# Scope & Sequence

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| **Course Name:** Practicum in Architectural Design/Extended Practicum in Architectural Design  **TSDS PEIMS Code:** 13004805 (First Time Taken)  13004815 (Second Time Taken) | | **Course Credit:** 3.0  **Course Requirements:** Grade Placement 12.  **Prerequisites:** Architectural Design II.  **Corequisites:** Practicum in Architectural Design. |
| **Course Description:** Extended Practicum in Architectural Design is an occupationally specific course designed to provide technical instruction in architectural design. Safety and career opportunities are included in addition to work ethics and architectural design study. | | |
| **NOTE 1:** The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Architecture & Construction Career Cluster. This is a suggested scope and sequence for the course content. This content will work with any textbook, instructional materials or practicum experience. If locally adapted, make sure all TEKS are covered.  **NOTE 2:** Completion of skill sets may be demonstrated throughout the practicum. Therefore, content based on the TEKS does not have to be delivered sequentially. The major reason students take a practicum is to provide additional time on task for learning specialized skills. In most cases where the Extended Practicum is added to the Practicum, it is because the student is spending more than 15 hours per week at his/her training station (place of employment or internship).  **NOTE 3:** The information in this scope and sequence document does not describe detailed activities, because the activities will vary from student to student and training station to training station. The intent is that students incorporate and use previously learned knowledge and skills related to the career cluster. | | |
| **Practicum Plan** | **TEKS Covered**  **130.66. (c) Knowledge and skills.** | |

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| **Section 1: Pre-Practicum**  Prior to beginning practicums, students will review and discuss professional standards and employers’ expectations, personal and workplace safety, effective problem-solving strategies, positive interpersonal skills, the principles of group participation and teamwork, appropriate work habits, ethical conduct, teamwork, and conflict-management skills. Students will also discuss the technical and academic skills required for the practicum, and put into place strategies for mastering any/all skills necessary to manage and perform work/practicum responsibilities.  Also prior to beginning their practicum experiences, students will agree to adhere to policies and procedures, to demonstrate positive work attitudes and behaviors, including punctuality and effective time management, to accept constructive criticism, to make ethical decisions, and to comply with all applicable rules, laws, and regulations in a consistent manner.  Students, supervising instructors, and practicum experience supervisors will read and review locally created practicum checklist(s). Parents/guardians will also be provided with a copy. Checklist(s) will include all relevant TEKS along with rubrics for supervisor evaluations and student self-evaluations. Students will read, discuss, and demonstrate an understanding of the provided checklist and rubric criteria before beginning their practicum experiences | (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, for the student's chosen field;  (B) demonstrate an understanding of group participation and leadership related to citizenship and career preparation;  (C) demonstrate productive work habits and attitudes;  (D) apply the competencies related to resources, information, interpersonal skills, 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.  (2) The student relates communication, mathematics, and science to the requirements of the student's chosen field. 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) apply mathematics principles and practices;  (C) apply and identify scientific principles used in projects; and  (D) read and interpret appropriate schematics, charts, graphs, drawings, construction documents, directions, manuals, bulletins, and regulations.  (3) The student knows the function and application of the tools, equipment, technologies, and materials used in the student's chosen field. The student is expected to:  (B) use the tools and equipment commonly employed in the student's chosen field in a safe manner; and  (C) handle and dispose of environmentally hazardous materials used in the student's chosen field in a proper manner.  (7) The student follows appropriate codes, laws, standards, or regulations. The student is expected to:  (A) identify areas where codes, laws, standards, or regulations may be required;  (B) locate the appropriate codes, laws, standards, or regulations; and  (C) comply with the appropriate codes, laws, standards, or regulations.  (8) The student demonstrates the ability to solve problems, think critically, and make decisions. The student is expected to:  (C) apply decision-making techniques.  (9) The student applies communication, mathematics, and science knowledge and skills to job-related activities. The student is expected to:  (A) apply written, verbal, and visual communication techniques consistent with industry standards;  (B) use mathematics concepts in communication technology; and  (C) identify and apply scientific principles. |
| **Section 2: TEKS Checklist Components for Practicum in Architectural Design**  Students, parents/guardians, and instructional/workplace supervisors will review, understand, and agree to a checklist of practicum objectives. Checklists may be locally adapted/modified, but all corresponding TEKS Checklist Components must be addressed. | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (B) demonstrate an understanding of group participation and leadership related to citizenship and career preparation;  (C) demonstrate productive work habits and attitudes;  (D) apply the competencies related to resources, information, interpersonal skills, 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.  (2) The student relates communication, mathematics, and science to the requirements of the student's chosen field. 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) apply mathematics principles and practices;  (C) apply and identify scientific principles used in projects; and  (D) read and interpret appropriate schematics, charts, graphs, drawings, construction documents, directions, manuals, bulletins, and regulations.  (3) The student knows the function and application of the tools, equipment, technologies, and materials used in the student's chosen field. The student is expected to:  (A) identify and select basic materials and processes used in the student's chosen field;  (B) use the tools and equipment commonly employed in the student's chosen field in a safe manner;  (C) handle and dispose of environmentally hazardous materials used in the student's chosen field in a proper manner; and  (D) demonstrate knowledge of new and emerging technologies in the student's chosen field.  (6) The student produces multimedia communication and rendering products using the appropriate tools, equipment, machines, materials, and processes. The student is expected to:  (A) use a variety of tools, equipment, and machines.  (7) The student follows appropriate codes, laws, standards, or regulations. The student is expected to:  (A) identify areas where codes, laws, standards, or regulations may be required;  (B) locate the appropriate codes, laws, standards, or regulations; and  (C) comply with the appropriate codes, laws, standards, or regulations.  (8) The student demonstrates the ability to solve problems, think critically, and make decisions. The student is expected to:  (C) apply decision-making techniques.  (9) The student applies communication, mathematics, and science knowledge and skills to job-related activities. The student is expected to:  (A) apply written, verbal, and visual communication techniques consistent with industry standards;  (B) use mathematics concepts in communication technology; and  (C) identify and apply scientific principles. |
| **Section 3: Critical-Thinking and Problem-Solving: Practicum Check-In 1**  Students will discuss and demonstrate critical thinking and problem solving skills as they participate in check-in(s) with supervisors throughout their practicum experiences. Students will analyze and evaluate their practicum experiences as they describe how they have applied critical-thinking and problem-solving skills, and alternative solutions to possible problems they have encountered thus far or may still encounter. Students will also be encouraged to discuss and predict what mathematical and technical skills will be necessary for a successful practicum experience as well as a successful career in an architectural design-related field.  As part of their practicum experience, students will use appropriate computer applications/technology to identify and describe new and emerging technologies in architectural design, and demonstrate effective communication skills as they present their findings in a brief presentation to the supervising instructor. Students will also research and summarize the rights and responsibilities of employers and employees, research and discuss ethical practices as defined by the architectural industry, and research and analyze legal aspects of the architectural-related workplace. | (3) The student knows the function and application of the tools, equipment, technologies, and materials used in the student's chosen field. The student is expected to:  (D) demonstrate knowledge of new and emerging technologies in the student's chosen field.  (8) The student demonstrates the ability to solve problems, think critically, and make decisions. The student is expected to:  (B) apply critical-thinking strategies to the analysis and evaluation of proposed technological solutions; and  (C) apply decision-making techniques.  (11) The student demonstrates ethical and legal practices for careers in the architectural-related workplace. The student is expected to:  (A) summarize the rights and responsibilities of employers and employees;  (B) exhibit ethical practices as defined by the architectural industry;  (C) analyze legal aspects of the architectural-related workplace; |
| **Section 4: Check List Progress and Research Activities: Check-In 2**  During this check-in, students will discuss and self-evaluate their practicum check list progress as well as any questions or problems they may have encountered. Students and supervising instructors will discuss course timelines and requirements as well as effective time management strategies for task completion.  As part of their practicum experience, students will complete and present a short research project to their supervising instructor. As part of this project, students will describe and discuss factors that affect the use and interpretation of communication products, identify and describe the roles of communication such as informing, persuading, and educating, and apply multimedia communication and rendering technology to individual or community problems.  Also as part of their practicum experiences, students will develop or improve a communication product by following a problem-solving strategy and produce an architectural project using multimedia communication techniques. | (4) The student selects and uses multimedia communication and rendering technology to meet specific architectural design needs. The student is expected to:  (A) apply multimedia communication and rendering technology to individual or community problems;  (B) describe the factors that affect the use and interpretation of communication products; and  (C) identify and describe the roles of communication such as informing, persuading, and educating.  (5) The student designs multimedia communication and rendering products using appropriate architectural design processes and techniques. The student is expected to:  (A) develop or improve communication products that meet specified needs.  (6) The student produces multimedia communication and rendering products using the appropriate tools, equipment, machines, materials, and processes. The student is expected to:  (B) produce an architectural project using multimedia communication techniques.  (8) The student demonstrates the ability to solve problems, think critically, and make decisions. The student is expected to:  (A) develop or improve a product by following a problem-solving strategy. |
