



# **Agricultural Structures Design & Fabrication (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.

## Agricultural Structures Design & Fabrication (Proc 17) Pre-Test/Post-Test TEKS Blueprint

Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(D) demonstrate knowledge of personal and occupational health and safety practices in the workplace	Personal & Occupational Health & Safety
(3) The student demonstrates principles of facilities design and fabrication related to agricultural structures. The student is expected to:	(A) develop building plans	Introduction to Construction Drawings
(3) The student demonstrates principles of facilities design and fabrication related to agricultural structures. The student is expected to:	(B) select site and locate agricultural building placement	Building Construction: Basic Site Evaluation
(3) The student demonstrates principles of facilities design and fabrication related to agricultural structures. The student is expected to:	(C) estimate materials and costs needed for construction with an emphasis on renewable eco-friendly materials	Planning Cost-Effective Construction
(3) The student demonstrates principles of facilities design and fabrication related to agricultural structures. The student is expected to:	(D) select appropriate environmental control systems with a special emphasis on green technology	Emerging Technologies in Construction
(3) The student demonstrates principles of facilities design and fabrication related to agricultural structures. The student is expected to:	(E) use computer-aided design software as appropriate	Computer-Aided Design Techniques
(4) The student explores the different types of power systems used in agricultural structures. The student is expected to:	(A) define the terms and principles of electricity	Principles of Electricity
(4) The student explores the different types of power systems used in agricultural structures. The student is expected to:	(B) estimate electrical needs and loads	Principles of Electricity
(4) The student explores the different types of power systems used in agricultural structures. The student is expected to:	(C) plan installations using local codes and National Electric Code guidelines	Principles of Electricity
(4) The student explores the different types of power systems used in agricultural structures. The student is expected to:	(D) demonstrate the use of various meters	Installation: Electrical Wiring & Control Systems
(4) The student explores the different types of power systems used in agricultural structures. The student is expected to:	(E) select circuit wiring materials and supplies	Installation: Electrical Wiring & Control Systems
(4) The student explores the different types of power systems used in agricultural structures. The student is expected to:	(F) demonstrate electrical systems repair	Installation: Electrical Wiring & Control Systems
(4) The student explores the different types of power systems used in agricultural structures. The student is expected to:	(G) explore alternative power systems, including solar, wind, and biomass	Environmental Resources: Renewable & Non-Renewable Resources & Energy
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(A) demonstrate appropriate use of surveying equipment	Building Construction: Basic Surveying
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(B) demonstrate and apply Geographic Information System (GIS) and Global Positioning System (GPS) principles	Geographic Information Systems (GIS) & Global Positioning Systems (GPS)
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(C) reinforce, place, finish, and cure concrete	Concrete: Composition & Mixing Concrete: Constructing Forms & Curing
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(D) plan, establish, and maintain water-management systems	Water Management Systems in Agriculture
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(E) identify non-traditional structural building techniques, including industry trends that are eco-friendly	Non-Traditional Building Structures
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(F) discuss the use of masonry and drywall construction	Building Construction: Basic Masonry Installation: Drywall
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(G) install doors, windows, and roofing materials	Installation: Windows Installation: Roofing
(5) The student constructs agricultural structures using appropriate technology. The student is expected to	(H) install plumbing equipment and fixtures to comply with governmental regulations and applicable codes	Installation: Plumbing Equipment & Fixtures
(6) The student demonstrates metal construction techniques related to agricultural design and fabrication of structures. The student is expected to:	(A) explain the operations of safe oxy-fuel cutting	Oxy-Fuel Cutting

## Agricultural Structures Design & Fabrication (Proc 17) Pre-Test/Post-Test TEKS Blueprint

Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(6) The student demonstrates metal construction techniques related to agricultural design and fabrication of structures. The student is expected to:	(B) demonstrate safe electrical welding	Shielded Metal Arc Welding: Preparation & Safety Gas Metal Arc Welding: Equipment, Set-Up & Maintenance