

High School Name:  
Community College Name:  
CTE Program of Study Name:  
Date:

Hillsboro Online Academy  
Portland Community College  
HOA Agriculture and Natural Resources  
6/29/2018

## Agriculture Food & Natural Resource Systems Cluster

2018

### Skills-to-Course Matrix

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### Cluster Knowledge and Skills (CTE standards)

| CCTC | Code Number | KS Statement   | Intro. To Ag<br>TSA? | Horticulture<br>yes | Food Science<br>TSA? | Environment<br>TSA? | Intro. To Vet<br>TSA? | Service Learn<br>TSA? |
|------|-------------|--|----------------------|---------------------|----------------------|---------------------|-----------------------|-----------------------|
| AG 1 | AG01        | Analyze how issues, trends, technologies, and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster™.   | x                    | x                   |                      | x                   |                       | x                     |
| AG 2 | AG02        | Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster™ and the role agriculture, food, and natural resources (AFNR) play in society and the economy. | x                    | x                   |                      |                     |                       | x                     |
| AG 3 | AG03        | Examine and summarize importance of health, safety, and environmental management systems in AFNR organizations.  | x                    | x                   | x                    | x                   | x                     |                       |
| AG 4 | AG04        | Demonstrate stewardship of natural resources in AFNR activities.   | x                    | x                   |                      | x                   |                       |                       |
| AG 5 | AG05        | Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.   | x                    | x                   | x                    | x                   | x                     | x                     |
| AG 6 | AG06        | Analyze the interaction among ANFR systems in the production, processing and management of food, fiber, and fuel and sustainable use of natural resources.                               | x                    | x                   | x                    | x                   | x                     |                       |

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Agribusiness Systems **Focus Area**

**2018**

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**Focus Area Knowledge and Skills (CTE standards)**

| CCTC     | Code Number | KS Statement   | TSA? | yes | TSA? | TSA? | TSA? | TSA? |
|----------|-------------|--|------|-----|------|------|------|------|
| AG-BIZ 1 | AGBZ01      | Apply management planning principles in AFNR business enterprises.   |      |     |      |      |      |      |
| AG-BIZ 2 | AGBZ02      | Use record keeping to accomplish AFNR business objectives, manage budgets, and comply with laws and regulations.     |      |     |      |      |      |      |
| AG-BIZ 3 | AGBZ03      | Manage cash budgets, credit budgets, and credit for an AFNR business using generally accepted accounting principles. |      |     |      |      |      |      |
| AG-BIZ 4 | AGBZ04      | Develop a business plan for an AFNR enterprise or business unit.   |      |     |      |      |      |      |
| AG-BIZ 5 | AGBZ05      | Use sales and marketing principles common to agribusiness systems to accomplish AFNR business objectives.            |      |     |      |      |      |      |

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## Animal Systems Focus Area

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#### Focus Area Knowledge and Skills (CTE standards)

| CCTC     | Code Number | KS Statement  | Intro. To Ag | Horticulture | Food Science | Environment | Intro. To Vet | Service Learning |
|----------|-------------|---|--------------|--------------|--------------|-------------|---------------|------------------|
|          |             |   | TSA?         | yes          | TSA?         | TSA?        | TSA?          | TSA?             |
| AG-ANI 1 | AGAN01      | Analyze historic and current trends impacting the animal systems industry.  |              |              |              |             | x             |                  |
| AG-ANI 2 | AGAN02      | AGAN02  |              |              |              |             |               |                  |
| AG-ANI 3 | AGAN03      | Design and provide proper animal nutrition given desired outcomes for performance, development, reproduction, and/or economic production. |              |              |              |             |               |                  |
| AG-ANI 4 | AGAN04      | Apply principles of animal reproduction given desired outcomes for performance, development, and/or economic production.                  |              |              |              |             |               |                  |
| AG-ANI 5 | AGAN05      | Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health.         |              |              |              |             |               |                  |
| AG-ANI 6 | AGAN06      | Classify, evaluate and select animals based on anatomical and physiological characteristics.  |              |              |              |             |               |                  |
| AG-ANI 7 | AGAN07      | Apply principles of effective animal health care.   |              |              |              |             | x             |                  |

