# Scope & Sequence

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| Course Name: Architectural Design II **PEIMS Code:** 13004700 | | | **Course Credit:** 2.0  **Course Requirements:** Recommended for Grades 11-12.  **Prerequisites:** Architectural Design l or Advanced Interior Design and Geometry.  **Recommended Prerequisites:** Principles of Architecture and Principles of Construction.  **Corequisites:** None. |
| **Course Description:** In Architectural Design II, students will gain advanced knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design II includes the advanced knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes. | | | |
| **NOTE:** This is a suggested scope and sequence for the course content. This content will work with any textbook or instructional materials. If locally adapted, make sure all TEKS are covered. | | | |
| **Total Number of Periods**  **Total Number of Minutes**  **Total Number of Hours** | 350 Periods  15,750 Minutes  262.50 Hours\* | \*Schedule calculations based on 175/180 calendar days. For 0.5 credit courses, schedule is calculated out of 88/90 days. Scope and sequence allows additional time for guest speakers, student presentations, field trips, remediation, extended learning activities, etc. | |
| **Unit Number, Title, and Brief Description** | **# of Class Periods\***  (assumes 45-minute periods)  Total minutes per unit | **TEKS Covered**  **130.54. (c) Knowledge and skills** | |
| **Unit 1: Professional Standards/Employability Skills**  Students will discuss the professional standards and employability skills, including identifying entrepreneurship and preparation requirements, in the field of architecture, and demonstrate an understanding of group participation and leadership related to citizenship and career preparation. Students will further develop and demonstrate these skills and attributes throughout the course. In small groups and/or in other classroom activities, students will identify employers' expectations and appropriate work habits, apply the competencies related to resources, information, systems, and technology in appropriate settings and situations, and demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate governmental regulations.  Students will discuss employability skills that lead to job success in the architectural design industry. In small groups and/or other classroom activities, students will demonstrate effective verbal, nonverbal, written, and electronic communication skills, demonstrate effective methods to secure, maintain, and terminate employment, demonstrate positive interpersonal skills, including conflict resolution, negotiation, teamwork, and leadership, and evaluate the relationship of good physical and mental health to job success and achievement. Students will also demonstrate appropriate grooming and appearance for the workplace, demonstrate appropriate business and personal etiquette in the workplace, and exhibit productive work habits and attitudes.  Students will use appropriate technology and/or materials to maintain a project portfolio that documents architectural projects using a variety of multimedia techniques. Students will develop the project portfolio throughout the course. | 45 periods  2,025 minutes | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (A) identify employment opportunities, including entrepreneurship and preparation requirements, in the field of architecture;  (B) demonstrate an understanding of group participation and leadership related to citizenship and career preparation;  (C) identify employers' expectations and appropriate work habits;  (D) apply the competencies related to resources, information, systems, and technology in appropriate settings and situations; and  (E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate governmental regulations.  (12) The student exhibits employability skills that lead to job success in the architectural design industry. The student is expected to:  (A) demonstrate effective verbal, nonverbal, written, and electronic communication skills;  (B) demonstrate effective methods to secure, maintain, and terminate employment;  (C) demonstrate positive interpersonal skills, including conflict resolution, negotiation, teamwork, and leadership;  (D) evaluate the relationship of good physical and mental health to job success and achievement;  (E) demonstrate appropriate grooming and appearance for the workplace;  (F) demonstrate appropriate business and personal etiquette in the workplace;  (G) exhibit productive work habits and attitudes; and  (H) maintain a project portfolio that documents architectural projects using a variety of multimedia techniques. | |
| **Unit 2: Teamwork**  Students will discuss the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. In small groups and/or other classroom activities, students will describe how teams function, use teamwork to solve problems, distinguish between the roles of team leaders and team members, identify characteristics of good leaders, identify employers' expectations and appropriate work habits, define discrimination, harassment, and inequality, use time-management techniques to develop and maintain work schedules and meet deadlines, and complete work according to established criteria. Students will further develop and demonstrate these skills and attributes throughout the course. | 20 periods  900 minutes | (7) The student describes the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. The student is expected to:  (A) describe how teams function;  (B) use teamwork to solve problems;  (C) distinguish between the roles of team leaders and team members;  (D) identify characteristics of good leaders;  (E) identify employers' expectations and appropriate work habits;  (F) define discrimination, harassment, and inequality;  (G) use time-management techniques to develop and maintain work schedules and meet deadlines; and  (H) complete work according to established criteria. | |
