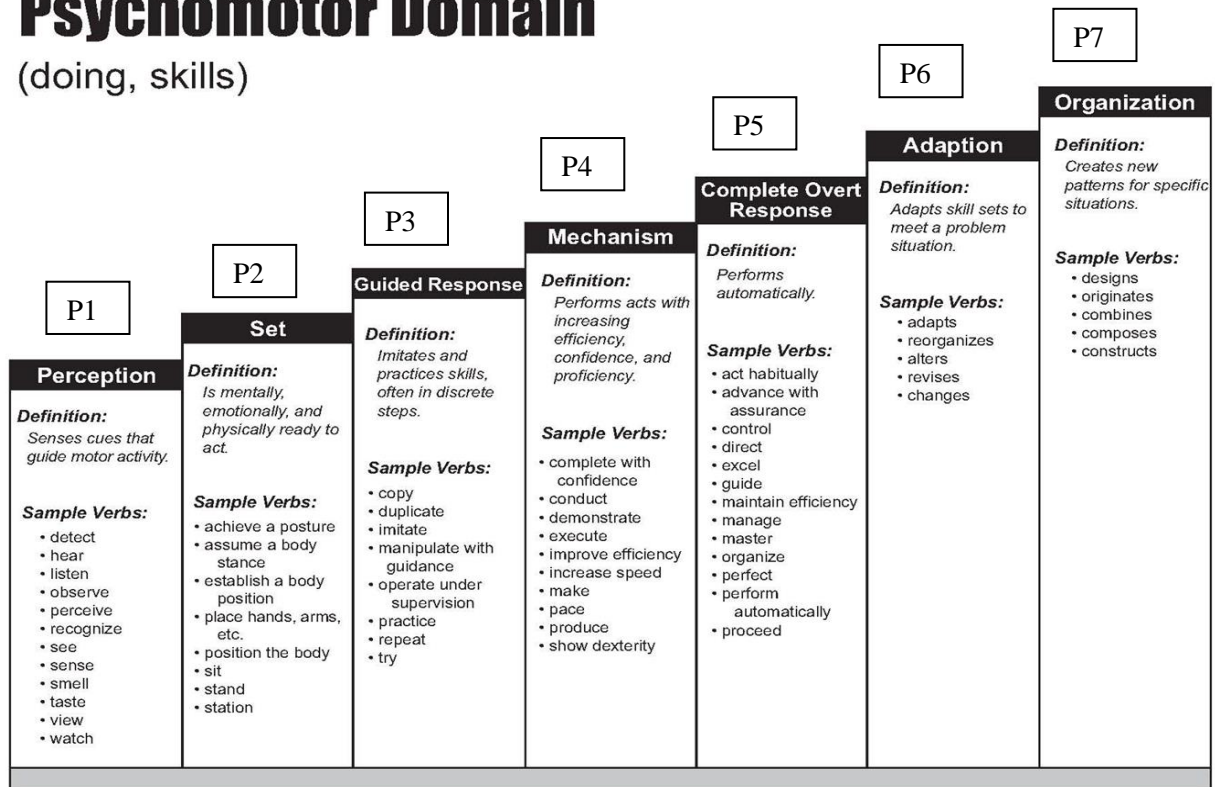
<b>COURSE OBJECTIVES</b>
To Understand the basic concepts & environment of AutoCAD and apply these fundamental concepts of AutoCAD in 2D and 3D modeling. At the end of this course the students will be able to draw 2D drawings and 3D models with engineering specifications.

<b>COURSE LEARNING OUTCOMES (CLOs)</b>			
	<b>CLO Statement</b>	<b>Mapping with PLO</b>	<b>Mapping with Bloom's Taxonomy</b>
<b>CLO-1</b>	<b>Identify</b> Engineering Drawing and CAD as language of Technical communication. Understand and manipulate the concepts of 2D drawing using AutoCAD software	<b>PLO-1</b>	<b>C2</b>
<b>CLO-2:</b>	Recognize various functions and commands of AutoCAD software to create two dimensional, Isometric and three-dimensional drawings and models related to Computer System Engineering applications. Generate and Produce the drawing views of the components	<b>PLO-5</b>	<b>P2</b>

	and assemblies in AutoCAD		
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## Psychomotor Domain (doing, skills)



