

Discipline: Agriculture	Sub-discipline: Environmental Horticulture
General Course Title: Turfgrass Management	Min. Units: 3 Semester
Proposed Suffix: L	
<p>Course Description: Introduction to maintenance and management of turfgrasses that includes sports athletic fields, golf courses, parks, cemeteries, commercial, and residential lawns. Discussion will focus on identification, installation, cultural requirements, and maintenance practices. Emerging areas of sports, golf course, and recreation turf management to be highlighted. Laboratory required.</p>	
Required Prerequisites or Co-Requisites ¹	
Advisories/Recommended Preparation ²	
<p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> • Identify 12 common warm and cool season turfgrass species and substitutes to turfgrasses. • Select an appropriate turfgrass or turf substitute for a given site and use. • Prepare a site for planting turf, given a set of criteria for turf use and the method of establishing the turf. • Describe the different standards and preparations used when installing turfgrass depending on its intended use. • Describe the criteria for mowing both cool and warm season grasses. • Evaluate nutrient needs of both cool and warm season turf. • Calculate application rates of fertilizer for a given area of turfgrass. • Calibrate fertilizer spreader and apply fertilizer materials at the given rate. • Describe methods used for evaluating moisture needs of turf. • Prepare an efficient irrigation schedule for a given turf grass site. • Explain how soil conditions, turf type, and climate relate to irrigation scheduling. • Summarize the criteria used for evaluating the need for soil and turf aeration. • Develop a plan to correct problems associated with soil compaction. • List the steps used when planting turf by seed and vegetative materials including seeding, sodding, and variations – hydroseeding, drill seeding, pre-germination, washed soil, big roll. • Identify at least 60 common turf pests including: insects, diseases, weeds and vertebrate pests. • Create an integrated pest management plan for a given turf site • Identify at least 10 pieces of equipment used in turf maintenance or establishment. • Demonstrate how to operate a given piece of turf equipment safely. • Explain the process used to troubleshoot problems with a selected piece of turf maintenance equipment. • Demonstrate routine maintenance of a selected piece of turf maintenance equipment • Develop and present a turfgrass management plan for a given turf area or site • Explain specialized needs of sports and golf course turf management 	

**Turfgrass Management
(Content Continued)**

¹ Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

² Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

Course Content:

1. Survey of the Turfgrass Industry
 - a. History
 - b. Current scope
 - c. Future growth/employment
 - d. Turfgrass applications
 - e. Environmental issues

2. Turfgrass Variety
 - a. Identification and Selection of 12 warm & cool season species
 - b. Evaluation
 - c. Establishment
 - d. Use
 - e. Value
 - f. Turfgrass substitutes
 - g. Seed label interpretation

3. Soil Preparation
 - a. Physical
 - b. Chemical
 - c. Biological
 - d. Organic Amendments
 - e. Inorganic Amendments
 - f. Planting Method/Usage

4. Mowing
 - a. Height
 - b. Frequency
 - c. Types of mowers – reel, rotary, flail
 - d. Warm and cool season species

5. Fertilization
 - a. pH
 - b. Timing
 - c. Balance
 - d. Micro-organisms
 - e. Types of fertilizers
 - f. Application rates/spreader calibration
 - g. Warm and cool season species

6. Irrigation
 - a. Methods
 - b. Frequency
 - c. Duration
 - d. Water audits/other options for evaluating moisture needs
 - e. Troubleshooting and repair
 - f. Drainage / run-off
 - g. Scheduling/Evapotranspiration (E.T.) Rate

**Turfgrass Management
(Content Continued)**

7. Aeration (Soil Aerification)
 - a. Frequency

- b. Irrigation
 - c. Types of Equipment – deep & shallow tine, hollow & solid tine
 - d. Evaluating Need
 - e. Programming
8. Thatch Control
- a. Timing
 - b. Equipment
 - c. Evaluating Need
 - d. Programming
9. Planting Methods
- a. Seeding/Over-seeding (Sexual) – drill seed, broadcast, hydroseed, Pre-germination, washed soil
 - b. Vegetative (Asexual) – sod, stolons, plugs, sprigs
 - c. Procedures/steps
 - d. Standards/Usage
10. Pest Control
- a. Insects
 - b. Diseases
 - c. Weeds
 - d. Vertebrate pests
 - e. Minimum 60 pests
 - f. Integrated Pest Management Plan
11. Equipment
- a. Selection
 - b. Use
 - c. Safety
 - d. Minimum 10 types
12. Turf Equipment
- a. Troubleshooting process
 - b. Maintenance – preventative/others
13. Maintenance Programming
- a. Seven/eleven links concepts (# 2 through 12 above)
 - b. Management Plan for special use and general turf areas
 - c. Renovation of existing turf areas
 - d. Other management factors

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

Methods of Evaluation: Lecture Comprehensive Quizzes and Exams Written Critical Thinking Scenarios Problem Analysis and Solution Research and Term Papers	Methods of Evaluation: Laboratory Laboratory Skill Validation by Observation Laboratory Projects and Reports Laboratory Research Projects and Reports Laboratory Skill Practicum Exams
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Typical Textbooks, Manuals, or Other Support Materials

Turgeon, A.J. (2012). Turfgrass Management 9/E. Prentice-Hall, NJ (ISBN: 10:0137074352).

McCarty, L.B. (2010) Best Golf Course Management Practices Prentice-Hall, NJ (ISBN: 10:0135047099)

Christians, Nick (2011) Fundamentals of Turfgrass Management. Ann Arbor Press, (ISBN-13: 978-0470587317)

