# Competency Task List

# Applied Horticulture/Horticultural Operations, General CIP 01.0601

# High School Graduation Years 2022, 2023, 2024

## 100 Safety

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 101 | Follow all general safety, laboratory safety and field-site safety practices and procedures in horticulture. |   |   |
| 102 | Follow all OSHA safety standards for the horticulture services industry. |  |  |
| 103 | Follow procedures written in the Safety Data Sheet (SDS) information system. |  |  |
| 104 | Operate horticulture equipment. |  |  |
| 105 | Select the proper protective clothing and equipment. |  |  |
| 106 | RESERVED |  |  |

## 200 Safe and Proper Plant Health Care Practices

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 201 | Control weeds, insects, and plant diseases. |   |   |
| 202 | Interpret horticulture product labels. |   |   |
| 203 | Formulate quantities of horticultural products used in plant health care. |   |   |
| 204 | RESERVED |   |   |
| 205 | Investigate the concept of plant health care, e.g., disease, nutrients. |   |   |
| 206 | Distinguish the components of an integrated pest management program including the effects of chemicals and pesticides on the environment. |  |  |
| 207 | Analyze various horticultural pests including their signs and symptoms. |  |  |
| 208 | RESERVED |  |  |
| 209 | Prepare for PA Pesticide Certification. |  |  |

## 300 Basic Botany

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 301 | Describe the process of photosynthesis, respiration, translocation, and transpiration. |  |   |
| 302 | Compare plant cell structure, organization, and function. |  |   |
| 303 | Compare plant structures and explain their functions. |  |  |
| 304 | Analyze conditions essential for seed germination. |  |  |
| 305 | Explain the environmental factors that affect the growth and development of a plant. |  |  |
| 306 | Distinguish between sexual and asexual plant reproduction. |  |  |
| 307 | Analyze plant nutrient requirements. |  |  |
| 308 | Describe the nutrient cycles. |  |  |
| 309 | Classify plants and use appropriate binomial taxonomic terminology. |  |  |
| 310 | Describe techniques used to control environmental factors. |  |  |
| 311 | Describe how weather and climate impact growing conditions and plant selection. |  |  |

## 400 Horticulture Business Operations

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 401 | RESERVED |  |   |
| 402 | RESERVED |  |   |
| 403 | Develop a horticultural business plan. |  |  |
| 404 | Analyze pricing and mark-up techniques. |  |  |
| 405 | RESERVED |  |  |
| 406 | Research vendors to obtain product information. |  |  |
| 407 | Perform appropriate customer and client relationship attributes. |  |  |
| 408 | RESERVED |  |  |
| 409 | Analyze record keeping system to determine best management practices. |  |  |
| 410 | RESERVED |  |  |

## 500 Soils and Fertilizer

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 501 | Compare soil/media characteristics. |   |   |
| 502 | Analyze soil and/or plant nutrients. |   |   |
| 503 | Describe soil management techniques. |  |  |
| 504 | Conduct proper soil sampling techniques. |  |  |
| 505 | Test soil for pH, texture, macronutrients, and soluble salts. |  |  |
| 506 | Interpret commercial soil test reports. |  |  |
| 507 | Describe criteria for selecting fertilizers and soil amendments. |  |  |
| 508 | Describe factors influencing fertilizer application. |  |  |
| 509 | RESERVED |  |  |
| 510 | RESERVED |  |  |
| 511 | RESERVED |  |  |
| 512 | Compare current issues regarding plant and soil management that impacts agronomic and horticultural practices. |  |  |
| 513 | Analyze microbial life and its effects on soil. |  |  |

## 600 Sustainable Horticulture

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 601 | Investigate different methods of sustainable horticulture. |   |   |
| 602 | Compare sustainable watering and fertilizing techniques to conventional techniques.  |   |   |
| 603 | Compare sustainable plant material selection to conventional plant material.  |   |   |
| 604 | Recycle horticultural waste. |   |   |
| 605 | RESERVED |  |  |

## 700 Horticulture Technology

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| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 701 | Explain the uses of technologically altered plants. |   |   |
| 702 | RESERVED |  |  |
| 703 | RESERVED |  |  |
| 704 | Research advanced and emerging technologies in horticulture. |  |  |
| 705 | Perform a point of sale (POS) transaction. |  |  |

## 800 History and Current Status of Horticulture

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 801 | Describe major historical developments in the field of horticulture. |   |   |
| 802 | Compare/contrast the effect human beings have had on various plant species. |   |   |
| 803 | Determine how development of certain plant species has affected cultural development. |   |   |
| 804 | Describe the role horticulture plays in the economy of the state and nation. |  |  |
| 805 | RESERVED |  |  |
| 806 | Critique the impact of that botanical gardens, public parks, and plants have on people in a society. |  |  |

## 900 Plant Identification

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 901 | Outline the proper use of plant material in various segments of the horticulture industry. |   |   |
| 902 | Determine the impact of environmental factors on plant materials. |   |   |
| 903 | Analyze characteristics of various plant categories including woody and herbaceous plants in the horticulture industry. |   |   |
| 904 | Identify 100 plants used in the horticulture industry by horticultural reference/botanical reference (70 to be deciduous, evergreen, annuals, perennials, and house plants) |  |  |

## 1000 Horticultural Careers and Opportunities

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 1001 | Describe careers and working conditions in the horticulture industry. |   |   |
| 1002 | Perform job readiness skills needed in the horticulture industry. |   |   |
| 1003 | Research horticulture industry certifications. |   |   |
| 1004 | Explore postsecondary opportunities. |  |  |

## 1100 Horticultural Pathways

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| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Cross-Walk |
| 1101 | Apply concepts of landscape, hardscape, or floral design. |   |   |
| 1102 | Create various horticulture designs. |   |   |
| 1103 | Calculate measurements, areas, and volumes of horticulture designs. |   |   |
| 1104 | Interpret landscape design, symbols, and abbreviations. |  |  |
| 1105 | Transplant various types of plant material. |  |  |
| 1106 | Prune various types of plant material. |  |  |
| 1107 | Describe the characteristics of lawn/turfgrass installation and maintenance. |  |  |
| 1108 | Describe the characteristics and features of various types of growing structures. |  |  |
| 1109 | Prepare plant material for marketing or sales. |  |  |
| 1110 | Recognize non-traditional growth and propagation of various plant materials. (examples may include but are not limited to: hydroponics, aquaponics, aeroponics, and tissue culture) |  |  |

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