SFMA

STUDENT CHALLENGE

2027 Student Challenge Study Guide

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Presented in partnership with the SAFE Foundation

SAFE

The Foundation for Safer Athletic Fields

Table of Contents

Introduction ……...…… 2

SFMA Student Challenge Participant Code of Conduct and Eligibility Requirements …...…… 3

Rules and Guidelines for the SFMA Student Challenge …….. 4

Exam Overview ……..…….. 7

Topics Covered in the SFMA Student Challenge …… 8

Weed List (Broadleaf and Grassy) ……....……. 13

Turfgrass and Seed List ……..…….…… 15

Insect List ……..…… 16

Malady List (Biotic) ……..……...… 18

Malady List (Abiotic) …….. 19

Soil and Soil Amendment List ……. 20

Equipment List ……. 21

Irrigation Component List …… 23

Study Resources ……...… 24

Introduction

Thank you for your participation in the 2027 SFMA Student Collegiate Challenge! The Student Challenge is presented in partnership with the SAFE Foundation. Each year students from 2-year and 4-year colleges and universities across the country compete in an exam that challenges knowledge in the sports field industry.

The 2027 SFMA Student Challenge will take place on Wednesday, February 3rd from 2 - 4:30 pm at the Tampa Convention Center in Tampa, FL. Please make your travel plans accordingly.

The deadline to register for the SFMA Student Challenge is December 14, 2026. Any team not registered by this date will not be allowed to compete in the event. STUDENT CHALLENGE PARTICIPANTS ARE REQUIRED TO REGISTER ONLINE. SFMA will not accept any other registration method. SFMA Student Challenge competitors' full conference registration fee is waived. Each student must register individually and be a current SFMA member. If you are not a member, you must include your dues payment with online registration. Please contact SFMA with any questions at 800-323-3875 or jmclendon@sportsfieldmanagement.org.

SFMA Student Challenge Participant Code of Conduct and Eligibility Requirements

IMPORTANT - READ THIS PAGE BEFORE PROCEEDING

Code of Conduct

As a participant in the SFMA Student Challenge and a guest of SFMA, SAFE, and the sponsors of the event, all participating students are expected to conduct themselves in a professional, courteous, and responsible manner while at the SFMA Conference and Exhibition. You are expected to be in business casual attire for the exam.

Eligibility

Graduate students are not eligible to compete in the SFMA Student Challenge, take the Student Challenge exam, or enter the exam room.

Participants in the SFMA Student Challenge competing on a two-year team may compete in no more than three total Student Challenge events. Participants in the SFMA Student Challenge competing on a four-year team may compete in no more than five total Student Challenge events. Students who have transferred from a two-year program to a four-year program may compete in up to five total Student Challenge events.

Should a student be deemed to be in violation of any of these policies by authorized SFMA staff or volunteers, the team/school that the student represents may be disqualified from current and future SFMA Student Challenge competitions and will be asked to pay for the Conference registration of all team members and forfeit all awards.

Please contact SFMA with any questions regarding these policies at 800-323-3875 or jmclendon@sportsfieldmanagement.org.

Rules and Guidelines for the SFMA Student Challenge

1. Teams shall consist of no more than four members from two-year undergraduate, four-year undergraduate, technical school, or junior college programs

- Undergraduate individuals are allowed to compete as an individual if they choose
- Team members graduating up to three months prior to the date of the SFMA Student Challenge can compete, so long as they have not begun a graduate program

2. Prior to competing, teams must declare whether they will compete in the two-year or four-year competition

- Teams with any members who are in a four-year program must compete in the four-year competition
    - Example 1: One team member from four-year program at University X, three team members from two-year program at University X. Team must compete in four-year competition.
    - Example 2: One team member from four-year program at University Y, three team members from two-year program at Junior College Z. Team must compete in four-year competition.

3. Graduate students are not eligible to compete in the SFMA Student Challenge, take the Student Challenge exam, or enter the exam room

4. Individuals from different institutions can form teams to compete, but are not required to be on a team and may compete as an individual

- Awards and prizes will be divided according to the breakdown of schools represented on the team
    - Example: Two team members from University X, one team member from College Y, one team member from Junior College Z
        - 50% of prize to University X, 25% of prize to College Y, 25% of prize to Junior College Z

5. Grading Protocol:

- Multiple Choice: All multiple choice answers must be dark and recognizable. Any changed answers must be adequately erased to distinguish from the original answer.
- Identification: Only the use of the correct common name will be counted as a correct answer.

