

Cover Sheet: Request 14163

IDS 2935 Weeks UFQ2: Biodiversity in a Changing World

Info

Process	Course New/Close/Modify Ugrad Gen Ed
Status	Pending at PV - General Education Committee (GEC)
Submitter	Jennifer Weeks jenweeks1@ufl.edu
Created	8/26/2019 3:26:11 PM
Updated	8/26/2019 6:30:07 PM
Description of request	IDS2935 is the course "shell" through which the first offerings in the new UF Quest curriculum will be offered. I am asking that the Gen Ed committee temporarily approve a section of IDS2935 titled Biodiversity in a Changing World as an offering that fills the Biological Sciences and International Gen Ed Designations. This temporary approval will last for three semesters.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Entomology and Nematology 514914000	Heather Mcauslane		8/26/2019
Weeks UFQ2 Biodiversity in a Changing World Gen Ed Syllabus.pdf					8/26/2019
College	Approved	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Approved by Joel H. Brendemuhl.	8/26/2019
No document changes					
General Education Committee	Pending	PV - General Education Committee (GEC)			8/26/2019
No document changes					
Office of the Registrar					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|Gen_Ed|New-Close-Modify for request 14163

Info

Request: IDS 2935 Weeks UFQ2: Biodiversity in a Changing World

Description of request: IDS2935 is the course "shell" through which the first offerings in the new UF Quest curriculum will be offered. I am asking that the Gen Ed committee temporarily approve a section of IDS2935 titled Biodiversity in a Changing World as an offering that fills the Biological Sciences and International Gen Ed Designations. This temporary approval will last for three semesters.

Submitter: Jennifer Weeks jenweeks1@ufl.edu

Created: 8/21/2019 11:34:20 AM

Form version: 1

Responses

Course Prefix and Number

Response:
IDS2935

Enter the three letter prefix, four-digit course number, and lab code (if applicable), as the course appears in the Academic Catalog (or as it has been approved by SCNS, if the course is not yet listed in the catalog).

If the course has been approved by the UCC but is still pending at SCNS, enter the proposed course prefix and level, but substitute XXX for the course number; e.g., POS2XXX.

Course Title

Enter the title of the course as it appears in the Academic Catalog (or as it has been approved by SCNS, if the course is not yet listed in the catalog, or as it was approved by the UCC, if the course has not yet been approved by SCNS).

Response:
IDS 2935 Weeks UFQ2: Biodiversity in a Changing World

Delivery Method

Please indicate the delivery methods for this course (check all that apply). Please note that content and learning outcome assessment must be consistent regardless of delivery method.

Response:
Classroom

Request Type

Response:
Change GE/WR designation (selecting this option will open additional form fields below)

Effective Term

Enter the term (semester and year) that the course would first be taught with the requested change(s).

Response:
Spring

Effective Year

Response:
2020

Credit Hours

Select the number of credits awarded to the student upon successful completion. Note that variable credit courses are not eligible for GE or WR certification.

Response:
3

Prerequisites

Response:
n/a

Current GE Classification(s)

Indicate all of the currently-approved general education designations for this course.

Response:
None

Current Writing Requirement Classification

Indicate the currently-approved WR designation of this course.

Response:
None

Requesting Temporary or Permanent Approval

Please select what type of General Education Approval you desire for this course. Selecting 'Permanent', will request a permanent General Education designation. You may also select a temporary General Education assignment for 1, 2, or 3 semesters.

Response:
3 semesters

Requested GE Classification

Indicate the requested general education subject area designation(s) requested for this course. If the course currently has a GE designation and the request includes maintaining that designation, include it here.

Response:
B - Biological Sciences

Requested Writing Requirement Classification

Indicate the requested WR designation requested for this course. If the course currently has a WR designation and the request includes maintaining that designation, include it here.

Response:

None

Accomplishing Objectives

Please provide an explanation of how the General Education Objectives will be accomplished in the course. A numbered list is the recommended format (see example GE syllabus). Inclusion of this explanation is a required component of GE courses and syllabi.