## Programme Learning Outcomes

What the graduates are expected to know and able to perform or attain by the time of graduation (skills, knowledge and behavior/attitude)

<b>PLO 1: Engineering Knowledge</b>	An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
<b>PLO 5: Modern Tool Usage</b>	An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

Tentative Weekly Schedule			
Week	Contents	Activity	Mapping with CLOs
01	Introduction to Auto Desk, AutoCAD, Drawing, Design,		
	GUI, UCS, WCS, Selection Windows (Cross & Solid Windows)		
	Views, Keyboard Commands, Repeating the Command		
02	Introduction to Toolbars, Displaying Toolbars		
	Setting the Units, Limits, Grids, Snap, Drafting Setting, VSCURRENT		
	<b>Practice Session</b> on Toolbars, Units, Limits, Grids, Snap, Drafting Setting	<b>Assignment 1</b>	<b>CLO2</b>
03	Coordinate Systems, Types of coordinates (Cartesian, Polar, Cylindrical, Spherical)		
	Drawing an object, Draw Toolbar, Line, Ortho, Polar		
	<b>Practice Session</b>	<b>Quiz 1</b>	<b>CLO1</b>
04	Point command, Blip mode, Ellipse, Donut command		
	Text, Multiple Text, construction Line(X-line), Ray Command, Spline, Hatch & Fill Command		
	<b>Practice Session</b>	<b>Task 1</b>	<b>CLO3</b>
05	Modifying toolbar, Copy, Move, Array, Mirror commands		

	Offset, Scale, Chamfer, Fillet, Scale , Break, Join, Explode Trim, Extend Commands		
	<b>Practice Session</b>	<b>Assignment 2</b>	<b>CLO1</b>
06	Dimensioning Command, Dim aligned, dim Radius, Leader, dimension style, Creating Baseline dimensions		
	<b>Practice Session</b>	<b>Task 2</b>	<b>CLO2</b>
07	Array, Rectangular Array, Polar Array		
	Rotate, Divide, Pedit Commands, Changing Properties (Color, Line Type, line weight etc.)		
	<b>Practice Session</b>	<b>Quiz 2</b>	<b>CLO1</b>
08	Introduction to Layers, Creating new Layer, changing Properties of Layers		
	<b>Practice Session</b>		
<b>Mid Term Examination</b>			
09	ISOMETRIC Drawing: Setting model space and creating Isometric Drawings Working with Layout, Creating New Layout and Using Layout form templates		
	<b>Practice Session</b>		
10	Customizing Setting, Options, changing background color,		
	Introduction to Block command, insert (block insertion) command Introduction to Attributes/title blocks. Attributes Definition, Edit attributes		
	<b>Practice Session</b>	<b>Task 3</b>	<b>CLO2</b>
11	Introduction to 3D Commands		
	Solid Modeling: Box, sphere, cylinder, cone, wedge, torus, pyramid etc.		
	<b>Practice Session</b>	<b>Task 4</b>	<b>CLO2</b>
12	Extrusion Command, Simple, Tapper, Along a Path Extrusion		
	3D viewports, controlling viewports, 3D orbit, Visual Style		
	<b>Practice Session</b>	<b>Task 5</b>	<b>CLO2</b>
13	Solid Composites: Union, Subtraction, Intersection, Sweep, Loft, Presspull, Cylindrical helix etc.		
	3D Commands: Revolve, 3D mirror, copy, move, offset, 3D Array etc.		
	<b>Practice Session</b>	<b>Quiz 3</b>	<b>CLO2</b>
14	Solid Editing Commands: extrude face, shell, rotate		

	face etc.		
	Creating Camera, walk and fly, aerial view etc.		
	<b>Practice Session</b>	<b>Assignment 3</b>	<b>CLO2</b>
15	Rendering, Material Library, Motion Path Animation		
	Documenting the files, Printing your drawing, layout. Views extraction using solve view and solve draw commands etc.		
	<b>Practice Session</b>		
16	Revision, Problem Discussion and Mini Project Collection.	Mini project	<b>CLO2</b>
<b>Final Term Examination</b>			