



# **INSTRUCTIONAL PACKAGE**

FOR 154  
Mensuration

Effective Term  
Fall 2024/Spring 2025/Summer 2025

# INSTRUCTIONAL PACKAGE

## Departmental Mission Statement:

### Forestry Management Technology Department & Program Mission Statement

The mission of the Department, the Programs and its faculty is to support the broader College's goals as detailed above, but also provide a comprehensive silviculturally based environmental education that recognizes the broad multiple uses demanded from the forest environments of South Carolina, the Southeastern United States, and the nation.

- We want our graduates to recognize how their daily decisions will have a lasting impact on the social, cultural, economic, and environment fabric of our state, region and country.
- Their natural resource decision making process must be based on the highest professional and ethical standards for the long term protection and promotion of a high demand resource.
- We strive to prepare well trained forest, wildlife and natural resource technicians for both public and private sector employers and promote career opportunities for our graduates.

## Part I: Course Information

Effective Term: Fall 2024/Spring 2025/Summer 2025

COURSE PREFIX: FOR 154

COURSE TITLE: Mensuration

CONTACT HOURS: 2 Lecture, 3 Lab

CREDIT HOURS: 3

### RATIONALE FOR THE COURSE:

The purpose of this course is to give the student a working knowledge of the techniques and instrumentation that are commonly utilized to measure the important parameters of a standing forest (basal area, height, diameter, site quality, stand density, and volume). The ability to measure these parameters is essential to develop information required in the decision-making processes involved in silviculture and forest management.

### COURSE DESCRIPTION:

This course is a study of the techniques and instruments used in the measurement of standing or harvested trees. The use of log rules, volume tables, yield tables, and elementary statistics are included.

### PREREQUISITES/CO-REQUISITES:

Must be enrolled in one of the following Fields of Study (Major, Minor, or Concentration):

Forestry Management Tech

Wildlife Management

**Prerequisites:**

(( New ACCUPLACER Reading Comp 200) or ( Multiple Measures English 1) or ( SAT Critical Reading 380) or ( ACT English 14) or (Credit level [ENG 101](#) Minimum Grade of C or Credit level [ENG 101](#) Minimum Grade of TC or Credit level [ENG 155](#) Minimum Grade of C or Credit level [ENG 155](#) Minimum Grade of TC))

\***Online/Hybrid** courses require students to complete the [DLi Orientation Video](#) prior to enrolling in an online course.

**REQUIRED MATERIALS:**

Please visit the [BOOKSTORE](#) online site for most current textbook information.

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

**ADDITIONAL REQUIREMENTS:**

- Hand-held Scientific Calculator w/Trig Functions (Sine, Cosine, Tangent)
- 50-ft Diameter Tape
- Cruising Vest

**SAFETY AWARENESS**

All laboratories are conducted outdoors in whole or in part, regardless of weather conditions. Appropriate clothing is required, including pants and boots. Please do not wear sandals, tennis-shoes, sneakers, crocs, flip-flops, slippers, etc. Appropriate protective clothing should be worn when inclement weather is anticipated. Students should consider raingear, jackets, and gloves. Because of the obvious health risks associated with exposure to inclement weather, the instructors reserve the right to dismiss any student who is not properly dressed from any lab period.

Being outdoors carries some additional risk. Always be aware of your surroundings. Pay special attention while crossing roads or examining trees near roads. Bees, wasps and yellow jackets, although not common, may be encountered during a lab. You may wish to inform your instructor of any allergies or other medical conditions that you may have. Poison-ivy will be present, so know what the species looks like. It is everyone's responsibility for keeping the class safe.

**TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's learning management system (LMS).

Access to the myHGTC portal for student self-services.

College email access – this is the college's primary official form of communication.

**CLASSROOM ETIQUETTE:**

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.

**NETIQUETTE:** is the term commonly used to refer to conventions adopted by Internet users on the web, mailing lists, public forums, and in live chat focused on online communications etiquette. For more information regarding Netiquette expectations for distance learning courses, please visit [Online Netiquette](#).

