BSC 2862 – Global Change Ecology and Sustainability

Syllabus-Fall 2018

I. Class Meetings

Monday	Period 2-3	8:30 AM – 10:25 AM	ROL 0205
Wednesday	Period 2	8:30 AM – 9:20 AM	FAC 0120

II. Contact Information

Instructor:
Margo Stoddard, PhD
Office: 310A Bartram Hall
Office Hours: M 10:45-12:45 am, W 9:45-10:45 am
E-mail: mstodd@ufl.edu

TA:
Felicity Newell, PhD Candidate
305 Dickinson Hall
Office Hours: by appointment
E-mail: fnewell@ufl.edu

III. Course Goals and Objectives

The primary goal of this course is to use ecological concepts to discuss major anthropogenic driven changes that are occurring globally. Fundamental concepts discussed include changes in land use, alterations in the water, nitrogen, phosphorus, and carbon cycles, climate change, redistribution of species, loss of biodiversity, and species extinctions. An additional course goal is to evaluate best management practices, technologies, policies, and human behavior that can result in minimizing negative human impacts on the biosphere and promote sustainability. This course will also develop critical thinking skills for development of reasoned thought.

Objectives of the course will be achieved if, by its conclusion, students can:

- Identify the major factors that influence land use change, alteration in water, nutrient, and carbon cycles, climate change, redistribution of species, and extinctions on a global scale.
- Compare and contrast different management practices, technologies, policies, and human behavior that can promote sustainability.
- Apply the basic concepts in ecology to evaluate human impact on global systems.

IV. Expectations

Each student is solely responsible for reading and following the instructions, guidelines and schedules in this syllabus and on the course webpage or announced in class. Not having read the information in this syllabus or in instructor announcements will not constitute an excuse for missing an assignment, exam, or other assessment. Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information. **Check Announcements in Canvas regularly as e-mail notifications from Canvas do not always go through.**

V. Communication with Instructor

All e-mail correspondence to the course instructor or teaching assistant must **originate from your ufl.edu account, have your full name in the body of the e-mail**. E-mails not meeting these requirements may not be recognized by email filters, and thus may not be answered.

When you have a question, check the course syllabus and e-Learning announcements to see if it is already answered **before** e-mailing your Instructor. Barring unusual circumstances, expect a reply with 24 hours (Monday - Friday). Emails and e-Learning Discussion posts are checked at least once per day, but sometimes not more than that.

VI. Course Resources

A. Textbook

Environment: The Science Behind the Stories by Jay Withgott and Matthew Laposata, 2017, Pearson Education, Inc. (publisher). 6th edition.

The etext can be purchase through the link below, or another option of your choosing.
https://console.pearson.com/enrollment/zwgwso

Students are strongly encouraged to read the assigned chapters before coming to class as this will make it easier to comprehend the lecture material.

B. Course Website (e-Learning Canvas)

Class material including the syllabus, lecture slides, and other information related to the course will be posted on the course e-learning website (https://elearning.ufl.edu/ . **You are responsible for all announcements made in lecture and/or posted on the course website for this class**. NOTE: the class syllabus and schedule will be edited as necessary throughout the semester. Make sure you reference the most recent version. The update date will be noted in the upper right corner of the posted syllabus. For help with e-learning/Canvas, call the UF Computing Helpdesk at 352-392-4357 or click on one of the help tabs along the top of the e-learning website.

VII. Assessments and Grading

A. Exams

There will be two exams during the semester: a mid-term and a final. Exams will be administered during the normal class meeting times. Each exam will cover material from lecture, homework, in-class activities, comprehension quizzes (if any), and the assigned reading in the textbook. All exams will be a mixture of multiple-choice, fill-in-the blank, short answer, and essays. **Each student must take the exam when it is scheduled. Each student must bring her/his Gator ID to class on exam days.** All exams and answer sheets will be collected at the end of the exam period.

Exams will be available for review by appointment for one week after the exam date. Exams will **not** be available for review after the semester has ended.

