

# ARCHITECTURAL DRAFTING COURSE OUTLINE

**Course Length:** 180 Hours, 2 Semesters

**Grade Level:** 10-12

**Prerequisite:** Industrial Drafting

**Method of Instruction:** Text book, demonstration, overheads, and discussions.

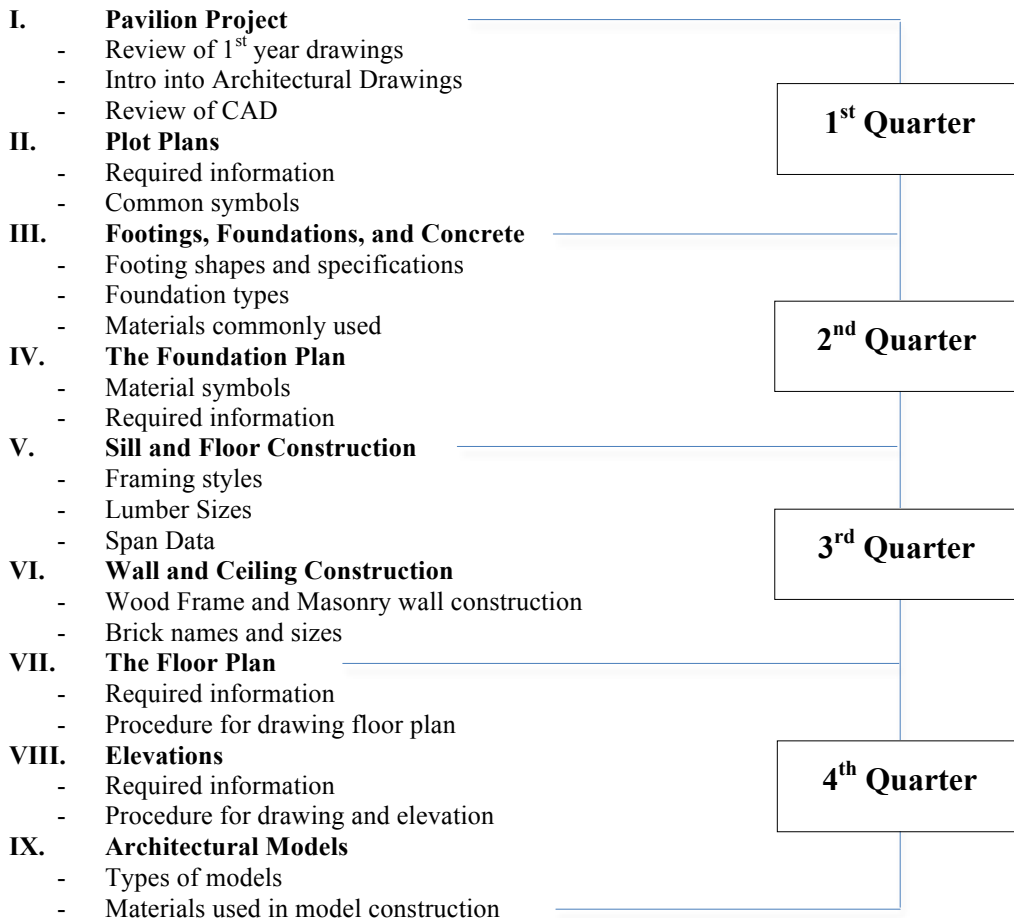
**Method of Grading:** Accumulation of points from assignments and activities, teacher made rubrics for activities.

**Course Description:** A second-year drafting course providing basic drafting skills along with information necessary for planning and designing various types of structures and dwellings. It presents basic instruction in preparing architectural working drawings using both traditional and computer-based methods. Learning activities include experimentation with designing, constructing, and testing architectural ideas.

## Course Outcomes:

1. Describe in graphic form, the shape and size of an object.
2. Create drawings utilizing both conventional hand drawn and computer-aided drafting.
3. Correctly use the tools and equipment used in the drafting industry.
4. Complete assigned tasks within established time schedules.

## Course Content:



**Resources and Textbooks:**

Clois E. Kicklighter. **Architecture: Residential Drawing and Design**, Goodheart-Willcox 1995

Hepler, Wallach, Hepler. **Architecture: Drafting and Design**, 7<sup>th</sup> Edition. Glencoe McGraw-Hill 1998.

**AutoCad 2004** Computerized Drafting Software

**3D Home Architect** Computerized Drafting Software

# Girard High School

Name \_\_\_\_\_ SS#    /    /

School \_\_\_\_\_ Instructor \_\_\_\_\_

**RATING SCALE:**

- 3 Skilled-Works independently**
- 2 Limited Skill-Requires assistance to perform task**
- 1 Skill Underdeveloped-Received instruction but has not developed skill**
- 0 No Exposure-No instruction or training in this area**

**DIRECTIONS:** Evaluate the student by checking the appropriate Number to indicate the degree of competency reached. Rate each task to reflect employability readiness.