| **Section 5: Architectural Design Careers and Practicum Culminating Activities**  During their practicum experience, students will develop and update a professional resume as well as maintain a project portfolio.  Students will also use appropriate technology and/or assigned materials to review and evaluate how interests, abilities, personal priorities, and family responsibilities affect career choice, and the rewards and demands for various levels of employment in a variety of careers. Students will also research and determine preparation requirements as well as future employment outlook for a variety of careers, as well as entrepreneurial opportunities in architecture and related fields, and discuss their findings with their supervising instructor.  As a culminating project for the practicum, students will develop a school-based learning activity in collaboration with the teacher and at least one related mentor that provides an in-depth study of at least one aspect of a selected business, industry, and labor independent study and present the project in at least two formats to a panel of students, teachers, and architectural designers. | (5) The student designs multimedia communication and rendering products using appropriate architectural design processes and techniques. The student is expected to:  (B) maintain a project portfolio that documents architectural projects using a variety of multimedia techniques.  (10) The student determines employment opportunities and preparation requirements for careers in the field of architecture. The student is expected to:  (A) determine preparation requirements for various levels of employment in a variety of careers;  (B) analyze the future employment outlook;  (C) describe entrepreneurial opportunities in architecture and related fields;  (D) determine how interests, abilities, personal priorities, and family responsibilities affect career choice;  (E) compare rewards and demands for various levels of employment in a variety of careers; and  (F) determine continuing education opportunities that enhance career advancement and promote lifelong learning.  (11) The student demonstrates ethical and legal practices for careers in the architectural-related workplace. The student is expected to:  (D) develop a school-based learning activity in collaboration with the teacher and at least one related mentor that provides an in-depth study of at least one aspect of a selected business, industry, and labor independent study;  (E) present the project in at least two formats such as model, graphic, verbal, or written to a panel of students, teachers, and practitioners in the career concentration;  (F) maintain a project portfolio that documents experience by using graphic or written documentation of architectural-related projects; and  (G) develop and update a professional resume that includes appropriate education history, work history, professional references, letters of recommendation, and all relevant information for any licenses, certifications, and credentials. |

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| **Extended Practicum Plan** | **TEKS Covered**  **130.71. (c) Knowledge and skills.** |
| **Section 1: Pre-Practicum**  Prior to beginning practicums, students will review and discuss professional standards and employers’ expectations, personal and workplace safety, effective problem-solving strategies, positive interpersonal skills, the principles of group participation and teamwork, appropriate work habits, ethical conduct, teamwork, and conflict-management skills. Students will also discuss the technical and academic skills required for the practicum, and put into place strategies for mastering any/all skills necessary to manage and perform work/practicum responsibilities.  Also prior to beginning their practicum experiences, students will agree to adhere to policies and procedures, to demonstrate positive work attitudes and behaviors, including punctuality and effective time management, to accept constructive criticism, to make ethical decisions, and to comply with all applicable rules, laws, and regulations in a consistent manner.  Students, supervising instructors, and practicum experience supervisors will read and review locally created practicum checklist(s). Parents/guardians will also be provided with a copy. Checklist(s) will include all relevant TEKS along with rubrics for supervisor evaluations and student self-evaluations. Students will read, discuss, and demonstrate an understanding of the provided checklist and rubric criteria before beginning their practicum experiences. | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (A) participate in a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to architectural design;  (B) participate in training, education, or preparation for licensure, certification, or other relevant credentials to prepare for employment;  (C) demonstrate professional standards and personal qualities needed to be employable such as self-discipline, positive attitude, integrity, leadership, appreciation for diversity, customer service, work ethic, and adaptability with increased fluency;  (D) employ teamwork and conflict-management skills with increased fluency to achieve collective goals; and  (E) employ planning and time-management skills and tools with increased fluency to enhance results and complete work tasks.  (2) The student applies professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;  (B) apply active listening skills to obtain and clarify information;  (D) analyze, interpret, and effectively communicate information, data, and observations; and  (E) observe and interpret verbal and nonverbal cues and behaviors to enhance communication.  (4) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:  (A) demonstrate understanding of and consistently follow workplace safety rules and regulations;  (B) handle and dispose of environmentally hazardous materials used in the student's chosen field in a proper manner; and  (C) demonstrate use of tools and equipment commonly employed in the architectural design field in a safe manner.  (5) The student understands the professional, ethical, and legal responsibilities in architectural design. The student is expected to:  (A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;  (B) apply ethical reasoning to a variety of situations in order to make ethical decisions;  (C) exhibit ethical practices as defined by the architectural industry; and  (D) comply with all applicable rules, laws, and regulations in a consistent manner. |
