Environmental Biology

Ecosystems of Southwest Florida
BSC 1051C CRN: 81681

Florida Gulf Coast University
College of Arts and Sciences
Department of Marine and Ecological Sciences
Fall 2012

Instructor and Contact Information:

David Green, M.S.
Office: Whitaker Hall #124
Office Phone: 239.590.7657
Online Communication via Angel
Twitter: @DGENVBIO

Meeting Time & Location:	WH #112	T	8:00 AM – 12:15 PM
Office Hours:	Monday		2:00 – 3:00 PM
	Wednesday		1:00 – 2:00 PM
	or by appointment		

Course Description:

Environmental Biology, BSC 1051C, is a 3 credit hour non-science majors course that examines environmental science and the role humans play in global sustainability locally and regionally. The environment of southwest Florida is used as an example to investigate environmental concepts within their ecological, cultural, economic, and historical contexts. This course is inquiry based and fully integrated with both laboratory and field experiences which emphasize active learning strategies. We will be engaged in active-learning techniques designed to make your learning experience fresh, exciting, and hands-on (based on the SENCER method – www.sencer.net). **Students are responsible for textbook material, since exams will cover this material.**

Off-campus field excursions, on-campus Nature Walks, and field-based data collection laboratory sessions will necessitate proper attire and preparedness on the student's part. **Students must arrive to every class period prepared for the outdoors for part or all of class. You will get wet, muddy, hot, insect-bitten, itchy, sweaty, etc.** Proper attire and outerwear must be worn according to the weather conditions (warm, cool, wet, dry, etc.). Sunscreen, sunglasses, and hats must be worn for sun protection. **Bring plenty of water to drink** as many of our field trips will be conducted in remote areas with few, if any, facilities. Some field trips and Nature Walks will be conducted in the rain, so rain gear is highly recommended. **Be prepared!!!** Please inform the instructor of any medical issues that could potentially prevent you from participating in field-based activities *on the first day of class* so that accommodations can be made.

Specific Course Objectives:

To enhance baseline scientific knowledge of crucial conservation and management issues relating to regional and global sustainability by developing the critical thinking skills necessary to understand the problems we face.

- Gain awareness and knowledge of local aquatic, terrestrial, and coastal ecosystems
- Foster a sense of respect and responsibility for the preservation of the natural landscape
- Expand understanding of the core ecological principles related to global sustainability
- Understand the anthropogenic influences of modern societies on the Earth's precious natural resources, both locally and on the global scale
- Interact with environmental scientists and professionals to gain a broad perspective on approaches to dealing with regional environmental issues
- Develop teamwork and independent work skills, thereby preparing students for their professional lives
- Improve science writing skills through a critical evaluation of topics related to global sustainability
- Improve oral presentation skills through the development of various presentations given to the class
- To use and evaluate the effectiveness of emerging technologies in a General Education STEM classroom (Twitter discussions, podcasts, and RLO's)

Student Responsibilities and Personal Conduct:

- Attend all classes, labs, field excursions, on-campus Nature Walks, etc. and **be prepared for the elements**
- **Participate** in discussions and group projects
- **Read** all assignments and prepare for the upcoming activities before coming to class
- **Prepare** for all quizzes and exams by keeping up with required reading assignments, attending lectures, and understanding the material presented
- **Complete** all required classwork efficiently and professionally
- No laptops, electronic devices, texting, and cell phones in class – ring tones and conversations are annoying, rude, and inappropriate
- Respect your classmates by listening, understanding, and engaging in serious debate
- Cheating of any kind will not be tolerated. Likewise, if you observe cheating, it is your duty to report it to me immediately.
- Meet with me if you feel you are falling behind, feeling lost, or if you need to discuss a serious matter that may be negatively influencing your overall performance

Absences: To succeed in this class, you must attend. Repeated absences will prevent you from obtaining a desired grade. 5 or more absences (for any reason – approved or unapproved) will result in automatic failure of this class.

Course Grading Policy:

Your grade will be based on the following grading scale:

A	93 – 100%
A-	90 – 92%
B+	87 – 89%
B	83 – 86%
B-	80 – 82%
C+	77 – 79%
C	70 – 76%
D	60 – 69%
F	≤ 59%

Breakdown of grading structure for this course:

Quizzes, Assignments, & Participation:	10%
Civic Engagement Project:	10%
Exams:	80% (2 exams @ 40% each)
	Total: 100%

Journal: The Nature Journal is intended to be a working studyguide to help you succeed academically, and should be completed independently. Specific tasks will be explained throughout the semester. The journal will not be collected for a grade but WILL form the foundation or class discussions.