## A. CAREER DEVELOPMENT SKILLS

(Time Management)

- 3 2 1 0 \_\_\_\_\_ 1. Set priorities or the order in which several tasks will be accomplished.
- 3 2 1 0 \_\_\_\_\_ 2. Identify and eliminate time traps.

(Materials Management)

- 3 2 1 0 \_\_\_\_\_ 1. Locate information and select the materials, tools, equipment, or other resources to perform the activities needed to accomplish a specific task.
- 3 2 1 0 \_\_\_\_\_ 2. Perform routine tasks related to equipment operations and maintenance.

(Communication Skills)

- 3 2 1 0 \_\_\_\_\_ 1. Prepare and deliver a presentation appropriate to subject matter, purpose, and audience.
- 3 2 1 0 \_\_\_\_\_ 2. Incorporate visual media into a presentation.

(Teamwork Skills)

Participates in team tasks:

- 3 2 1 0 \_\_\_\_\_ 1. Establish team goals.
- 3 2 1 0 \_\_\_\_\_ 2. Establish team standards.
- 3 2 1 0 \_\_\_\_\_ 3. Receive and give information.
- 3 2 1 0 \_\_\_\_\_ 4. Process information.
- 3 2 1 0 \_\_\_\_\_ 5. Complete team task on time.

# Architectural Drafting

ENROLLMENT DATE ___/___/___	COMPLETION DATE ___/___/___	HOURS COMPLETED _____
<b>I certify that the student received training in the areas indicated.</b>		
Student Signature _____	Date ___/___/___	
Instructor Signature _____	Date ___/___/___	
Administrator Signature _____	Date ___/___/___	

(Work Ethics)

Apply rules and regulations in a given occupational area, including:

- 3 2 1 0 \_\_\_\_\_ 1. Punctuality and dependability.
- 3 2 1 0 \_\_\_\_\_ 2. Responsibility for position.
- 3 2 1 0 \_\_\_\_\_ 3. Accuracy

(Mathematics)

- 3 2 1 0 \_\_\_\_\_ 1. Convert common units of measurement within and/or across measurement systems (metric/English, ect)
- 3 2 1 0 \_\_\_\_\_ 2. Construct and interpret tables, charts, maps, and/or graphs.

(Writing)

- 3 2 1 0 \_\_\_\_\_ 1. Check, edit, and revise for correct information, appropriate emphasis, grammar, spelling, and punctuation.

(Computer Literacy)

- 3 2 1 0 \_\_\_\_\_ 1. Compose, organize, and edit information using a computer.
- 3 2 1 0 \_\_\_\_\_ 2. Access, navigate, and use on-line services.

(Human Relation Skills)

- 3 2 1 0 \_\_\_\_\_ 1. Demonstrate ability to work with various class members in groups to accomplish production tasks.
- 3 2 1 0 \_\_\_\_\_ 2. Demonstrate critiquing ability with various class members for a variety of projects.

## B. CLASS SPECIFIC SKILLS

### (Basic House Design)

- 3 2 1 0 \_\_\_\_\_ 1. Identify the historical influences that helped shape today's home designs.
- 3 2 1 0 \_\_\_\_\_ 2. Recognize and describe the elements of contemporary dwellings.
- 3 2 1 0 \_\_\_\_\_ 3. Recognize the four basic house designs
- 3 2 1 0 \_\_\_\_\_ 4. Describe the basic construction drawings used to build a structure.

### (Drawing Instruments and Techniques)

- 3 2 1 0 \_\_\_\_\_ 1. Define the three principal views in orthographic projection.
- 3 2 1 0 \_\_\_\_\_ 2. List and explain the use of architectural drafting equipment.
- 3 2 1 0 \_\_\_\_\_ 3. Discern the difference between size and scale.

### (Plot Plans)

- 3 2 1 0 \_\_\_\_\_ 1. Identify the various features shown on a typical plot plan.
- 3 2 1 0 \_\_\_\_\_ 2. Visualize land elevations from contour lines.
- 3 2 1 0 \_\_\_\_\_ 3. Recognize typical topographical symbols and apply them to site considerations.
- 3 2 1 0 \_\_\_\_\_ 4. Properly locate a building on a site.
- 3 2 1 0 \_\_\_\_\_ 5. Draw a plot plan using correct symbols and conventions.