## Part II: Student Learning Outcomes

### COURSE LEARNING OUTCOMES and ASSESSMENTS\*:

#### Module #1

**Materials Covered:** Forest Measurements, Scales of Measurement and Rounding, Guide to Written Assignments, Introduction to Statistics and Concepts, Woodland Safety & CPR/First Aid

**\*Assessment(s):** In Class Assignments, Quiz, Labs, Exam

#### Learning Outcomes:

1. Identify the uses and purposes of measuring the forest.
2. Effectively apply rules of rounding for the forest industry.
3. Differentiate between business letters, memos, and professional emails.
4. Create and explain graphs of different forest measurement variables.
5. Recognize how personal choices can bias samples.
6. Calculate mean, mode and median of datasets.
7. Explain the standard deviation and coefficient of variation as they apply to forestry decisions.
8. Discuss the basic concepts of Woodland Safety, including PPEs, hazard identification, poisonous plant identification, venomous snake/spider identification and emergency procedures
9. Demonstrate proper understanding and techniques in First Aid, CPR and AED operation.

#### Module #2

**Materials Covered:** Forest Sampling, Land Measurements, Area Determination, GPS, Log Rules and Volume estimates

**\*Assessment(s):** In Class Assignments, Quiz, Labs, Exam

#### Learning Outcomes:

1. Differentiate between random, systematic, and stratified sampling.
2. Define and calculate cubic volume; cord; MBF; weight scale.
3. Identify basic log scaling rules.
4. Discuss concept of land area, chains, pacing, and compass operation.

5. Define bearing; azimuth; agonic line; declination.
6. Calculate acreage using a dot grid and GPS.
7. Explain differences in map scales and their use in area determination.
8. Demonstrate the ability to obtain bearings and distances from remotely sensed imagery
9. Determine area, scale, and topography using remotely sensed data

### Module #3

**Materials Covered:** Measuring Standing Trees, Forest Inventory, Site Index, Stand Density and Stocking, Line Plot and Strip Cruise Calculations, Forest Inventories with Point Samples, 3P Sampling

**\* Assessments:** In Class Assignments, Quiz, Labs, Exam

#### *Learning Outcomes:*

1. Knowledge of log scaling, grading, and tree defects.
2. Demonstrate the safe and proper use of field equipment.
3. Define DBH and its appropriate measurement with specific instruments.
4. Define, establish, and measure total height, merchantable height with specific instruments.
5. Use increment borer to determine "tree age."
6. Define and calculate basal area.
7. Convert existing tree volume table into tree weight table.
8. Create cruise tally card, estimate volume/weight of tallied trees, complete a Stand and Stock Table, and provide an estimate of the forest stand's value based on current timber pricing.
9. Demonstrate methods and types of timber cruising (100% tally, strip, line-plot, pointsampling).
10. Estimate number of trees and the basal area per acre for plot and point sampling.
11. Define and explain 3P sampling and when it is used.

### Module #4

**Materials Covered:** GIS data use, Forest Assessment of Rangeland, Wildlife, Water, and Recreation

**\*Assessment(s):** In Class Assignments, Quiz, Labs, Exam

\*\*Program Learning Outcome Assessment (Forestry Standard 1) – student's ability to correctly measure trees, compass/pace, and navigate using GPS)

#### *Learning Outcomes:*

1. Identify the different types of aerial photographs and their uses.
2. Explain the uses of Geographic Information Systems in forestry.
3. Calculate Animal Unit Months (AMU) for rangeland/silvipasture.

4. Estimate animal populations using Lincoln-Petersen Index.
5. Delineate watershed boundaries and classify streams by stream order.
6. Evaluate recreational use indicators to determine the best predictor.

***\*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\***

<b>Class Assignments</b>	<b>20%</b>
<b>Labs</b>	<b>20%</b>
<b>Exams (4)</b>	<b>20%</b>
<b>Lab Practical</b>	<b>20%</b>
<b>Final Exam</b>	<b>20%</b>
	<b>100%</b>

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

#### **GRADING SYSTEM:**

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.

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, contact the SSTC at [sstc@hgtc.edu](mailto:sstc@hgtc.edu) or self-schedule in the Penji iOS/Android app or at [www.penjiapp.com](http://www.penjiapp.com). 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.



