

Bi 201-001 Fundamentals of Biology: Cells, Genes, and Heredity
Fall 2016 Syllabus
Portland State University
T/Th 10:00-11:20 Hoffmann Hall 109

Course Description Fundamentals of Biology provides overview of basic concepts of biology and applications to everyday life. Topics include the material basis of living systems; cell and molecular structures and interactions, and genetics and heredity, as applied to issues such as cancer, nutrition, reproductive and genetic testing, and biotechnology.

Along with a review of biological processes and structures, there is significant emphasis in this course on ethical, legal, and social applications of biology. A number of course lecture periods are devoted to participatory discussion and exploration of contemporary applications of genetics and molecular biology, as they intersect with ethical, legal and social concerns.

This course fulfills the science requirement for non-majors. This course will not fulfill biology major requirements or pre-allied health requirements for introductory biology. Prerequisite: Admission to Portland State University

Instructor

Required items Text: Campbell Essential Biology with Physiology 4th or 5th edition by Jane B. Reece, Kelly A. Hogan, Eric J. Simon, Jean L. Dickey MasteringBiology or other associated digital content associated with this text is not required.
iClicker 2 or iClicker Hybrid
Exams: 4 Scantron forms (Form SC982-E 100 item full page form) #2 pencil, & photo ID. Prefill your forms with your name and student ID.

Course Web Page The PSU online resource "D2L" will be used for posting course materials and grades. Log in at <https://d2l.pdx.edu> with your PSU username and password. Material will be posted by 9am on the morning of the lecture.

Problems with D2L access should be directed to OIT:

Phone | 24 hours a day, 7 days a week 503-725-HELP (4357)

Helpdesk Email | Technology Questions & Concerns help@pdx.edu

Location | Mon-Fri 8:00 a.m.-7:00 p.m.

Smith Memorial Student Union

Room 18 (basement level)

1825 SW Broadway

Portland, OR 97201

- Learning Objectives** Through your participation and completion of this course, you will gain:
- An understanding of fundamental biological concepts at the cell and molecular level, such as:
 1. what living organisms are made of, and how this structure relates to function
 2. how energy flows and is transformed in living organisms
 3. how reproduction and growth is regulated at the cellular level
 4. how information is stored and transmitted within cells and organisms
 - The ability to apply and understand how basic concepts relate to everyday issues, such as cancer, nutrition, climate change, gene technology, forensics, reproductive testing and technologies.
 - The ability to critically evaluate media coverage of current issues relating to biology
 - The opportunity to research and propose solutions to policy issues that involve biological concepts and information
 - An understanding of the process of scientific research through exposure to and evaluation of original peer-reviewed research articles in biology

Attendance There will be three in class exams and a final exam. The lowest class exam score will be dropped. The final exam score cannot be dropped. The lowest 4 clicker scores (see below) will be dropped. The lowest DD worksheet score (see below) will be dropped.

No makeup opportunities for exams, clicker points, or in class worksheets will be given for any reason whatsoever.

Do not take this course if you cannot commit to regular attendance or cannot attend the final exam.

Exams See schedule below for exam dates. Exams 1-3 will have 25 multiple choice questions. The final exam will have 50 multiple choice questions. Bring scantron forms, pencils, and student ID on exam days.

Deliberative Democracy (DD) Exercises 3 in-class Deliberative Democracy Exercises (DD) will examine the science relevant to social policy issues. The exercise itself will involve debating both sides of the policy using what we have learned in class along with the issues presented in the required readings.

1. Each exercise will have assigned readings. A 50 point online open book quiz on material from these readings is due prior to the start of the in-class exercise. Online quizzes are accessed in the "activities" tab of D2L, under "quizzes". Quizzes will be available 1 week prior to the due date (see class schedule at the end of this syllabus). **LATE SUBMISSIONS WILL BE ACCEPTED** for one week with a **25 point penalty**.
2. You will be required to complete group worksheets during each in-class exercise, worth 25 points each. Worksheets will be graded based on the thoroughness and engagement of the group responses. Your grade will not be influenced or judged on the stance that you take, only on the depth and thoroughness of your responses to the questions on the worksheets, as well as the level of your participation. A single worksheet

will be submitted per group. Attendance is required for worksheet submission. Lowest worksheet score will be dropped.

