

# General Horticulture and Plant Science (11.42000) (2013)

Demonstrate employability skills required by business and industry. AFNR - GHPS-1

**1.2** Demonstrate creativity by asking challenging questions and applying innovative procedures and methods. AFNR-GHPS-1.2

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**1.1** Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities. AFNR-GHPS-1.1

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**1.3** Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations AFNR-GHPS-1.3

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**1.4** Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity. AFNR-GHPS-1.4

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**1.5** Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply teamwork skills. AFNR-GHPS-1.5

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**1.6** Present a professional image through appearance, behavior and language. AFNR-GHPS-1.6

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Learns to work safely in the agriculture lab and work sites, demonstrates selected competencies in leadership through the FFA and agricultural industry organizations, and develops plans for a Supervised Agricultural Experience Program (SAEP). AFNR-GHPS-2

**2.1** Explain the role of the Agricultural Education program and the FFA in personal development. AFNR-GHPS-2.1

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**2.2** Demonstrate knowledge learned through a SAEP. AFNR-GHPS-2.2

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**2.3** Develop leadership and personal development skills through participation in the FFA AFNR-GHPS-2.3

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**2.4** Explore career opportunities in horticulture-plant science through the FFA and Agricultural Education Program. AFNR-GHPS-2.4

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**2.5** Explore the professional agricultural organizations associated with the course content. AFNR-GHPS-2.5

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**Identify plant parts, growth, and reproduction processes.** [AFNR-GHPS-3](#)

**3.1 Compare and contrast the three phases of plant life (dormancy, vegetative, reproductive)** [AFNR-GHPS-3.1](#)

**3.2 Describe the difference between annuals, biennials, and perennials.** [AFNR-GHPS-3.2](#)

**3.3 Categorize vegetative structures and functions of plant parts (i.e....leaves, stems, roots).** [AFNR-GHPS-3.3](#)

**3.4 Sketch the sexual reproductive structures of plants and summarize their functions. (e.g., flower, fruit, seeds).** [AFNR-GHPS-3.4](#)

**3.5 Sketch the sexual reproductive structures of plants and summarize their functions. (e.g., stems, roots).** [AFNR-GHPS-3.5](#)

**Determine factors that affect plant development and growth.** [AFNR-GHPS-4](#)

**4.1 Describe the process of photosynthesis and investigate factors affecting photosynthesis in plants.** [AFNR-GHPS-4.1](#)

**4.2 Describe the process of respiration and investigate factors affecting respiration in plants** [AFNR-GHPS-4.2](#)

**4.3 Differentiate between the growth processes of plants (e.g., germination, photosynthesis, transpiration, respiration, osmosis).** [AFNR-GHPS-4.3](#)

**Discuss the importance of sexual reproduction in plants.** [AFNR-GHPS-5](#)

**5.1 Examine the importance of plant propagation** [AFNR-GHPS-5.1](#)

**5.2 Compare and contrast sexual and asexual propagation.** [AFNR-GHPS-5.2](#)

**5.3 Describe the factors involved in planting seeds and demonstrate proper planting methods.** [AFNR-GHPS-5.3](#)

**AFNR-GHPS-6 Discuss the importance of asexual reproduction in plants.** [AFNR-GHPS-6](#)

**6.1 Describe the various methods of vegetative propagation.** [AFNR-GHPS-6.1](#)

**6.2 Apply information learned to correctly demonstrate each method of vegetative propagation.** [AFNR-GHPS-6.2](#)

**Determine the basic principles and uses of soil and plant growth media** [AFNR-GHPS-7](#)

**7.1 Identify and sketch soil materials and structure.** [AFNR-GHPS-7.1](#)

**7.2 Evaluate the components and functions of a good growing media** [AFNR-GHPS-7.2](#)

**Identify macro, secondary and micro plant nutrients.** [AFNR-GHPS-8](#)

**8.1 List and discuss the nutrients needed for plant growth.** [AFNR-GHPS-8.1](#)

**8.2 Categorize common nutrient deficiency symptoms.** [AFNR-GHPS-8.2](#)

**8.3 Assess soil pH, analyze plant nutrient availability and discuss methods of pH modification** [AFNR-GHPS-8.3](#)

**Explore the use of plant fertilizers and proper fertilizing methods.** [AFNR-GHPS-9](#)

**9.1 Identify the components of a complete plant fertilizer.** [AFNR-GHPS-9.1](#)

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**9.2 Analyze the difference between organic and inorganic fertilizers.** [AFNR-GHPS-9.2](#)

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**9.3 Demonstrate proper technique for applying water soluble and granular fertilizers.** [AFNR-GHPS-9.3](#)

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**9.4 Calculate accurate fertilizer ratios.** [AFNR-GHPS-9.4](#)

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**Evaluate the damage caused to plants by insects, weeds, diseases, and physiological disorders.** [AFNR-GHPS-10](#)

**10.1 Identify common insects, weeds, diseases and physiological disorders.** [AFNR-GHPS-10.1](#)

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**10.2 Diagram the external structure of an insect** [AFNR-GHPS-10.2](#)

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**10.3 Illustrate the complete and incomplete life cycles of insects.** [AFNR-GHPS-10.3](#)

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**10.4 Describe the damage inflicted by insects and weeds.** [AFNR-GHPS-10.4](#)

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**10.5 Describe common plant diseases and compare and contrast solution methods** [AFNR-GHPS-10.5](#)

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**10.6 Identify the proper methods of controlling pests.** [AFNR-GHPS-10.6](#)

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**Compare and contrast the use of various plant growing containers.** [AFNR-GHPS-11](#)

**11.1 Describe the containers used in plant production.** [AFNR-GHPS-11.1](#)

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**11.2 Analyze the advantages and disadvantages of each type of plant growing container.** [AFNR-GHPS-11.2](#)

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**Describe various plant irrigation methods.** [AFNR-GHPS-12](#)

**12.1 Explain the different types of watering methods for plants.** [AFNR-GHPS-12.1](#)

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**12.2 Compare and contrast the advantages and disadvantages of each type of watering system.** [AFNR-GHPS-12.2](#)

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**Explore plant science and horticulture careers and opportunities.** [AFNR-GHPS-13](#)

**13.1 Exhibit critical thinking and problem solving skills in career planning in various plant science careers.** [AFNR-GHPS-13.1](#)

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**13.2 Analyze skills, education requirements, income, and advantages and disadvantages of careers in the plant science industry.** [AFNR-GHPS-13.2](#)