Labs: Lab exercises are intended to describe the scientific method in action, to provide encounters with the local habitats, and to help explain key concepts:

- Soils Lab
- Campus Ecosystems Characterization Lab
- Freshwater Marshes Lab
- Ecology of Ants Lab
- Cypress Domes, Crayfish, and Age-structure Lab
- GIS and GPS Lab Exercises

Exams: There are two exams this semester. Each exam is worth 30% of the final grade. Anything we cover (textbook, lectures, RLOs, labs, field excursions, videos, guest speakers, etc.) will be considered appropriate material for these exams. Make-up exams will not be given, and you must be responsible enough to show up on time for these exams. You will not be allowed to take the exam and will be awarded a 0% if you arrive after the exams have been passed out to the class.

Participation: You must **be prepared** to participate in all activities. Discussions with your classmates are *strongly* encouraged. Field excursion participation is essential. Likewise, behavior on field excursions will be noted. **Missed classes due to religious holidays, athletic events, and other University-approved absences must be dealt with on the first day of class**; otherwise you may not receive an excused absence.

Extra Credit: All coursework is expected to be completed in a timely and professional manner. If you do your part, extra credit will not be necessary. There is no make-up work, grade bumps, curves, extra credit, etc. in this class, for whatever reason.

Texts: 1. **<u>Environmental Science for a changing world 1st Edition</u>,** Houtman et al.; WH Freeman & Scientific American; 2013. (required)

2. **Journal** (size = 8½" x 11") to be taken on field excursions and to nature spots (required)

3. **National Audubon Society Field Guide to Florida**, Peter Alden *et al*.; Chanticleer Press, Alfred A. Knopf Publishers, New York; 1998. (recommended)

4. Additional reading materials (journal articles, etc.) will be provided throughout the semester

Withdrawal: You must go to the Registrar's Office to withdraw. Last day to drop a class without academic penalty is Friday, November 2, 2012 (Academic Calendar).

Academic Honesty: Familiarize yourself with the FGCU Academic Honesty and Civil Conduct in the Classroom policy. Your registration can be terminated by the Dean of Students at FGCU for violation of these policies.

Flexibility: Changes to the class schedule are likely during the course of the semester because of current events or interruptions (*i.e.* weather events or guest speaker cancellations) that may alter the schedule timing. Advanced notification by the instructor to the students will be given in advance of any modification to the current class schedule shown below.

Twitter: You can establish a Twitter account (www.twitter.com). Directions for this are posted in Angel. Once your account is ready, search for and follow: DGENVBIO To reply to my messages you must type: @DGENVBIO .

Lectures: I have prepared outlines of the textbook chapters in mp3 format, so that you can download them, and listen with your IPods or through I-tunes. They are an oral outline of what is covered in your text to help you study. Please use the following link to access the audio files directly from the webpage.

http://itech.fgcu.edu/faculty/jsparrow/DavidGreenLectures/DavidGreenLectures.html

RLO's: Digital reusable learning objects (RLOs) are prepared following each lecture and serve as highly-interactive and worthwhile web-based study aids.

Civic Engagement Component: This particular section of Environmental Biology provides an opportunity for you to become active participants in service to your community, while at the same time learning collaboratively about the environmental and sustainability needs you will encounter. The project and requirements will be explained in greater detail in class.

Course Schedule

I. Ecology Concepts, Terminology, and the Scientific Method

Class 1 **21 AUG** **Class Introduction & Overview, Pre-SALG**

Class 2 **28 AUG** **Geo-literacy: Mapping the Campus Trails & Features**

Class 3 **4 SEP** **"Geology and Climate" and Campus Nature Walk (Soils)**

Class 4 **11 SEP** **"Ecosystems: What are they and how do they work?" & Campus Nature Walk (Ecosystem types)**

Class 5 **18 SEP** **"Evolution and Biodiversity", EO Wilson & Ecology of Ants Lab Exercise**

Class 6 **25 SEP** **Exam I & The 1^0 Factor**
Exam: All class activities, field excursions, readings, lectures, and lab activities
Civic Engagement Project Introduction and Background

II. "A Journey down the Corkscrew Watershed"

Class 7 **2 OCT** **Uplands, Watersheds, and Ecotones: CREW Field Excursion**

Class 8 **9 OCT** **Cypress and Wetlands: Corkscrew Swamp Sanctuary Virtual Field Excursion (in ANGEL)**

Class 9 **16 OCT** **Oak hammocks & Coastal Rivers: BNP Field Excursion**
Living in a Democracy: Local Politics and Environmental Issues
Civic Engagement Project Proposals Due

Class 10 **23 OCT** **Estuaries and Barrier Islands: Barefoot Beach Preserve**
Field Excursion: Focus on Coastal Urbanization Impacts