6. Should two schools have the same score, and that score qualifies for first, second, or third place, the following tiebreakers will be applied

- In the event of a tie, the team who has the higher score on three-out-of-four sections of the exam shall be declared the winner or finish higher.
- If the above procedure does not resolve the tie, the team with the higher score in the Short Answer/Case Study section shall be declared the winner or finish higher.

- If the above procedure does not resolve the tie, the team with the higher score in the Identification section shall be declared the winner or finish higher.
- If the above procedure does not resolve the tie, the team with the higher score in the Multiple Choice section shall be declared the winner or finish higher.

7. Two-year competition prizes

First Place

- A cash award, equal to that presented to the Four-Year Competition First Place Team, presented by The SAFE Foundation
- A trophy recognizing the team as SFMA Student Challenge Champions, Two-Year Competition
- One medallion per team member

Second Place

- A plaque recognizing the team as SFMA Student Challenge Second Place, Two-Year Competition
- One medallion per team member

Third Place

- A plaque recognizing the team as SFMA Student Challenge Third Place, Two-Year Competition
- One medallion per team member

8. Four-year competition prizes

First Place

- A cash award, equal to that presented to the Two-Year Competition First Place Team, presented by The SAFE Foundation
- A trophy recognizing the team as SFMA Student Challenge Champions, Four-Year Competition
- One medallion per team member

Second Place

- A plaque recognizing the team as SFMA Student Challenge Second Place, Four-Year Competition
- One medallion per team member

Third Place

- A plaque recognizing the team as SFMA Student Challenge Third Place, Four-Year Competition
- One medallion per team member

9. First place winners receiving prize money in the Two-Year and Four-Year competitions shall have the following obligations to SFMA

- Author an article to be used in *Sports Field Management* magazine, SFMA Chapter Newsletter, SFMA Online Newsletter, or any other SFMA communication vehicle.
- Each winning team shall file a short, written progress report to the Student Challenge Sub-Committee Chairperson.
- Preferred uses of SAFE First Place Funds
    - To create an Athletic Sports Field learning lab

        - *Ex*: build home plate/mound; small-scale field project involving painting, drainage, irrigation, mowing; renovating an infield, goal areas, etc.
    - Purchase Athletic Sports Field Specific Equipment and Products
        - *Ex*: paint sprayers, transits, hand tools, mowers, irrigation equipment, tarps, stencils, paint, soil conditioners, clay, etc.
    - Other items or projects as approved by the SFMA Student Challenge Chairperson or Committee

It is The SAFE Foundation's policy to not pay overhead costs at the winning team's university, college, or school. Funding is not intended for field days. Funds need to be spent or designated to be spent prior to the next year's SFMA annual conference. Winning teams are encouraged to leverage the prize to generate additional funding through collaboration with campus athletics, the community, or other organizations.

Exam Overview

Check-In

- Teams may check-in 30 minutes prior to the start of the exam. Two-year and four-year teams check in separately. All team members must be present to sign-in. Teams will receive a sealed exam packet. If the packet is opened prior to the start of the exam, the team will be disqualified.

Testing Policies and Exam Room Protocol

- Students are responsible for storing personal belongings during the exam. The following is **PROHIBITED** from being at the exam table: hats, cell phones, smart watches and other devices, sunglasses, conference badges, outside calculators, notes and resources, and bags (backpacks, purses, briefcases).
- The exam is broken into 4 sections. Each section is 30 minutes with 5 minutes of transition between sections.
    - The Multiple Choice section will make up about 40% of the exam. Paper tests will be provided for each team to use during this portion. Do not write on the exam.
        - If special accommodations are necessary due to individual needs, advance notice is required. Students must provide proof of need by December 14 to Jennifer McLendon at jmclendon@sportsfieldmanagement.org.
    - The Identification section will make up about 30% of the exam. Teams will have 30 minutes to work through this section. Word banks will be provided for the samples. Be prepared to make identification based on a photo or physical sample.
    - The Short Answer section will make up about 15% of the exam. Teams will have 30 minutes to complete this section.
    - The Practicum section will make up about 15% of the exam. Teams will have 30 minutes to complete this section.
- CSFM Monitors will be located throughout the room to answer questions and provide guidance as students proceed through the exam.
- You will be provided with scratch paper, an answer booklet, pencils, and calculators.

