



INSTRUCTIONAL PACKAGE

FOR-206

Forest Ecology

Effective Term

Fall 2018

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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 2018

COURSE PREFIX: FOR-206

COURSE TITLE: Forest Ecology

CONTACT HOURS: 3 Lecture

CREDIT HOURS: 3-0-3

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)

REQUIRED MATERIALS:

Textbook Required: Forest Ecology: A Foundation for Sustainable Forest Management & Environmental Ethics in Forestry, by J.P. Kimmins, 3rd Edition, 2004, Publisher: Prentice-Hall, ISBN: 0-13-066258-5.

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

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.

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

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.
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

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

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

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

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

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

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

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.
8. 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.***

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	90%
Article or Topic Review Paper	<u>10%</u>
	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. 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 ([ACADEMIC CALENDAR](#)). 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 eighty percent (80%) of his or her classes in order to be eligible to receive credit for any course. However, due to the varied nature of courses taught at the College, a more rigid attendance policy may be required by individual instructors. At a minimum, a student may be withdrawn from a course(s) after he or she has been absent in excess of ten percent (10%) of the total contact hours for a course. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

This course will follow the College's 80% attendance policy. The course is made up of 3 Lecture hours per week. Students who miss any combination of missed hours exceeding 20% of the scheduled class / lab time will be dropped from the course with a W or a WF. Students missing a lab session are encouraged to join another section if possible to stay current.

Part V: Student Resources

The Student Success and Tutoring Center (SSTC)



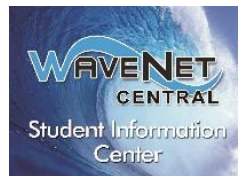
The SSTC offers to all students the following **free** resources:

1. **Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
2. **On-line student success and academic support resources**.

Visit the SSTC website: [Student Success & Tutoring Center](#) and visit the student services tab in your WaveNet account to schedule appointments using TutorTrac. For more information, call: SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455. Room locations and Live Chat is available on the SSTC website.

Student Information Center: WaveNet Central (WNC)

WNC offers to all students the following **free** resources:



1. **Getting around HGTC:** General information and guidance for enrollment!
2. Use the [Online Resource Center \(ORC\)](#) for COMPASS support, technology education, and online tools.
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.

Visit the WNC website: [Wavenet Central](#). Live Chat and Center locations are posted on the website. Or please call one of the following locations: WNC Conway, 349-5182; WNC Grand Strand, 477-2076; and WNC Georgetown, 520-1473.

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 Jocelyn Williams, Director of Student Development on the Conway Campus Jaime Davis, Counselor/Advisor on the Georgetown Campus or Kristin Griffin, Counselor on the Grand Strand Campus. These individuals 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, gender, national or ethnic origin, age, religion, disability, marital status, veteran status, sexual orientation, gender identity, or pregnancy in educational programs and/or activities.

Title IX Requirements

Horry Georgetown Technical College prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking. Any student who believe he or she has experienced or witnessed discrimination including sexual harassment, domestic violence, dating violence, sexual assault or stalking is encouraged to report such incidents to one of the College's Title IX Coordinators.

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

<p>Dr. Melissa Batten, AVP Student Affairs <i>Title IX Coordinator</i></p> <p>Building 1100, Room 107A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5228 Melissa.Batten@hgtc.edu</p>	<p>Jacquelyne Snyder, AVP Human Resources <i>Section 504, Title II, and Title IX Coordinator</i></p> <p>Building 200, Room 212A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5212 Jacquelyne.Snyder@hgtc.edu</p>
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