DDE extra credit #1:

2 points each (6 points total). Provide a 250 word reflection on your learning via the DD exercise. The extra credit DD reflection will open at the end of class on the last day of each DD exercise, and be open for a week for your completion (with the exception of the final DD exercise, which will close for submission at midnight the day of the course final).

DDE extra credit #2:

5 points each (10 points total): Pre- and post- class surveys, available through the D2L survey tool during the 2nd and 10th week of the term. NOTE: You do not need to study or prepare for these in any way! Points will be awarded solely based on completion.

Clicker Questions

In class questions will be asked using the "iclicker" polling system, in which student responses to instructor presented questions will be recorded via iclicker remotes held by each student (see required materials). To receive clicker grades, **you must register your clicker online.** Beginning week 2, you must bring a functioning clicker to every class.

10 points will be awarded for correctly answered clicker questions during each class period (with the exception of exam days). The lowest 4 daily scores will be dropped. You will not receive credit if you do not bring your functioning clicker to class, or you do not attend class.

To register online, go to <https://www1.iclicker.com/register-clicker/>

1. Enter your First Name and Last Name in the appropriate fields.
2. In the "student ID" field, enter your ODIN ID (Use your ODIN username/login, NOT your 9-digit number).
3. Enter your Remote ID, the 8-character alphanumeric code printed below the barcode on the back of your remote, or within the battery compartment.
4. Enter the letters or numbers in the Image Code on the screen.
5. Click the Register button. **An on-screen message confirms that registration was successful.**

Use Frequency AA in class.

Grading

Item	Points	Date/Time
Clicker questions	100*	During the lecture periods
Exam 1	50**	Oct 13 10am-11am
Exam 2	50**	Nov 8 10am-11am
Exam 3	50**	Nov 29 10am-11am
Final Exam	100	Dec 6 10:15am-12:05pm Final Exam score can NOT be dropped.
DDE1 worksheet	25***	Oct 18 in class
DDE2 worksheet	25***	Nov 10 in class
DDE3 worksheet	25***	Dec 1 in class
Online Quiz 1	50	Due by 10am Oct 18
Online Quiz 2	50	Due by 10am Nov 8
Online Quiz 3	50	Due by 10am Dec 1
Totals	500	

***Lowest 4 clicker scores dropped**

****Lowest score among Exam 1-3 will be dropped. There is no class after the exam.**

***** Lowest score among DDE 1-3 worksheets will be dropped**

90-100%= A, 88-89.99%= B+, 80-87.99%= B, 78-79.99%= C+, 70-77.99%= C, 68-69.99%= D+, 60-67.99%= D, 0-59.99%= F. Grades will be rounded to 2 significant digits.

There will be no exceptions or bumping up of grades for being "close".

Disability

If you have a disability and are in need of academic accommodation: first register with the Disability Resource Center (503) 725-4150, <http://www.drc.pdx.edu>, then notify Dr. _____ to make appropriate arrangements.

To ensure all students with disabilities receive the accommodations they are entitled to, Dr. _____ needs advance notice that you plan on using them. To guarantee accommodation, please confirm that Dr. _____ has received your accommodation letter from the DRC, and notify her at least a week before the exam date with specific testing arrangements.

Note: Students with testing accommodations may take exams at the PSU Testing Center. These exams must be taken the same day and overlap with the time period as class exams.

Making your testing center appointments: To ensure optimal appointment times, please schedule exams with the testing center and e-mail your appointment times for all 4 exams to Dr. _____ by **5pm on Monday of week 2.**

- Academic Courtesy**
1. Students are expected to arrive for class on time so that lectures start and end according to schedule.
 2. Respect the rights of fellow students during the class period.
 3. Please avoid talking or other distracting behavior, and turn phones off.
 4. Everyone is expected to help maintain the appearance of the classroom. After class, all trash should be removed and discarded appropriately.

Academic Honesty Cheating or plagiarism of any kind will not be tolerated. See the PSU "Code of Student Conduct and Responsibility" for more information: <http://www.pdx.edu/dos/codeofconduct>. If cheating is observed, the grade for the assignment will be a "0", and cannot be dropped as a lowest score. The student will be reported to University officials as described in the Code (577-031-0142: Procedures for Complaints of Academic Dishonesty).

