



INSTRUCTIONAL PACKAGE

FOR 206
Forest Ecology

Effective Term
Fall 2020

INSTRUCTIONAL PACKAGE

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 2020

COURSE PREFIX: FOR 206

COURSE TITLE: Forest Ecology

CONTACT HOURS: 2 lecture, 3 lab

CREDIT HOURS: 3.00

RATIONALE FOR THE COURSE:

All living organisms in a forest ecosystem and their environment are linked together. An understanding of the interrelationship between organisms and their environment and organism to organism will help us sustain ecosystem stability and function, promote long term productivity and reduce losses to stress. The student will gain an understanding of the environmental factors affecting the plant community; plant community inter-relationships; factors influencing plant distribution and succession; and environmental forces affecting forest management.

COURSE DESCRIPTION:

This course is a study of the nature of forests and forest trees, how they grow, reproduce, and their relationships to the physical and biological environment.

PREREQUISITES/CO-REQUISITES:

Corequisite: FOR-102 or (Credit level FOR 102 Minimum Grade of C or Credit level FOR 102 Minimum Grade of TC)

***Online/Hybrid** courses require students to complete the DLI Online Student Orientation prior to completing an online course. The DLI Online Student Orientation can be found in WaveNet, under the

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My Student tab.

REQUIRED MATERIALS:

Please visit the [BOOKSTORE](#) online site for most current textbook information. Use the direct link below to find textbooks.

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

TECHNICAL REQUIREMENTS:

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

STUDENT IDENTIFICATION VERIFICATION:

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

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: Sustainability of Forest Ecosystems Development of the Sciences of Forestry and Forest Ecology

*Assessment(s): Complete class review activity.
Essay Based Unit Test
Lab Activity

Learning Outcomes:

1. Define the concept of sustainability.
2. Identify the historic impacts of the human population on functioning ecosystems.
3. Identify the ecological implications of population growth on the environment and ways to manage it.

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4. Identify the ways in which humans depend on the forest, historically and today.
5. Describe the development of forestry as a profession.
6. Describe how forest ecology has developed as a science.

Module #2

Materials Covered: Ecology and the Ecosystem Concept Production Ecology: The Transfer and Storage of Energy in Ecosystems.

*Assessment(s): Complete class review activity.
 Essay Based Unit Test
 Lab activity

Learning Outcomes:

1. Identify the major historic development steps in the Science of Ecology.
2. Identify the subdivisions of Ecology.
3. Identify the Concepts on Biological Organization.
4. Describe the Ecosystem Concept and levels of Biological Integration.
5. Identify the various Sources of Energy for Living Organisms.
6. Identify the Tropic Chains & Webs, Ecological Pyramids & Energy Flow
7. Identify the Terminology Used in Production Ecology (Primary Producer & Consumer)
8. Identify the how leaf area has an impact on Foliage Production Efficiency and Growth.
9. Identify how a plant allocates carbon internally and carbon storage.
10. Describe the Energy Benefits / Cost Relationships associated with Forest Production.
11. Identify the effects of Forest Management on Energy in the Forest Ecosystem.

Module #3

Materials Covered: Biogeochemistry: Nutrient Cycling Forest Ecosystem Classification and Sustainable Forest Management

*Assessment(s): Complete class review activity.
 Essay Based Unit Test
 Lab Activities

Learning Outcomes:

1. Describe how plants (producers) acquire and utilize nutrients.
2. Describe how animals (consumers) acquire energy from plant substances.
3. Explain how the working components of the Geochemical cycle; Biogeochemical Cycle; and Biochemical Cycle.
4. Identify how Nitrogen is recycled in the environment.
5. Identify how humans and forest management activities impact the Biogeochemical cycle.
6. Explain how the long term declines in forest productivity are impacted by lost fertility.
7. Identify the various forms of Ecosystem Classification: Climatic, Landform, Vegetation and Ecosystem classification (function).

Module #4

Materials Covered: Ecological Role of Solar Radiation and Temperature

*Assessment(s): Complete class review activity.
Essay Based Unit Test
Lab Activities

Learning Outcomes:

1. Describe the physical nature of solar radiation, its intensity, spectral quality and temporal variations.
2. Identify the importance of light as a factor in forestry.
3. Describe the importance of temperature for plant growth and the geographic and temporal variations.
4. Identify how plants and animals react to changes in temperature and seasonal differences.
5. Describe how humans have impacted temperature regimes.

Module #5

Materials Covered: Ecological effects of Atmospheric Movements Role of Water

*Assessment(s): Complete class review activity.
Unit Test
Lab activities

Learning Outcomes:

1. Describe the effects of wind on vegetation, animals and ecosystem function.
2. Describe the spatial and temporal nature of wind.
3. Describe how vegetation and forest management can impact winds.
4. Describe the importance of water for plants, animals and ecosystem function.
5. Identify how plants adapt to available water (excess or deficits).
6. Describe the effects of water on plant distribution and production.
7. Identify how water and nutrients interact and how major and minor plants compete for water.

Module #6

Materials Covered: Soil: The Least Renewable Physical Component Fire: A Pervasive & Powerful Environmental Factor

*Assessment(s): Complete class review activity.
Essay Based Unit Test
Lab Activities

Learning Outcomes:

1. Describe the following physical properties of soil: soil water, soil chemical, organic matter, soil fertility, soil development stages, and ecological significance.
2. Describe the importance of soils to forest and ecosystem management.

3. Identify the types and occurrence of fire in the ecosystem.
4. Describe the effects of fire on soils, plants, animals and ecosystem processes.
5. Describe the effects of fire exclusion in the ecosystem.
6. Describe the role of fire in forest management.

Module #7

Materials Covered: Population Ecology: Species Abundance and Dynamics Community Ecology

*Assessment(s): Complete class review activity.
Essay Based Unit Test
Lab Activities

Learning Outcomes:

1. Describe the major determinants of population size, its growth and demographics.
2. Describe how populations can be cyclical and what causes these fluctuations.
3. Describe methods of natural population regulation, including predation.
4. Describe the factors that promote and limit plant populations.
5. Describe the structure and growth of plant communities.
6. Identify the interactions that take place between a plant and its community.
7. Describe the Competitive Exclusion Principle and the Ecological Niche Concept.
8. Identify the current day thinking on what is Biological Diversity.

Module #8

Materials Covered: Genetic and Evolutionary Aspects of Ecosystems Sustainability and Renewability of Natural Resources

*Assessment(s): Complete class review activity.
Essay Based Unit Test
Lab Activities

Learning Outcomes:

1. Describe the role of genetic variation in populations.
2. Identify examples of genetic selection, adaptation and evolution.
3. Describe the role of Co-evolution and the Biotic Environment.
4. Identify what is a "Material Resource." Identify the level of renewability for different material resources.
5. Describe the concepts of Sustainability, Ecological Rotation, and Sustained Yield.
6. Identify aspects of our ecosystem that may not be renewable.

****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*

Tests	50%
Assignments	10%
Papers/Plans	10%
Labs	10%
Class Participation	10%
Final Exam	10%
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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:

This course follows the College's 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.

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 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:

Testing in an **online/hybrid** course may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms

Further more 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 RPNOW, 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.

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

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