### (Footing, Foundations, and Concrete)

- 3 2 1 0 \_\_\_\_\_ 1. Describe the procedure for staking out a house location.
- 3 2 1 0 \_\_\_\_\_ 2. List the major considerations when designing a footing for a residential foundation.
- 3 2 1 0 \_\_\_\_\_ 3. Analyze a typical floor plan to determine the appropriate foundation.
- 3 2 1 0 \_\_\_\_\_ 4. Discuss the design considerations for wood, concrete, and masonry foundation walls.
- 3 2 1 0 \_\_\_\_\_ 5. Explain the purpose of a lintel.

### (The Foundation Plan)

- 3 2 1 0 \_\_\_\_\_ 1. Identify the primary features included in a foundation plan.
- 3 2 1 0 \_\_\_\_\_ 2. Discuss the difference between a foundation plan and a basement plan.
- 3 2 1 0 \_\_\_\_\_ 3. Design and draw a foundation plan for a typical residential structure.

### (Sill and Floor Construction)

- 3 2 1 0 \_\_\_\_\_ 1. Recognize platform and balloon framing.
- 3 2 1 0 \_\_\_\_\_ 2. Plan the appropriate floor support using joists or trusses for a structure.

### (Sill and Floor Construction Continued)

- 3 2 1 0 \_\_\_\_\_ 3. Determine proper joist sizes using a typical span data chart.
- 3 2 1 0 \_\_\_\_\_ 4. Describe the components of a floor system.
- 3 2 1 0 \_\_\_\_\_ 5. Demonstrate an understanding of principles involved in post and beam construction.

### (Wall and Ceiling Construction)

- 3 2 1 0 \_\_\_\_\_ 1. Name the members of a typical frame wall.
- 3 2 1 0 \_\_\_\_\_ 2. Explain methods of frame wall construction.
- 3 2 1 0 \_\_\_\_\_ 3. Interpret information shown on a ceiling joist span data chart.
- 3 2 1 0 \_\_\_\_\_ 4. Sketch the various types of exterior walls used in residential construction.

### (Doors and Windows)

- 3 2 1 0 \_\_\_\_\_ 1. Recognize the functions that doors and windows perform.
- 3 2 1 0 \_\_\_\_\_ 2. Compare the types of doors used in a residential dwelling.
- 3 2 1 0 \_\_\_\_\_ 3. Draw proper door and window symbols on a typical floor plan.
- 3 2 1 0 \_\_\_\_\_ 4. Interpret the information shown in a window or door detail.

### (Stairs)

- 3 2 1 0 \_\_\_\_\_ 1. Define common stair terminology.
- 3 2 1 0 \_\_\_\_\_ 2. Discuss the appropriate use of the various stair designs.
- 3 2 1 0 \_\_\_\_\_ 3. Draw structural details for a stair.
- 3 2 1 0 \_\_\_\_\_ 4. Perform stair calculation for a residential stairway.

### (Fireplaces and Chimneys)

- 3 2 1 0 \_\_\_\_\_ 1. Compare the various types of fireplaces appropriate for a modern residence.
- 3 2 1 0 \_\_\_\_\_ 2. Identify the parts of a standard masonry fireplace and chimney.
- 3 2 1 0 \_\_\_\_\_ 3. Apply the appropriate principles to design a typical fireplace.

### (The Floor Plan)

- 3 2 1 0 \_\_\_\_\_ 1. List the information required on a typical floor plan.
- 3 2 1 0 \_\_\_\_\_ 2. Represent typical materials using standard architectural symbols.
- 3 2 1 0 \_\_\_\_\_ 3. Design and draw a residential floor plan using accepted symbols and techniques.
- 3 2 1 0 \_\_\_\_\_ 4. Dimension a floor plan in a clear and precise manner.

(Roof Designs)

- 3 2 1 0 \_\_\_\_\_ 1. Describe the construction of a typical frame roof.
- 3 2 1 0 \_\_\_\_\_ 2. Draw a roof using a typical roof slope or pitch.
- 3 2 1 0 \_\_\_\_\_ 3. Explain the importance of proper ventilation and flashing.
- 3 2 1 0 \_\_\_\_\_ 4. Interpret information found on a rafter span chart.

(Elevations)

- 3 2 1 0 \_\_\_\_\_ 1. List features that should be included on an exterior elevation.
- 3 2 1 0 \_\_\_\_\_ 2. Identify the dimensions commonly shown on elevations.
- 3 2 1 0 \_\_\_\_\_ 3. Illustrate symbols that are often found on elevations.
- 3 2 1 0 \_\_\_\_\_ 4. Draw a typical exterior elevation that demonstrates proper techniques.

(Architectural Models)

- 3 2 1 0 \_\_\_\_\_ 1. List the features commonly included on a presentation model.
- 3 2 1 0 \_\_\_\_\_ 2. Summarize the steps for construction a balsa wood model.
- 3 2 1 0 \_\_\_\_\_ 3. Explain the various types of architectural models used to represent residential structures.