Tips For Success

1. **Be an active learner.** Read the text chapters associated with each lecture ahead of class. Attend all lectures. You are responsible for all topics discussed in the lecture. Take notes during class. Write down questions that come to mind during the lecture. Identify points in the lecture that you think are the main points. Review your notes after class, incorporating details that you remember but didn't get written down. While you are reading the textbook, take time to think about what you are reading. How does it fit with what you know already? Combine the information from the lecture and the text into one set of complete notes to review and study. Consider using the Cornell System of note-taking and review: a simple but powerful method for studying (available on D2L).
2. **Figure out and use your learning strengths.** Learning styles vary from person to person. You might do your best studying through reading, writing, drawing, or through discussion with fellow students. Most likely, it will take some of each to be most successful. Experiment, and use the techniques that work best for you.
3. **Spend time on this course.** Schedule and spend time reading and reviewing course materials. Revisit your notes and think about the logical structure underlying the subjects. Plan on spending a significant amount of time (**10-15 hours/week**) working on this course. Later topics build upon earlier portions of the course: please do not let yourself fall behind.
4. **Ask for help if you need it.** Come to my office hours, find a study partner or study group, use the Discussions board on D2L, etc. You'll make the best progress when you work to identify the areas you need to work on and are active about seeking guidance.
5. **Use the University resources.** Campus services are available to help you with all aspects of your education, see <http://www.pdx.edu/studentaffairs>. PSU's undergraduate advising website is <http://www.pdx.edu/advising>. The Undergraduate Advising and Support Center (UASC), 425 Smith Center, <http://www.pdx.edu/advising/academic-resources-and-services>, offers academic advising and referral, academic support programs, community college relations, disability resource center, athletics advising, study skills workshops, tutorial programs, and student veteran services. The Peer Tutoring and Learning Center offers tutoring in many subjects (including Biology), as well as various workshops, see <http://www.pdx.edu/tutoring/>.

	Date	Scheduled Topics ^{1, 2}
1	T Sep 27	Syllabus and Ch 1 Biology Today
2	Th Sep 29	Ch 2 Essential Chemistry for Biology
3	T Oct 4	Ch 3 The Molecules of Life Intro to DDE1
4	Th Oct 6	Ch 4 A tour of the cells
5	T Oct 11	Ch 5 The working cell
6	Th Oct 13	Exam 1 (ch 1-5)
7	T Oct 18	DD1: High Fructose Corn Syrup (HFCS) vs Sugar, DD1 Online Quiz Due 10am
8	Th Oct 20	Ch 6 Cellular Respiration: Obtaining Energy from Food
9	T Oct 25	Ch 7 Photosynthesis: Using light to make food, DD Reflection Essay Due 11:30am
10	Th Oct 27	Ch 8 Cellular Reproduction: Cells from Cells
11	T Nov 1	Ch 8 (continued from previous day) and Intro to DDE2
12	Th Nov 3	Ch 9 Patterns of inheritance
13	T Nov 8	Exam 2 (Ch 6-9)
14	Th Nov 10	DD2 Genetic Testing and Privacy, DD2 Online Quiz Due 10am
15	T Nov 15	Ch 10 The Structure and Function of DNA
16	Th Nov 17	Ch 11 How Genes are Controlled, DD Reflection Essay Due 11:30am
17	T Nov 22	Ch 12 DNA technology Intro to DDE3
18	Th Nov 24	No class, Thanksgiving holiday
19	T Nov 29	Exam 3 (Ch 10-12)
20	Th Dec 1	DD3: Zika Virus GMO Mosquitoes, DD3 Online Quiz Due 10am
21	T Dec 6	Final Exam 10:15-12:05, DD Reflection Essay Due midnight https://www.pdx.edu/registration/final-exams-fall-2015/#/?section=dayclassesmeetingbefore1600

¹Lecture topics may change from those listed in the syllabus

²Read the chapter in the text corresponding to the lecture in advance of the class period during which the topic will be presented.