Make-up Exams: No make-up exams will be given without prior permission or documentation of illness. Students who must miss an exam due to a pre-arranged university-approved excused absence (e.g., sports, etc.) must let the instructor know **a minimum of 2 weeks in advance**. These students may be required to take the make-up exam *before* the scheduled in-class exam.

In case of illness on exam day, a letter from the student's primary care provider (e.g., UF Student Health Care Center) is required. Online doctor excuses are not acceptable. This letter must state that the student was unable to complete the exam on the scheduled date (i.e., a letter stating only that the student was seen in a clinic is not sufficient). A personal matter requires a note from the Dean of Students (202 Peabody Hall). These notes must be received within five business days after the exam.

B. Peer-review paper presentations

Students will be assigned into small groups and each group will select a peer-reviewed article that researches a technological, biological, or best management practice solution to dealing with a global change problem we discuss in class (broad topics will be provided). Students will prepare a 10-12-minute presentation to be given to the class that summarizes the information in the article and addresses questions described under the assignment details.

C. Class Activities & Homework

In-class activities include (but are not limited to) discussions, case studies, data analysis, and participation in group activities, e.g., field trips. These activities with a point value will typically be announced on the course website, but there may be unannounced activities. Approximately 10 class activities (subject to change) will be assigned. **In-class activities require class attendance and cannot be made-up if you miss class.**

D. In-Class Quiz Questions

Unannounced in-class quizzes will include questions based on material covered the previous class, or in class on the same day. Students may not make up these quizzes, regardless of the reason (e.g., absence).

E. Online discussion posts

Each week during the semester you will be required to post an answer to an assigned prompt in the discussion section in CANVAS. In addition, you must comment on at least two different students' posts. Detailed instructions will be provided for each assignment.

F. Group project

Working as part of a team can be very challenging, but also very rewarding. Learning to work as part of a team is an important life and professional skill that you will practice as part of this course. You will be assigned to a group (typically 4 students per group). Each group will research a topic of their choosing related to campus or local natural areas (subject to instructor approval) and develop a project plan and present their findings in a format of their choosing (subject to instructor approval) that will be presented in class towards the end of the semester. In addition to the overall group grade for the project, there will be individual homework assignments related to the group project, which are included as part of the final grade for the project. You will also evaluate participation of each of your team members. Grades for individuals will be adjusted if necessary, based on this feedback.

G. Field trips

One or more mandatory field trips will be scheduled for this course. Dates and times will be announced early in the semester.

H. Extra Credit

Extra credit may be offered at the discretion of the instructor. Any extra credit available will be offered to ALL students in the course.

I. Grading (Note: this may be adjusted, depending whether in-class quiz grades are included)

Assessment	Points	% of Total Points
Exams (2 @ 100 points each)	200	28.2
Class activities and homework (~10 @ 10 points each)	100	14.1
Online discussion posts (10 posts @ 5 points each)	50	7.0
Peer presentations	50	7.0
Group project	140	19.7
TOTAL	540	100

All grades will be posted on Canvas, and it is the responsibility of the student to check their grades to make sure they match the grade issued for that assignment. If there is a discrepancy you must let us know within ONE week of the grade being posted on Canvas.

Grade categories are listed below. **Final scores will NOT be rounded (i.e., 89.99% is not 90%).**

Point Range (%)	Letter Grade
≥ 93.00	A
≥ 90.00	A–
≥ 87.00	B+
≥ 83.00	B

≥ 80.00	B–
≥ 77.00	C+
≥ 73.00	C
≥ 70.00	C–
≥ 67.00	D+
≥ 60.00	D
≥ 57.00	D–
< 57.00	E

The current UF policy for assigning grade points is available at the following undergraduate catalog web page: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

J. Special Treatment

Please do not request individual special treatment regarding grading at the end of the semester; **we do not adjust grades for individuals for any reason**. Plan to do well on all exams and other assessments from the beginning of the semester; if you are having difficulty in the class, please let your instructors know *before* the exams rather than after, and as early as possible in the semester.