Post Exam

- All testing materials **MUST** be returned – this includes scratch paper, calculators, and pencils. Testing materials may **NOT** be removed from the room. Failure to comply by turning in your test constitutes academic fraud and your team and school will be banned from competing in the SFMA Student Challenge for a period to be determined by the SFMA Student Challenge Committee.
- Teams may be required to complete a brief survey pertaining to the Student Challenge.
- The top three teams in the 4-year and 2-year divisions will be announced at 12:30 pm Thursday, February 4th at the Hunter booth located on the Trade Show floor. Winners and team scores will be posted soon thereafter near the exam room.

Topics Covered in the SFMA Student Challenge

The section topics have been based upon the SFMA competency outlines and are as follows.

Turfgrass Identification, Selection, and Morphology

- Identify major turfgrass species by differentiating the seeds and/or morphological characteristics. Live samples may be used.
- Identify the regional climatic zones of the U.S. and which turfgrass species are best adapted to those zones.
- Understand the basics of the selection of turfgrasses for sports field use based on the adaptability of the turfgrass species and cultivars in various agronomic and climatic conditions.
- Read and understand a seed label.
- Understand the principles of the formulations of blends and/or mixtures of turf grasses.
- Understand the different seeding techniques and be able to choose the proper one for various conditions.
- Understand vegetative turfgrass establishment via sprigs, stolons, and sod and the various techniques used in each.

Turfgrass Soils

- Identify basic soil types using the soil textural triangle.
- Identify soils based on their use in sports field management. Physical samples may be used.
- Understand soil formation, soil profiles, and soil classifications as they relate to sports field management.
- Understand soil physical properties, i.e. texture, structure, aggregation, bulk density, porosity, drainage, water relationships, and modification.
- Understand soil chemical properties, i.e. soil acidity/alkalinity, pH, cation exchange capacity, salt concentrations, phytotoxic contaminants, and nutrient availability.
- Read and understand a soil test.
- Understand the physical, chemical, and biological characteristics of soils and their influence on turf grass growth.
- Understand how to choose a proper growing medium for turfgrass rootzones.

Soil Fertility

- Understand the fertilizer label and its components.
- Understand how to develop a fertilization plan based on soil test results.
- Be able to calculate the nutrients applied on an elemental basis for a given area and rate.
- Understand turfgrass nutrition requirements and the effects of excesses, deficiencies, and nutrient imbalance on turfgrass growth.
- Know the mineral elements essential for turfgrass growth, their sources, and their relative

requirements by species (macronutrients, secondary, and micronutrients).

- Know the differences in the physical characteristics of fertilizers and how these differences can influence the uniformity of size and their dispersion tendencies. Physical samples may be used.
- Understand the differences in the release characteristics of fertilizers and when the best time is to apply the different types.
- Have a general understanding of how to plan and implement an annual fertility plan.

Irrigation

- Understand the basics of irrigation system hydraulics and precipitation rates.
- Understand evapotranspiration (ET) and the factors which influence it.
- Understand the importance of proper irrigation system design to achieve efficient and uniform distribution of water.
- Understand the importance and necessity of water quality and water conservation.
- Identify irrigation system components and parts including valves, head, controllers, pipes, fittings, pumps, electrical elements and components of each of these. Identify "Smart Components" that enable water conservation in irrigation systems. Physical samples, diagrams, photographs, or descriptions may be used.
- Read an irrigation schematic/blueprint and assemble/install an irrigation system based on specifications.

Drainage

- Understand the various types of drainage – internal, surface, and subsurface installed systems – and the benefits/disadvantages of each for use on sports fields.
- Understand how the dispersion test can help a turf manager evaluate the stability of a soil.
- Understand the forces that influence surface tension of water and how these forces influence water intake, movement, and retention in soils.
- Understand the forces that are required to pull water through the soil; e.g. suction or matric potential.
- Recognize the differences between saturation, field capacity, wilting point, and permanent wilting point.
- Have a working knowledge of the reasons for a field experiencing net infiltration, ponding, or runoff.
- Understand the reasons for localized dry spots (LDS) and how to manage those areas.
- Understand the concept of perched and temporary water tables and how they affect sports fields.
- Understand the design criteria for a subsurface drainage system which includes: drainage patterns, pipe size, slope, and collector drains.
- Assemble/install a subsurface drainage system based on a schematic/blueprint.
- Be able to identify the different types of drainage pipe and system components including

pipes, fittings, and backfill materials. This may include physical samples, diagrams, photographs, or descriptions.

