

FLORIDA STATE COLLEGE AT JACKSONVILLE  
COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: BSC 2050

COURSE TITLE: Biology of Environmental Systems

PREREQUISITE(S): None

COREQUISITE(S): None

STUDENT ADVISING NOTES: Successful completion of a biological or physical science course

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 3

CONTACT HOUR BREAKDOWN:

Lecture/Discussion:	3
Laboratory:	
Other:	Field activities are highly recommended.

FACULTY WORKLOAD POINTS: 3

STANDARDIZED CLASS SIZE ALLOCATION (including on-line): 30

CATALOG COURSE DESCRIPTION: This course is an introduction to the principles of ecology, with discussion of major ecosystems and selected environmental issues.

SUGGESTED TEXT(S):

Elements of Ecology, Smith & Smith, Benjamin. Cummings

Living in the Environment, Miller, Thompson

Ecology, Concepts and Applications, Molles, McGraw Hill

Principles of Environmental Science, Cunningham and Cunningham, McGraw Hill

Optional text(s):

Priceless Florida, Natural Systems and Native Species, Whitney, et al. Pineapple Press,

Ecosystems Of Florida, Myers, UCF Press

IMPLEMENTATION DATE: November 14, 1987

REVIEW OR MODIFICATION DATE: Spring Term, 20052  
Fall Term, 2006 (20071)  
Fall Term, 2008 (20091) - Outline Review 2007

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Introduction- Scope and Definition of Ecology and Environmental Science	2
II. Biological Levels of Organization Interdisciplinary Nature of Ecology and Environmental Studies Scientific Methodology and Investigation	2
III. The Niche and Habitat	2
IV. The Biotic and Abiotic Environment	3
V. Plant and Animal Adaptation, Evolution, Species Diversity	4
VI. Decomposition	1
VII. Population and Population Growth	3
VIII. Communities and Species Interactions (predation, parasitism, competition, mutualism, etc.)	4
IX. Ecosystem Production (food chain and webs, energy flow)	3
X. Ecological Succession	3
XI. Biogeochemical Cycles and their environmental implications	2
XII. Energy and the Environment, global warming	4
XIII. Environmental Issues/Case Studies at Instructor's Discretion	12

Learning Objectives- The student will be able to:

1. Compare and contrast environmental science and ecology.
2. Identify the levels of biological organization and give an example of each level.
3. State or demonstrate the steps of scientific inquiry, giving an example of each step.
4. Define an ecological niche. Give a case in point, and four environmental factors which would delineate the example niche given.
5. Differentiate between abiotic and biotic environment factors.
6. Describe competition, predation, and symbiosis. Describe 3 types of symbiosis.
7. Describe populations and give examples of factors that influence populations and their growth.
8. Describe communities and give examples of factors that influence community structure.
9. Define the different types of succession by providing examples of each type.
10. Describe biogeochemical cycles for biologically important nutrients and be able to describe the processes involved in biogeochemical cycles.
11. Be able to illustrate food chains and food webs. Describe and quantify energy flow in ecosystems from producers to consumers and to decomposers.
12. Identify the major biomes found in our biosphere.
13. Identify three environmental issues that are currently important in our society, giving the causative factors for each issue and giving pros and cons involved in the resolution of each issue.



Course Prefix and Number: BSC 2050	Semester Credit Hours: 3
Course Title: Biology of Environmental Systems	

Discipline Area for the Course:

**Communication**
                         
  **Mathematics**
                         
  **Social & Behavioral Sciences**  
 **Humanities & Visual/Performing Arts**
                         
  **Natural Sciences**
                         
  **Other-Designated Option**

INTELLECTUAL COMPETENCIES:

**X Reading**   **X Speaking**   **X Critical Analysis**      **X Quantitative Skills**   **X Scientific Method of Inquiry**  
**X Writing**   **X Listening**   **X Information Literacy**   **X Ethical Judgment**   **X Working Collaboratively**

KNOWLEDGE	Primary	Secondary	N/A	VALUE	Primary	Secondary	N/A
A. Global and Historical Knowledge & Understanding				Intellectual honesty	<b>X</b>		
• Comprehends a general knowledge of the nature, origins and contributions of major civilizations		<b>X</b>		Curiosity and openness to new ideas	<b>X</b>		
• Comprehends the workings and interrelations of personal, business and government economies		<b>X</b>		Recognition of one's own creative potential		<b>X</b>	
• Comprehends political, social and economic systems and their effects upon society		<b>X</b>		Acceptance of and respect for differences among people and cultures	<b>X</b>		
B. Cultural and Aesthetic Knowledge and Understanding							
• Comprehends the contributions of the arts and humanities to the human experience on a personal, national or global level			<b>X</b>	Civic Engagement	<b>X</b>		
• Comprehends the historical development of the arts and sciences		<b>X</b>		Lifelong Learning	<b>X</b>		
• Comprehends religious and cultural systems and their effects upon society		<b>X</b>					
C. Human Awareness and Understanding							
• Comprehends the dynamics of human behavior and the process of increasing self-awareness, growth and development		<b>X</b>					
• Comprehends the stages of human development and the dynamics of human relationships in diverse cultures			<b>X</b>				
• Comprehends the factors that promote physical, mental and social well-being		<b>X</b>					
D. Mathematics, Science and Technology							
• Comprehends the basic concepts and investigative processes of the natural sciences	<b>X</b>						
• Comprehends the breadth, significance and development of the mathematical sciences		<b>X</b>					
• Comprehends the ways science and technology have shaped and continue to reshape human cultures and the environment	<b>X</b>						

Name of Person Completing This Form: Phillip Petersen, Cate Hurlbut, Carroll Mann

Signature: \_\_\_\_\_ Date: 11/21/2007



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Course Title: <b>Biology of Environmental Systems</b>	

Discipline Area for the Course:

<input type="checkbox"/> Communication	<input type="checkbox"/> Mathematics	<input type="checkbox"/> Social & Behavioral Sciences
<input type="checkbox"/> Humanities & Visual/Performing Arts	<input checked="" type="checkbox"/> Natural Sciences	<input type="checkbox"/> Other-Designated Option

INTELLECTUAL COMPETENCIES:

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<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input checked="" type="checkbox"/> Information Literacy	<input checked="" type="checkbox"/> Ethical Judgment	<input checked="" type="checkbox"/> Working Collaboratively

	Learning Outcomes	Method Of Assessment
1	Explain and apply major concepts in ecological studies.	Written tests, reports and/or use of equipment to demonstrate student competency in field.
2	Demonstrate knowledge of scientific method.	Formulate problem, make observations, derive and test hypothesis and make conclusions.
3	Communicate scientific ideas through oral or written assignments.	Students use analytical reasoning skills to solve problems on written tests and assignments.
4	Interpret scientific models such as formulas, graphs, tables and schematics, draw inferences from them and recognize their limitations.	Written reports of projects and/or written tests demonstrate student competency in the application of scientific knowledge.
5	Demonstrate problem solving methods and critical thinking in situations that are encountered outside the classroom.	Students use demonstrations, group discussions, written tests, research projects and/or field experiences to illustrate competence in recognizing and evaluating various scientific processes.

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