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## Environmental Service Systems Focus Area

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#### Focus Area Knowledge and Skills (CTE standards)

| CCTC     | Code Number | KS Statement  | TSA? | yes | TSA? | TSA? | TSA? | TSA? |
|----------|-------------|---|------|-----|------|------|------|------|
| AG-ENV 1 | AGEV01      | Use analytic procedures and instruments to manage environmental systems activities.   |      |     |      | x    |      |      |
| AG-ENV 2 | AGEV02      | Evaluate the impact of public policies and regulations on environmental services facility operations.   |      |     |      | x    |      |      |
| AG-ENV 3 | AGEV03      | Develop proposed solutions to environmental issues, problems, and applications using scientific principles of meteorology, soil science, hydrology, microbiology, chemistry, and ecology. |      | x   |      | x    |      |      |
| AG-ENV 4 | AGEV04      | Demonstrate the operation of environmental service systems (e.g., pollution control, water treatment, wastewater treatment, solid waste management, and energy conservation).             |      |     |      | x    |      |      |
| AG-ENV 5 | AGEV05      | Use tools, equipment, machinery, and technology common to tasks in environmental system services.   |      | x   |      |      |      |      |

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Food Products and Processing **Focus Area**

**2018**

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**Focus Area Knowledge and Skills (CTE standards)**

| CCTC    | Code Number | KS Statement  | Intro. To Ag | Horticulture | Food Science | Environment | Intro. To Vet | Service Learning |
|---------|-------------|---|--------------|--------------|--------------|-------------|---------------|------------------|
|         |             |   | TSA?         | yes          | TSA?         | TSA?        | TSA?          | TSA?             |
| AG-FD 1 | AGFD01      | Develop and implement procedures to ensure safety, sanitation, and quality in food product and processing facilities. | x            | x            | x            |             |               |                  |
| AG-FD 2 | AGFD02      | Apply principles of nutrition, biology, microbiology, chemistry, and human behavior to development of food products.  |              | x            | x            |             |               |                  |
| AG-FD 3 | AGFD03      | Select and process food products for storage, distribution, and consumption.  |              | x            | x            |             |               |                  |
| AG-FD 4 | AGFD04      | Explain the scope of the food industry and the historical and current developments of food products and processing.   |              | x            | x            |             |               |                  |

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Natural Resources Focus Area

2018

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Focus Area Knowledge and Skills (CTE standards)

| CCTC    | Code Number | KS Statement   | Intro. To Ag | Horticulture | Food Science | Environment | Intro. To Vet | Service Learning |
|---------|-------------|--|--------------|--------------|--------------|-------------|---------------|------------------|
|         |             |  | TSA?         | yes          | TSA?         | TSA?        | TSA?          | TSA?             |
| AG-NR 1 | AGNR01      | Plan and conduct natural resource management activities that apply logical, reasoned, and scientifically based solutions to natural resource issues and goals. |              |              |              | x           |               | x                |
| AG-NR 2 | AGNR02      | Analyze interrelationships between natural resources and humans needed to manage natural resource systems.   |              |              |              | x           |               |                  |
| AG-NR 3 | AGNR03      | Develop plans to ensure responsible and sustainable production and processing of natural resources.  |              |              |              | x           |               | x                |
| AG-NR 4 | AGNR04      | Demonstrate responsible control and management procedures and techniques to protect or maintain natural resources.   |              |              |              | x           |               |                  |

