

Passaic County Technical Institute

Curriculum of Instruction

Landscape Design/Horticulture I

Grade 9

June 2011

Prepared by Michael Di Patria

I. COURSE DESCRIPTION

Landscape Design/Horticulture I is a one (1) year course, which introduces the student to the Landscape/Horticulture Industry. Emphasis will be placed on the importance of horticultural within our environment. Students taking this course will look at career opportunities within the industry. This would include comparing characteristics, preparation and credentials needed to be successful in this field. Students in this course will be involved in plant science as it pertains to Plant Classification, Propagation, Media, Nutrients and Fertilizers. Students will learn to identify and use (properly and safely) non-powered garden tools. Students in Landscape Design/Horticulture I will be introduced to greenhouse environmental conditions and growing plants in the greenhouse. They will plan, plant and maintain a vegetable and flower garden. In addition, the course will discuss Horticultural Business Management such as entrepreneurship and the basic types of businesses through text and role playing activities. Students will also be introduced to basic principles of good landscape design. They will learn to use these principles through design activities using the proper symbols and scale measurement.

Time Frame: 1 year

Suggested Grade Level: Grade 9

Prerequisite: Acceptance into School of Landscape Design

II. OBJECTIVES / OUTLINE

Upon completion of Landscape Design/Horticulture I, the student will be able to:

- A. Identify and describe the major areas within the Landscape/horticulture Industry
- B. List examples of careers in the landscape/horticulture Industry
- C. Explain environment and the issues associated with maintaining a good environment
- D. Describe how plants are classified and the difference between annuals, biennials, and perennials
- E. Explain parts of a plant, their structures and functions
- F. Discuss importance and use of plant growth regulators
- G. Explain the effects of media, nutrients and fertilizers on plant growth
- H. Discuss basic information on business management as it relates to the Industry
- I. Explain and use basic principles of good landscape design
- J. Identify and properly use non-power landscape tools
- K. Grow, lay-out, plant and maintain a flower and vegetable garden
- L. Discuss student organizations – ie. FFA
- M. Demonstrate occupational and personal safety in the workplace (class/shop).

COURSE OUTLINE

Landscape/Horticulture Careers

- A. Explain landscape/horticulture as a science, technology and industry
- B. Describe the major areas of landscape/horticulture
- C. Discuss how to prepare for a career in landscape/horticulture
- D. Identify employer expectations in the workplace
- E. Demonstrate occupational and personal safety in the workplace

Landscape/Horticulture and the Environment

- A. Explain environment and the issues associated with maintaining a good environment
- B. Describe how water resources are related to landscape/horticulture
- C. Discuss how fertilizers are environmental concerns
- D. Explain how pesticides pose a threat to the environment
- E. Describe the role of best management practices

Plant Classification, Function and Structure

- A. Explain different ways plants are classified
- B. Describe the difference among annuals, biennials and perennials
- C. Explain the process of photosynthesis and respiration
- D. Identify and describe the functions of the vegetative plant parts
- E. Discuss the difference between simple and compound leaves
- F. Describe the parts found on a plant stem
- G. Explain the difference between dicot and monocot stems
- H. Describe the difference between taproot and fibrous root systems
- I. Identify and describe the reproductive structures of plants

Plant Propagation

- A. Discuss the importance of plant propagation
- B. Explain the difference between sexual and asexual propagation
- C. Describe how to successfully direct seed outdoors
- D. Discuss the factors involved in planting seeds for transplanting
- E. Explain the various methods of stem cutting propagation
- F. Describe the various types of media used for cuttings

Media, Nutrients and Fertilizers

- A. Explain and identify growing media
- B. Describe soil materials and structure
- C. Name the nutrients needed for plant growth
- D. Describe pH and how it is modified
- E. Explain fertilization and fertilizer

Non-power Tools

- A. Identify and describe basic non-power tools used in landscape/horticulture industry
- B. Demonstrate proper procedure in using non-power tools
- C. Describe safety precautions in using non-power tools

Landscape Design

- A. Explain the importance of landscaping and landscape planning
- B. Discuss elements of design and effect
- C. Explain Principles of Good Landscape Design
- D. Demonstrate use of scale and proper design symbols

Student Organizations and Internships in Horticulture

- A. Describe common organizations for students in horticulture
- B. Explain the purpose, nature and organization of the FFA
- C. Evaluate and apply for FFA chapter

Landscape/Horticulture Business Management

- A. Explain Entrepreneurship
- B. Describe three ways of doing business
- C. Explain how to prepare a business plan
- D. Demonstrate knowledge of safety practices in the workplace

Greenhouse Environment

- A. Explain the importance of environmental conditions on greenhouse plants
- B. Discuss the various types of containers used for growing greenhouse plants
- C. Describe the function of good growing media and the components of soilless mixture
- D. Explain the difference between organic and inorganic fertilizers

III. EVALUATION, PROFICIENCIES and NJCCS

A. Evaluation :

Students to be evaluated using the following grading system:

Tests	40%
Quizzes	20%
Projects	20%
Notebooks/Homework	10%
Class Participation	10%
TOTAL	<hr/> 100%

B. Proficiencies :

Students will be able to:

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- M. Demonstrate occupational and personal safety in the workplace (class/shop).

C. NJCCS

The following CCS will be used throughout the course :

Standard 9.1 21st-Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Standard 9.2 Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

Standard 9.3 Career Awareness, Exploration, and Preparation: All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

Standard 9.4 Career and Technical Education: All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.

IV. TEXTBOOKS and INSTRUCTIONAL MATERIALS

“Introductory Horticulture”, fifth edition - H. Edward Reiley
Carroll L. Shry, Jr.