Turfgrass Mathematics

- · Perform area calculations for geometric configurations used in sports fields.
- · Calculate conversions between metric and English measurement systems given the formulas.
- · Calculate application rates for a given area.
- · Calculate application rates in pounds or ounces of active ingredient (a.i.) or of product per unit area.
- · Perform volume calculations for topdressing materials, seed, skinned area clay mixes, or other products used in sports field management.
- · Calculate "pure live seed" amounts from a seed label.
- · Calibrate liquid and dry material application equipment. Physical samples may be used.
- · Calculate precipitation rates and water related problems.

Pest Management

- · Understand climatic conditions and management practices, which may influence various pest infestations.
- · Have a basic understanding of pesticide activity, i.e. contact versus systemic, preventative versus curative.
- · Identify the various pesticide physical formulations such as emulsifiable concentrate, flowable, water-soluble packet, granular, etc.
- · Read and understand a pesticide label.
- · Knowledge of pesticide safety such as safe handling, storage and disposal, and REI.
- · Knowledge of distribution equipment including sprayer setup, pressures, nozzles, and pumps; broadcast and drop spreaders. Physical samples, diagrams, photographs, or descriptions may be used.
- · Knowledge of integrated pest management techniques in the overall sports field management plan.
- · Knowledge of environmental concerns such as drift, runoff, leaching, and persistence.
- · Identify weeds (grasses, sedges, and broadleaves) and understand their growth cycles in both cool season and warm season grasses. Physical samples, diagrams, photographs, or descriptions may be used.
- · Identify major turfgrass insect pests, understand their life cycles, and diagnose resulting turfgrass damage of both warm season and cool season turfgrasses. Physical samples, diagrams, photographs, or descriptions may be used.
- · Identify the major turfgrass diseases, understand their life cycles, and diagnose resulting turf grass damage of warm season and cool season turfgrasses. Physical samples,

diagrams, photographs, or descriptions may be used.

· Knowledge of how to troubleshoot turfgrass problems and create a corrective plan of action.

Sports Field Management – Turf Areas

· Understand general concepts dealing with safety, i.e. smoothness, consistency, Gmax, uniformity, on and off field hazards (may include safety checklist knowledge).

· Understand basic concepts of playability – traction, surface stability, species selection, irrigation management, appropriate crown specifications.

· Identify equipment, uses, depreciation, and equipment parts including mowers, aerifiers, sprayers, spreaders. Could include physical samples, diagrams, photographs, or descriptions.

· Understand field marking and logo painting. This can include field layout and lining, stencils, painting technique, paint mixing, etc.

· Understand the effects weather has on sports field management including weather fronts; atmospheric moisture, relative humidity, and dewpoint; heat index; and severe weather safety

· Comprehend basic cultural practices

- Knowledge of appropriate heights of cut and directional mowing, reel vs. rotary mower
- Identify and adjust a reel mower's height of cut and evaluate reel to bedknife clearance
- Understand soil compaction causes, effects on the physical properties of soils and effects on turfgrass growth.
- Understand how thatch develops and how to manage thatch
- Know the different methods and techniques of cultivation, including the types of equipment and techniques used and the advantages and disadvantages of each.

Sports Field Management – Non Turf Areas

· Identification of the different types of specialty soils (clay, infield mix, etc.), soil conditioners and mound or home plate fortification materials (both natural and synthetic). Physical samples may be used.

· Understand the various uses of soil conditioners on sports fields.

· Understand and outline pitcher's mound construction and maintenance.

· Surveyor's transit use and lasers: Measure heights using a transit and/or lasers and determine correct height of pitcher's mound and its slope.

· Understand and outline skinned area construction and maintenance including lip prevention and maintenance

· Understand grading and installation techniques associated with new construction projects

and field reconstruction.

- Be able to interpret various sections of sports field construction drawings.
- Knowledge of general synthetic turf maintenance.
- Identification of synthetic turf types and maintenance equipment. Could include physical samples, diagrams, photographs, or descriptions.
- Understand planning, preparation, and renovation/recovery associated with special events.

