Texas CTE

Principles of Agriculture, Food, and Natural Resources (2015)

Implementation of Texas Essential Knowledge and Skills for Agriculture, Food, and Natural Resources, Adopted 2015. §130.1

- **a** **The provisions of this subchapter shall be implemented by school districts beginning with the 2017-2018 school year.** §130.1
- **b** **No later than August 31, 2016, the commissioner of education shall determine whether instructional materials funding has been made available to Texas public schools for materials that cover the essential knowledge and skills for career and technical education as adopted in §§130.2-130.32 of this subchapter.** §130.1
- **c** **If the commissioner makes the determination that instructional materials funding has been made available under subsection (b) of this section, §§130.2-130.32 of this subchapter shall be implemented beginning with the 2017-2018 school year and apply to the 2017-2018 and subsequent school years.** §130.1
- **d** **If the commissioner does not make the determination that instructional materials funding has been made available under subsection (b) of this section, the commissioner shall determine no later than August 31 of each subsequent school year whether instructional materials funding has been made available. If the commissioner determines that instructional materials funding has been made available, the commissioner shall notify the State Board of Education and school districts that §§130.2-130.32 of this subchapter shall be implemented for the following school year.** §130.1

Principles of Agriculture, Food, and Natural Resources (One Credit), Adopted 2015. §130.2

- **a** **General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.** §130.2.A
- **b** **Introduction.** §130.2.B
  1. Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions. §130.2.B.1

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2 The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. §130.2.B.2

3 Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations. To prepare for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. To prepare for success, students need opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings. §130.2.B.3

4 Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations. §130.2.B.4

5 Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples. §130.2.B.5

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c Knowledge and skills. §130.2.C

1 The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to: §130.2.C.1

A identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources; §130.2.C.1.A

B apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources; §130.2.C.1.B

C demonstrate knowledge of personal and occupational safety, environmental regulations, and first-aid policy in the workplace; §130.2.C.1.C

D analyze employers' expectations such as appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and §130.2.C.1.D

E identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies. §130.2.C.1.E

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2 The student develops a supervised agriculture experience program. The student is expected to: §130.2.C.2

A plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity; §130.2.C.2.A

B apply proper record-keeping skills as they relate to the supervised agriculture experience; §130.2.C.2.B

C participate in youth leadership opportunities to create a well-rounded experience program; and §130.2.C.2.C

D produce and participate in a local program of activities using a strategic planning process. §130.2.C.2.D

3 The student analyzes concepts related to global diversity. The student is expected to: §130.2.C.3

A compare and contrast global agricultural markets, currency, and trends; and §130.2.C.3.A

B evaluate marketing factors and practices that impact the global markets. §130.2.C.3.B

4 The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to: §130.2.C.4

A define the scope of agriculture; §130.2.C.4.A

B analyze the scope of agriculture, food, and natural resources and its effect upon society; §130.2.C.4.B

C evaluate significant historical and current agriculture, food, and natural resources developments; §130.2.C.4.C

D identify potential future scenarios for agriculture, food, and natural resources systems, including global impacts; §130.2.C.4.D

E describe how emerging technologies and globalization impacts agriculture, food, and natural resources; and §130.2.C.4.E

F compare and contrast issues impacting agriculture, food, and natural resources such as biotechnology, employment, safety, environment, and animal welfare issues. §130.2.C.4.F

5 The student analyzes the structure of agriculture, food, and natural resources leadership in organizations. The student is expected to: §130.2.C.5

A develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives; §130.2.C.5.A

B develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives; and §130.2.C.5.B

C demonstrate democratic principles in conducting effective meetings. §130.2.C.5.C

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6 The student demonstrates appropriate personal and communication skills. The student is expected to: §130.2.C.6

A demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations; and §130.2.C.6.A

B demonstrate effective listening skills appropriate for formal and informal situations. §130.2.C.6.B