VIII. Academic Honesty

All students registered at the University of Florida have agreed to comply with the following statement:

> *"I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."*

In addition, on all work submitted for credit the following pledge is either required or implied:

> *"On my honor I have neither given nor received unauthorized aid in doing this assignment."*

If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: https://catalog.ufl.edu/ugrad/current/advising/info/student-responsibilities.aspx and

https://sccr.dso.ufl.edu/students/student-conduct-code/

IX. Attendance

Attendance is mandatory. If you are absent from class when a quiz or other activity requiring your participation occurs, you will receive a zero quiz and/or participation grade unless the absence is *excused*. An absence is considered *excused* if there is an *acceptable reason* according to UF policy (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx). Examples of acceptable reasons are medical illness, religious holidays, military obligation, and the twelve-day rule. For religious holidays, students are required to notify the instructor **prior** to the absence, but documentation of the religious holiday is not required. In all other cases, the following policies apply: It is your responsibility to notify the instructor of an excused absence and to provide documentation of an acceptable reason. Otherwise, the absence will be considered *unexcused*. Whenever possible, notify the instructor by email prior to the absence. When this is not possible (e.g., due to unexpected emergency or illness), the instructor should be notified as soon as possible.

X. Time Commitment

The UF College of Liberal Arts and Sciences expects that each student will devote 3-4 hours per week per credit-hour to each course, including time in lectures and labs. Because BSC 2862 is 3 credits, each student should therefore expect to devote 9-12 hours per week to this course. A recommended time allocation is below.

Activity	Hours per Week
Lectures	3
Homework	2-3
Textbook Readings	2-3
Review and Study	2-3

If you find yourself spending more than 12 hours per week on average on these activities, discuss this with your course instructor to see if you can refine your study habits. If you find yourself spending less than 9 hours per week on average, you may have difficulty learning and comprehending the material, and this might be reflected in poor performance on assessments (i.e., low grades).

XI. Conduct in Class

Use of electronic devices in class to take notes or otherwise participate in classroom activities is approved. Approved electronic devices are laptop computers, cell phones, smart phones, tablets, and voice recording devices. Other uses of these devices or the use of unapproved devices will be considered disruptive. If a student's conduct disrupts the teaching and learning atmosphere, that student will be asked to leave the class and may not be able to participate further.

XII. Accommodations for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: http://www.dso.ufl.edu/drc/. Note that the student should provide documentation of a requirement for accommodation **by the second week of classes**. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

XIII. Counseling Center

Many students experience test anxiety and other stress related problems. Please take advantage of the many resources and systems of support available through the UF Counseling and Wellness Center (3190 Radio Road, 352-392-1575, https://counseling.ufl.edu/).

XIIII. Learning objectives and Assignments

Lecture topics for this course are listed below. This is a tentative schedule; the dates and coverage of specific topics are subject to change. Posts, some material associated with class activities, and Project homework assignments are submitted through Canvas. Homework assignments (not shown in schedule below) will be scheduled and announced as they become available. The schedule on the Canvas course page will be updated as necessary. **CAHW in table below** = class activity or homework. NOTE: schedule is subject to change.

Wk	Day	Date	Topic and/or activity	Learning objectives/topics	Assignments
1	M	20 Aug		**Drop/Add - No Class**	
	W	22 Aug	Introduction to Global Change, Ecology, Sustainability	-review course format -define the study of ecology, global change, and sustainability and how these concepts are related -distinguish b/w unsustainable and sustainable development and resources	Read: Syllabus, Ch. 1 Post 1: About me (due 24 Aug)
2	M	27 Aug	Science of Sustainability, continued Climate & Biomes	-ID the steps of the scientific method -ID different approaches to research, types of data, & ways of presenting data. Describe their strengths & weaknesses. -define peer review -describe how to distinguish good from bad science and b/w levels of uncertainty -describe how to search UF library databases for peer-reviewed papers -explain how climatic factors can lead to predictable locations of different biomes -describe the characteristics used to identify biomes	Read: Ch. 1, 4.3 Post 2: Biomes
	W	29 Aug	Land use change and anthropogenic biomes	-compare and contrast natural and human influenced biomes in terms of climate, dominant vegetation type, and land use -describe how land use has changed over the last two centuries	Read: Ch. 12-13
3	M	3 Sept		**Labor Day - No Class**	
	W	5 Sept	Food production and the N and P cycles	-explain why plant productivity is limited by N and P -identify the technological advances that have helped reduce N and P limitation in managed systems	Read: Ch. 9-10, 4.2 Post 3: Eating lower on the food chain
4	M	10 Sept	N cycle; P cycle **Peer-review presentation 1-2**	-identify the major stocks and fluxes of the global N and P cycles -describe how the N and P cycles have been altered by humans -describe the process of eutrophication and N deposition	Read: Ch. 5 Post 4: Your N footprint
	W	12 Sept	Water cycle	-identify the major stocks and fluxes of the global water cycle -describe how the water cycle has been altered by humans	**CAHW1**: Changing N cycle Read: Ch. 15
5	M	17 Sept	**CAHW2**: Field trip to Sweetwater Wetland Park led by a project engineer; MEETING DETAILS TBD	**BEFORE** our trip watch: http://www.sweetwaterwetlands.org/history	Watch: video (url to left) AND prepare ≥ 1 question for our guide

