



# **INSTRUCTIONAL PACKAGE**

TUF 275  
Performance Turf Design and  
Construction

Effective Term  
AY 2020/2021

# INSTRUCTIONAL PACKAGE

## Part I: Course Information

Effective Term: Spring 2021

COURSE PREFIX: TUF 275

COURSE TITLE: Performance Turf Design and Construction

CONTACT HOURS: 5

CREDIT HOURS: 3

### **RATIONALE FOR THE COURSE:**

Every management factor of turfgrass management ties back to construction in many ways. Frequently, a graduate is responsible for rebuilding a variety of turfgrass related items to guarantee the proper laying surface and strategy are insured. Graduates frequently have found themselves as a foreman-superintendent during new course or field construction. Due to the extreme cost of USGA greens construction, sand-based field construction, and the various ancillary important items related, the student needs to understand construction principles and how to alter them to adapt to their own needs.

### **COURSE DESCRIPTION:**

This course is a study of the concepts needed to design, construct and renovate various golf and sports turf playing surfaces. Topics include: USGA green construction, proper survey and layout of athletic fields, drainage methods, construction timelines and budgeting.

### **PREREQUISITES/CO-REQUISITES:**

TUF 172 and TUF 252

### **REQUIRED MATERIALS:**

None

Suggested Reference: [Golf Course Design and Construction](#) published by the National Golf Foundation

**ADDITIONAL REQUIREMENTS:** None

### **TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's student portal for course materials.  
WaveNet and D2L email access.

## **STUDENT IDENTIFICATION VERIFICATION:**

### **CLASSROOM ETIQUETTE:**

During labs and outdoor activities, shoes should be closed toe for protection. Sandals, flip flops etc. are not considered acceptable. During all classes, proper dress is required. Pajamas or offensive language on clothing will not be allowed. Throughout the semester we may have guest lecturers and proper dress exhibits respect for the individual, the school, and the program.

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

## **Part II: Student Learning Outcomes**

### **COURSE LEARNING OUTCOMES and ASSESSMENTS\*:**

#### **UNIT I**

The student will be able to describe in detail all preparations made for construction and to prepare a prioritized step by step documentation of the construction phases.

#### **Student Learning Outcomes:**

1. List the major phases of construction.
2. Discuss any contracts and specifications that are necessary for construction.
3. Detail the factors that will alter the specifications for construction.
4. Describe the necessary details in a construction contract.
5. Explain the appropriate time for a superintendent/grounds manager to be hired.
6. Discuss the responsibilities held by a superintendent during the construction period.
7. List the different types of bidding procedures and steps in the bidding process.
8. Prepare a flowchart of a critical path network for golf course construction.
9. Explain the advantages to using the critical path method.
10. Prepare a construction activity plan.
11. Discuss the first stage of construction.
12. Itemize the equipment that is needed by the construction crew.
13. Discuss the three phases of basic construction.
14. List everything that rough grading includes.
15. Explain the importance of stripping top soil.

#### **UNIT II**

The student will be able to construct a green and to discuss in detail the advantages and disadvantages of a USGA green. This also ties directly to sports turf field construction of sand based mediums.

## **Student Learning Outcomes:**

1. List the major steps of putting green construction.
2. Explain the two methods of achieving surface contours.
3. Discuss the three steps of subsurface drainage.
4. Design and install subsurface drainage.
5. List the primary concerns of putting green soils and the criteria necessary to make the soil percolate properly.
6. List the disadvantages and advantages of sandy soils.
7. Explain the importance of laboratory soils tests.
8. List the laboratory tests necessary for greens soils.
9. Run the tests necessary on soils for greens construction.
10. State where reliable soils tests can be obtained.
11. List the criteria necessary for selection of root zone soil amendments.
12. List the types of organic material in order of acceptability.
13. List the types of greens construction.
14. Draw a cross section of a USGA green.
15. List specific and particle size to gravel ratios required.
16. Discuss the course sand layer in USGA greens construction.
17. Explain the purpose of ringing the green.
18. Totally explain a perched water table.
19. Create a perched water table in a laboratory.

## **UNIT III**

The student will be able to build a California green system or a hybrid-type system of greens construction.

## **Student Learning Outcomes:**

1. Explain the California and hybrid designs of greens construction
2. Explain the function of the impermeable barrier.
3. Explain the importance of sand selection.
4. Discuss the soil principles.
5. Describe a sand green and explain the scientific principles behind its operation.
6. Interpret the sand used for native, California and for USGA based construction.
7. List the advantages and disadvantages of a sand green.
8. List the problems of contouring with sand greens and give corrective solutions.
9. Explain the PAT system.
10. Explain how finish grading of greens should be done.

## **UNIT IV**

The student will be able to explain the methods of renovation of greens and construction of tees and fairways.

