Principles of Architecture Syllabus

Course Description/Goals:

This course provides an overview to the various fields of architecture, interior design, and construction management. Students will develop professional skills, investigate career opportunities and the skills necessary to work in this industry. Course studies will include project planning, hand-drawing, reading plans, identifying appropriate materials, creating models and portfolio development. Students will have the opportunity to complete the OSHA 10 Hour training program.

Course TEKS/Objectives:

Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management. Achieving proficiency in decision making and problem solving is an essential skill for career planning and lifelong learning. Students use self-knowledge, education, and career information to set and achieve realistic career and educational goals. Jobspecific training can be provided through training modules that identify career goals in trade and industry areas. Classroom studies include topics such as safety, work ethics, communication, information technology applications, systems, health, environment, leadership, teamwork, ethical and legal responsibility, employability, and career development and include skills such as problem solving, critical thinking, and reading technical drawings.

https://tea.texas.gov/about-tea/laws-and-rules/sboe-rules-tac/sboe-tac-currently-in-effect/ch130b.pdf

Course Outline:

Semester 1	Semester 2
Unit 1: Introduction to Architecture ● What is Architecture? ● Role of Architects in Society ● Overview of the Built Environment	**Unit 6: Site Planning & Environmental Considerations** ● Topography and Site Analysis ● Zoning, Codes, and Regulations

- Career Pathways in Architecture, Engineering & Construction (AEC)
- Safety in the Studio and Construction Settings (OSHA basics)

Unit 2: Architectural History & Styles

- Overview of Architectural Eras: Classical, Gothic, Renaissance, Modern, Postmodern
- Famous Architects & Landmark Buildings
- Regional & Cultural Influences in Architecture

Unit 3: Elements & Principles of Design

- Line, Shape, Form, Space, Texture, Color
- Principles: Balance, Contrast, Emphasis, Rhythm, Unity
- Application in Architectural Design

Unit 4: Technical Drawing & Drafting Basics

- Drawing Tools and Drafting Techniques
- Orthographic Projections: Plan, Elevation, Section
- Lettering, Symbols, Line Types
- Scale and Dimensioning

- Sustainability in Architecture (LEED, Passive Design)
- Orientation, Sun Path, Wind, and Climate

Unit 7: Structural Systems

- Load-Bearing vs. Frame Structures
- Materials: Wood, Steel, Concrete, Glass
- Basic Structural Forces: Tension, Compression, Shear

Unit 8: Building Systems

- Electrical, Plumbing, HVAC Basics
- Building Envelope and Insulation
- Smart Buildings and Green Technologies

Unit 9: Space Planning & Residential Design

- Bubble Diagrams and Adjacency
- Room Sizes and Standards
- Universal Design & Accessibility
- Designing a Small Home or Room

Unit 10: Final Project & Portfolio Development

- Capstone Design Project (Residential or Community Structure)

Unit 5: Introduction to CAD (Computer-Aided Design)	• Site Plan, Floor Plan, Elevations, Perspective • Presentation Boards or Digital Portfolio • Class Presentation or Design Review (Critique)
• Introduction to CAD Software (AutoCAD, Revit, SketchUp, etc.) • Drawing Basic Floor Plans Digitally • Creating and Interpreting Blueprints	