Response:

Biological Sciences (B) Objectives: Biological science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the life sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern biological systems. Students will formulate empirically-testable hypotheses derived from the study of living things, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

With respect to the Biological Science objectives, these will be accomplished in this course in the following manner:

Students will formulate empirically-testable hypotheses and apply techniques of discovery and critical thinking when conducting the virtual diversity lab, the UF NATL diversity lab, and the Chill Coma lab activity. Students will focus on major scientific developments and their impacts on society, science, and the environment when reading and discussing research-based articles for evidence of anthropogenic activities altering biodiversity and, subsequently, ecosystem services. Some of those discussions will include participation of the author of the article being read either in-person or via Zoom. Those discussions and associated writing assignments will also provide students the opportunity to apply logical reasoning skills through scientific criticism and argument. Students will also write personal reflections on the ways in which approaches to measuring diversity and making policy decisions about biodiversity are influenced by cultural, economic, political, and social systems and beliefs on local, regional, and global scales. This will also allow them to apply logical reasoning and critical thinking skills.

International (N) Course Objectives: International courses promote the development of students' global and intercultural awareness. Students examine the cultural, economic, geographic, historical, political, and/or social experiences and processes that characterize the contemporary world, and thereby comprehend the trends, challenges, and opportunities that affect communities around the world. Students analyze and reflect on the ways in which cultural, economic, political, and/or social systems and beliefs mediate their own and other people's understanding of an increasingly connected world.

With respect to the International objectives, these will be accomplished in this course in the following manner:

Students will work in groups on case studies during class that emphasize the complex issues surrounding biodiversity in different regions around the globe highlighting the interface of science, politics, and society. The case studies are international in scope including land use and disease in the Caribbean, land use and ecosystem functioning in the Gulf of Mexico, invasive species impacts on local faunal diversity, and community-based wildlife management in Africa and the Americas. These peer-reviewed, case studies are drawn from the National Center for Case Study Teaching in Science (NCCSTS) and promote the application of active learning techniques to teach science, with a particular emphasis on interdisciplinary problem-based learning. Students will submit group deliverables for 5 case studies.

Content: Explanation of Assessment

Please provide an explanation of how the General Education Content SLO will be assessed in this course. This is a required component of a General Education syllabus.

Response:

For the Biological Sciences content SLO, students will identify, describe, and explain the basic concepts, theories and terminology of natural science and the scientific method; the major scientific discoveries and the impacts on society and the environment; and the relevant processes that govern biological and physical systems.

At the end of the course students will be able to:

A. Describe global patterns of biodiversity and analyze processes that create and maintain biodiversity.

B. Summarize and evaluate research-based articles for evidence of anthropogenic activities altering biodiversity and, subsequently, ecosystem services.

C. Develop and present a case study of a particular biodiversity issue including a detailed analysis of the problem as well as current or proposed solutions.

This will be accomplished through (1) written analyses of selected readings to be used in class discussions using the CREATE method. (CREATE-Consider, Read, Elucidate the hypotheses, Analyze and interpret the data, and Think of the next Experiment- <https://teachcreate.org/>), (2) group work on case studies that emphasize the complex issues surrounding biodiversity in different

regions around the globe highlighting the interface of science, politics, and society, and (3) development of either an analytical or problem-oriented case study involving biodiversity conservation in

the international community.

D. Utilize different methodologies to sample and calculate diversity in a computer-simulated "virtual forest" as well as among habitats on campus.

This will be accomplished through activities designed to have students examine the relationship between sampling methodology and diversity indices used to assess biodiversity. The first lab uses

a computer simulation. The second involves collecting and sorting insects from NATL to calculate diversity.

For the International content SLO, students must identify, describe, and explain the historical, cultural, economic, political, and/or social experiences and processes that characterize the contemporary world. By the end of the course students will be able to:

A. Summarize and evaluate research-based articles for evidence of anthropogenic activities altering biodiversity and, subsequently, ecosystem services.

B. Analyze and reflect on the ways in which approaches to measuring and making policy decisions about biodiversity are influenced by cultural, economic, political, and social systems and beliefs on local, regional, and global scales.

This will be accomplished through group work on case studies that emphasize the complex issues surrounding biodiversity in different regions around the globe highlighting the interface of science, politics, and society. The case

studies are international in scope including land use and disease in the Caribbean, land use and ecosystem functioning in the Gulf of Mexico, invasive species impacts on local faunal diversity, and community-based wildlife

management in Africa and the Americas. These peer-reviewed, case studies are drawn from the National Center for Case Study Teaching in Science (NCCSTS) and promote the application of active learning techniques to teach

science, with a particular emphasis on interdisciplinary problem-based learning. Students will submit group deliverables at the end of the class period for each of 5 case studies. In addition, students will conduct written analyses

of selected readings to be used in class discussions using the CREATE method. (CREATE-Consider, Read, Elucidate the hypotheses, Analyze and interpret the data, and Think of the next Experiment- <https://teachcreate.org/>).