Class 11 **30 OCT** **Human Populations and Age-Structure Diagrams & Cypress Dome and Crayfish Lab Exercise and Wetwalk**

Class 12 **6 NOV** **Ecosystem-based Management: The Florida Everglades & Freshwater Resources Role-play Exercise**

Class 13 **13 NOV** **Exam Two and "Freshwater Supply Concerns"**
Exam: All class activities, field excursions, readings, lectures, and lab activities

III. Visualizing Human Impacts & Urbanization: Making Informed *Connections*!

Class 14 **20 NOV** **Visualizing Course Concepts: GIS and Mapping Skills**
Classroom and On-campus Field Lab Exercise

Class 15 **27 NOV** **Connections: Civic Engagement Project Presentations**
"Southwest Florida Issues", Course Summary, Post-SALG
Civic Engagement Project Written Reflections & Oral Presentations Due

A "Wordle" visualization or "word cloud" of David Green's BSC1051C Class (www.wordle.net)

"Guiding Question" for the course:

How can tomorrow's generations of all southwest Florida inhabitants continue to benefit from the natural goods and services a healthy coastal watershed provides, by better understanding *our* role as citizens *today*?

Student Learning Outcomes

University Outcomes:

- An ecological perspective
- Effective communication
- Information literacy
- Technological literacy

Environmental Studies Concentration Outcomes:

- Demonstrate the ability to evaluate and implement the scientific process.
- Demonstrate the ability to compare and contrast important ecological components and processes of different ecosystems.
- Demonstrate the ability to apply the science of ecology to environmental issues.

Important Information

*** Please note that all assignments are due at the beginning of class, unless otherwise directed. No late assignments will be accepted for any reason. A grade of "0" will be awarded for assignments not given to me on time. Manage your time wisely, and this should not be an issue. Remember labs will be conducted during class time. If you miss these, there are no make-ups available.

*** **Please refer to ANGEL for posted materials, calendar of events, and grade postings.**

*** The Instructor reserves the right to award a failing grade to any student with 5 or more absences.

University Guidelines **(please familiarize yourself with these policies for this and all other classes):**

*** ***Disabilities Accommodations Services***

Florida Gulf Coast University, in accordance with the Americans with Disabilities Act and the University's guiding principles, will provide classroom and academic accommodations to students with documented disabilities. If you need to request an accommodation in this class due to a disability, or you suspect that your academic performance is affected by a disability, please see me or contact the Office of Adaptive Services. The Office of Adaptive Services is located In Howard Hall 137. The phone number is 590-7956.

*** ***Academic Behavior Standards and Academic Dishonesty***

All students are expected to demonstrate honesty in their academic pursuits. The university policies regarding issues of honesty can be found in the FGCU Student Guidebook under the ***Student Code of Conduct*** *and* ***Policies and Procedures*** *sections. All students are expected to study this document which outlines their responsibilities and consequences for violations of the policy. The FGCU Student Guidebook is available online at* http://studentservices.fgcu.edu/judicialaffairs/new.html

