



Principles of Architecture (Proc 17)

PRE-TEST/POST-TEST TEKS BLUEPRINT

Pre-Test/Post-Test Development Overview

TEKS Addressed Selection Process

The Texas Essential Knowledge & Skills (TEKS) included in the course pre-test and post-test were selected for their direct relevance to the course content. This selection process was guided by the goal of assessing learners' understanding of specific topics and skills that are integral to the course. As a result, TEKS related to general employability skills or broader topics were often excluded. This focus ensures that the assessments accurately measure students' mastery of the subject matter, allowing educators to gain a clear insight into areas where students excel or may need additional support. By concentrating on content-specific TEKS, the tests provide a more precise evaluation of the students' knowledge and understanding of the core material.

Test Question Development Process

The questions created for the pre-test and post-test were designed using psychometric principles to ensure they are of high quality and fairness. This approach helps to accurately assess student understanding. These principles guide the development of questions to be reliable, valid, and free from bias, ensuring that they effectively measure the knowledge and skills the students are expected to acquire in the course.

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Knowledge & Skills Statement	Student Expectation	ICEV Lesson Title
(2) The student performs mathematical operations to complete tasks such as measuring and estimating materials and supplies. The student is expected to:	(A) determine areas and volumes of various structures and estimate materials and supplies using appropriate geometric formulas and calculations	Mathematics in Construction
(2) The student performs mathematical operations to complete tasks such as measuring and estimating materials and supplies. The student is expected to:	(C) determine ratios, fractions, and proportions using appropriate formulas and calculations	Mathematics in Construction
(2) The student performs mathematical operations to complete tasks such as measuring and estimating materials and supplies. The student is expected to:	(E) estimate materials and supplies using dimensions, spaces, and structures calculations	Mathematics in Construction
(3) The student uses physics skills to work with materials and load applications. The student is expected to:	(A) apply basic concepts of static and loads to planning	Physics in Construction
(4) The student manages chemical materials safely. The student is expected to:	(A) recognize the issues present when mixing compatible and incompatible substances to maintain workplace and jobsite safety	Personal & Occupational Health & Safety
(4) The student manages chemical materials safely. The student is expected to:	(D) apply chemical processes in relation to environmental conditions	Personal & Occupational Health & Safety
(5) The student reads, comprehends, and communicates effectively in the workplace, using proper grammar and workplace terminology when using printed, written, and electronic media. The student is expected to:	(A) use technological applications to transmit reports	Project Management Skills
(5) The student reads, comprehends, and communicates effectively in the workplace, using proper grammar and workplace terminology when using printed, written, and electronic media. The student is expected to:	(C) read and follow technical instructions and manuals	Project Management Skills
(5) The student reads, comprehends, and communicates effectively in the workplace, using proper grammar and workplace terminology when using printed, written, and electronic media. The student is expected to:	(D) compose an accurate and organized diary or log of work	Project Management Skills
(5) The student reads, comprehends, and communicates effectively in the workplace, using proper grammar and workplace terminology when using printed, written, and electronic media. The student is expected to:	(E) write reports and documents such as estimates, permits, memos, and technical reports	Project Management Skills
(9) The student identifies the relationship between available resources and requirements of a project to accomplish realistic planning. The student is expected to:	(A) initiate a project, including identifying resources and materials and time-management, labor-management, job management, and job-site obligations in order to effectively plan	Project Management Skills
(9) The student identifies the relationship between available resources and requirements of a project to accomplish realistic planning. The student is expected to:	(B) plan a project, including estimating correct amounts of required resources and materials and identifying risks	Project Management Skills
(9) The student identifies the relationship between available resources and requirements of a project to accomplish realistic planning. The student is expected to:	(D) execute, monitor, and control a project using available resources and materials effectively	Project Management Skills
(9) The student identifies the relationship between available resources and requirements of a project to accomplish realistic planning. The student is expected to:	(E) close a project, including identifying lessons learned and evaluating waste of resources and materials	Project Management Skills
(12) The student uses technological applications specific to architecture and construction to access, manage, integrate, and create information. The student is expected to:	(A) manage personal and professional schedules and contact information	Project Management Skills
(13) The student uses electronic devices to communicate. The student is expected to:	(E) send electronic messages	Microsoft® Outlook 2019 Basics - Unit 1 (Welcome to Microsoft® Outlook®)
(13) The student uses electronic devices to communicate. The student is expected to:	(I) save electronic messages and attachments	Workplace Technology
(14) The student uses writing and publishing applications. The student is expected to:	(A) prepare simple documents and other business communications	Business Letters & Memos

