PACING GUIDE

COURSE: Computer Aided Design   **GRADE(S): 9th- 12th**

MONTH	UNIT	STANDARDS/SKILLS	ASSESSMENTS What evidence (formative/summative) is utilized to establish that the content, standards, & skills have been mastered?	CONTENT Topics being covered? What do students need to know? (*nouns*)	ACTIVITIES w/Integration of Technology & Career Ready Practices
September	1A	0 x ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17 0 ARCH.9-12.9.4.12.B.(2 x).4	Class Projects/ Peer grading/ Teacher ● Why are the views in an orthographic drawing arranged in a specific way? ● Why is it important to include the proper spacing between views of an Orthographic drawing? ● What is First-angle projection? ● What is Third-angle projection?	CAD-Unit-Plan-1A-Curriculum-Hand Sketches-Orthographic-Projection Students will become familiar with the concept and techniques involved in creating an orthographic drawing. The lesson will also cover visualization techniques to help students understand the necessary views needed to properly present the shape of an object and the features that are unique to it. Students will sketch by hand different geometries and apply the detailing necessary to fully describe a design in three, separate two-dimensional views based on the glass box theory.	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software
October	1A	0 x ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17 0 ARCH.9-12.9.4.12.B.(2 x).4	Class Projects/ Peer grading/ Teacher ● Why are the views in an orthographic drawing arranged in a specific way? ● Why is it important to include the proper spacing between views of an Orthographic drawing? ● What is First-angle projection? ● What is Third-angle projection?	CAD-Unit-Plan-1A-Curriculum-Hand Sketches-Orthographic-Projection Students will become familiar with the concept and techniques involved in creating an orthographic drawing. The lesson will also cover visualization techniques to help students understand the necessary views needed to properly present the shape of an object and the features that are unique to it. Students will sketch by hand different geometries and apply the detailing necessary to fully describe a design in three, separate two-dimensional views based on the glass box theory.	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software
November	1A		Class Projects/ Peer grading/ Teacher	CAD-Unit-Plan-1A-Curriculum-Hand Sketches-Orthographic-Projection	Multi-View Drawings: Hand Sketches

		0 x ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17 0 ARCH.9-12.9.4.12.B.(2 x).4	• Why are the views in an orthographic drawing arranged in a specific way? • Why is it important to include the proper spacing between views of an Orthographic drawing? • What is First-angle projection? • What is Third-angle projection?	Students will become familiar with the concept and techniques involved in creating an orthographic drawing. The lesson will also cover visualization techniques to help students understand the necessary views needed to properly present the shape of an object and the features that are unique to it. Students will sketch by hand different geometries and apply the detailing necessary to fully describe a design in three, separate two-dimensional views based on the glass box theory.	Computers, AutoCAD Software
December	1B	0 x ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17 0 ARCH.9-12.9.4.12.B.(2 x).4	Class Projects/ Peer grading The important ideas and core processes that are central to this lesson are: • What are Multiview drawings? • What are XY, and YZ, XZ planes; and parallel planes? • What are First and Third Angle Projection • How would you define Orthographic projection? • Can you identify the view necessary to make a Multiview Drawing? • What are the advantages of Multiview drawings?	CAD-Unit-Plan-1B-Curriculum-Hand Sketches-Multiview Drawings The important ideas and core processes that are central to this lesson are: • Understand the concepts of Multiview drawings. • Understand X, Y, and Z axes; XY, and YZ, XZ planes; and parallel planes. • Understand and draw orthographic projections and position the views. • Understand the First and Third Angle Projection	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software
January	1B	0 x ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17	Class Projects/ Peer grading The important ideas and core processes that are central to this lesson are: • What are Multiview drawings? • What are XY, and YZ, XZ planes; and parallel planes? • What are First and Third Angle Projection • How would you define Orthographic projection?	CAD-Unit-Plan-1B-Curriculum-Hand Sketches-Multiview Drawings The important ideas and core processes that are central to this lesson are: • Understand the concepts of Multiview drawings. • Understand X, Y, and Z axes; XY, and YZ, XZ planes; and parallel planes. • Understand and draw orthographic projections and position the views. • Understand the First and Third Angle Projection	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software