These readings were intentionally chosen because of their international scope including how diversity intersects with history, politics, economics, and local culture to impacts society in unanticipated ways including infectious disease transmission and poverty.

Critical Thinking: Explanation of Assessment

Please provide an explanation of how the General Education Critical Thinking SLO will be assessed in this course. This is a required component of a General Education syllabus.

Response:

For the Biological Sciences critical thinking SLO, students must formulate empirically-testable hypotheses derived from the study of physical processes or living things; apply logical reasoning skills effectively through scientific criticism and argument; and apply techniques of discovery and critical thinking effectively to solve scientific problems and to evaluate outcomes.

At the end of the course students will be able to:

A. Utilize different methodologies to sample and calculate diversity in a computer-simulated "virtual forest" as well as among habitats on campus.

This will be accomplished through activities designed to have students examine the relationship between sampling methodology and diversity indices used to assess biodiversity. The first lab uses a

computer simulation. The second involves collecting and sorting insects from NATL to calculate diversity. This SLO is also addressed in an inquiry-based classroom activity where students will use a

chill-coma recovery assay to compare thermal tolerance among six different lines (3 fast recovering lines and 3 slow recovering lines) of the fly *Drosophila melanogaster*. The objective of the activity is

to provide an opportunity to assess natural genetic variation in cold tolerance and to discuss the implications for this variation to allow adaptation by natural selection to occur, thus facilitating persistence of the species despite a changing climate. Students will identify questions and concepts that guide scientific investigations, conduct a scientific investigation (including use of appropriate

tools and techniques for data collection), utilize statistics, and develop critical thinking and communication skills.

B. Summarize and evaluate research-based articles for evidence of anthropogenic activities altering biodiversity and, subsequently, ecosystem services.

This will be accomplished through (1) written analyses of selected readings to be used in class discussions using the CREATE method. (CREATE-Consider, Read, Elucidate the hypotheses, Analyze and interpret the data, and Think of the next Experiment- <https://teachcreate.org/>), (2) group work on case studies that emphasize the complex issues surrounding biodiversity in different

regions around the globe highlighting the interface of science, politics, and society.

C. Analyze and reflect on the ways in which approaches to measuring and making policy decisions about biodiversity are influenced by cultural, economic, political, and social systems and beliefs on

local, regional, and global scales.

This will be accomplished through group work on case studies that emphasize the complex issues surrounding biodiversity in different regions around the globe highlighting the interface of science, politics, and society. The case studies are international in scope including land use and disease in the Caribbean, land use and ecosystem functioning in the Gulf of Mexico, invasive species impacts on local faunal diversity, and community-based wildlife management in Africa and the Americas. These peer-reviewed, case studies are drawn from the National Center for Case Study Teaching in Science (NCCSTS) and promote the application of active learning techniques to teach science, with a particular emphasis on interdisciplinary problem-based learning. Students will

submit group deliverables at the end of the class period for each of 5 case studies.

For the International critical thinking SLO, students must analyze and reflect on the ways in which cultural, economic, political, and/or social systems and beliefs mediate understandings of an increasingly connected contemporary world.

By the end of the course, students will be able to:

A. Analyze and reflect on the ways in which approaches to measuring and making policy

decisions about biodiversity are influenced by cultural, economic, political, and social systems and beliefs on local, regional, and global scales.

This will be accomplished by students submitting weekly informal writing on assigned work and class discussion submitted on Tuesdays regarding the previous week. Students will be provided with guiding questions to answer in

their reflection in addition to any other thoughts, questions, ideas they may want to share.

