Department: Plant and Earth Science

Program Name: Horticulture

Program Level: Undergraduate

College: Agriculture, Food, and Environmental Science

Program: Major

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Title: Professor and Department Chair

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Program Outcomes

Outcome 1: Acquire, integrate, and apply knowledge of plant science and horticultural practices to manage and sustainable landscapes. (a) Use multiple sources, including current and older literature, to find, evaluate, organize, and manage information related to horticultural systems. (b) Apply scientific methods to test hypotheses. (c) Demonstrate competence with both laboratory and field-based technologies used in modern horticulture. (d) Apply concepts of plant biology, horticultural science, systematics, ecology and genetics to manage and improve plants and their products.

Outcome 2: Demonstrate interdisciplinary knowledge and competency in managing horticultural systems. (a) Assess soils, soil health, and fertility, water, and site limitations. (b) Recommend and use appropriate application methods, materials, and diagnostic skills for addressing soil constraints and irrigation, nutrient, stress, and pest management issues. (c) Assess potential and evaluate realized interactions with the abiotic and biotic environment in which plants are grown. (d) Recommend appropriate, effective and integrated approaches to produce and maintain high-quality food and landscape crops. (e) Apply principles of accounting, business law, labor, marketing, and personnel management to a horticultural business and contribute to developing the various components of a business plan.

Outcome 3: Synthesize knowledge and use insight and creativity to better understand and improve horticultural plant systems. (a) Anticipate and recognize problems, identify causes of those problems, quantify potential impacts, analyze options, identify viable solutions to the
problems, and evaluate actions and consequences of treatments and interventions.  (b) Develop, identify, and employ best management practices that lead to sustainable solutions and outcomes.  
(c) Understand how global issues including climate change, energy use, water availability, and/or food safety impact the sustainability of horticultural systems locally, nationally, and globally.

**Outcome 4:** Appreciate and communicate the diverse impacts of horticulture on people.  (a) Communicate effectively with various audiences using oral, written, and visual presentation skills, and contemporary networking/social media technologies.  (b) Describe the various ways plants impact human well-being (mental; psychological and restorative; physical; medicinal and physiological).  (c) Describe and assess the influence of plants and their management on environmental sustainability and restoration.  (d) Quantify the economic importance of plants in managed ecosystems and the impact of horticultural crops in food systems.  (e) Describe the social, spiritual, and cultural importance of plants to historical and contemporary communities of people.

**Outcome 5:** Demonstrate professionalism and proficiency in skills that relate to horticulture.  (a) Demonstrate leadership and the ability to collaborate and work in teams.  (b) Demonstrate a high level of personal and social responsibility.  (c) Develop a plan for life-long learning as it relates to career choice and professionalism.  (d) Develop thoughtful, clear, and consistent perspectives on ethical and moral issues related to horticulture.  (e) Demonstrate knowledge of a range of cultures, values, and political perspectives relevant for living in a global community.  (f) Plan, engage, and learn from actions that demonstrate civic responsibility to community and society.

**Outcome 6:** (Applies to Landscape Design and Management Option only): Demonstrate the ability to assess a site and develop commercially acceptable sustainable landscapes.  (a) Recommend appropriate plant selections for site specific conditions to meet the goals of a sustainable landscape.  (b) Apply sustainable design principles in the development of complete landscape plans for a variety of environmental, aesthetic, and functional situations including softscapes and hardscapes.  (c) Develop professional bids associated with landscape projects.

**Outcome 7:** (Applies to Fruit and Vegetable Sustainable Systems only): Demonstrate the knowledge and competency to plan fruit and vegetable production and distribution systems.  (a) Apply critical thinking skills to diagnose plant health problems in pre and post-harvest situations and recommend appropriate control procedures.  (b) Apply critical thinking skills towards assessing local market opportunities and profitability for fresh and value added fruit and vegetable products.  (c) Demonstrate knowledge in the critical components of food safety and supply chain documentation.