ACADEMIC AFFAIRS

Course Number: ARBT 125

Department: Architecture and Building Technology

Course Title: Architectural CAD I

Semester: Fall   Year: 2013

Objectives/Competencies

Course Objective	Competencies
1. Discuss and understand concepts of architectural drafting.	1. Discuss basic drawing set-up. a. Paper sizes b. Borders c. Title block 2. Identify and use different line weights and types. 3. Use different architectural and engineering scales. 4. Understand the basic architectural drawing views such as plan views, elevations, sections, and details. 5. Understand how and where to create appropriate section views. 6. Understand how to dimension a drawing in accordance with architectural graphic standards. 7. Use appropriate symbols for cross referencing architectural drawings.
2. Discuss and understand computer hardware and software	1. Identify and discuss proper handling and use of different

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basics.	hardware elements of a CAD system.
	  a. Monitor
	  b. Keyboard
	  c. CPU
	  d. Plotter
	  e. Printer
	  f. Portable storage devices
	  g. Mouse/pointing device
	2. Understand and manage the operating system.
	3. Create directories and manage files using the operating system's file manager to:
	  a. Copy files
	  b. Delete files
	  c. Move files
	  d. Sort files
	4. Understand and apply knowledge of internet to transfer files and obtain engineering/architectural details and information for design:
	  a. Use webmail to attach and send drawing files.
	  b. Search internet and obtain necessary design information such as product sizes and specifications.
	  c. Identify sources of design drawings and blocks on the internet and using Autodesk software.
	  d. Understand basics of shared drawings such as drawing locks to prevent multiple users from editing same drawing and network storage of drawings.

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3. Understand autoCAD menu basics, drawing set-up, cursor and display control.	1. Use and mange the drawing editor, including toolbars, pulldowns, mouse buttons and screen menus.
	2. Use the Help facility.
	3. Understand when to use SAVE vs. SAVE AS.
	4. Set up new drawings in accordance with Architectural Standards:
	   a. Units
	   b. Limits
	   c. Border line placement
	   d. Title block
	   e. Letters and numbers
	5. Control the cursor:
	   a. Ortho
	   b. Snap
	6. Control the display of drawings with Zoom, Pan, Redraw and Regen.

4. Understand and use autoCAD draw commands.	1. Create entities with the draw commands:
	   a. Arc.
	   b. Circle
	   c. Ellipse
	   d. Line
	   e. Point
	   f. Polygon
	   g. Polyline

Course Objective	Competencies

	h. Rectangle
	2. Reverse the last command with UNDO.
	3. Enter points using the three methods of coordinate entry:
	    a. Relative rectangular
	    b. Relative polar
	    c. Absolute
	4. Identify and use object snap modes to draw and edit with accuracy.
	    a. Center
	    b. Endpoint
	    c. Insertion
	    d. Intersection
	    e. Midpoint

5. Understand and use autoCAD edit commands.	1. Modify the drawing using EDIT commands:
	    a. Align
	    b. Break
	    c. Chamfer
	    d. Copy
	    e. Erase
	    f. Explode
	    g. Extend
	    h. Fillet
	    i. Mirror
	    j. Move
	    k. Offset

Course Objective	Competencies

	l. Pedit
	m. Polar array
	n. Rectangular array
	o. Rotate
	p. Scale
	q. Stretch
	r. Trim
	2. Use different object selection set methods:
	   a. All
	   b. Crossing
	   c. Crossing polygon
	   d. Fence
	   e. Last
	   f. Pick
	   g. Previous
	   h. Window
	   i. Window polygon
	3. Change object properties using the DDCHPROP command.
	4. Understand and use Grips to facilitate the drawing and editing processes.

6. Understand and use autoCAD organization commands.	1. Organize drawing information using layers, colors and linetypes. 2. Identify and use layer management tools: a. On/Off

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	b. Lock/Unlock c. Freeze/Thaw 3. Adjust the appearance of lines using the LTSCALE command. 4. Discuss the use of freezing layers to shorten regeneration time.

7. Understand and use autoCAD text commands.	1. Place text on the drawing using:
	  a. TEXT
	  b. DTEXT
	  c. MTEXT
	2. Edit text using the DDEDIT command.
	3. Use the STYLE command to create and edit text styles.

8. Understand and use autoCAD dimensioning commands.	1. Dimension drawings:
	  a. Angular dimensions
	  b. Centerlines
	  c. Linear dimension
	  d. Radial and diameter dimensions
	2. Discuss how dimension variables control the appearance of dimensions.
	3. Know where to reference default dimension variables.
	4. Create and use dimension styles.

9. Understand and use blocks in autoCAD.	1. Group objects in the current drawing using the BLOCK command.

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	2. Save blocks externally using the WBLOCK command. 3. Automate the drawing process with ATTRIBUTS. 4. Insert blocks using DDINSERT. 5. Edit attributes with DDATTE.
10. Create and plot (print) drawings in autoCAD.	1. Plot and print drawings using current plot and print technology including paperspace.