



SPORTS FIELD
MANAGEMENT ASSOCIATION

Sports Field Management Association

**SFMA Turfgrass Science
Certification
Study Guide**

CERTIFICATION OVERVIEW

The SFMA Turfgrass Science Certification verifies individuals possess the knowledge and skills needed to thrive within the turfgrass industry. The certification exam assesses knowledge of turfgrass principles, practices, and playing surfaces.

EXAM OVERVIEW

The SFMA Turfgrass Science Certification is hosted on the iCEV Testing platform. iCEV offers optional preparation materials designed to ensure success on the certification exam. More information about the certification exam and testing platform can be found at <https://www.icevonline.com/turfgrass>

The certification exam is a 100-question, randomized assessment. Exam questions are in the format of multiple choice, sort order, diagramming, matching, labeling and other question types meant to fully evaluate an individual's competency of the industry standards. The certification exam should be proctored within a controlled environment. The proctor of the exam must review and verify all exam procedures and provide electronic documentation through the exam platform.

ABOUT THE SPORTS FIELD MANAGEMENT ASSOCIATION

The Sports Field Management Association is a non-profit, professional association for men and women who manage outdoor sports fields worldwide. Since 1981, SFMA has been providing education and practical knowledge in the art and science of sports field management. SFMA's mission is to advance professionalism in sports field management and safety through education, awareness programs and industry development. Learn more at <https://www.sportsfieldmanagement.org/>

INDUSTRY STANDARDS

The certification exam assesses knowledge and skills from the following weighted industry standards:



BENEFITS OF TURFGRASS - 5%

- Environmental Benefits
- Community Benefits
- Economic Benefits



TURFGRASS ANATOMY, IDENTIFICATION & ADAPTATIONS - 20%

- Turfgrass Anatomy
- Turfgrass Identification
- Climatic Adaptations
- Criteria for Selecting Turfgrass Species



TURFGRASS ENVIRONMENT - 25%

- Plant Growth Requirements
- Soil Types
- Soil Properties
- Choosing a Proper Growing Medium
- Drainage
- Compaction



TURFGRASS CULTURAL PRACTICES - 30%

- Mowing
- Nutrient Management
- Irrigation
- Aeration
- Topdressing
- Seeding/Sodding/Sprigging
- Integrated Pest Management
- Weeds, Insects & Diseases
- Equipment/Tools
- Establishment



PLAYING SURFACE PREPARATION- 20%

- Field Dimensions
- Surface Playability
- Sports Specific Preparation
- Field Marking & Logo Painting
- Quality, Evaluation & Safety of Surfaces & Facilities
- Seasonal/Annual Maintenance

Industry Standard Overview

To pass the SFMA Turfgrass Science Certification exam, certification candidates must have adequate knowledge of the industry standards. The following outlines an in-depth overview of the industry standards and sub-standards:

Industry Standard: Benefits of Turfgrass

- Environmental Benefits
 - temperature regulation
 - oxygen production
 - carbon sequestration
 - soil quality improvement
 - pollution mitigation
- Community Benefits
 - recreational uses
 - improved visual quality
 - physical and mental health improvements
- Economic Benefits
 - employment opportunities
 - tourism

Industry Standard: Turfgrass Anatomy, Identification & Adaptations

- Identification
 - cool-season
 - warm-season
- Visual Quality Assessments
 - density
 - texture
 - color
 - smoothness
 - uniformity
- Anatomical Structure
 - seedhead/inflorescence
 - leaf
 - sheath
 - roots
 - growth habit
 - crown
- Climatic Adaptations
 - temperature
 - shade
 - drought or insufficient water

Industry Standard: Turfgrass Environment

- Growth Requirements
 - water
 - nutrients
 - air
 - sunlight
- Physical Properties
 - texture
 - structure
 - aggregation
 - bulk density
 - porosity
 - drainage
 - water relationships
 - modification
- Chemical Properties
 - soil acidity/alkalinity
 - pH
 - cation exchange capacity
 - salt concentrations
 - phytotoxic contaminants
 - nutrient availability

Industry Standard: Turfgrass Cultural Practices

- Management & Control Practices
- Tool & Equipment Safety
- Establishment & Repair Tools
- Mowing & Hand-held Equipment
- Application, Cultivation & Specialized Equipment