### **Student Learning Outcomes:**

1. Discuss the advantages of dragging in pipelines.
2. Explain the operation of these verti-drain.
3. Explain the Cambridge Sportsturf drainage system.
4. Explain the individual steps of the Cambridge system.
5. List the equipment necessary to install a Cambridge system.
6. List the major steps in tee construction.
7. Explain the subsurface drainage system of tee construction.
8. List the major steps in fairway construction and explain each.
9. Define and explain the use of French drains.
10. Explain stone removal during fairway construction.
11. Explain final grading methods.

### **UNIT V**

The student will be able to construct a bunker. Also: body of water, bulkheads, cartpaths, pitcher's mound, infield skin

### **Student Learning Outcomes:**

1. Describe the parts of a bunker.
2. List criteria for good bunker construction.
3. Explain the various methods of bunker construction.
4. Design a drainage system for a bunker.
5. List multiple ways of lip construction.
6. List methods of sand placement in bunkers and skins in sports fields.
7. Discuss the methods for mound construction.
8. Discuss the types of bunker liners.
9. List methods of dam construction.
10. List methods of sealing the pond floor.
11. List methods of regulating spillways and overflows.
12. Examine cartpath construction methods and costs
13. Understand the sequence and components needed for bulkheads

***\*Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

## **Part III: Grading and Assessment**

### **EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS\*:**

Students’ performance will be assessed and the weight associated with the various measures/artifacts are listed below.

## EVALUATION\*

Unit Tests	40%
Weekly Quizzes	10%
Projects/Assignments	20%
Lab Participation/Lab work	10%
Final Exam	20%
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	100%

***\*Students, for the specific number and type of evaluations, please refer to the Instructor's Course Information Sheet.***

## GRADING SYSTEM:

State the College's or departmental grading system as delineated in the Catalog. Please note the College adheres to a 10 point grading scale A = 100 – 90, B = 89- 80, C = 79 – 70, D = 69 – 60, F = 59 and below. You must have your Dean's approval if changes in the scale are made.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

## Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

**For online and hybrid courses**, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, and if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

## Part V: Student Resources



### THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):

The SSTC offers to all students the following **free** resources:

1. **Academic tutors** for most subject areas, **Writing Center support**, and **college success skills**.
2. Online **tutoring** and academic support resources.
3. Professional and interpersonal communication **coaching** in the EPIC Labs.

Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring appointments using TutorTrac, visit the Student Services tab in WaveNet. Email [sstc@hgtc.edu](mailto:sstc@hgtc.edu) or call SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455, or go to the [Online Resource Center](#) to access on-demand resources.



### CENTRAL STUDENT INFORMATION CENTER: TECH Central

TECH Central offers to all students the following **free** resources:

1. **Getting around HGTC:** General information and guidance for enrollment!
2. Use the [Online Resource Center \(ORC\)](#) including scheduled technology training, Office 365 support, password resets, and username information.
3. **Drop-in technology support or scheduled training** in the Center or in class.
4. **In-person workshops, online tutorials and more services** are available.
5. **Chat with our staff on TECH Talk**, our live chat service. TECH Talk can be accessed on the student portal and on TECH Central's website, or by texting questions to (843) 375-8552.

Visit the [Tech Central](#) website for more information. Live Chat and Center locations are posted on the website. Or please call (843) 349 – TECH (8324).

### STUDENT TESTING:

The **Instructor Information Sheet** will have more details on test requirements for your course.

### DISABILITY SERVICES:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to HGTC's [Accessibility and Disability Service webpage](#). The Accessibility and Disability staff will review documentation of the student's disability and, in a confidential setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide

acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

### **STATEMENT OF EQUAL OPPORTUNITY/NON-DISCRIMINATION STATEMENT:**

Horry-Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation in educational programs and/or activities.

### **TITLE IX REQUIREMENTS:**

All students (as well as other persons) at Horry-Georgetown Technical College are protected by Title IX—regardless of their sex, sexual orientation, gender identity, part- or full-time status, disability, race, or national origin—in all aspects of educational programs and activities. Any student, or other member of the college community, who believes that he/she is or has been a victim of sexual harassment or sexual violence may file a report with the college’s Chief Student Services Officer, campus law enforcement, or with the college’s Title IX Coordinator, or designee.

\*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

### **INQUIRIES REGARDING THE NON-DISCRIMINATION/TITLE IX POLICIES:**

**Student and prospective student** inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs.

**Dr. Melissa Batten, VP Student Affairs**

*Title IX Coordinator*

Building 1100, Room 107A, Conway Campus

PO Box 261966, Conway, SC 29528-6066

843-349-5228

[Melissa.Batten@hgtc.edu](mailto:Melissa.Batten@hgtc.edu)

**Employee and applicant** inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources.

**Jacquelyne Snyder, VP Human Resources**

*EEO and Title IX Coordinator*

Building 200, Room 212A, Conway Campus

PO Box 261966, Conway, SC 29528-6066

843-349-5212

[Jacquelyne.Snyder@hgtc.edu](mailto:Jacquelyne.Snyder@hgtc.edu)