Thursday classes will begin with discussion of these guided reflections. Furthermore, students will conduct group work on case studies

that emphasize the complex issues surrounding biodiversity in different regions around the globe highlighting the interface of science, politics, and society. The case studies are international in scope including land use and

disease in the Caribbean, land use and ecosystem functioning in the Gulf of Mexico, invasive species impacts on local faunal diversity, and community-based wildlife management in Africa and the Americas. These peer-

reviewed, case studies are drawn from the National Center for Case Study Teaching in Science (NCCSTS) and promote the application of active learning techniques to teach science, with a particular emphasis on

interdisciplinary problem-based learning. Students will submit group deliverables at the end of the class period for each of 5 case studies. In addition, students will conduct written analyses of selected readings to be used in

class discussions using the CREATE method. (CREATE-Consider, Read, Elucidate the hypotheses, Analyze and interpret the data, and Think of the next Experiment-

<https://teachcreate.org/>). These readings were intentionally

chosen because of their international scope including how diversity intersects with history, politics, economics, and local culture to impacts society in unanticipated ways including infectious disease transmission and poverty.

Communication: Explanation of Assessment

Please provide an explanation of how the General Education Communication SLO will be assessed in this course. This is a required component of a General Education syllabus.

Response:

For the Biological Sciences communication SLO, students must communicate scientific knowledge, thoughts, and reasoning clearly and effectively.

At the end of this course students will be able to:

A. Summarize and evaluate research-based articles for evidence of anthropogenic activities altering biodiversity and, subsequently, ecosystem services.

This will be accomplished through (1) written analyses of selected readings to be used in class discussions using the CREATE method. (CREATE-Consider, Read, Elucidate the hypotheses, Analyze

and interpret the data, and Think of the next Experiment- <https://teachcreate.org/>)

B. Develop and present a case study of a particular biodiversity issue including a detailed analysis of the problem as well as current or proposed solutions.

This will be accomplished by students identifying and constructing either an analytical or problem-oriented case study involving biodiversity conservation in the international community. Students may

work alone or in groups. Some class time will be allocated to work on the project including meeting with the instructor to get approval for specific projects. Students will present their case study to the

class at the end of the semester.

C. Critically reflect on course content in the context of their intellectual, personal, and professional development at UF and beyond.

This will be accomplished by students submitting weekly informal writing on assigned work and class discussion submitted on Tuesdays regarding the previous week. Students will be provided with

guiding questions to answer in their reflection in addition to any other thoughts, questions, ideas they may want to share. Thursday classes will begin with discussion of these guided reflections.

D. Analyze and reflect on the ways in which approaches to measuring and making policy

decisions about biodiversity are influenced by cultural, economic, political, and social systems and beliefs on local, regional, and global scales.

This will be accomplished by students working in groups on case studies during class that emphasize the complex issues surrounding biodiversity in different regions around the globe highlighting the interface of science, politics, and society. The case studies are international in scope including land use and disease in the Caribbean, land use and ecosystem functioning in the Gulf of Mexico,

invasive species impacts on local faunal diversity, and community-based wildlife management in Africa and the Americas. These peer-reviewed, case studies are drawn from the National Center for

Case Study Teaching in Science (NCCSTS) and promote the application of active learning techniques to teach science, with a particular emphasis on interdisciplinary problem-based learning.

Students will submit group deliverables at the end of the class period for each of 5 case studies.

The international designation is always in conjunction with another category. Communication outcomes are listed above for Biological Sciences.

Biodiversity in a Changing World

UF Quest 2, Spring 2020

General Education: Biological Sciences, International

[Note: A minimum grade of a C is required for General Education credit]

Location: Entomology Building (Steinmetz) 1031

Time: Tuesdays and Thursdays period 5&6 (11:45-1:30)

Please note: Class resources, announcements, and assignments will be made available through the class Canvas site:

Instructor: Jennifer Weeks, Department of Entomology and Nematology

Jenweeks1@ufl.edu 273-3955

Office hours: Steinmetz (Entomology) Building, Room 3103 Thursdays 12:45-2:45 or by appointment

Course Description

This course addresses one of the most complex, pressing issues of our time- how humans are altering the number, relative abundance, and distribution of species on Earth via changing land use, agricultural practices, urbanization, globalization, and climate change and how this is impacting genetics, ecosystems and societies around the world. We will explore the patterns and the processes that have historically governed the distribution of life on Earth as well as utilize methodologies and analyses that scientists have developed to approach the study of biodiversity in both laboratory and field exercises.