Sports Field Management - Administration

- Understand proper communication techniques including verbal and non-verbal methods.
- Knowledge of basic supervisory skills including time management, leadership techniques, team development, positive performance management, conflict management, etc.
- Knowledge of the budgeting process and the fiscal responsibilities inherent in turf management.
- Knowledge of administrative principles of turf management safety management systems.

The History of SFMA

- Identify SFMA's Founders
- Understand SFMA's growth and establishment
- Knowledge of professional programs offered by SFMA
- Knowledge of SFMA's Mission and Vision

Weed List for SFMA Collegiate Student Challenge

Annual Bluegrass
Annual Sedge

Barnyardgrass
Bedstraw/Catchweed
Bermudagrass
Black Medic
Broadleaf Dock
Broadleaf Plantain
Broomsedge
Buckhorn Plantain
Bulbous Buttercup
Bull Thistle
Burclover

Canada Thistle
Carolina False Dandelion
Carolina Geranium
Carpetweed
Cheat Grass
Chicory
Cinquefoil
Common Chickweed
Common Mallow
Common Mullien
Common Vetch
Corn Speedwell
Crabgrass (Smooth)
Creeping Bentgrass
Creeping Buttercup
Creeping Speedwell
Creeping Woodsorrel
Crowfootgrass
Curly Dock
Cutleaf Evening Primrose

Dallisgrass
Dandelion
Dichondra
Dogfennel
Dollarweed/Pennywort
Doveweed
Downy Brome

English Daisy
Evening Primrose

Facelis
Fall Panicum
Field Bindweed
Field Pansy
Filaree
Fleabane
Florida Betony

Geranium
Goosegrass
Green Foxtail
Green Kylinga
Ground Ivy
Groundsel
Guineagrass

Hairy Bittercress
Hairy Buttercup
Hairy Galinsoga
Hairy Vetch
Hawkweed
Healall
Henbit
Hop Clover

Horseweed

Indian Mock Strawberry
Ivyleaf Speedwell

Japanese Stiltgrass
Jimsonweed
Johnsongrass
Junglerice

Kikuyugrass
Knowel
Kochia

Ladysthumb
Lambsquarter
Lanceleaf Groundcherry
Lawn Burrweed
Lespedeza
London Rocket
Lovegrass

Marestail
Mayweed
Morning Glory
Moss
Mouse Ear Chickweed
Mugwort
Musk Thistle
Mustard

Nettleleaf Goosefoot
Nimblewill

Oldfield Toadflax

Orchardgrass
Oxeye Daisy

Parsley Piert
Pennsylvania Smartweed
Pennywort/Dollarweed
Peppergrass/Virginia
Pepperweed
Persian Speedwell
Pineapple Weed
Pokeweed
Prickly Lettuce
Prickly Sida
Prostrate Knotweed
Prostrate Spurge
Puncture Vine
Purple Deadnettle
Purple Nutsedge
Purslane

Quackgrass

Ragweed
Rattail Fescue
Red Sorrel
Rockpurslane
Russian Thistle

Sandbur
Scarlet Pimpernel
Shepard's Purse
Sibara
Smallflower Buttercup
Spiny Sowthistle
Spotted Spurge
Smutgrass
Southwestern Cupgrass
Sow Thistle
Sprangletop
Star of Bethlehem
Swinecress

Texas Panicum
Thin Paspalum
Thymeleaf Speedwell

Venice Mallow
Violet
Virginia Buttonweed

Western Salsify
White Clover
Wild Carrot
Wild Garlic
Wild Onion
Wild Strawberry
Wild Violet
Witchgrass