Delmar Publishers, Albany, New York, 1995

ISBN: 0-8273-6766-X

“Introduction to Horticulture”, fourth edition - Charles B. Schroeder

Pearson Education Inc., Boston, Ma. 2009 Eddie Dean Seagle

ISBN: 978-0-13-362631-5

Lorie Felton

John M. Ruter

William T. Kelly

Gerard Krewer

V. INSTRUCTIONAL STRATEGIES

Various teaching methods are utilized in this course. In order to meet the individual needs of our students, differentiated instruction is utilized in every class. Meaningful instruction will use a variety of strategies, including but not limited to: readings and exercises from approved text(s) and related supplemental materials, hands-on practical projects, shop demonstrations by the teacher and students, cooperative group activities, teacher generated worksheets and exercises, field trips to flower shows, botanical garden and selected secondary schools will support classroom content. Teacher modeling of landscape situations will also be implemented. The use of specific audio-visual materials will be utilized in classroom instruction. Computer use will consist of research and project reports.

VI. SCOPE and SEQUENCE

Skill to be Learned

9

10

11

12

Contracts/Contractors/Landscape Specification	I			
Greenhouse Operation	I			
Horticulture Industry & the Environment	I			
Hydroponics	I			
Integrated Pest Management (IPM)	I			
Interior Plantscape	I			
Irrigation Systems	I			
Landscape Maintenance	I			
Landscape Business Management	I			
Landscape Construction	I			
Landscape Design	I			
Landscape Enrichments	I			
Landscape/Horticulture Careers	I			
Lawn Maintenance Equipment	I			
Media, Nutrients and Fertilizer	I			
Non Power Tools	I			
Outdoor Room Concept	I			
Plant Classification, Function and Structure	I			
Plant Growth Regulators	I			
Plant Propagation	I			
Plant Selection and the use of Plants in the Landscape	I			
Pricing the Landscape	I			
Student Organizations	I			
Turf Grass	I			
Xeriscaping	I			

KEY:

INTRODUCE: I

DEVELOP IN DEPTH: D

REINFORCE : R

VII. PACING CHART

<u>Week</u>	<u>Chapter</u>	<u>Material</u>
Week 1	Unit 1 Exploring the Horticulture Industry	Horticulture as an Industry using Science and Technology
Week 2-3	Unit 1 Areas of Horticulture Unit 2 Employer Expectations/Safety	Major areas of Horticulture. Ways to prepare for a career in Horticulture.
Week 4	Unit 2 Employer Expectations/Safety	Identify employer expectations in the workplace. Demonstrate Occupational Safety in the workplace
Week 5	Chapter 27 Student Organizations and Internships in Horticulture	Describe Organizations for Students in Horticulture.
Week 6-7	Describe Organizations for Students in Horticulture	Explain purpose, nature and organization of the FFA. Evaluate and apply for FFA Chapter
Week 8-9	Chapter 3 Horticulture and the Environment	Environmental Issues. Water Resources and its Relationship to Landscape/Horticulture
Week 10-11	Chapter 3 Horticulture and the Environment	Discuss effects of Fertilizer and Pesticides on the Environment. Describe the role of Best Management Practices
Week 12	Chapter 4 Plant Classification, Function and Structure	Ways Plants are Classified. Plant Taxonomy
Week 13-14	Chapter 4 Plant Classification, Function and Structure	Annuals, Biennials and Perennials. Process of Photosynthesis. Main Parts of a Plant
Week 15-16	Chapter 4 Plant Classification, Function and Structure	Functions of the Vegetative Plant Parts. Simple and Compound Leaves, Taproot and Fibrous Root System
Week 17	Winter Break	
Week 18-19	Chapter 6 Media, Nutrients and Fertilizers	Identify Growing Media. Soils Materials and Structures
Week 20	Chapter 6 Media, Nutrients and Fertilizers	Nutrients needed for Plant Growth. pH and how it is modified
Week 21	Chapter 6 Media, Nutrients and Fertilizers	Types and Methods of Fertilizer.
Week 22	Chapter 16 Designing Landscapes	Important of proper Landscape Planning. Elements of Design and Effect.
Week 23-24	Unit 34	Principles of Good Landscape. Balance,

	Principles of Landscaping	Sequence, Scale, Simplicity and Focalization
Week 25	Chapter 16 Designing Landscapes	Use of Scale in Design Process, Design Symbols
Week 26-27	Chapter 9 Horticultural Business Management	Entrepreneurship, Ways of Doing Business, How to prepare a Business Plan. Safety Practices in the Workplace
Week 28	Chapter 23 Non Power Tools Proper Use and Maintenance	Identify basic Non Power Tools used in Landscape/Horticulture. Demonstrate proper use of Tools. Proper Safety and Maintenance Practices
Week 29	Chapter 10 Greenhouse Structure	Importance of Environmental Conditions on the Greenhouse
Week 30-31	Chapter 11 Growing Crops in the Greenhouse	Types of Containers, functions of Growing Media, Soiless Mixture
Week 32	Chapter 11 Growing Crops in the Greenhouse	Organic/Inorganic Fertilizers, Plant Fertilization
Week 33-34	Chapter 5 Plant Propagation	Importance of Plant Propagation. Sexual and Asexual Propagation, Types of Propagation Methods
Week 35	Section 3 – Unit 6 Plant Propagation – Seeds	Describe how to successfully Direct Seed Outdoors, Factors involved in planting seeds for transplanting
Week 36	Section 3 – Unit 7 Plant Propagation – Softwood and Semi-Hardwood Cuttings	Explain various methods of Stem Cuttings. Timing for Cutting. Types of Media used for Cuttings

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Student Proficiencies

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