*** ***Student Observance of Religious Holidays***

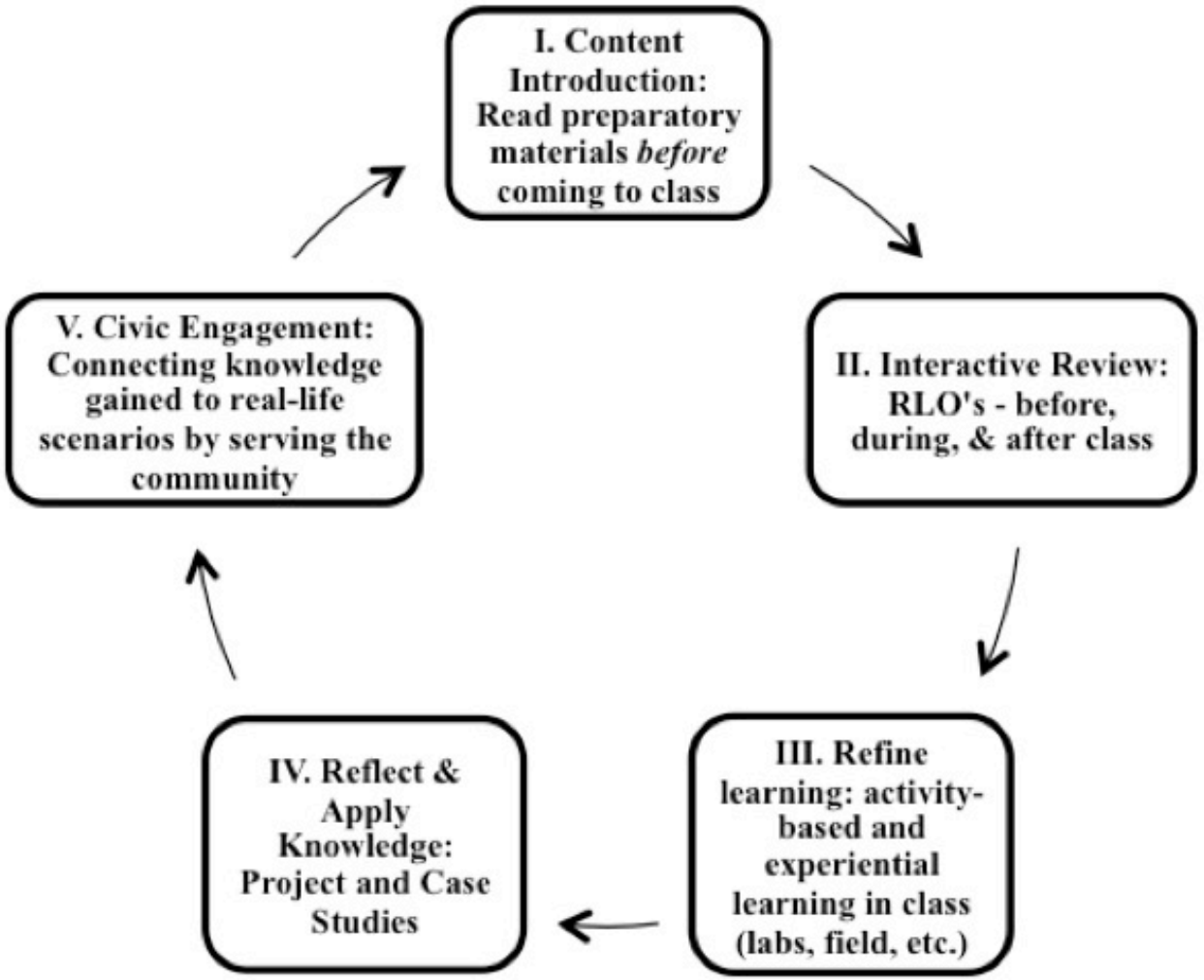
Kindly notify your Instructor on the first day of class about any upcoming classes you may miss due to religious holidays. For University guidelines, please visit the following website:

General Counsel Policies at: http://www.fgcu.edu/generalcounsel/policies-view.as

Calendar of Academic Events and Important Due Dates, Field Excursions, and Lab Activities:

Class	Topic	Theme	Notes	Text
1	**Introduction; Pre-SALG**	Introduction to Course	Campus Nature Walk	Ch 1
2	**Campus Ecosystems**	Geo-literacy	Campus Nature Walk	Ch 26
3	**Geology and Climate**	Ecology Concepts	Campus Nature Walk	Ch 2, 3
4	**Ecosystems**	Ecology Concepts	Campus Nature Walk	Ch 6, 7, 8
5	**Evolution and Biodiversity; Ecology of Ants Lab**	Ecology and Biodiversity	Campus - outside	Ch 9, 10
6	**Exam 1 and The 1 Degree Factor**	Current Issues	**Civic Engagement Project Assigned**	Ch 22
7	**CREW Field Excursion**	Inland/Upland/Freshwater	Trekking	Ch 11, 12, 6
8	**CSS Virtual Field Excursion**	Inland/Upland/Freshwater	Access in ANGEL	Ch 11, 12, 8
9	**Bonita Nature Place Field Excursion**	Issues/Riverine	Trail hiking; **Civic Engagement Project Proposal due**	Ch 10, 11, 7
10	**Barefoot Beach Field Excursion**	Coastal/Marine/Dune/Barrier Islands/Urbanization	Trail hiking	Ch 13, 26
11	**Human Population and Age-Structure Lab**	Issues / Freshwater	Campus wetwalk	Ch 4, 7
12	**The Florida Everglades**	Issues / Decisions	Role-play exercise	Ch 8
13	**Exam 2 and Freshwater Supply Concerns**	Current Issues	**.**	Ch 15
14	**Visualizing and Maps**	Current issues & concepts	GPS data / GIS	Ch 26
15	**Connections & Civic Engagement, Class Recap, Course Evaluations; Post-SALG**	*Connections!!!*	**CE Projects due**	.

To succeed in this class and reach your full potential as a student, follow these steps:



This conceptual model that explains how best to prepare for this class, based on the Instructor's curriculum design. Note that this is not a traditional "lecture-based" course. Instead, you will be participating in activity-based learning and using digital content as course supplements.

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