Correlation

of

Landscape Design, Installation, and Management

Second Edition

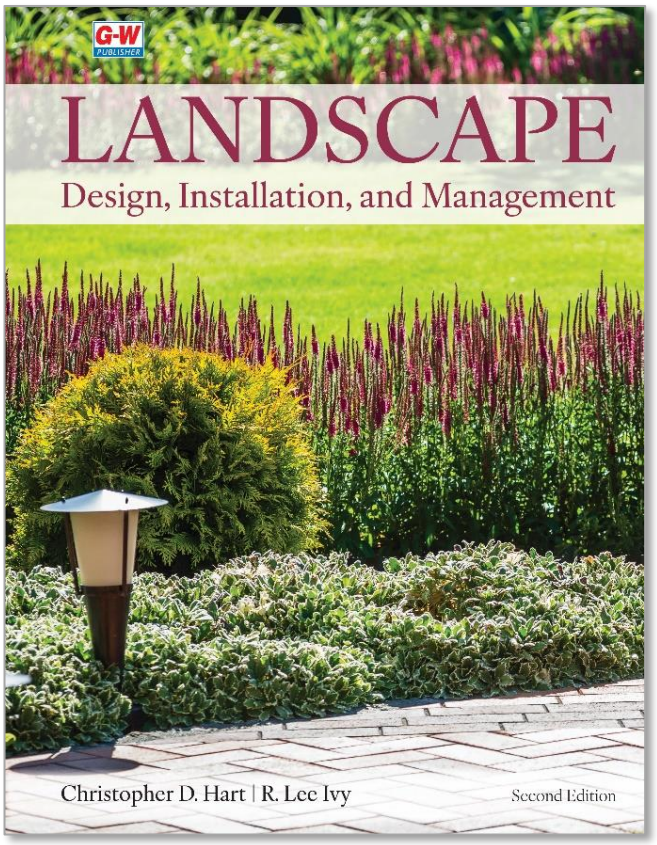
by

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to

National AFNR Standards: Plant Systems Career Pathway

Some of the activities at the end of each chapter that correlate to the standards have been included in this correlation chart. The SA indicates Suggested Activities and CT indicates Critical Thinking questions.



Standard	Text Location
PS.02. Apply principles of classification, plant anatomy, and plant physiology to plant production and management.	
PS.02.01. Classify plants according to taxonomic systems.	CH 9 Taxonomy and Physiology pp211-231 Scientific Classification pp213-219
PS.02.01.01.a. Identify and summarize systems used to classify plants based on specific characteristics.	Scientific Classification pp213-219
PS.02.01.01.b. Compare and contrast the hierarchical classification of agricultural and ornamental plants.	Scientific Classification pp213-219 Phylum p215 Class p215 Order p215 Family p215 Genus p216 Species pp216-217

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Standard	Text Location
PS.02.01.01.c. Classify agricultural and ornamental plants according to the hierarchical classification system	Scientific Classification pp213-219 Phylum p215 Class p215 Order p215 Family p215 Genus p216 Species pp216-217
PS.02.01.02.a. Describe the morphological characteristics used to identify agricultural and herbaceous plants (e.g., life cycles, growth habit, plant use and as monocotyledons or dicotyledons, woody, herbaceous, etc.).	Physical Hardiness and Life Cycle pp126-127 Stems pp219-222 Figure 9-15, p220 Herbaceous Perennials, pp240–242, p605 Trees, p234 Shrubs pp238-240 Turfgrasses pp242-243 Ground Covers p243 Vines pp244-246 Edible Plants pp246-247 Aquatic Plants p247 Geophytes p248
PS.02.01.02.b. Identify and describe important plants to agricultural and ornamental plant systems by common names.	Plant Nomenclature pp212-213 Common Names p213 Common and Binomial Names pp217-218 Nursery/Landscape Plant Identification pp255-269
PS.02.01.02.c. Identify and describe important plants to agricultural and ornamental plant systems by scientific names.	Plant Nomenclature pp212-213 Common and Binomial Names pp217-218 Nursery/Landscape Plant Identification pp255-269
PS.02.02. Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems.	NGSS: HS-LS1-4
PS.02.02.01.b. Compare and contrast mitosis and meiosis.	Sexual Propagation pp191-194 Asexual Propagation pp192-194
PS.02.02.02.a. Identify and summarize the components, types, and functions of plant roots.	Roots p219 Figure 9-14, p220
PS.02.02.03.a. Identify and summarize the components and the functions of plant stems.	Stems pp220-222
PS.02.02.03.b. Analyze and describe the difference in arrangement of vascular tissue between monocot and dicot plant stems.	Stems p220 Figure 9-15, p220
PS.02.02.04.a. Research and summarize leaf morphology and the functions of leaves.	Leaves p222
PS.02.02.04.b. Analyze how leaves capture light energy and summarize the exchange of gases.	Leaves p222 Photosynthesis pp224-225