		0 ARCH.9-12.9.4.12.B.(2 x).4	● Can you identify the view necessary to make a Multiview Drawing? ● What are the advantages of Multiview drawings?		
February	1B	0 x ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17 0 ARCH.9-12.9.4.12.B.(2 x).4	Class Projects/ Peer grading The important ideas and core processes that are central to this lesson are: ● What are Multiview drawings? ● What are XY, and YZ, XZ planes; and parallel planes? ● What are First and Third Angle Projection ● How would you define Orthographic projection? ● Can you identify the view necessary to make a Multiview Drawing? ● What are the advantages of Multiview drawings?	CAD-Unit-Plan-1B-Curriculum-Hand Sketches-Multiview Drawings The important ideas and core processes that are central to this lesson are: ● Understand the concepts of Multiview drawings. ● Understand X, Y, and Z axes; XY, and YZ, XZ planes; and parallel planes. ● Understand and draw orthographic projections and position the views. ● Understand the First and Third Angle Projection	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software
Match	1C	0 x ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17 0 ARCH.9-12.9.4.12.B.(2 x).4	● What are some of the advantages of using CAD versus hand drafting? ● How is the CAD software platform arranged? ● What are the different methods of inputting data when using CAD software? ● Why are viewports needed to plot out drawings of very large designs? How are they utilized? ● Why are viewports needed to plot out drawings of very large designs? How are they utilized? ● What is Dynamic Input Mode? ● Which are the three types of Coordinate Systems? ● How do you set up limits for a given drawing?	CAD-Unit-Plan-1C-Curriculum- Getting Started with AutoCAD This unit provides an overview of the different components of the AutoCAD screen. It teaches you about AutoCAD's drawing environment, how to start commands, and how to open existing drawings. It also introduces key points for Understanding the AutoCAD Interface	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software

			• How do you set up drawing units?
			• Compare and contrast:
			   • Direct Distance Entry
			   • Absolute Coordinate System
			   • Relative Coordinate System
			• Compare and contrast:
			   • Pick Box
			   • Crosshair
			• Compare and contrast:
			   • Pull Down Menu
			   • Status Bar		

April	1C	0x ARCH.9-12.3
		0x ARCH.9-12.9.4.12.B.(2).10
		0x ARCH.9-12.9.4.12.B.(2).12
		0x ARCH.9-12.9.4.12.B.(2).15
		0x ARCH.9-12.9.4.12.B.(2).16
		0x ARCH.9-12.9.4.12.B.(2).17
		0x ARCH.9-12.9.4.12.B.(2).4
			• What are some of the advantages of using CAD versus hand drafting?
			• How is the CAD software platform arranged?
			• What are the different methods of inputting data when using CAD software?
			• Why are viewports needed to plot out drawings of very large designs? How are they utilized?
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			• What is Dynamic Input Mode?
			• Which are the three types of Coordinate Systems?
			• How do you set up limits for a given drawing?
			• How do you set up drawing units?
			• Compare and contrast:
			   • Direct Distance Entry
			   • Absolute Coordinate System
			   • Relative Coordinate System
			• Compare and contrast:
				CAD-Unit-Plan-1C-Curriculum- Getting Started with AutoCAD
				This unit provides an overview of the different components of the AutoCAD screen. It teaches you about AutoCAD's drawing environment, how to start commands, and how to open existing drawings. It also introduces key points for Understanding the AutoCAD Interface
					Multi-View Drawings: Hand Sketches
					
					Computers, AutoCAD Software

			- Pick Box - Crosshair - Compare and contrast: - Pull Down Menu - Status Bar		
May	1D	$0 \atop x$ ARCH.9-12.3 0 ARCH.9-12.9.4.12.B.(2 x).10 0 ARCH.9-12.9.4.12.B.(2 x).12 0 ARCH.9-12.9.4.12.B.(2 x).15 0 ARCH.9-12.9.4.12.B.(2 x).16 0 ARCH.9-12.9.4.12.B.(2 x).17 0 ARCH.9-12.9.4.12.B.(2 x).4	- Class Projects/ Peer grading - Explain how to draw an Arc - Explain how to draw a Rectangle - Explain how to draw an ellipse - Explain how to draw an elliptical arc - Explain how to draw a polygon - Explain how to draw a polyline - What is the difference between a line and a polyline? - How do you create a simple text? - How do you assign a text style and write a simple text?	CAD-Unit-Plan-1D-Curriculum- Basic Commands This unit covers AutoCAD Commands: - Draw arcs using various points - Draw rectangles, ellipses, elliptical arcs, and polygons - Sections: Hand Sketches/ CAD Drawings - Draw polylines and donuts - Place point s and change their style and size - Draw infinite lines - Create simple text - Write simple text	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software
June	1D	$0 \atop x$ ARCH.9-12.3 0 ARCH.9-12.9.4.12.B x).10 0 ARCH.9-12.9.4.12.B x).12 0 ARCH.9-12.9.4.12.B x).15 0 ARCH.9-12.9.4.12.B x).16 0 ARCH.9-12.9.4.12.B x).17 0 ARCH.9-12.9.4.12.B x).4	- Class Projects/ Peer grading - Explain how to draw an Arc - Explain how to draw a Rectangle - Explain how to draw an ellipse - Explain how to draw an elliptical arc - Explain how to draw a polygon - Explain how to draw a polyline - What is the difference between a line and a polyline? - How do you create a simple text? - How do you assign a text style and write a simple text?	CAD-Unit-Plan-1D-Curriculum- Basic Commands This unit covers AutoCAD Commands: - Draw arcs using various points - Draw rectangles, ellipses, elliptical arcs, and polygons - Sections: Hand Sketches/ CAD Drawings - Draw polylines and donuts - Place point s and change their style and size - Draw infinite lines - Create simple text - Write simple text	Multi-View Drawings: Hand Sketches Computers, AutoCAD Software