Yarrow
Yellow Foxtail
Yellow Nutsedge
Yellow Rocket
Yellow Woodsorrel/Oxalis

Turfgrass and Seed List for the SFMA Student Collegiate Challenge

Common Name	**Latin Name**
Creeping Bentgrass	*Agrostis stolonifera*
Colonial Bentgrass	*Agrostis capillaris*
Tall Fescue	*(Festuca arundinacea) Lolium arundinaceum*
Creeping Red Fescue	*Festuca rubra ssp. rubra*
Hard Fescue	*Festuca brevipila*
Chewings Fescue	*Festuca rubra ssp. commutata*
Sheep Fescue	*Festuca ovina*
Kentucky Bluegrass	*Poa pratensis*
Supine Bluegrass	*Poa supina*
Annual Bluegrass	*Poa annua*
Rough Bluegrass	*Poa trivialis*
Italian Ryegrass/ Annual Ryegrass	*Lolium multiflorum*
Perennial Ryegrass	*Lolium perenne*
Smooth Brome	*Bromus inermis*
Buffalograss	*Buchloe dactyloides*
Bermudagrass	*Cynodon dactylon var. dactylon*
Hybrid bermudagrass	*Cynodon dactylon x C. transvaalensis*
Bahiagrass	*Paspalum notatum*
Kikuyugrass	*Pennisetum clandestinum*
St. Augustine grass	*Stenotaphrum secundatum*
Japanese Lawngrass (Zoysiagrass)	*Zoysia japonica*
Manilagrass	*Zoysia matrella*
Seashore Paspalum	*Paspalum vaginatum*
Carpetgrass	*Axonopus affinis*
Centipedegrass	*Eremochloa ophiuroides*

Insect List for the SFMA Student Collegiate Challenge

****Both immature and mature specimens may be used for identification.**

Annual Bluegrass Weevil (*Listronotus maculicollis* Dietz)
Ants
- **Harvester Ants**
  - Western (*Pogonomyrmex occidentalis*)
  - Red (*Pogonomyrmex barbatus*)
  - California (*Pogonomyrmex californicus*)
  - Florida (*Pogonomyrmex badius*)
- **Red Imported Fire Ants (*Solenopsis invicta*)**

Armyworm (*Pseudaletia unipuncta*)
Asiatic Garden Beetle (*Maladera castanea*)

Bermudagrass Scale (*Odonaspis ruthae*)
Billbugs
- Bluegrass Billbug (*Sphenophorus parvulus*)
- Hunting Billbug (*Sphenophorus venatus vestitus*)
- Denver Billbug (*Sphenophorus cicatristriatus*)
- Phoenician Billbug (*Sphenophorus phoeniciensis*)

Black Turfgrass Ataenius (*Ataenius spretulus*)

Chinch Bugs
- Hairy Chinch Bug (*Blissus leucopterus hirtus*)
- Southern Chinch Bug (*Blissus insularis*)
- Common Chinch Bug (*Blissus leucopterus leucopterus*)

Cicada Killer (*Sphecius speciosus*)
Cutworms
- Black Cutworm (*Agrotis ipsilon*)
- Bronzed Cutworm (*Nephelodes minians*)
- Variegated Cutworm (*Peridroma saucia*)

Dichondra Flea Beetle (C*haetocnema repens*)

European Chafer (*Rhizotrogus (Amphimallon) majalis*)
European Crane Fly/Leatherjacket (*Tipula paludosa*)

Fall Armyworm (*Spodoptera frugiperda*)
Fiery Skipper (*Hylephila phyleus*)

Greenbug / Aphid (*Schizaphis graminum*)
Green June Beetles (*Cotinis nitida*)
Ground Pearls (*Margarodes meridionalis and Eumargarodes laingi*)

Japanese Beetle (*Popillia japonica*)

Leafhoppers (*Draeculacephala minerva and Deltacephalus sonorus*)
May and June Beetles (*Phyllophaga species*)
Masked Chafer
- Northern Masked Chafer (*Cyclocephala borealis*)
- Southern Masked Chafer (*Cyclocephala lurida*)

Mealybug
- Rhodesgrass Mealybug (*Antonina graminis*)
- Buffalograss Mealybug (*Tridiscus sporoboli*)

Mites
- **Eriophyid Mites**
  - Bermudagrass Mite (*Eriophyes cynodoniensis*)
  - Zoysiagrass Mite (*Eriophyes zoysiae*)
  - Buffalograss Mite (*Eriophyes slykhuisi*)
  - Grain Rust Mite (*Abacarus hystrix and Aculodes mckenziei*)
- **Noneriophyid Mites**
  - Clover Mite (*Bryobia praetiosa*)
  - Banks Grass Mite / Timothy Mite / Date Mite (*Oligonychus pratensis*)
  - Brown Wheat Mite (*Petrobia latens*)
  - Winter Grain Mite / Blue Oat Mite / Pea Mite (*Pentheleus major*)

Mole Crickets
- Southern Mole Cricket (*Scapteriscus borellii*)
- Tawny Mole Cricket (*Scapteriscus vicinus*)
- Short-winged Mole Cricket (*Scapteriscus abbreviatus*)
- Northern Mole Cricket (*Neocurtilla hexadactyla*)

Oriental Beetle (*Exomala orientalis*)

Sod Webworms (*Crambus spp*.)

