Texas CTE

Principles of Agriculture, Food and Natural Resources (2024)

Knowledge and skills. D

1 The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to: D.1

- A identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources; D.1.A
- B identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources; D.1.B
- C describe and demonstrate appropriate personal and occupational safety and health practices for the workplace; D.1.C
- D identify employers' legal responsibilities and expectations, including appropriate work habits and ethical conduct; D.1.D
- E describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy; and D.1.E
- F identify training, education, and certification requirements for occupational choices in agriculture, food, and natural resources. D.1.F

2 The student develops a supervised agricultural experience program. The student is expected to: D.2

- A plan, propose, conduct, document, and evaluate a supervised agricultural experience program as an experiential learning activity; and D.2.A
- B use appropriate record-keeping skills in a supervised agricultural experience program. D.2.B

3 The student develops leadership skills through participation in an agricultural youth organization. The student is expected to: D.3

- A participate in youth agricultural leadership opportunities; D.3.A
- B review and participate in a local program of activities; and D.3.B
- C create or update documentation of relevant agricultural experience such as community service, professional, or classroom experiences. D.3.C

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4 **The student understands the agriculture industry in Texas and the United States. The student is expected to:** D.4

- A identify top agricultural commodities, exports, and imports in Texas and the United States; and D.4.A
- B identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity. D.4.B

5 **The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:** D.5

- A define agriculture and identify the sectors of the agriculture industry; D.5.A
- B analyze the impact agriculture, food, and natural resources have on society; D.5.B
- C identify and explain significant historical and current events that have impacted the agriculture industry; D.5.C
- D identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future; D.5.D
- E identify and discuss major innovations in the fields of agriculture, food, and natural resources; D.5.E
- F describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources; and D.5.F
- G compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries. D.5.G

6 **The student understands opportunities for leadership development in student organizations within agriculture, food, and natural resources. The student is expected to:** D.6

- A describe the history, structure, and development of and opportunities in student organizations in the agriculture, food, and natural resources career cluster; D.6.A
- B develop and demonstrate leadership and personal growth skills and collaborate with others to accomplish organizational goals and objectives; and D.6.B
- C demonstrate use of parliamentary procedures when conducting meetings. D.6.C

7 **The student identifies opportunities for involvement in professional agricultural organizations. The student is expected to:** D.7

- A discuss the role of agricultural organizations in formulating public policy; D.7.A
- B develop strategies for effective participation in agricultural organizations; and D.7.B
- C identify and discuss the purpose of various professional agricultural organizations. D.7.C

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The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to: D.8

A demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations; D.8.A

B identify and demonstrate effective customer service skills, including appropriate listening techniques and responses; and D.8.B

C explain the impact of marketing and advertising on the agricultural industry. D.8.C

9 The student applies a scientific process to agriculture, food, and natural resources topics. The student is expected to: D.9

A identify and select an important agricultural issue, question, or principle; D.9.A

B develop and test a hypothesis for the selected issue, question, or principle; D.9.B

C collect and analyze data for the selected agricultural issue, question, or principle; and D.9.C

D present findings and conclusions based on research performed using scientific practices. D.9.D

10 The student applies problem-solving, mathematical, and organizational skills to maintain financial or logistical records. The student is expected to: D.10

A identify the components of and develop a formal business plan for an agricultural enterprise; and D.10.A

B develop, maintain, and analyze records for an agricultural enterprise. D.10.B

11 The student develops technical knowledge and skills related to plant and soil systems. The student is expected to: D.11

A define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture; D.11.A

B identify the components and properties of soils; D.11.B

C describe the basic structure and functions of plant parts; D.11.C

D identify and use techniques for plant germination, growth, and development; and D.11.D

E identify and use tools, equipment, and personal protective equipment common to plant and soil systems. D.11.E

12 The student develops technical knowledge and skills related to animal systems. The student is expected to: D.12

A define animal science and analyze the relevance of animal selection, production, and marketing in the industry; D.12.A

B analyze the roles and how animals benefit the agriculture industry; D.12.B

C identify basic external anatomy of animals in agriculture; D.12.C

D identify and classify breeds of livestock; and D.12.D

E identify and use tools, equipment, and proper handling techniques related to animal systems. D.12.E

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13 **The student describes the principles of food products and processing systems. The student is expected to:** D.13

- A identify food products and processing systems; D.13.A
- B identify emerging technologies and trends in domestic and global food production; D.13.B
- C compare various food labels; D.13.C
- D discuss current issues in food production; and D.13.D
- E identify and use tools, equipment, and personal protective equipment common to food products and processing systems. D.13.E

14 **The student safely performs skills related to agricultural technology and mechanical systems. The student is expected to:** D.14

- A identify the major disciplines of agricultural technology and mechanical systems; D.14.A
- B demonstrate basic measuring practices with accuracy; D.14.B
- C create a bill of materials and a technical drawing for a proposed agricultural engineering project; D.14.C
- D identify common building tools, materials, and fasteners; and D.14.D
- E identify and use tools, equipment, and personal protective equipment common to agricultural technology and mechanical systems. D.14.E

15 **The student explains the principles of environmental and natural resources. The student is expected to:** D.15

- A identify natural resources of economic importance to Texas agriculture; D.15.A
- B explain the relationship between agriculture and environmental and natural resources; D.15.B
- C identify and describe regulations and governmental programs related to environmental and natural resources, including water regulations, pesticide usage, and hunting and fishing laws; D.15.C
- D identify and compare alternative energy sources that stem from or impact environmental and natural resources; and D.15.D
- E identify and compare energy and water conservation methods. D.15.E