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Standard	Text Location
PS.02.02.05.a. Identify and summarize the components of a flower, the functions of a flower and the functions of flower components.	Flowers p223
PS.02.02.06.a. Identify and summarize the functions and components of seeds and fruit.	Fruits p223 Seeds pp223-224
PS.02.03. Apply knowledge of plant physiology and energy conversion to plant systems.	NGSS: HS-LS1-5 Plant Processes pp224-227
PS.02.03.01.b. Apply knowledge of photosynthesis to analyze how various environmental factors will affect the rate of photosynthesis.	Photosynthesis pp224-225
PS.02.03.01.c. Evaluate the impact of photosynthesis and the factors that affect it on plant management, culture, and production problems.	Photosynthesis pp224-225
PS.02.03.02.a. Summarize the stages of cellular respiration including their products and byproducts.	Respiration p225
PS.02.03.03.c. Relate the principles of primary and secondary growth to plant systems.	Plant Nutrition pp227-228
PS.02.03.05.a. Compare and contrast the effects of transpiration, translocation, and assimilation on plants.	Transpiration p225 Translocation pp225-226 Acclimatization pp195-196
PS.02.03.05.b. Identify and analyze the factors affecting transpiration, translocation and assimilation rate and products.	Transpiration p225 Translocation pp225-226 Acclimatization pp195-196
PS.02.03.05.c. Devise plans for plant management that applies knowledge of transpiration, translocation and assimilation on plant growth.	Transpiration p225 Translocation pp225-226 Acclimatization pp195-196
PS.03. Propagate, culture and harvest plants and plant products based on current industry standards.	
PS.03.01. Demonstrate plant propagation techniques in plant system activities.	Plant Propagation pp191-194 Greenhouse Plant Production pp195-196
PS.03.01.02.c. Conduct tests associated with seed germination rates, viability, and vigor.	SA #8, p209
PS.03.01.03.a. Summarize optimal conditions for asexual propagation and demonstrate techniques used to propagate plants by cuttings, division, separation, layering, budding, and grafting.	Sexual Propagation pp191-194 Asexual Propagation pp192-194
PS.03.01.03.b. Manage the plant environment to support asexual reproduction.	Asexual Propagation pp192-194
PS.03.01.04.a. Define micropropagation, discuss advantages associated with the practice and summarize the main stages of the process.	Micropropagation p193 CT #1, p209

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Standard	Text Location
PS.03.02. Develop and implement a management plan for plant production.	*ELA* *CCSS.ELA-Literacy.RI.9-10.1* *CCSS.ELA-Literacy.RI.9-10.8* *CCSS.ELA-Literacy.RST.9-10.3* *CCSS.ELA-Literacy.WHST.9-10.2* *CCSS.ELA-Literacy.WHST.9-10.4* *CCSS.ELA-Literacy.WHST.9-10.9*
PS.03.02.01.a. Research and summarize the importance of starting with pest- and disease-free propagation material.	Quarantines pp204-205
PS.03.02.01.b. Inspect propagation material for evidence of pests or disease.	Quarantines pp204-205
PS.03.02.02.a. List and summarize the reasons for preparing growing media before planting.	Substrates pp187-191
PS.03.02.02.b. Prepare soil and growing media for planting with the addition of amendments.	Substrates pp187-191 Amendments p189
PS.03.03. Develop and implement a plan for integrated pest management for plant production.	Chapter 22 Pest Management pp565-603
PS.03.03.01.a. Identify and categorize plant pests, diseases, and disorders.	Identifying the Plant and Pest p567 Weeds pp573-574 Invertebrate Pests pp574-577 Plant Diseases pp577-578 Vertebrates p578 Pests, Disorders, and Beneficial Insects Identification (illustrated glossary) pp596-603
PS.03.03.01.b. Identify and analyze major local weeds, insect pests and infectious and noninfectious plant diseases.	Identifying the Plant and Pest p567 Weeds pp573-574 Invertebrate Pests pp574-577 Plant Diseases pp577-578 Pests, Disorders, and Beneficial Insects Identification (illustrated glossary) pp596-603
PS.03.03.01.c. Devise solutions for plant pests, diseases, and disorders.	Using IPM pp566-568 IPM Control Methods pp568-573 Prevention, Suppression, and Eradication p568
PS.03.03.02.a. Diagram the life cycle of major plant pests and diseases.	Figure 22-15 p575
PS.03.03.02.b. Predict pest and disease problems based on environmental conditions and life cycles.	CT #3, p594 SA #9, p595
PS.03.03.02.c. Design and implement a crop scouting program.	Monitoring the Pest p567
PS.03.03.03.a. Identify and summarize pest control strategies associated with integrated pest management and the importance of determining economic threshold.	IPM Control Methods pp568-573 Threshold Levels p567