Industry Standard: Playing Surface Preparation

- Surface Playability
 - traction
 - surface stability
 - species selection
 - irrigation management
 - appropriate crown specifications
- Sports Specific Preparation
 - rectangle fields
 - baseball/softball fields – infield management

Optional Preparation Materials Overview

The preparation materials offered by iCEV for the SFMA Turfgrass Science Certification was specifically created to prepare candidates for the certification exam. While it is not required to complete the preparatory materials before accessing the certification exam, SFMA recommends certification candidates complete some form of training. The following outlines the lessons scope and objectives:

Lesson 1: Benefits of Turfgrass

1. To summarize how turfgrass is beneficial to the environment, community and economy.

Lesson 2: Turfgrass Anatomy & Adaptations

1. To identify terminology related to the growth and development of a turfgrass area.
2. To analyze the anatomical structure of turfgrass.
3. To understand turfgrass development.
4. To examine climatic adaptations for turfgrass.

Lesson 3: Turfgrass Identification

1. To define turfgrass terminology.
2. To identify the characteristics of warm- and cool-season turfgrass species.
3. To analyze the growth habit of warm- and cool-season turfgrass species.
4. To understand the criteria for selecting certain turfgrass species.

Lesson 4: Turfgrass Growth Requirements

1. To identify physiological processes turfgrasses undergo, such as photosynthesis, respiration and transpiration.
2. To define growth requirements for turfgrass species.

Lesson 5: Soil Basics: Types

1. To analyze the various soil types.
2. To describe soil structures.
3. To identify a soil's horizontal or vertical dimensions across locations.
4. To understand the impacts of soil of turfgrass systems.

Lesson 6: Soil Basics: Physical Properties

1. To analyze soil texture and structure.
2. To define bulk density, porosity and drainage.
3. To examine water relationships.
4. To investigate how to modify soil profiles.

Lesson 7: Soil Basics: Chemical Properties

1. To understand soil acidity and alkalinity.
2. To analyze how soil pH is influenced.
3. To investigate cation exchange capacity.
4. To examine irrigation water quality concerns.
5. To evaluate phytotoxic chemicals.
6. To explore the various nutrients needed for plant uptake.

Lesson 8: Choosing a Proper Growing Medium

1. To summarize how to choose a proper growing medium for turfgrass.

Lesson 9: Turfgrass Management: Practices

1. To understand turfgrass establishment from various methods.
2. To analyze irrigation management techniques.
3. To summarize the management techniques of mowing, aeration and topdressing.

Lesson 10: Turfgrass Management: Controls

1. To summarize nutrient management in a turfgrass system.
2. To understand various fertilizers and herbicides used for turfgrass management controls.
3. To define an Integrated Pest Management system.

Lesson 11: Turfgrass Management

1. To identify common weeds found in turfgrasses.
2. To understand the characteristics of a weed's biology.
3. To examine the reasons for weed invasions.
4. To distinguish ways to control weeds in turfgrass systems.

Lesson 12: Turfgrass Management: Insects

1. To examine insect management steps.
2. To understand insect development.
3. To define an insect's lifecycle and biology.
4. To identify various insect pests.
5. To distinguish ways to control insect pests in turfgrass systems.

Lesson 13: Turfgrass Management: Diseases

1. To define symptoms and signs of diseases.
2. To understand the disease pyramid.
3. To examine the various areas a disease occurs on a turfgrass system.
4. To identify various disease pests.
5. To distinguish ways to control disease pests in turfgrass systems.

Lesson 14: Turfgrass Management: Equipment & Tools

1. To identify, store and maintain turfgrass hand tools and power equipment.
2. To understand the function of equipment and tools used in turfgrass management.
3. To demonstrate safety precautions while working with tools and equipment.

Lesson 15: Understanding Playing Surfaces

1. To examine natural, synthetic and hybrid turfgrass systems.
2. To evaluate desirable aspects of playing surfaces and specific turfgrass species.
3. To understand irrigation management for a playing surface.

Lesson 16: Playing Surface Preparation

1. To examine the preparation practices related to rectangular, softball and baseball fields.
2. To investigate the preparation practices associated with golf courses.
3. To explore the processes of logo painting and field marking on playing surfaces.

Lesson 17: Playing Surface Management

1. To analyze the management practices for natural turfgrass playing surfaces.
2. To examine the management practices for synthetic turfgrass playing surfaces.

Lesson 18: Turfgrass Growth Journal Capstone

1. To summarize turfgrass management practices.