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## Plant Systems Focus Area

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#### Focus Area Knowledge and Skills (CTE standards)

| CCTC    | Code Number | KS Statement   | Intro. To Ag | Horticulture | Food Science | Environment | Intro. To Veg | Service Learning |
|---------|-------------|--|--------------|--------------|--------------|-------------|---------------|------------------|
|         |             |  | TSA?         | yes          | TSA?         | TSA?        | TSA?          | TSA?             |
| AG-PL 1 | AGPL01      | Develop and implement a crop management plan for a given production goal that accounts for environmental factors.  |              | x            |              |             |               |                  |
| AG-PL 2 | AGPL02      | Apply the principles of classification, plant anatomy, and plant physiology to plant production and management.    |              | x            |              |             |               |                  |
| AG-PL 3 | AGPL03      | Propagate, culture, and harvest plants and plant products based on current industry standards.                     |              | x            |              |             |               |                  |
| AG-PL 4 | AGPL04      | Apply principles of design in plant systems to enhance an environment (e.g., floral, forest, landscape, and farm). |              | x            |              |             |               |                  |

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Power, Structure and Technology Systems Focus Area

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Focus Area Knowledge and Skills (CTE standards)

| CCTC     | Code Number | KS Statement   | TSA? | yes | TSA? | TSA? | TSA? | TSA? |
|----------|-------------|--|------|-----|------|------|------|------|
| AG-PST 1 | AGPT01      | Apply physical science principles and engineering applications related to mechanical equipment, structures, and biological systems to solve problems and improve performance in AFNR power, structural, and technical systems. |      |     |      |      |      |      |
| AG-PST 2 | AGPT02      | Operate and maintain mechanical equipment related to AFNR power, structural, and technical systems.  |      |     |      |      |      |      |
| AG-PST 3 | AGPT03      | Service and repair mechanical equipment and power systems used in AFNR power, structural, and technical systems.   |      |     |      |      |      |      |
| AG-PST 4 | AGPT04      | Plan, build, and maintain AFNR structures.   |      |     |      |      |      |      |
| AG-PST 5 | AGPT05      | Use control, monitoring, geospatial, and other technologies in AFNR power, structural, and technical systems.  |      |     |      |      |      |      |



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## Forestry and Forest Products Focus Area

2018

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#### Focus Area Knowledge and Skills (CTE standards)

| CCTC      | Code Number | KS Statement  | Intro. To Ag | Horticulture | Food Science | Environment | Intro. To Vet | Service Learning |
|-----------|-------------|---|--------------|--------------|--------------|-------------|---------------|------------------|
|           |             |   | TSA?         | yes          | TSA?         | TSA?        | TSA?          | TSA?             |
| AG-FFP 1  | AGFP01      | Describe the ecological concepts and principles; investigate and explain the relationships between these principles and AGFPest development.                          |              |              |              |             |               |                  |
| AG-FFP 2  | AGFP02      | Illustrate Oregon's diverse AGFPests including history, cultural uses, AGFPest types, policies, and industry.   |              |              |              |             |               |                  |
| AG-FFP 3  | AGFP03      | Explain the human/natural resources relationships when implementing AGFPest management activities.  |              |              |              |             |               |                  |
| AG-FFP 4  | AGFP04      | Demonstrate skills essential AGFP leadership and citizenship responsibilities.  |              |              |              |             |               |                  |
| AG-FFP 5  | AGFP05      | Demonstrate skills in career research, planning, and preparation.   |              |              |              |             |               |                  |
| AG-FFP 6  | AGFP06      | Document and describe AGFPest production practices and timber processing procedures.  |              |              |              |             |               |                  |
| AG-FFP 7  | AGFP07      | Summarize and explain applications of appropriate AGFPest health practices.   |              |              |              |             |               |                  |
| AG-FFP 8  | AGFP08      | Identify multi-use principles to AGFPests and associated lands (to include wild life, fish, recreation, water, energy, air, carbon and ect).                          |              |              |              |             |               |                  |
| AG-FFP 9  | AGFP09      | Apply cartographic (map) skills to AGFPest management activities.   |              |              |              |             |               |                  |
| AG-FFP 10 | AGFP10      | Apply AGFPest mensuration techniques.   |              |              |              |             |               |                  |
| AG-FFP 11 | AGFP11      | Prepare a business plan using accepted business management principles used in the production, processing, marketing and transportation of AGFPest project / products. |              |              |              |             |               |                  |