# Agricultural, General CIP 01.0000

# Competency Task List

## 100 Animal Science

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 101 | Analyze cultural and societal uses and contributions of animals locally and globally through the lens of function and breed. |  |  |
| 102 | Perform animal handling techniques. |  |  |
|  | RESERVED (103) |  |  |
| 104 | Identify the external anatomy of animals. |  |  |
| 105 | Connect the functions of the animal body system to their system components. |  |  |
|  | RESERVED (106) |  |  |
| 107 | Predict genetic types using monohybrid and dihybrid Punnett square methods. |  |  |
| 108 | Explain the significance of the six classes of nutrients for animal growth, performance, maintenance, and reproduction. |  |  |
| 109 | Administer medicines according to the label. |  |  |
| 110 | Investigate environmental, food, medicinal, public safety, and biosecurity issues related to animal health. |  |  |
| 111 | Evaluate the equipment and facilities used in modern animal agricultural production. |  |  |
| 112 | Examine the impact of pests and diseases in animal production. |  |  |
| 113 | Investigate emerging technologies within animal science. |  |  |
|  | RESERVED (114) |  |  |
| 115 | Analyze the quality of common feedstuffs. |  |  |

## 200 Plant Science

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 201 | Classify plants. |  |  |
|  | RESERVED (202) |  |  |
| 203 | Connect plant structure to plant function. |  |  |
| 204 | Identify products and uses of plant species in the industry. |  |  |
| 205 | Explain the process of photosynthesis/respiration and their importance to life. |  |  |
| 206 | Analyze the functions of the essential nutrients for plant development. |  |  |
| 207 | Assess the environmental factors that affect the development and maintenance of a plant. |  |  |
| 208 | Demonstrate sexual and asexual plant reproduction. |  |  |
| 209 | Design an integrated pest management (IPM) plan. |  |  |
| 210 | Examine the impact of pests and diseases in plant production. |  |  |
| 211 | Connect the role of plant pollinators to food production. |  |  |
| 212 | Investigate emerging technologies within plant science. |  |  |
| 213 | Evaluate and critique designs in the horticultural industry using the principles of design. |  |  |
| 214 | Demonstrate the use of common horticultural tools. |  |  |

## 300 Soil Science

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 301 | Explain the processes of soil formation. |  |  |
| 302 | Identify and describe physical, chemical, and biological soil characteristics. |  |  |
| 303 | Perform soil sampling techniques. |  |  |
| 304 | Analyze and interpret the results of a soil test. |  |  |
| 305 | Calculate fertilizer rates to maintain proper plant nutrition. |  |  |
| 306 | Draw conclusions from a soil survey to determine land uses, capability factors, and land capability classes. |  |  |
| 307 | Evaluate soil conservation practices and soil management techniques and soil health. |  |  |
| 308 | Investigate emerging technologies within soil science. |  |  |

## 400 Mechanical Technology and Mechanization

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 401 | Identify the progression of technological advancements and their potential impacts in the agricultural industry. |  |  |
| 402 | Demonstrate safety rules and regulations. |  |  |
| 403 | Wear personal protective equipment. |  |  |
| 404 | Exhibit positive safety attitudes and responsibilities. |  |  |
| 405 | Maintain and service mechanical systems. |  |  |
| 406 | Perform calculations and measurements used in agricultural technology |  |  |
| 407 | Interpret project plans, blueprints, or schematics. |  |  |
| 408 | Investigate emerging technologies of agricultural mechanization. |  |  |
| 409 | Apply concepts on Safety Data Sheets (SDS). |  |  |
| 410 | Utilize a variety of technical sources (e.g., owner/operator manuals, internet resources, and journals within applications of mechanical technology). |  |  |

## 500 Leadership and Supervised Agricultural Experience (SAE)

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 501 | Maintain accurate program plans and records (e.g., SAE). |  |  |
| 502 | Analyze records to determine areas of growth (e.g., SAE). |  |  |
| 503 | Create short- and long-term SMART (Specific, Measurable, Attainable, Realistic/Results-based, and Timely) goals. |  |  |
| 504 | Serve in a community or civic organization (e.g., Future Farmers of America (FFA)). |  |  |
| 505 | Perform leadership tasks associated with citizenship (e.g., Future Farmers of America (FFA)). |  |  |
| 506 | Demonstrate oral, written, and verbal skills necessary for employment. |  |  |
| 507 | Research career opportunities in agriculture. |  |  |
| 508 | Create a plan to achieve career goals and priorities. |  |  |
| 509 | Conduct and/or actively participate in a meeting. |  |  |
| 510 | Use social media as a professional business tool. |  |  |

## 600 Agribusiness

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 601 | Describe the role agriculture plays in local, state, national, and global economies. |  |  |
| 602 | Identify functions, roles, and purposes of management in a business. |  |  |
| 603 | Maintain accurate business and financial records. |  |  |
| 604 | Research nontraditional agricultural markets. |  |  |
| 605 | Calculate net worth statement. |  |  |
| 606 | Construct a basic business plan. |  |  |
| 607 | Differentiate between products and commodities in the marketplace. |  |  |
| 608 | Apply concepts of supply and demand in agricultural industry. |  |  |
| 609 | Investigate types of ownership and structures of agricultural businesses. |  |  |

## 700 Natural Resource Management

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 701 | Research the history of conservation in Pennsylvania. |  |  |
| 702 | Differentiate between renewable and non-renewable natural resources. |  |  |
| 703 | Investigate point and non-point pollution impacts on environment. |  |  |
| 704 | Explain the importance of management and planning of resources. |  |  |
| 705 | Identify the importance of wildlife and forestry as it relates to natural resources management. |  |  |
| 706 | Assess the impacts of invasive species on ecosystems. |  |  |
| 707 | Analyze and interpret water quality, air quality, and waste management within ecosystems. |  |  |
| 708 | Critique the sustainability of various agriculture practices. |  |  |
| 709 | Analyze the impact of conventional and alternative energy sources on the environment and within the agricultural industry. |  |  |
| 710 | Apply concepts of reduce, reuse, and recycle. |  |  |
| 711 | Identify the importance of biodiversity to the environment. |  |  |

## 800 Biotechnology

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 801 | Describe the use of biotechnology in agriculture. |  |  |
| 802 | Investigate past, current, and emerging applications of biotechnology in agriculture. |  |  |
| 803 | Explore ethical, legal, and social biotechnology issues. |  |  |

## 900 Food Science

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| Item | Task | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 901 | Identify and describe foods derived from animal and plant sources. |  |  |
| 902 | Investigate current consumer food trends. |  |  |
| 903 | Demonstrate techniques and procedures for the handling of food products. |  |  |
| 904 | Interpret and evaluate results of quality assurance tests on food products and examine steps to implement corrective procedures. |  |  |
| 905 | Research the impact of state and federal agencies on food supply industries. |  |  |
| 906 | Examine the various paths food products take to get from farm to table. |  |  |

1 Student Demonstrated Entry-Level Industry Proficiency as Indicated by (X)