Through discussion of selected readings and group work on case studies, we will explore how the changes in biodiversity around the world impact critical ecosystem services including nutrient cycling, food production, disease transmission, and culture. We will collect and analyze data on diversity and conduct experiments geared to understanding processes that govern biodiversity. Finally, we will interact with scientists to discuss ways they can interact with community partners to address these issues on a global scale. This class is recommended for students interested in understanding more clearly how we approach answering questions with science, how science is evaluated, and the challenges with using science to create and implement policy when the challenges are global in nature. Students taking this course will be prepared to explore higher level courses in entomology, agronomy, horticulture, plant pathology, soil and water sciences, biology, geography, and wildlife ecology and conservation to further their depth of knowledge and develop their skill set in understanding and thinking critically about biodiversity in a changing world.

Course Delivery

This course is a traditional face-to-face class focused on understanding biodiversity and examining how human-mediated changes to Earth will impact biodiversity and, subsequently, humanity. Students will receive feedback from the instructor on weekly guided responses and advice on the development of a culminating case study on a biodiversity-related issue. Students will be engaged through class discussion as well as field trips with the instructor, invited speakers, and one another. Students will participate in weekly in-class group work to address real-world problems and prioritize solutions regarding biodiversity and conservation. Students will also be tasked with collecting and analyzing data on diversity and conducting experiments geared to understanding the underlying processes that govern biodiversity.

Quest 2 and Gen Ed Descriptions and Student Learning Outcomes

Quest 2 Description: Quest 2 courses are grounded in the modes of inquiry and analysis characteristic of the social and/or biophysical sciences, Quest 2 courses invite students to address pressing questions facing human society and the planet—questions that outstrip the boundaries of any one discipline and that represent the kind of open-ended, complex issues they will face as critical, creative, and thoughtful adults navigating a complex and interconnected world.

Quest 2 Student Learning Outcomes:

- Identify, describe, and explain the cross-disciplinary dimensions of a pressing societal issue or challenge as represented by the social sciences and/or biophysical sciences incorporated into the course. (Content)
- Critically analyze quantitative or qualitative data appropriate for informing an approach, policy, or praxis that addresses some dimension of an important societal issue or challenge. (Critical Thinking)
- Develop and present, in terms accessible to an educated public, clear and effective responses to proposed approaches, policies, or practices that address important societal issues or challenges (Communication)
- Connect course content with critical reflection on their intellectual, personal, and professional development at UF and beyond. (Connection)

Biological Sciences (B) Description: Biological science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the life sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern biological systems. Students will formulate empirically-testable hypotheses derived from the study of living things, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

Biological Sciences Student Learning Outcomes:

- Identify, describe, and explain the basic concepts, theories and terminology of natural science and the scientific method; the major scientific discoveries and the impacts on society and the environment; and the relevant processes that govern biological and physical systems. (Content)
- Formulate empirically-testable hypotheses derived from the study of physical processes or living things; apply logical reasoning skills effectively through scientific criticism and argument; and apply techniques of discovery and critical thinking effectively to solve scientific problems and to evaluate outcomes. (Critical thinking)
- Communicate scientific knowledge, thoughts, and reasoning clearly and effectively. (Communication)

International (N) Description: This designation is always in conjunction with another program area: International courses promote the development of students' global and intercultural awareness. Students examine the cultural, economic, geographic, historical, political, and/or social experiences and processes that characterize the contemporary world, and thereby comprehend the trends, challenges, and opportunities that affect communities around the world. Students analyze and reflect on the ways in which cultural, economic, political, and/or social systems and beliefs mediate their own and other people's understanding of an increasingly connected world.

International Student Learning Outcomes:

- Identify, describe, and explain the historical, cultural, economic, political, and/or social experiences and processes that characterize the contemporary world. (Content)
 - Analyze and reflect on the ways in which cultural, economic, political, and/or social systems and beliefs mediate understandings of an increasingly connected contemporary world. (Critical Thinking)
 - The international designation is always in conjunction with another category.
- Communication outcomes are listed in those subject areas.