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Standard	Text Location
PS.03.03.03.b. Demonstrate pesticide formulations including organic and synthetic active ingredients and selection of pesticide to control specific pest.	Types of Pesticides pp579-581 Pesticide Formulations pp581-582 Herbicides pp579-580 Insecticides pp580-581 Liquid Pesticides p581 Pesticide Dusts p581 Pesticide Granules p582 Wettable powders (WP) p582 Aerosol sprays p582 Fumigants p582
PS.03.03.03.c. Employ pest management strategies to manage pest populations, assess the effectiveness of the plan and adjust the plan as needed.	IPM Control Methods pp568-573 SA #2, p595
PS.03.03.04.a. Distinguish between risks and benefits associated with the materials and methods used in plant pest management.	CT #5, p594
PS.03.03.04.b. Examine and apply procedures for the safe handling, use and storage of pesticides including personal protective equipment and reentry interval.	Pesticide Labels pp583-586 Pesticide Application pp586-589 Mixing Pesticides pp587-588 Applying Pesticides pp589 Storage and Disposal pp589-590 SA #4, p595
PS.03.03.04.c. Evaluate environmental and consumer concerns regarding pest management strategies.	Assessing the Area p588 CT #1, p594 SA #7, p595
PS.03.05. Harvest, handle, and store crops according to current industry standards.	ELA CCSS.ELA-Literacy.RST.9-10.3 CCSS.ELA-Literacy.RST.9-10.4 CCSS.ELA-Literacy.WHST.9-10.2a
PS.03.05.01.a. Identify and summarize harvesting methods and equipment.	Nursery Plant Production pp197-203 Container Production pp197-199 Pot-in-Pot Production pp199-200 Field Production p200 Balled-and-Burlapped p201 Bare Root p201 Transporting Nursery Stock pp202-203
PS.03.05.01.b. Assess the stage of growth to determine crop maturity or marketability and demonstrate proper harvesting techniques.	Caliper p201
PS.03.05.01.c. Analyze the processes used by mechanical harvesting equipment.	Field Production p200
PS.03.05.04.a. Identify and categorize plant preparation methods for storing and shipping plants and plant products.	Transporting Nursery Stock pp202-203

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Standard	Text Location
PS.03.05.04.b. Analyze the proper conditions required to maintain the quality of plants and plant products held in storage and during shipping.	Transporting Nursery Stock pp202-203
PS.03.05.04.c. Monitor and evaluate environmental conditions in storage facilities for plants and plant products.	Greenhouse Plant Production pp195-196
PS.03.05.05.a. Summarize the reasons for preparing plants and plant products for distribution.	Transporting Nursery Stock pp202-203
PS.04. Apply principles of design in plant systems to enhance an environment (e.g., floral, forest landscape, and farm).	
PS.04.01. Evaluating, identifying, and preparing plants to enhance an environment.	
PS.04.01.01.a. Identify and categorize plants by their purpose (e.g., floral plants, landscape plants, house plants, etc.).	Nursery/Landscape Plant Identification (illustrated glossary) pp255-269 **Landscape/Horticulture Virtual Toolbox** included in Digital Companion contains plants separated by categories (e.g., floral plants, landscape plants, house plants, etc.).
PS.04.01.01.b. Demonstrate proper use of plants in their environment (e.g., focal and filler plants in floriculture, heat tolerant and shade plants in a landscape design, etc.).	CH 5 Site Evaluation and Plant Selection pp117-137 **Landscape/Horticulture Virtual Toolbox** included in Digital Companion contains plants separated by categories (e.g., floral plants, landscape plants, house plants, etc.).
PS.04.01.01.c. Install plants according to a design plan that uses the proper plants based on the situation and environment.	CH 5 Site Evaluation and Plant Selection pp117-137 CH 16 Creating the Design pp405-429 SA #5, p429
PS.04.01.02.a. Summarize the applications of design in agriculture and ornamental plant systems.	CH 5 Site Evaluation and Plant Selection pp117-137 CH 6 Principles and Elements of Design pp139-155 CH 16 Creating the Design pp405-4297 CT #2, p429 SA #1, p429 SA #9, p429
PS.04.01.02.b. Create a design utilizing plants in their proper environments. *KSS: AFNR Career Cluster – Natural Resources Systems Pathway, Statement 3* *AFNR Career Cluster – Plant systems Pathway, Statement 2* *STEM Career Cluster, Statement 4*	CH 5 Site Evaluation and Plant Selection pp117-137 CH 6 Principles and Elements of Design pp139-155 CH 16 Creating the Design pp405-4297 CT #4, p429 SA #1, p429 SA #7, p429
PS.04.01.02.c. Evaluate a design and provide feedback and suggestions for improvement (e.g., a landscape, or a landscape plan, etc.).	SA #1, p429 SA #6, p137

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