Two-lined Spittlebugs (*Prosapia bicincta*)

White Grubs
- Japanese Beetle (*Popillia japonica*)
- May and June Beetles (*Phyllophaga species*)
- Northern Masked Chafer (*Cyclocephala borealis*)
- Southern Masked Chafer (*Cyclocephala lurida*)
- Green June Beetles (*Cotinis nitida*)
- European Chafer (*Rhizotrogus (Amphimallon) majalis*)
- Asiatic Garden Beetle (*Maladera castanea*)
- Oriental Beetle (*Exomala orientalis*)
- Black Turfgrass Ataenius (*Ataenius spretulus*)

Malady List (Biotic) for the SFMA Student Collegiate Challenge

Algae
Anthracnose Foliar Blight / Basal Rot
Ascochyta Leaf Blight

Black-Layer
Brown Blight
Brown Patch / Large Patch / Rhizoctonia Blight
Brown Stripe

Cercospora Leaf Spot
Copper Spot

Damping Off / Seed Rot
Dollar Spot
Drechslera leaf spot and melting out
Drechslera red leaf spot

Fading Out
Fairy Ring
Fusarium

Gray Leaf Spot / Blast
Gray Snow Mold

Helminthosporium Leaf Spot

Leaf Blotch / Scald
Leaf and Sheath Blight (Mini Ring)
Leaf Smuts
Leaf Spot / Melting Out

Moss

Necrotic Ring Spot
Net Blotch
Nematode damage

Pink Patch
Pink Snow Mold / Microdochium Patch / Fusarium Patch
Powdery Mildew
Pythium Blight / Pythium Root Rot

Read Leaf Spot
Red Thread
Rhizoctonia Large Patch
Rust

Sclerotium Blight / Southern Blight
Slime Mold
Southern Blight
Spring Dead Spot
Stripe Smut
Summer Patch

Take-All Patch
Take-All Root Rot / Bermudagrass Decline
Typhula Blight

White Patch / White Blight

Yellow Patch
Yellow Tuft / Downy Mildew

Malady List (Abiotic) for the SFMA Student Collegiate Challenge

Abrasive injury
Animal damage - chemical
Animal damage – physical

Chemical spills
Cold weather damage

Drought stress

Equipment injury

Fertilizer misapplication

Hazardous material

Irrigation issues

Lightning Damage

Mixed stand of turfgrass

Pesticide misapplication

Shade
Soil compaction

Thatch
Traffic stress

Wilt
Wet wilt

Soil and Soil Amendment List for SFMA Student Collegiate Challenge

Bio-char
Brick Dust

Calcined Clay
Clay Rootzone
Compost
Crumb Rubber

Diatomaceous Earth
Drainage Stone
- Pea gravel

Expanded Shale

Infield Mix

Limestone

Mound Clay

Native Soil Rootzone
- Heavy clay
- Loam
- Caliche

Peat

Sand
- Topdressing Sand
- Sand Rootzone
- Silica sand

Topsoil

Vitrified Clay

Warning Track Material

Zeolite

Equipment List for SFMA Student Collegiate Challenge

Actuation valves
Aeration Equipment
- Air Injection
- Deep Drill
- Fraise Mower
- Hollow tines
- Hollow tine aerator
- Solid tines
- Solid tine aerator
- Spiker/Slicer
- Vertical Mower/Verticutter
- Water Injection

Air Filter
Anchor driver

Base anchor
Base plugs (whisker)
Base plugs (mushroom)
Batter box template
Blower
Broom

Dig out tool
Diaphragm Pump
Disc tool
Drag Mat

Edger

Fertilizer Spreader
- Drop
- Rotary
- Tractor Mounted

Front End Loader
Fuel Filter
Fuel Tank

Gawryla grip
Gmax/surface testing equipment
- Clegg Impact Hammer
- F355
- Shear strength

Grader/Laser Level

Groomer
- Synthetic
- Infield

Grooming/Lute rake
Gun extension

Hose end nozzle
Hydraulic Filter
Hydraulic Line
Hydraulic Pump
Hydraulic Reservoir

