

# BSC 2862 – Global Change Ecology and Sustainability

Syllabus-Spring 2017

## I. Class Meetings

Monday	Period 1	8:30 AM – 9:20 AM	MCCA 2186
Wednesday	Period 1-2	8:30 AM – 10:25 AM	MCCA 2186

## II. Instructor

**Jennie DeMarco, PhD**

Department of Biology

Office: 417 Carr Hall

Office Hours: M 9:30-10:30 am, W 10:30-12:30 pm and by appointment

E-mail: jennied@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 strive to develop critical thinking skills for development of reasoned thought and for evaluation of life experiences.

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 course instructor must **originate from your ufl.edu account, have your full name in the body of the e-mail, and contain your course and section number in the subject line.** E-mails not meeting these requirements may not be recognized by e-mail filters, and thus may not be answered.

When you have a question, check the following sources **first** to see if it is already answered, **before** e-mailing your Online Instructor:

- o Course Syllabus
- o e-Learning announcements (this is the primary means that your Instructor has to communicate with you in a timely manner)
- o e-Learning Discussion FAQ
- o e-Learning Discussion General Posts

If you still cannot find the answer to your questions:

- o If it is a question that others might find useful to know the answer to as well, post it in the e-Learning Discussion section.
- o If it is a question specific to you (e.g. account or grade specific), e-mail Dr. DeMarco. Barring unusual circumstances, expect a reply with 24 hours (Monday through Friday). E-mails and e-Learning Discussion posts are checked at least once per day, but sometimes not more than that.

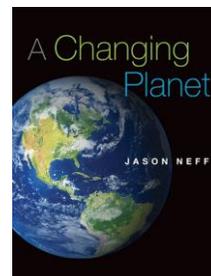
## VI. Course Resources

### A. Textbook

*A Changing Planet*, by Jason Neff, 2016, Pearson Education, Inc. (publisher). This is an online textbook and access for students this semester is FREE.

Here is how to register to gain access to the textbook:

1. Visit this link: <https://console.pearson.com/enrollment/i2jd4h>
2. Create a Pearson Account using your Gatorlink (@ufl.edu) e-mail address. **Failing to use your Gatorlink e-mail address will result in NO CREDIT received for assignments associated with the online textbook.**
3. Choose your course under 'My Courses' and choose an access option: redeem an access code that you got from your school's bookstore or purchase access online. There is a free trial if you are waiting for financial aid.

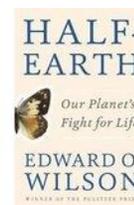


What you should know:

- Bookmark <https://console.pearson.com> to easily access your materials.
- Pearson recommends using the latest version of Chrome, Firefox, or Safari with this digital product.
- Contact your instructor if you lose the invite link.

### B. Book Discussion

Half-Earth: Our Planet's Fight for Life, by E. O. Wilson, 2016 Edition. This book can be purchased at most book stores include Amazon. You may purchase the hardcopy or the digital version.



### C. Classroom Response System (Clicker)

We will use the Learning Catalytics (LC) at [www.learningcatalytics.com](http://www.learningcatalytics.com) for quiz questions during class. LC allows students to use a cell phone (text messaging), laptop, tablet, or smartphone to participate in class. **See section XII below for information on setting up your Learning Catalytics account.**

#### D. Course Website (e-Learning)

Class material including the syllabus, weekly comprehension quizzes, exam results, lecture slides, and other information related to the course will be posted on the course e-Learning website (<http://lss.at.ufl.edu>). The course is found under “e-Learning in Canvas”. **You are responsible for all announcements made in lecture and/or posted on the course website for this class.** For help with e-Learning, call the UF Computing Help Desk at 352-392-4357, or visit the e-Learning support website: <https://lss.at.ufl.edu/help.shtml>.

## VII. Assessments and Grading

#### A. Exams

There will be two exams given during the semester: a mid-term and a final. Exams will be administered during the normal semester and during the normal class meeting times. Each exam will cover material from lecture, homework, in-class activities, comprehension quizzes, and the assigned reading in the textbook. Exams are worth 31 % of the course grade.

