

COURSE: ARCHITECTURE-CAD

Grade Level:10-12

MAIN/ GENERAL TOPIC	SUB-TOPIC:	ESSENTIAL QUESTIONS:	WHAT THE STUDENTS WILL KNOW:	WHAT THE STUDENT WILL BE ABLE TO DO:	Assessments:	WHEN STUDENT DOES IT:
Residential design and primary considerations	Identify historical influences Recognize elements of contemporary designs Examine current trends Site consideration	What components are reflected in residential architecture	Different styles of residential architecture Current design trends Material applications Research sources Know key site considerations, restrictions, zoning, and codes	Identify styles and trends in residential architecture Identify and use architectural research sources Apply all site considerations	Testing	Sept
Room planning	Sleeping area Living area Service area	How do the different areas of a house relate to each other	Factors that are the bases of room design Appropriate room sizes and locations Basic furniture space application Relationships between areas	Design and layout rooms within an area Relate areas to each other Draw a line layout of a basic floor plan to scale formatted in Auto-CAD	Draw preliminary floor plans	Sept-Oct
Review the basic drawing environment Using modification tools	Drawing setup and organization AutoCAD display and selection operations Modify commands Geometric constructions Add text to drawings Object grips and properties	What is the basis of your drawing What basic modifications will help you master introductory and advanced drawings	Basic drawing environment and how to use it Detail the setup process for drawing creation Maximize the use of display tools to make drawing manipulation easier Modify commands to remove, change, or create entities Create geometric shapes to form a foundation of design Create and add text to your drawings	Identify areas of AutoCAD screen interface Set up drawings and types of measurement units Use the display tools to make drawing manipulation easier Use break, trim, move, scale, rotate, stretch, explode, array, copy, fillet, chamfer, extend, mirror, and offset Create boundary lines using basic drawing commands Create text through both dynamic and multiline options	Develop a series of templates Develop a series of Architectural blocks	Oct-Nov
Design and draw 1 st floor plan	Typical materials Standard symbols Dimensioning standards Location and sizes of walls	Why is the floor plan the heart of a set of construction drawings	Wall locations and sizes Window and door locations and sizes Cabinets, appliances, and permanent fixtures Room names and material symbols Dimensioning Procedures for drawing floor plans	Draw inner and outer walls to proper sizes Locate and draw all windows and doors Draw all permanent fixtures in place Add all dimensions, notes and room names	Finished floor plan	Nov-Dec

Footings, Foundations, and concrete	Footings Foundation walls Beams and girders Drainage and wall preparation Concrete and masonry	Why is the foundation a major consideration in house design	How to analyze a typical floor plan to determine the appropriate foundation Calculate loads to be supported by carrying beams and lally columns Soil preparation and drainage	Draw proper foundation plans using proper line representations Show all utilities input and output Draw all permanent fixtures, beams, and columns Add all dimensions and notations	Finished foundation plan	Dec-Jan
Elevations	Grade line, floor line and ceiling line Walls Windows Doors Roof layout and construction Projection of layout points Dimensioning	How do elevations represent the four sides of a house	Layout all height lines Project point from floor plans and other elevations Research and draw all windows and doors Calculate roof pitch and layout cornice Research siding and roof materials and draw and notate representations of each Draw chimney and all finish work Add all dimensions and notations	Project and draw all elevation features to height lines Layout and draw all windows and doors Layout and draw roof angles and cornice Add all necessary dimensions and notations	Four finished elevations	Feb-March
Electrical plan	Meter Distribution box Outlets Switches Phone outlets Cable TV outlets Central vacuum system All special electrical features	What is involved in a complete electrical plan	Design and draw a complete electrical plan Know the basic electrical symbols How to build a lighting fixture schedule Research fixtures and all other fixed appliance that will be used in the electrical plan Labeling of all fixtures on drawing Know the basic electrical codes	Research all information needed to draw an electrical plan Draw a complete electrical plan Build a lighting schedule Completely label the drawing	Complete an electrical plan	April
Plumbing and heating plan	Cold water lines Hot water lines Valves Waste removal system Fixtures Schematic symbols	What information is needed for the plumbing and heating contractors	Design and draw a complete plumbing and heating plan Research fixtures and all other fixed appliance that will be used in the plumbing plan Research the different types of heating systems and apply the system that fits the house design Know the basic schematic symbols Know the basic plumbing codes	Research all information needed to draw an plumbing/heating plan Draw a complete plumbing/heating plan Build a plumbing fixture schedule Completely label the drawing	Complete a plumbing/heating plan	May
Detail drawings	Stair details Fireplace details Crossection Kitchen cabinets Roof details Cornice details Any custom feature	What explanation details are required to complete a full set of working architectural drawings	Basic stair design and layout Basic fireplace designs and dimensional layout Crossections for added details Layouts for complicated roof designs Plans for any specialty cabinets Review of all required plans to meet contractors needs	Draw basic stair plan Draw basic fireplace plan Draw crossections Research and draw all special details Add all dimensions and notations	Complete set of detail drawings as needed	june

