Computer Aided Drafting for Architecture Syllabus

Course Description/Goals:

This course focuses on learning industry standard drafting skills through AutoDesk Revit. Course studies include setting up a CAD workstation and working with software ribbons to increase design skills. Students will increase their depth of knowledge in the software and gain the skills of a drafter. Students will work on large scale design projects using Gantt Charts, bubble diagrams and more to simulate the professional work of an architect. CAD students may earn their certification AutoCad.

Course TEKS/Objectives:

Computer Aided Drafting for Architecture introduces students to the specific architectural computer aided design and drafting (CADD) software and equipment required to produce architectural working drawings and construction documents.

https://tea.texas.gov/academics/learning-support-and-programs/innovative-courses/computeraideddraftingforarchitecture2020-2021.pdf

Course Outline:

Semester 1	Semester 2
Unit 1: Introduction to CAD & Architectural Drafting (1 week) • Overview of architectural drafting and CAD in the industry • Introduction to software: AutoCAD, Revit, or similar • Review of architectural scales, drawing conventions, and file management	**Unit 6: Introduction to 3D CAD for Architecture (2 weeks)** • Switching from 2D to 3D tools (extrude, revolve, loft, etc.) • Modeling walls, windows, and doors in 3D • Viewports, rendering basics, and perspective views

- Exercise: Navigate the software interface and create simple shapes

- Software: Revit, SketchUp, or AutoCAD 3D

Unit 2: Drafting Tools, Layers, and Precision Drawing (2–3 weeks)

- Using drafting tools: Line, Polyline, Trim, Offset, Mirror, etc.

- Object snaps, ortho mode, polar tracking, and grids

- Layer management and line types for architectural plans

- Activity: Draft basic floor plan elements (walls, windows, doors)

Unit 3: 2D Floor Plan Development – Residential (3–4 weeks)

- Floor plan standards and room layout

Unit 7: 3D Residential Modeling Project (3–4 weeks)

- Develop a 3D model from existing 2D plans

- Add roof, foundation, materials, and textures

- Apply camera views, walk-through animations, and renders

- Project: Complete 3D model of home with interior and exterior views

---

Unit 8: Site Plans and Topography Basics (2 weeks)

- Introduction to site plan components: property lines, setbacks, landscaping

- Reading and importing topographic data

- Drawing walls, doors, windows, and fixtures to scale

- Applying dimensions and annotations

- Adding furniture symbols and hatch patterns

- Project: Create a complete 2D residential floor plan (one level)

Unit 4: Elevations and Sections (3 weeks)

- Creating exterior elevations from floor plan

- Developing building sections to show interior structure

- Understanding materials and line weights in drawings

- Project: Produce a full set of elevations and a section drawing of the home design

---

Unit 5: Annotation, Title Blocks, and Plotting (2 weeks)

- Drawing sidewalks, driveways, and contours

- Project: Create a basic site plan for the residential project

---

Unit 9: Building Codes, Symbols, and Schedules (2 weeks)

- Interpreting and applying residential codes (setbacks, egress, etc.)

- Architectural symbols (electrical, plumbing, doors/windows)

- Creating and using schedules (door/window/material)

- Exercise: Add code-compliant features and symbol annotations to a plan

---

Unit 10: Commercial Space Planning (Intro) (2–3 weeks)

- Differences between residential and commercial drafting

- Title blocks, drawing templates, and sheet organization

- Annotation styles, dimensions, and text standards

- Plotting/printing to scale (PDF and physical)

- Exercise: Compile and print floor plans, elevations, and sections as a sheet set

- Open plan concepts, egress paths, ADA compliance

- Project: Draft a basic commercial floor plan (retail, cafe, or office)

Unit 11: Portfolio Development & Industry Prep (2 weeks)

- Compile drafting and modeling work into a professional portfolio

- Export PDFs and images for digital portfolio

- Resume writing and preparing for interviews or certification

- Optional: Practice exam for AutoCAD Certified User (ACU)