All exams will be a mixture of multiple-choice, fill-in-the blank, short answer, and essays. **Each student must take the exam during her/his registered section time. Each student must bring her/his Gator ID to class on exam days.** No student will be allowed to start an exam after the first student to complete an exam leaves the classroom. All exams and answer sheets will be collected at the end of the exam period. No additional time will be given to complete an exam if you arrive late. Please be aware that filling in the scantron sheets is part of the exam; no extra time at the end of the class period will be given for filling out the scantron sheets.

Each exam may be curved using the following approach: The top 3% of the scores in the class will be averaged, and the difference from 100 points will be added to each individual exam score.

Exams will be available for review by appointment for one week after the exam date; specific times for exam review will be announced following each exam. 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 that will be missing an exam due to a pre-arranged university-approved excused absence (sports, etc.) should let the instructor know **a minimum of two 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 is required. 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 (P202 Peabody Hall). These notes must be received within five business days after the exam. Make up exams may be short-answer or essay format.

#### B. Comprehension Quizzes

Students will receive up to 14% of the total course points for participation in the online comprehension quizzes. Each quiz will be allowed three attempts and the highest score received will be recorded for that quiz. **All quizzes must be completed by the stated due date and time for credit. Extensions will NOT be given because of technical or personal issues that occur within 24 hours of the assignment deadline.** Most quizzes will also have a set time limit, so make sure you have time to devote to that assignment before you begin. You are expected to work by yourself on the quizzes and cheating will not be tolerated.

**C. Homework Assignments**

A variety of homework assignments will be announced on the course website, including searching for and summarizing peer-reviewed scientific literature, collecting and analyzing data, and individual assignments that contribute to group projects. Unless stated otherwise, **homework is due at the beginning of class on the date it appears in the Schedule on the course website.** A total of 5 homework assignments worth 10 points each totaling 14 % of your total course grade will be assigned throughout the semester. **Late homework will NOT be accepted.**

**D. Peer presentations**

Students will be preselected into pairs and each pair will be required to select a management technique or technology that helps to minimize the negative human impact for the subject they are assigned. Students will prepare a 15 minute presentation that will be given to the class that teaches the class about the technique or technology.

**E. In-Class Activities**

In-class activities include (but are not limited to) discussions, case studies, data analysis, and participation in group projects. In-class activities with a point value will typically be announced on the course website, but there may be unannounced activities in addition to clicker questions. A total of 10 in-class activities will be assigned each worth 10 points and totaling 14 % of your total course grade. **In-class activities require class attendance and cannot be made-up if you miss class.**

**F. Book discussions**

Students will be required to read the book, “Half-Earth: Our Planet’s Fight for Life” by E.O. Wilson. Students will be required to answer several essay questions and be prepared to discuss them in class.

**G. In-Class Quiz “Clicker” Questions**

Students will receive up to 8 % of the total course points for participation in the in-class quizzes that are to be answered using the classroom response system (Learning Catalytics, see above). Students may not make up LC questions, regardless of the reason (e.g., absence, malfunctioning cell phone, forgot to register, etc.). It is the student’s responsibility to regularly check (i.e., daily or weekly) their gradebook in LC to ensure that their submissions were correctly received, and to contact LC support to resolve any issues with submissions not being properly recorded in the LC gradebook.

**Grading:** 55 total course points will be awarded for Learning Catalytics (LC) quizzes. The points earned will reflect the proportion of LC questions answered correctly in class. Each question posed will be scored as 0.75 LC points for participation with an additional 0.25 LC points for a correct answer. Full in-class quiz credit (55 course points) will be awarded to all students achieving 85% of the total possible LC points from that unit; those achieving less than 85% will receive course points in proportion to their achieved LC points (e.g. 50% of LC points earned = 27.5 course points).

**Setting up Your Account: IMPORTANT-when creating your account, you must use your Gatorlink (@ufl.edu) e-mail address. Failing to do so will result in NO CREDIT received for LC units.**

Please follow these instructions to register:

- a) Go to [www.learningcatalytics.com](http://www.learningcatalytics.com)
- b) On the top right, click “Register”. On the next screen, click “I am a student”.
- c) Select “I have an access code”.
- d) Read and accept the Pearson License Agreement and Privacy Policy. Then, “Create a new Pearson account”. Enter the access code provided by your instructor.