	W	19 Sept	Water management **Peer-review presentation 3-4**	-identify water management practices at the local, state, country, and global level -review ecosystem services	Post 5: **CAHW 3**: TBD
6	M	24 Sept	**CAHW 4**: NATL field exercise: MEETING DETAILS TBD		**CAHW 5**: Longleaf pine video & quiz
	W	26 Sept	**Exam 1**		
7	M	1 Oct	Carbon cycle Group projects **Peer-review presentation 5-6**	-identify the major stocks and fluxes of the global C cycle -brainstorm project ideas	Read: Group project assignment **CAHW 6**: field exercise worksheet
	W	3 Oct	Group projects	-meet with group	Post 6: Your C footprint
8	M	8 Oct	TBD		
	W	10 Oct	TBD		
9	M	15 Oct	**CAHW7:** Field trip to Siembra Organic Farm; MEETING DETAILS TBD		Prepare: >1 question for our guide Group project: Annotated bibliography
	W	17 Oct	Changing C cycle **Peer-review presentation 7**	-describe how the C cycle has been altered by humans -discuss strategies for reducing atmospheric C	Read: Ch. 19 Post 7: Florida's Energy
10	M	22 Oct	Renewable energy **Peer-review presentation 8-9**	-compare and contrast different alternative energy sources	Read: Ch. 20-21
	W	24 Oct	C sequestration	-compare and contrast different C sequestration strategies	**CAHW 8**: TBD
11	M	29 Oct	Climate change **Peer-review presentation 10-11**	-identify the major factors that influence climate -describe how and why the climate is changing -compare and contrast past climate change with current and future climate change	Read: Ch. 18 Group Project: Proposal
	W	31 Oct	Impacts of climate change	Glaciers, polar ice caps, and sea level rise	Read: Ch. 16 Post 8: Sea level Rise
12	M	5 Nov	Impacts of climate change **Peer-review presentation 12-13**	Ocean acidification	**CAHW 9**: Coral Bleaching Activity
	W	7 Nov	Impacts of climate change	Range shifts, phenology, and extinctions	

13	M	12 Nov		**Veterans' Day - No Class**	
	W	14 Nov	Biodiversity	-define biodiversity -describe how biodiversity is being threatened -identify strategies to preserve biodiversity	**CAHW 10**: TBD
14	M	19 Nov	Biodiversity (continued) & Invasive species **Peer-review presentation 14-15**	-define the term invasive species -identify threats of invasive species on biodiversity and ecosystem function -describe strategies for preventing the spread of and eradicating invasives	Post 9: Biodiversity & Invasive Species Group Project: Methods & Results
	W	21 Nov		**Thanksgiving Holiday - No Class**	
15	M	26 Nov	Extinctions **Peer-review presentation 16-17**	-compare and contrast mass extinctions with background extinctions -identify factors that can cause extinctions	Post 10: Extinctions
	W	28 Nov	**Exam 2**		
16	M	3 Dec	**Group presentations**		Group Project: Presentations
	W	5 Dec	**Group presentations**		Group Project: Presentations
		7 Dec			Group Project: Final Report