| **Unit 3: Academic Skills**  Students will discuss how core academic skills relate to the requirements of architecture. In small groups and/or other classroom activities, students will demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers, complete work orders and related paperwork, estimate jobs, schedules, and standard industry practices related to legal restrictions, read and interpret architectural symbols, schematics, blueprints, work drawings, manuals, and bulletins, and apply descriptive geometry related to auxiliary views, revolutions, and intersections. | 20 periods  900 minutes | (2) The student relates core academic skills to the requirements of architecture. The student is expected to:  (A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers;  (B) complete work orders and related paperwork;  (C) estimate jobs, schedules, and standard industry practices related to legal restrictions;  (D) read and interpret architectural symbols, schematics, blueprints, work drawings, manuals, and bulletins; and  (E) apply descriptive geometry related to auxiliary views, revolutions, and intersections. | |
| **Unit 4: Technical Knowledge**  Students will discuss the concepts and skills that form the technical knowledge of architectural computer-aided drafting. In small groups and/or other classroom activities, students will demonstrate knowledge of architectural design principles, determine building code and zoning requirements for building types in a selected area, and demonstrate knowledge of the various grades and types of construction materials. | 20 periods  900 minutes | 3) The student knows the concepts and skills that form the technical knowledge of architectural computer-aided drafting. The student is expected to:  (A) demonstrate knowledge of architectural design principles;  (B) determine building code and zoning requirements for building types in a selected area; and  (C) demonstrate knowledge of the various grades and types of construction materials. | |
| **Unit 5: Tools, Equipment, Technologies, and Materials**  Students will discuss the function and application of the tools, equipment, technologies, and materials used in architectural computer-aided design. In small groups and/or classroom activities, students will use the tools, materials, and equipment commonly employed in the field of architectural computer-aided design in a safe manner, handle and dispose of environmentally hazardous materials used in the field of architecture in accordance with the material safety data sheet (MSDS), the Occupational Safety and Health Administration (OSHA), and the Environmental Protection Agency (EPA) regulations, and demonstrate knowledge of new and emerging technologies that may affect the field of architecture. | 20 periods  900 minutes | (4) The student knows the function and application of the tools, equipment, technologies, and materials used in architectural computer-aided design. The student is expected to:  (A) use the tools, materials, and equipment commonly employed in the field of architectural computer-aided design in a safe manner;  (B) handle and dispose of environmentally hazardous materials used in the field of architecture in accordance with the material safety data sheet (MSDS), the Occupational Safety and Health Administration (OSHA), and the Environmental Protection Agency (EPA) regulations; and  (C) demonstrate knowledge of new and emerging technologies that may affect the field of architecture. | |
| **Unit 6: History and Culture**  Students will discuss the architectural history and culture as records of human achievement by examining the connections between twentieth and twenty-first century architecture and art and connections between Greek and Roman architecture and art. In small groups and/or other classroom activities, students will compare and contrast historical and contemporary styles by identifying general themes and trends, describe general characteristics in architectural artworks from a variety of cultures, and compare and contrast career opportunities in architecture. | 20 periods  900 minutes | (10) The student demonstrates an understanding of architectural history and culture as records of human achievement by examining the connections between twentieth and twenty-first century architecture and art and connections between Greek and Roman architecture and art. The student is expected to:  (A) compare and contrast historical and contemporary styles by identifying general themes and trends;  (B) describe general characteristics in architectural artworks from a variety of cultures; and  (C) compare and contrast career opportunities in architecture. | |
| **Unit 7: Simulations I**  Students will apply the concepts and skills of the trade to simulated and actual work situations. In small groups and/or other classroom activities, students will use problem-solving skills to analyze a situation to identify a problem to be solved, break a complex problem into component parts that can be analyzed and solved separately, strive for accuracy and precision, work independently, and work collaboratively. Students will research an architectural project, design and present an effective architectural product, and present a final architectural product for critique.  Students will also apply architectural lettering techniques, develop preliminary sketches of a residential plan or nonresidential plan, demonstrate through drawings the development of maximum efficiency of circulation within areas or rooms, develop a site plan using maximum orientation of the building relative to views, sun, and wind direction, draw building designs and styles to ensure compatibility between interior and exterior to enhance overall appearance, draw schematic site plans, floor plans, roof plans, building elevations, sections, perspectives, and character sketches using design development techniques, draw scaled wall thickness plans, interior elevations, and sections, develop details, sections, floor and wall sections, ceiling and roof sections, door and window sections, and other sections as required, assemble an architectural design in three dimensions, and research the Green Building Rating System as defined by the U.S. Green Building Council.  