**You must use your Gatorlink ID** for your “Student ID.” Example: If your e-mail address is [albert@ufl.edu](mailto:albert@ufl.edu), use *albert*, NOT your 8-digit numerical UF ID (e.g., 1234-5678). Your Student ID should be all lowercase, and be careful not to enter a space afterwards! If the “Username” is already taken, you may add a few numbers to the end (e.g., *albert123*). **Your “Student ID” must be your Gatorlink ID however.**

**Technical Issues:** For problems with Learning Catalytics, contact Pearson 24/7 Technical Support:

Website: <http://247pearsoned.custhelp.com/>

By phone: 800-677-6337 (students)

Online Student Help: [help.pearsoncmg.com/learning\\_catalytics/student/en/index](http://help.pearsoncmg.com/learning_catalytics/student/en/index)

LC tech support cannot recover grades for submissions that did not save unless the student provides a screenshot of their submission within 24 hours of lecture.

#### H. Online discussion posts

Weekly during the semester you will be required to post an answer to an assigned prompt in the discussion section in CANVAS. In addition you will comment on at least two different students' posts. Detailed instructions will be provided for each assignment. Discussion posts account for 7 % of your course grade.

#### I. 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 3 students per group) based on common interests. Each group will research a topic of their choosing related to campus 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 in the Homework point category.

#### J. Field trips

Four mandatory field trips will be scheduled for this course. Date and times will be announced early in the semester.

#### K. 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.

#### L. Grading

Assessment	Points	% of Total Points
Exams (2 @ 100 points each)	200	26.8
Online quizzes (10 quizzes @ 10 points each)	100	13.4
Homework (5 @ 10 points each)	50	6.7
Book discussions	45	6.0
Peer presentations	50	6.7
In-class activities/discussions (10 @ 10 points each)	100	13.4
In-class questions	50	6.7
Online discussion posts (10 posts @ 5 points each)	50	6.7
Group project	100	13.4
TOTAL	745	100.0

All grades will be posted on e-Learning (in terms of course points, i.e., the point scheme above), and it is the responsibility of the student to check their grades on e-Learning and 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 eLearning.

Minimum grade cutoffs are listed below. Because each exam is curved individually (see section IX-A, above), the scores for the course as a whole will not be curved (i.e. these grade cutoffs will not be lowered, so don't ask). However, these cutoffs will not be raised; in other words, if you receive 93% of the possible points, you are guaranteed to earn an A grade.

**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

Note that 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>.

#### M. 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.

### 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-honor-code.aspx#honesty>.

## 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. **Students are strongly encouraged to read the assigned chapters before coming to class as this will make it easier to comprehend the lecture material. If you miss class, visit the e-Learning site for any lecture notes and course announcements.**

## 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
Online Exercises	1-2
Textbook Readings	2-3
Review and Study	2-4

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 should recognize that you may have difficulty learning and comprehending the material in this time, and this will probably be reflected in poor performance on the various assessments, causing you to receive a lower overall course grade.

## XI. Conduct in Class

Please be courteous and do not talk during lecture. This can be distracting to other students and the instructor.

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, iPod touch, and voice recording devices. Other uses of these devices or the use of unapproved devices will be considered disruptive. Unapproved electronic devices include video recorders, digital cameras and MP3 players. Students who use unapproved devices in class will be considered disruptive. Multiple disruptions will be considered grounds for the assignment of a failing grade.

## **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**. No accommodations are available to students who lack this documentation. 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. “[A Self Help Guide for Students](#)” as well as a diverse array of support systems are available through the UF Counseling and Wellness Center (3190 Radio Road, 392-1575, <http://www.counsel.ufl.edu/>)

#### XIV. Lecture Schedule

Lecture topics for this course are listed below. This is a tentative schedule; the dates and coverage of specific topics are subject to change.

