Texas CTE

Agricultural Structures Design and Fabrication

Knowledge and skills. ASDF

1 The student develops a supervised agriculture experience program. The student is expected to: ASDF.1

- A plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity; ASDF.1A
- B apply proper record-keeping skills as they relate to the supervised agriculture experience; ASDF.1B
- C participate in youth leadership opportunities to create a well-rounded experience program; and ASDF.1C
- D produce and participate in a local program of activities using a strategic planning process. ASDF.1D

2 The student demonstrates principles of facilities design and fabrication related to agricultural structures. The student is expected to: ASDF.2

- A develop building plans; ASDF.2A
- B select site and locate agricultural building placement; ASDF.2B
- C estimate materials and costs needed for construction with an emphasis on renewable and eco-friendly materials; ASDF.2C
- D select appropriate environmental control systems with a special emphasis on green technology; and ASDF.2D
- E use computer-aided design software as appropriate. ASDF.2E

3 The student explores the different types of power systems used in agricultural structures. The student is expected to: ASDF.3

- A define the terms and principles of electricity; ASDF.3A
- B estimate electrical needs and loads; ASDF.3B
- C plan installations using local codes and National Electric Code guidelines; ASDF.3C
- D demonstrate the use of various meters; ASDF.3D
- E select circuit wiring materials and supplies; ASDF.3E
- F demonstrate electrical systems repair; and ASDF.3F
- G explore alternative power systems, including solar, wind, and biomass. ASDF.3G

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4 **The student constructs agricultural structures using appropriate technology. The student is expected to:** ASDF.4

- A demonstrate appropriate use of surveying equipment; ASDF.4A
- B demonstrate and apply Geographic Information System (GIS) and Global Positioning System (GPS) principles; ASDF.4B
- C reinforce, place, finish, and cure concrete; ASDF.4C
- D plan, establish, and maintain water-management systems; ASDF.4D
- E identify non-traditional structural building techniques, including industry trends that are eco-friendly; ASDF.4E
- F discuss the use of masonry and drywall construction; ASDF.4F
- G install doors, windows, and roofing materials; and ASDF.4G
- H install plumbing equipment and fixtures to comply with governmental regulations and applicable codes. ASDF.4H

5 **The student demonstrates metal construction techniques related to agricultural design and fabrication of structures. The student is expected to:** ASDF.5

- A explain the operations of safe oxy-fuel cutting; and ASDF.5A
- B demonstrate safe electrical welding. ASDF.5B