Course Objectives and Goals

Student Learning Outcomes

Reflecting the curricular structures of Quest 2 and these Gen Ed designations, after taking Biodiversity in a Changing World, students will be able to:

1. Describe global patterns of biodiversity and analyze processes that create and maintain biodiversity. **(Content SLOs for Q2, Gen Ed Bio, and International)**
2. Utilize different methodologies to sample and calculate diversity in a computer-simulated "virtual forest" as well as among habitats on campus. **(Critical Thinking SLOs for Q2 and Gen Ed Bio)**
3. Summarize and evaluate research-based articles for evidence of anthropogenic activities altering biodiversity and, subsequently, ecosystem services. **(Critical Thinking SLOs for Q2, Gen Ed Bio, and International)**
4. Analyze and reflect on the ways in which approaches to measuring and making policy decisions about biodiversity are influenced by cultural, economic, political, and social systems and beliefs on local, regional, and global scales. **(Critical Thinking SLOs for Q2, Gen Ed Bio, and International)**
5. Critically reflect on course content in the context of their intellectual, personal, and professional development at UF and beyond. **(Connection SLO for Q2)**
6. Develop and present a case study of a particular biodiversity issue including a detailed analysis of the problem as well as current or proposed solutions. **(Communication SLO for Gen Ed Bio and Q2)**

To see how assigned work advances each SLO, go to page 4-5

Required Texts and Reading Materials

There is no required text for this course.

Other assigned readings (as listed below) will be made available as the Canvas course page. Students are required to bring a copy of the day's assigned reading to class.

Required Reading (posted in Canvas as PDFs):

1. Excerpts from: Wood, Stedman-Edwards, and Mang. 2000. *The Root Causes of Biodiversity Loss*. Taylor & Francis, NY, USA.
2. Scheffers, B.R., L. De Meester, T.C.L. Bridge, A.A. Hoffmann, J.M. Pandolfi, R.T Corlett, S.H.M. Butchart, P. Pearce-Kelly, K.M. Kovacs, D. Dudgeon, M. Pacifici, C. Rondinini, W.B. Foden, T.G. Martin, C. Mora, D. Bickford, J.E.M. Watson. 2016. The broad footprint of climate change from genes to biomes to people. *Science* 354: aaf7671
3. Fletcher, R. J., et. al. 2018. Is habitat fragmentation good for biodiversity? *Biological Conservation* 226: 9-15.
4. Flory, S. L., et. al. 2018. Emerging pathogens can suppress invaders and promote native species recovery. *Biological Invasions* 20 (1), 5-8.
5. Magurran, A. E., & Dornelas, M. 2010. Biological diversity in a changing world. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 365(1558), 3593-7.
6. Keesing, F. et al. 2010. Impacts of biodiversity on the emergence and transmission of infectious diseases. *Nature* 468: 647–652.
7. Secretariat of the Convention on Biological Diversity (2014) *Global Biodiversity Outlook 4 — Summary and Conclusions*. Montréal, 20 pages.
8. Turner, R. et al. 2007. Global Conservation of Biodiversity and Ecosystem Services. *BioScience*. 57. 868-873. 9.1641/B571009. https://www.conservation.org/publications/Pages/Will-Turner_Global-Biodiversity-Conservation-Alleviation-of-Poverty.aspx
9. Turner, W.R., et al. 2012. Global Biodiversity Conservation and the Alleviation of Poverty. *BioScience* 62: 85–92. ISSN 0006-3568, electronic ISSN 1525-3244.

Grading Scale

I record your points on all assignments over the course of the semester in the Canvas gradebook, which translates total points into a letter grade using a standard grading scale:

A 94-100% of points possible	C 74-76.99% A-
90-93.99%	C- 70-73.99%
B+ 87-89.99%	D+ 67-69.99%
B 84-86.99%	D 64-66.99%
B- 80-83.99%	D- 60-63.99%
C+ 77-79.99%	E <60

More information on UF grading policy is available at:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

Point Breakdown

	<u>Points (% of total grade)</u>
Paper Summaries [8 @ 20 pts].	160 (25 %)
Weekly Guided Reflections [13 @ 10 pts.]	130 (20 %)
Classroom Group work Case Studies (5 @ 20 points each)	100 (15.5 %)
Virtual Forest Lab Report	50 (8 %)
Biomonitoring Project Lab Report	50 (8 %)
Chilly Flies/Rapid Evolution Report	50 (8 %)
Project Presentation	100 (15.5 %)

Details on graded elements (You must complete all assigned work to pass the class.)