As a culminating activity for this unit, students will create a project demonstrating sustainable design as it relates to architectural design as defined by the U.S. Green Building Council. | 60 periods  2,700 minutes | (5) The student applies the concepts and skills of the trade to simulated and actual work situations. The student is expected to:  (A) use problem-solving skills to analyze a situation to identify a problem to be solved;  (B) break a complex problem into component parts that can be analyzed and solved separately;  (C) strive for accuracy and precision;  (D) work independently;  (E) work collaboratively;  (F) research an architectural project;  (G) design and present an effective architectural product;  (H) present a final architectural product for critique;  (I) apply architectural lettering techniques;  (J) develop preliminary sketches of a residential plan or nonresidential plan;  (K) demonstrate through drawings the development of maximum efficiency of circulation within areas or rooms;  (L) develop a site plan using maximum orientation of the building relative to views, sun, and wind direction;  (M) draw building designs and styles to ensure compatibility between interior and exterior to enhance overall appearance;  (N) draw schematic site plans, floor plans, roof plans, building elevations, sections, perspectives, and character sketches using design development techniques;  (O) draw scaled wall thickness plans, interior elevations, and sections;  (P) develop details, sections, floor and wall sections, ceiling and roof sections, door and window sections, and other sections as required;  (Q) assemble an architectural design in three dimensions;  (R) research the Green Building Rating System as defined by the U.S. Green Building Council; and  (S) create a project demonstrating sustainable design as it relates to architectural design as defined by the U.S. Green Building Council. | |
| **Unit 8: Simulations II**  Students will apply the concepts and skills of the trade to simulated and actual work situations. In small groups and/or other classroom activities, students will customize screen menus to fit specific problems or needs, construct architectural drawings using advanced computer-aided design drafting skills, create two- or three-point perspectives, create three-dimensional solid models, view three-dimensional objects in several different positions, use a computer system to create a bill of materials, use a computer-aided drafting system to create and modify nonresidential or residential architectural drawings, plot architectural drawings for presentation, and render three-dimensional objects with applied materials. | 60 periods  2,700 minutes | (6) The student applies the concepts and skills of the trade to simulated and actual work situations. The student is expected to:  (A) customize screen menus to fit specific problems or needs;  (B) construct architectural drawings using advanced computer-aided design drafting skills;  (C) create two- or three-point perspectives;  (D) create three-dimensional solid models;  (E) view three-dimensional objects in several different positions;  (F) use a computer system to create a bill of materials;  (G) use a computer-aided drafting system to create and modify nonresidential or residential architectural drawings;  (H) plot architectural drawings for presentation; and  (I) render three-dimensional objects with applied materials. | |
| **Unit 9: Explore, Develop, and Organize Ideas**  Students will explore, develop, and organize ideas from their surroundings. In small groups and/or other classroom activities, students will use advanced skills to illustrate ideas for architectural projects from direct observation, experiences, and imagination, and use advanced skills comparing and contrasting the use of architectural elements such as color, texture, form, line, space, and value and architectural principles such as emphasis, pattern, rhythm, balance, proportion, and unity in personal architectural projects and those of others using vocabulary accurately. | 30 periods  1,350 minutes | (8) The student sustains exploration, development, and organization of ideas from their surroundings. The student is expected to:  (A) use advanced skills to illustrate ideas for architectural projects from direct observation, experiences, and imagination; and  (B) use advanced skills comparing and contrasting the use of architectural elements such as color, texture, form, line, space, and value and architectural principles such as emphasis, pattern, rhythm, balance, proportion, and unity in personal architectural projects and those of others using vocabulary accurately. | |
| **Unit 10: Media Applications**  Students will use advanced skills expressing ideas through original architectural projects using a variety of media with appropriate skill. Students will use appropriate technology and/or materials to create, using advanced skills, visual solutions by elaborating on direct observation, experiences, and imagination, create, using advanced skills, designs for practical applications, and demonstrate, using advanced skills, effective use of architectural media and tools in design, drawing, painting, printmaking, and sculpture such as advanced model building. | 30 periods  1,350 minutes | (9) The student uses advanced skills expressing ideas through original architectural projects using a variety of media with appropriate skill. The student is expected to:  (A) create, using advanced skills, visual solutions by elaborating on direct observation, experiences, and imagination;  (B) create, using advanced skills, designs for practical applications; and  (C) demonstrate, using advanced skills, effective use of architectural media and tools in design, drawing, painting, printmaking, and sculpture such as advanced model building. | |
| **Unit 11: Architectural Projects**  Students will make advanced, informed judgments about personal architectural projects and the architectural projects of others. In small groups and/or other classroom activities, students will  interpret, evaluate, and justify architectural artistic decisions in personal architectural artworks, and select and analyze original architectural artworks, portfolios, and exhibitions by peers and others to form precise conclusions about formal qualities, historical and cultural contexts, intents, and meanings. | 25 periods  1,125 minutes | (11) The student makes advanced, informed judgments about personal architectural projects and the architectural projects of others. The student is expected to:  (A) interpret, evaluate, and justify architectural artistic decisions in personal architectural artworks; and  (B) select and analyze original architectural artworks, portfolios, and exhibitions by peers and others to form precise conclusions about formal qualities, historical and cultural contexts, intents, and meanings. | |