7 The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to: §130.2.C.7

A discuss major research and developments in the fields of agriculture, food, and natural resources; §130.2.C.7.A

B use a variety of resources for research and development; and §130.2.C.7.B

C describe scientific methods of research. §130.2.C.7.C

8 The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to: §130.2.C.8

A develop a formal business plan; and §130.2.C.8.A

B develop, maintain, and analyze records. §130.2.C.8.B

9 The student uses information technology tools to access, manage, integrate, and create information related to agriculture, food, and natural resources. The student is expected to: §130.2.C.9

A apply technology applications such as industry-relevant software and Internet applications; §130.2.C.9.A

B use collaborative, groupware, and virtual meeting software; §130.2.C.9.B

C analyze the benefits and limitations of emerging technology such as online mapping systems, drones, and robotics; and §130.2.C.9.C

D explain the benefits of computer-based and mobile application equipment in agriculture, food, and natural resources. §130.2.C.9.D

10 The student develops technical knowledge and skills related to soil systems. The student is expected to: §130.2.C.10

A identify the components and properties of soils; §130.2.C.10.A

B identify and describe the process of soil formation; and §130.2.C.10.B

C conduct experiments related to soil chemistry. §130.2.C.10.C

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11 The student develops technical knowledge and skills related to plant systems. The student is expected to: §130.2.C.11

- A describe the structure and functions of plant parts; §130.2.C.11.A
- B discuss and apply plant germination, growth, and development; §130.2.C.11.B
- C describe plant reproduction, genetics, and breeding; §130.2.C.11.C
- D identify plants of importance to agriculture, food, and natural resources; and §130.2.C.11.D
- E use tools, equipment, and personal protective equipment common to plant systems. §130.2.C.11.E

12 The student develops technical knowledge and skills related to animal systems. The student is expected to: §130.2.C.12

- A describe animal growth and development; §130.2.C.12.A
- B identify animal anatomy and physiology; §130.2.C.12.B
- C identify and evaluate breeds and classes of livestock; and §130.2.C.12.C
- D explain animal selection, reproduction, breeding, and genetics. §130.2.C.12.D

13 The student describes the principles of food products and processing systems. The student is expected to: §130.2.C.13

- A evaluate food products and processing systems; §130.2.C.13.A
- B determine trends in world food production; §130.2.C.13.B
- C discuss current issues in food production; and §130.2.C.13.C
- D use tools, equipment, and personal protective equipment common to food products and processing systems. §130.2.C.13.D

14 The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to: §130.2.C.14

- A identify major areas of power, structural, and technical systems; §130.2.C.14.A
- B use safe and appropriate laboratory procedures and policies; §130.2.C.14.B
- C create proposals that include bill of materials, budget, schedule, drawings, and technical skills developed for basic power, structural, and technical system projects or structures; §130.2.C.14.C
- D identify building materials and fasteners; and §130.2.C.14.D
- E use tools, equipment, and personal protective equipment common to power, structural, and technical systems. §130.2.C.14.E

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15 The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to: §130.2.C.15

A determine the effects of agriculture, food, and natural resources upon safety, health, and the environment; §130.2.C.15.A

B identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources; §130.2.C.15.B

C identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources; §130.2.C.15.C

D research and analyze alternative energy sources that stem from or impact agriculture, food, and natural resources; and §130.2.C.15.D

E evaluate energy and water conservation methods. §130.2.C.15.E

§130.3. Professional Standards in Agribusiness (One-Half Credit), Adopted 2015. §130.3

a General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one-half credit for successful completion of this course. §130.3.A

b Introduction. §130.3.B

1 Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions. §130.3.B.1

2 The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. §130.3.B.2

3 Professional Standards in Agribusiness primarily focuses on leadership, communication, employer-employee relations, and problem solving as they relate to agribusiness. To prepare for careers in agribusiness systems, students must attain academic skills and knowledge, acquire §130.3.B.3