- **Required Readings and Paper Summaries**

For each paper assigned for class discussion, students can access the paper on the course Canvas site. Students will provide written analyses of selected readings to be used in class discussions using the CREATE method. (CREATE- Consider, Read, Elucidate the hypotheses, Analyze and interpret the data, and Think of the next Experiment- <https://teachcreate.org/>). Guidelines for these written analyses will be provided in the Canvas course site. There are 8 summaries worth 20 points each for a total of 160 points.

Advances SLOs: 1, 2, 3, 5

- **Guided Reflections**

Students will complete weekly informal writing on assigned work and class discussion submitted on Tuesdays regarding the previous week. Students will be provided with guiding questions to answer in their reflection in addition to any other thoughts, questions, ideas they may want to share. Thursday classes will begin with discussion of these guided reflections. There are 13 guided reflections worth 10 points each for a total of 130 points.

Advances SLOs: 1, 2, 3, 4, 5

- **Measuring Diversity: Virtual Forest and Biomonitoring Lab Reports**

Students will complete two lab reports for the virtual Forest and NATL field sampling labs. These activities are designed to have students examine the relationship between sampling methodology and diversity indices used to assess biodiversity. The first lab uses a computer simulation. The second involves collecting and sorting insects from NATL to calculate diversity. The report guidelines and rubric will be posted to the Canvas site. Each report is worth 50 points.

Advances SLOs: 1,2, 3, 4

- **Patterns and Processes of Diversity: Chilly Flies/Rapid Evolution Report**

Global climate change will likely have substantial impacts on living organisms and it is critical to examine how genetic variation may either facilitate or limit the ability for organisms to adapt to global climate change through natural selection. In an inquiry-based classroom activity, students will use a chill-coma recovery assay to compare thermal tolerance among six different lines (3 fast recovering lines and 3 slow recovering lines) of the fly *Drosophila melanogaster*. The objective of the activity is to provide an opportunity to assess natural genetic variation in cold tolerance and to discuss the implications for this variation to allow adaptation by natural selection to occur, thus facilitating persistence of the species despite a changing climate. Students will identify questions and concepts that guide scientific investigations, conduct a scientific investigation (including use of appropriate tools and techniques for data collection), utilize statistics, and develop critical thinking and communication skills. The report guidelines and rubric will be posted to the Canvas site. This lab report is worth 50 points.

Advances SLOs: 1, 3

- **Classroom Case Study Group Work**

Over the course of the semester, students will periodically work in groups on case studies during class that emphasize the complex issues surrounding biodiversity in different regions around the globe highlighting the interface of science, politics, and society. The case studies are international in scope including land use and disease in the Caribbean, land use and ecosystem functioning in the Gulf of Mexico, invasive species impacts on local faunal diversity, and community-based wildlife management in Africa and the Americas. These peer-reviewed, case studies are drawn from the National Center for Case Study Teaching in Science (NCCSTS) and promote the application of active learning techniques to teach science, with a particular emphasis on interdisciplinary problem-based learning. Students will submit group deliverables at the end of the class period for each of 5 case studies that are worth 20 points each for a total of 100 points.

Advances SLOs: 1, 3

- **Case Study Project Presentation**

The purpose of a case study is to walk the audience through a situation where a problem is presented, background information provided and a description of the solution (or potential solution) given. Students will identify and construct either an analytical or problem-oriented case study involving biodiversity conservation in the international community. Students may work alone or in groups. Some class time will be allocated to work on the project including meeting with the instructor to get approval for specific projects. However, time outside of class will also be

required. Students will present their case study to the class at the end of the semester. Detailed instructions and rubric are available in the Canvas course site. This presentation is worth 100 points.
Advances SLOs: 1, 3