### 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, financial aid, registration, and payment plan support!
2. Use the [Online Resource Center \(ORC\)](#) including Office 365 support, password resets, and username information.
3. **In-person workshops, online tutorials and more services** are available in Desire2Learn, Student Portal, Degree Works, and Office 365.
4. **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), Option #1.



## HGTC LIBRARY:

Each campus location has a library where HGTC students, faculty, and staff may check out materials with their HGTC ID. All three HGTC campus libraries are equipped with computers to support academic research and related school work; printing is available as well. Visit the [Library](#) website for more information or call (843) 349-5268.

## STUDENT TESTING:

Testing in an **online/hybrid** course and in **make-up exam** situations may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms (which may have a fee associated with the usage)

Furthermore, tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

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. Students will need to reach out to the Accessibility and Disability Services staff each semester to renew their accommodations.

## COUNSELING SERVICES:

HGTC Counseling Services strives to optimize student success through managing personal and



academic concerns that may interfere with achieving educational goals. Staff are available to every student for assistance and guidance on personal matters, academic concerns and other areas of concern. HGTC offers free in-person and telehealth counseling services to students. For more information about counseling services, please reach out to [counseling@hgtc.edu](mailto:counseling@hgtc.edu) or visit the website the [Counseling Services webpage](#).

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

Horry-Georgetown Technical College shall not discriminate in employment or personnel decisions or in student admissions or in student decisions, or in all other segments of the College community 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 the educational programs and activities which it operates, and the college is prohibited from discrimination in such manner by applicable laws. Practices and requirements for nondiscrimination extend to the enrollment of students in programs and activities of the College and employment by the College.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Tamatha Sells, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5218, [tamatha.sells@hgtc.edu](mailto:tamatha.sells@hgtc.edu) or to the US Department of Education Office of Civil Rights. (Telephone: 800-421-3481/Email: [OCR@ed.gov](mailto:OCR@ed.gov)).

Other employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Snyder, Vice President, Human Resources and Employee Relations & the College's Affirmative Action/Equal Opportunity Officer, Horry-Georgetown Technical College, Building 200C, Room 205B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, [jacquelyne.snyder@hgtc.edu](mailto:jacquelyne.snyder@hgtc.edu).

Other student and prospective student inquiries concerning the federal laws and their application to the College or any student decision may be directed to Dr. Melissa Batten, Vice President, Student Affairs, Section 504 & Title II Coordinator Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, [melissa.batten@hgtc.edu](mailto:melissa.batten@hgtc.edu).

### **TITLE IX REQUIREMENTS:**

Title IX of the Education Amendments of 1972 protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination.

HGTC prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking and will provide students, faculty, and staff with necessary information regarding prevention, policies, procedures, and resources.

Any student, or other member of the college community, who believes that they have been a victim of sexual harassment, domestic violence, dating violence, sexual assault, or stalking may file a report with the college's Title IX Coordinator or campus law enforcement\*.

\*Faculty and Staff are required to report these incidents to the Title IX Coordinator 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).

For more information, contact Tamatha Sells, Title IX Coordinator, Conway Campus, Building 1100C, Room 107B, 843-349-5218, [tamatha.sells@hgtc.edu](mailto:tamatha.sells@hgtc.edu).

## **PREGNANCY ACCOMMODATIONS**

Under Title IX, colleges must not exclude a pregnant student from participating in any part of an educational program. Horry-Georgetown Technical College is committed to ensuring that pregnant students receive reasonable accommodations to ensure access to our educational programs.

Students should advise the Title IX Coordinator of a potential need for accommodations as soon as they know they are pregnant. It is extremely important that communication between student, instructors, and the Title IX Coordinator begin as soon as possible. Each situation is unique and will be addressed individually.

Title IX accommodations DO NOT apply to Financial Aid. Financial Aid regulations do not give the College any discretion in terms of Financial Aid eligibility.

Certain educational programs may have strict certification requirements or requirements mandated by outside regulatory agencies. Therefore, in some programs, the application of Title IX accommodations may be limited.

To request pregnancy accommodations, please complete the [\*\*Pregnancy Intake Form\*\*](#).