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(15) The student uses spreadsheet applications. The student is expected to:	(B) perform calculations and analysis on data	Introduction to Microsoft® Office 2019 - Unit 3 (Excel)
(17) The student uses collaborative applications. The student is expected to:	(C) maintain a shared database of contact information	Microsoft® Outlook 2019 Basics - Unit 4 (Contacts & Tasks)
(18) The student complies with governmental regulations and applicable codes to establish a legal and safe environment. The student is expected to:	(A) identify occupation-specific governmental regulations and national, state, and local building codes to establish appropriate regulations and codes	Understanding Construction Codes, Regulations & Contracts
(18) The student complies with governmental regulations and applicable codes to establish a legal and safe environment. The student is expected to:	(B) comply with governmental regulations and building codes	Understanding Construction Codes, Regulations & Contracts
(18) The student complies with governmental regulations and applicable codes to establish a legal and safe environment. The student is expected to:	(D) read and discuss Safety Data Sheet (SDS) information to manage and dispose of hazardous materials	Personal & Occupational Health & Safety
(19) The student examines all aspects of the built environment and systems to complete project planning. The student is expected to:	(A) align and incorporate the built environment and its systems to complete the project	Project Management Skills
(19) The student examines all aspects of the built environment and systems to complete project planning. The student is expected to:	(B) label all systems on a set of construction documents	Project Management Skills
(20) The student applies industry standards and practices to ensure quality work. The student is expected to:	(A) identify current industry standards and practices in order to incorporate quality into projects	Project Management Skills
(20) The student applies industry standards and practices to ensure quality work. The student is expected to:	(B) document how quality improves profitability	Project Management Skills
(20) The student applies industry standards and practices to ensure quality work. The student is expected to:	(C) report on issues that affect quality	Project Management Skills
(21) The student observes rules and regulations to comply with personal and occupational health and safety standards. The student is expected to:	(B) practice safety rules and regulations	Personal & Occupational Health & Safety
(21) The student observes rules and regulations to comply with personal and occupational health and safety standards. The student is expected to:	(C) identify safety precautions and hazards to ensure a safe environment	Personal & Occupational Health & Safety
(24) The student reads regulations and contracts to ensure ethical and safety elements are observed. The student is expected to:	(A) study regulations and codes to identify those applicable to the local area	Understanding Construction Codes, Regulations & Contracts
(24) The student reads regulations and contracts to ensure ethical and safety elements are observed. The student is expected to:	(B) locate and implement regulations and codes applicable to tasks and projects	Understanding Construction Codes, Regulations & Contracts
(24) The student reads regulations and contracts to ensure ethical and safety elements are observed. The student is expected to:	(C) comply with local, state, and federal agencies and model code-setting organizations	Understanding Construction Codes, Regulations & Contracts
(24) The student reads regulations and contracts to ensure ethical and safety elements are observed. The student is expected to:	(D) recognize the definition of specialized words or phrases to fully understand documents and contracts	Understanding Construction Codes, Regulations & Contracts
(24) The student reads regulations and contracts to ensure ethical and safety elements are observed. The student is expected to:	(G) use words with multiple meanings correctly in context	Understanding Construction Codes, Regulations & Contracts
(25) The student recognizes a positive work ethic to comply with employment requirements. The student is expected to:	(B) recognize appropriate dress for the work environment	Personal & Occupational Health & Safety
(26) The student recognizes requirements for career advancement to plan for continuing education and training. The student is expected to:	(K) identify declining and emerging occupations, practices, and procedures	Emerging Technologies in Construction
(27) The student examines the organization and structure of various segments of the industry to prepare for career advancement. The student is expected to:	(A) recognize segments of the construction industry and show the relationships to specialty areas	Maintenance/Operations
(27) The student examines the organization and structure of various segments of the industry to prepare for career advancement. The student is expected to:	(I) examine licensing, certification, and credentialing requirements at the national, state, and local levels to achieve compliance	Project Management Skills

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(27) The student examines the organization and structure of various segments of the industry to prepare for career advancement. The student is expected to:	(L) evaluate and select suitable sources of licensing, certification, and credentialing	Project Management Skills
(27) The student examines the organization and structure of various segments of the industry to prepare for career advancement. The student is expected to:	(N) document sources and agencies for licensing and certification and credentialing information, including contact information	Project Management Skills
(29) The student reads technical drawings and documents to plan a project. The student is expected to:	(B) recognize elements and symbols of blueprints and drawings	Introduction to Construction Drawings
(29) The student reads technical drawings and documents to plan a project. The student is expected to:	(C) relate information on blueprints to actual locations on the print	Introduction to Construction Drawings
(29) The student reads technical drawings and documents to plan a project. The student is expected to:	(E) interpret and use drawing dimensions	Measurement in Construction
(30) The student uses and maintains appropriate tools, machines, and equipment to accomplish project goals. The student is expected to:	(A) select tools, machinery, and equipment to match requirements of the project	Installation: Roofing
(30) The student uses and maintains appropriate tools, machines, and equipment to accomplish project goals. The student is expected to:	(B) safely operate tools, machinery, and equipment	Installation: Roofing
(30) The student uses and maintains appropriate tools, machines, and equipment to accomplish project goals. The student is expected to:	(C) maintain and care for tools, machines, and equipment	Installation: Roofing
(30) The student uses and maintains appropriate tools, machines, and equipment to accomplish project goals. The student is expected to:	(D) use tools, machines, and equipment productively and efficiently in alignment with industry standards	Installation: Roofing
(30) The student uses and maintains appropriate tools, machines, and equipment to accomplish project goals. The student is expected to:	(E) identify sources of information concerning state-of-the art tools, equipment, materials, technologies, and methodologies	Emerging Technologies in Construction
(30) The student uses and maintains appropriate tools, machines, and equipment to accomplish project goals. The student is expected to:	(G) explore state-of-the-art tools, equipment, materials, technologies, and methodologies	Emerging Technologies in Construction