Week	Date	Topics	Due
1	Tues Jan 7 Thur Jan 9	An introduction to life on Earth Course goals Paper Discussion Excerpts from: Wood, Stedman-Edwards, and Mang. 2000. The Root Causes of Biodiversity Loss. Taylor & Francis, NY, USA.	- Paper Summary 1
2	Tues Jan 14 Thur Jan 16	Distribution of biodiversity: patterns and processes Paper Discussion Magurran, A. E., & Dornelas, M. 2010. Biological diversity in a changing world. Philosophical transactions of the Royal Society of London. Series B, Biological sciences, 365(1558), 3593-7.	Guided Reflection 1 Paper Summary 2
3	Tues Jan 21 Thur Jan 23	Species diversity, genetic diversity, and ecosystem diversity	Guided Reflection 2
4	Tues Jan 28 Thur Jan 30	Patterns & Processes: Chill Coma Lab Patterns & Processes: Hardy-Weinberg Activity	Guided Reflection 3
5	Tues Feb 4 Thur Feb 6	Biodiversity metrics – calculating diversity from samples Guest lecturer: Andrea Lucky , UF Entomology Virtual Forest Lab	Guided Reflection 4 Chill Coma/ H-W Report
6	Tues Feb 11 Thur Feb 13	Field trip FLMNH Guest lecturer: Andrei Sourakov , Lepidoptera Collections Manager, FLMNH	Guided Reflection 5 Virtual Forest Report
7	Tues Feb 18 Thur Feb 20	Why is diversity important: ecosystem services and economics Paper Discussion: Turner, R. et al. 2007. Global Conservation of Biodiversity and Ecosystem Services. BioScience. 57. 868-873 Case 1: Sealing the Deal (U.S.)	Guided Reflection 6 Paper Summary 3
8	Tues Feb 25 Thurs Feb 27	Public health and biodiversity Case 2: Dengue in Jamaica Paper Discussion Keesing, F. et al. 2010. Impacts of biodiversity on the emergence and transmission of infectious diseases. Nature 468: 647–652.	Guided Reflection 7 Paper Summary 4

9	Tues Mar 3 Thur Mar 5	Spring Break	
10	Tues Mar 10 Thur Mar 12	NATL Biomonitoring Lab NATL Biomonitoring Lab	Guided Reflection 8
11	Tues Mar 17 Thur Mar 19	Land use and biodiversity Paper Discussion: Fletcher, R. J., et. al. 2018. Is habitat fragmentation good for biodiversity? Biological Conservation 226: 9-15. Guest Lecturer, Rob Fletcher , UF WEC Case 3: Gulf of Mexico Dead Zone Project Work	Guided Reflection 9 Paper Summary 5 NATL Biomonitoring Lab Report
12	Tues Mar 24 Thur Mar 26	Climate change and biodiversity Paper Discussion Scheffers, et.al. 2016. The broad footprint of climate change from genes to biomes to people. Science 354: aaf7671 Guest Lecturer: Brett Scheffers, UF WEC Guest lecturer, Dan Hahn, UF Entomology Project Work	Guided Reflection 10 Paper Summary 6
13	Tues Mar 31 Thur Apr 2	Globalization and biodiversity Paper Discussion: Flory, S. L., et. al. 2018. Emerging pathogens can suppress invaders and promote native species recovery. Biological Invasions 20 (1), 5-8. Case 4: Cats vs. Birds (global) Project work	Guided Reflection 11 Paper Summary 7
14	Tues Apr 7 Thur Apr 9	Biodiversity Conservation and the global community Paper Discussion: Turner, W.R., et al. 2012. Global Biodiversity Conservation and the Alleviation of Poverty. BioScience 62:85–92. Guest lecturer: Will Turner , CI Case 5: Community-based wildlife management in Africa Project work	Guided Reflection 12
15	Tues Apr 14 Thur Apr 16	Presentations Presentations	Guided Reflection 13 Presentations
16	Tues Apr 21	Presentations and Course Evaluations	Presentations

Policies

Class Attendance

Class attendance is required. Students are allowed two discretionary absences (see “Attendance” under “Graded Work” above) to cover unexcused absences. Additional absences that meet the standard of “excused” per UF’s policies [<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>] may be allowed, otherwise each absence beyond two will result in two points off of the final grade.

Making Up Work

Work is due as specified in the syllabus. Late work is subject to a 10% point penalty for each 24 hour period it is late. To be excused from submitting work or taking an exam at the assigned time, you must confer with the instructor in advance and/or meet the UF standards for an excused absence.

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Class Demeanor

Students are expected to arrive to class on time, stay the full class period, and behave in a manner that is respectful to the instructor and to fellow students. Electronic devices should be turned off and placed in closed bags. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be kept to a minimum.

Materials and Supplies Fees

There are no additional fees for this course.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

The Honor Code (<https://www.dso.ufl.edu/scer/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc/Default.aspx>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 302 Tigert Hall for one-on-one consultations and workshops.