| **Section 2: TEKS Checklist Components for Extended Practicum in Architectural Design**  Students, parents/guardians, and instructional/workplace supervisors will review, understand, and agree to a checklist of practicum objectives. Checklists may be locally adapted/modified, but all corresponding TEKS Checklist Components must be addressed. | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (A) participate in a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to architectural design;  (B) participate in training, education, or preparation for licensure, certification, or other relevant credentials to prepare for employment;  (C) demonstrate professional standards and personal qualities needed to be employable such as self-discipline, positive attitude, integrity, leadership, appreciation for diversity, customer service, work ethic, and adaptability with increased fluency;  (D) employ teamwork and conflict-management skills with increased fluency to achieve collective goals; and  (E) employ planning and time-management skills and tools with increased fluency to enhance results and complete work tasks.  (2) The student applies professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;  (B) apply active listening skills to obtain and clarify information;  (D) analyze, interpret, and effectively communicate information, data, and observations; and  (E) observe and interpret verbal and nonverbal cues and behaviors to enhance communication.  (3) The student implements advanced problem-solving methods. The student is expected to:  (A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;  (B) analyze elements of problems to develop creative and innovative solutions;  (C) apply decision-making techniques with increased fluency to the selection of technological solutions;  (D) develop or improve a product by following a problem-solving strategy;  (E) apply critical-thinking strategies to the analysis and evaluation of proposed technological solutions; and  (F) conduct technical research to gather information necessary for decision making.  (4) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:  (A) demonstrate understanding of and consistently follow workplace safety rules and regulations;  (B) handle and dispose of environmentally hazardous materials used in the student's chosen field in a proper manner; and  (C) demonstrate use of tools and equipment commonly employed in the architectural design field in a safe manner.  (5) The student understands the professional, ethical, and legal responsibilities in architectural design. The student is expected to:  (A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;  (B) apply ethical reasoning to a variety of situations in order to make ethical decisions;  (C) exhibit ethical practices as defined by the architectural industry; and  (D) comply with all applicable rules, laws, and regulations in a consistent manner.  (6) The student participates in a supervised architectural design experience. The student is expected to:  (C) read and interpret appropriate schematics, charts, graphs, drawings, construction documents, directions, manuals, bulletins, and regulations; and  (G) collect representative work samples. |
| **Section 3: Critical-Thinking and Problem-Solving: Practicum Check-Ins**  During practicum check-ins, students will discuss and self-evaluate their practicum check list progress as well as any questions or problems they may have encountered. Students and supervising instructors will discuss course timelines and requirements as well as effective time management strategies for task and project completion.  Students will also discuss and demonstrate critical-thinking and problem-solving skills as they participate in check-in(s) with supervisors throughout their practicum experiences. Students will document, analyze, and evaluate their practicum experiences as they describe how they have applied critical-thinking and problem-solving skills, and alternative solutions to possible problems they have encountered thus far or may still encounter.  As part of their practicum experience, students will use appropriate computer applications/technology and tools to identify, design, and produce multimedia communication and rendering products, and demonstrate effective communication skills as they present their work in a brief presentation to the supervising instructor. | (2) The student applies professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;  (C) create and deliver formal and informal presentations effectively; and  (D) analyze, interpret, and effectively communicate information, data, and observations.  (6) The student participates in a supervised architectural design experience. The student is expected to:  (A) conduct, document, and evaluate learning activities in a supervised architectural design experience;  (B) develop advanced technical knowledge and skills related to the student's occupational objective;  (D) design multimedia communication and rendering products using appropriate architectural design processes and techniques;  (E) produce multimedia communication and rendering products using the appropriate tools, equipment, machines, and materials; and  (G) collect representative work samples. |
| **Section 4: Extended Practicum Culminating Activities**  During their practicum experience, students will use appropriate technology and/or assigned materials to review and evaluate their practicum learning activities and experiences, and discuss their findings with their supervising instructor. Students will also present and discuss their representative work samples.  As a culminating project for the practicum, students will demonstrate and/or discuss advanced technical knowledge and skills as well as self-evaluate and discuss their strengths and weaknesses in technical skill proficiency. | (2) The student applies professional communications strategies. The student is expected to:  (A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;  (C) create and deliver formal and informal presentations effectively; and  (D) analyze, interpret, and effectively communicate information, data, and observations.  (6) The student participates in a supervised architectural design experience. The student is expected to:  (A) conduct, document, and evaluate learning activities in a supervised architectural design experience;  (B) develop advanced technical knowledge and skills related to the student's occupational objective;  (F) evaluate strengths and weaknesses in technical skill proficiency; and  (G) collect representative work samples. |