Week	Day	Date	Topic	Learning objectives By the end of the course you should be able to:
1	W	4 Jan	Introduction to Global Change, Ecology, Sustainability, and the Scientific Method	<ul style="list-style-type: none"> <li>-define the study of ecology, global change, and sustainability</li> <li>-identify the steps of the scientific method</li> <li>-differentiate between primary and secondary sources</li> <li>-identify the best strategies for reading a scientific paper</li> </ul>
2	M	9 Jan	Population growth	<ul style="list-style-type: none"> <li>-describe the factors that influence population growth</li> <li>-compare and contrast exponential versus logistic growth</li> <li>-describe the current pattern of human population growth</li> </ul>
	W	11 Jan	Climate and biomes	<ul style="list-style-type: none"> <li>-explain how climatic factors can lead to predictable locations of different biomes around the globe</li> <li>-describe the characteristics used to identify biomes</li> </ul>
3	M	16 Jan		<b>Martin Luther King Jr Day-NO Class</b>
	W	18 Jan	Land use change and anthropogenic biomes	<ul style="list-style-type: none"> <li>-compare and contrast natural and human influenced biomes in terms of climate, dominant vegetation type, and land use</li> <li>-<i>Introduce class project on assessing the impact of campus natural areas on the environment, society, and sustainability (short brainstorming session on project ideas)</i></li> </ul>
4	M	23 Jan	Problem: Food production and the N and P cycles	<ul style="list-style-type: none"> <li>-explain why plant productivity is limited by N and P</li> <li>-identify the technological advances that have helped reduce N and P limitation in managed systems</li> </ul>
	W	25 Jan	N cycle	<ul style="list-style-type: none"> <li>-identify the major stocks and fluxes of the global N cycle</li> <li>-describe how the N cycle has been altered by humans</li> </ul>
5	M	30 Jan	P cycle	<ul style="list-style-type: none"> <li>-identify the major stocks and fluxes of the global P cycle</li> <li>-describe how the P cycle has been altered by humans</li> </ul>
	W	1 Feb	Eutrophication and N deposition	<ul style="list-style-type: none"> <li>-describe the process of eutrophication and N deposition</li> </ul>
6	M	6 Feb	Best management practices for applying fertilizer	<ul style="list-style-type: none"> <li>-identify best management practices for minimizing fertilizer runoff</li> </ul>
	W	8 Feb	Water cycle	<ul style="list-style-type: none"> <li>-identify the major stocks and fluxes of the global water cycle</li> <li>-describe how the water cycle has been altered by humans</li> </ul>

7	M	13 Feb	Water management	-identify water management practices at the local, state, country, and global level
	W	15 Feb	Field Trip	Sweetwater Wetlands Nature Park
8	M	20 Feb	<b>Mid-term Exam</b>	
	W	22 Feb	Group projects	In-class work day on group projects
9	M	27 Feb	Carbon cycle	-identify the major stocks and fluxes of the global C cycle -calculate turnover times of different C stocks
	W	1 Mar	Changing C cycle	-describe how the C cycle has been altered by humans -discuss strategies for reducing atmospheric C
10	M	6 Mar		<b>Spring Break-No class</b>
	W	8 Mar		<b>Spring Break-No Class</b>
11	M	13 Mar	Renewable energy	-compare and contrast different alternative energy sources
	W	15 Mar	C sequestration	-compare and contrast different C sequestration strategies
12	M	20 Mar	Climate change	-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
	W	22 Mar	Impacts of climate change	Glaciers, polar ice caps, and sea level rise
13	M	27 Mar	Impacts of climate change	Ocean acidification
	W	29 Mar	Impacts of climate change	Range shifts, phenology, and extinctions
14	M	3 Apr	Biodiversity	-define biodiversity -describe how biodiversity is being threatened -identify strategies to preserve biodiversity
	W	5 Apr	Invasive species	-define the term invasive species -identify threats of invasive species on biodiversity and ecosystem function -describe strategies for preventing the spread of invasives and eradicating invasives
15	M	10 Apr	Group projects	In-class work day on group projects
	W	12 Apr	Extinctions	-compare and contrast mass extinctions with background extinctions -identify factors that can cause extinctions
16	M	17 Apr	<b>Final Exam</b>	
	W	19 Apr	Final Presentations	Group projects due-mini presentation on projects