Infill Depth Gauge
Infiltration Rings
Irrigation head tool

Leaf rake
Leveling bar
Lift Arm

Magnet
Mowers
- Flail
- Reel
- Rotary

Net clip

Oil Filter

Paint mixing bit
Paint strainer
Painter
pH meter
Pipe puller
Post pounder

Red vs yellow fuel/diesel can
Reel Mower HOC Gauge/Accu-Gage
Reel Mower Components
- Spider
- Reel cylinder
- Reel blade
- Shaft

- Bedbar
- Bedknife
- Bedknife adjuster
- Roller
- Roller adjuster

Reverse Tine Tiller
Reversable spray tip
Rotary Mower Components
- Mulching blades
- Bench grinder
- Balancer

Roller

Sand slit drainage install
Screening rake
Seeder
Sifting scoop
Skid-Steer
Slope gauge
Sod cutter
Sod knife
Soil Moisture meter
Soil Probe
Soil Tensiometer
Solenoid
Sprayers
- Backpack
- Boom

String winder
Suck tube
Sweeper

Tamp/Sweet spot tamp
Topdresser
Torpedo level
Tractor
Transit
Trencher
Trimmer - Line trimmer/weed whacker
Turf prism

Utility Vehicle

Wheel kit

York Rake

Irrigation Component List for SFMA Student Collegiate Challenge

Backflow Preventer
Ball valve

Clear pressure regulated rotor
Controller/Timer
Control valve

Decoder for 2-wire system
Dirty Water irrigation valves
Drip irrigation

Fittings
- Elbow
- Tee
- Reducing tee

Flow sensor

Gate Valve
Glue

Lateral Line

Main Line
Master Valve

Nozzle

Pipe
- Schedule 40
- Schedule 80
- HDPE pipe
- Poly
- PVC

Point of Connection
Pressure regulator
Primer

Screen with check valve installed

Solenoid
- AC
- DC

Sprinkler controller wire
Sprinkler head
- Rotary
- Pop up

Swing joint with gasket

Valve Box
Valve-In-Head Sprinkler

Water cannon
Water wheel
Wire Connectors
- DBRY-6
- Epoxy

Wireless Transmitter

Study Resources

Students have a wide variety of resources available to them. The following textbooks, along with SFMA's monthly publication, *Sports Field Management* are recommended as study resources. The textbooks may be available through your school library, local bookstore, or may be purchased online from various book outlets. Speak with your instructors, peers, and/or other industry professionals regarding topics in the general study guide. Start networking now! The SFMA directory is available online to all student members and is full of quality industry professionals. Also be sure to check out the Institute on the SFMA website (www.sportsfieldmanagement.org) to access various technical bulletins on sports field management.

Compendium of Turfgrass Diseases (*3rd Edition*) – Richard W. Smiley, Peter H. Dernoeden, and Bruce B. Clarke

Controlling Turfgrass Pests (*3rd Edition*) – Thomas W. Fermanian, Malcom C. Shurtleff, Roscoe Randell, Henry T. Wilkinson and Philip L. Nixon

Destructive Turfgrass Insects – Daniel A. Potter

Establishing and Maintaining the Natural Turf Athletic Field—Stephen T. Cockerham, Victor A. Gibeault, and Deborah B. Silva

Fundamentals of Turfgrass Management *(Fifth Edition)* – Nick Christians, Aaron Patton, Quincy Law

Handbook of Turfgrass Insects – Rick L. Brandenburg, Michael G. Villani

Human Resource Management for Golf Course Superintendents – Robert A. Milligan, Thomas R. Maloney

Managing Turfgrass Pests – Thomas L. Watschke, Peter H. Dernoden and David J. Shetlar

Mathematics for the Green Industry: Essential Calculations for Horticulture and Landscape Professionals – Michael L. Agnew, Nancy H. Agnew, Nick Christians, Ann Marie VanDerZanden

Practical Drainage for Golf, Sportsturf, and Horticulture – Keith McIntyre and Bent Jakobsen.

Irrigation Design and Technical Guides – Hunter Industries - https://www.hunterindustries.com/resource_guide/tech-and-education-guides

Sports Fields: Design, Construction and Maintenance, Second Edition - Jim Puhalla, Jeff Krans, and Mike Goatley

Turfgrass Management (*Ninth Edition*) – A.J. Turgeon

Turfgrass Soil Fertility and Chemical Problems – R.N. Carrow, D.V. Waddington, and Rieke