Bi 202-001 Fundamentals of Biology: Ecology, Conservation, and Health
Winter 2017 Syllabus
Portland State University
T/Th 10:00-11:20 Hoffmann Hall 109

Course Description A fundamental introduction to the biological concepts and principles underlying the relationships among ecology, conservation, sustainability, and public health. Topics include ecological principles, population ecology, and public health. These will translate into a better scientific understanding of ecology and health. Fulfills the science requirements for non-majors. This course will not fulfill biology major requirements or pre-allied health requirements for introductory biology. 3 credits.

Instructor

TAs:

Required items Text: Campbell Essential Biology with Physiology 4th or 5th edition by Jane B. Reece, Kelly A. Hogan, Eric J. Simon, Jean L. Dickey MasteringBiology or other associated digital content associated with this text is not required.
iClicker 2 or iClicker Hybrid
Exams: 4 Scantron forms (Form SC982-E 100 item full page form) #2 pencil, & photo ID. Prefill your forms with your name and student ID.

Course Web Page The PSU online resource "D2L" will be used for posting course materials and grades. Log in at <https://d2l.pdx.edu> with your PSU username and password. Material will be posted by 9am on the morning of the lecture.

Problems with D2L access should be directed to OIT:

Phone | 24 hours a day, 7 days a week 503-725-HELP (4357)

Helpdesk Email | Technology Questions & Concerns help@pdx.edu

Location | Mon-Fri 8:00 a.m.-7:00 p.m.

Smith Memorial Student Union

Room 18 (basement level)

1825 SW Broadway

Portland, OR 97201

Learning Objectives

- Apply the scientific method to topics related to ecology and public health.
- Communicate the biological principles of ecology and human health to current socially and environmentally relevant issues.
- Demonstrate a command the fundamental biological principles which inform a modern views of ecology and human health.
- Apply scientific concepts around ecology and human health to develop informed opinions on related topics in the media and other academic disciplines.
- Critically analyze scientific data presented in both the popular media as well as peer reviewed literature.

Attendance

There will be three in class exams and a final exam. The lowest class exam score will be dropped. The final exam score cannot be dropped. The lowest 5 clicker scores (see below) will be dropped. The lowest DDE worksheet score (see below) will be dropped.

No makeup opportunities for exams, clicker points, or DDE in class worksheets will be given for any reason whatsoever.

Do not take this course if you cannot commit to regular attendance or cannot attend the final exam.

Exams

See schedule below for exam dates. Exams 1-3 will have 25 multiple choice questions. The final exam will have 50 multiple choice questions. Bring Scantron forms, pencils, and student ID on exam days.

Deliberative Democracy Exercises (DDE)

3 in-class Deliberative Democracy Exercises (DDE) will examine the science relevant to social policy issues. The exercise itself will involve debating both sides of the policy using what we have learned in class along with the issues presented in the required readings.

1. Each exercise will have assigned readings. A 50 point online open book quiz on material from these readings is due prior to the start of the in-class exercise. Online quizzes are accessed in the "activities" tab of D2L, under "quizzes". Quizzes will be available 1 week prior to the due date (see class schedule at the end of this syllabus). **LATE SUBMISSIONS** for online quizzes will be accepted up to 1 week after the due date with a 25 point penalty applied. Contact Dr. _____ to arrange late submission.
2. You will be required to complete group worksheets during each in-class exercise, worth 25 points each. Worksheets will be graded based on the thoroughness and engagement of the group responses. Your grade will not be influenced or judged on the stance that you take, only on the depth and thoroughness of your responses to the questions on the worksheets, as well as the level of your participation. A single worksheet will be submitted per group. Attendance is required for worksheet submission. Lowest worksheet score will be dropped.

DDE extra credit #1:

2 points each (6 points total). Provide a 250 word reflection on your learning via the DDE. The extra credit DD reflection will open at the end of class on the last day of each DD exercise, and be open for a week for your completion (with the exception of the final DD exercise, which will close for submission at midnight the day of the course final).

DDE extra credit #2:

2 points each (4 points total): Pre- and post- class surveys and tests, available through the D2L survey tool during the 2nd and 10th week of the term. NOTE: You do not need to study or prepare for these in any way! Points will be awarded solely based on completion.

Clicker Questions

In class questions will be asked using the "iclicker" polling system, in which student responses to instructor presented questions will be recorded via iclicker remotes held by each student (see required materials). To receive clicker grades, **you must register your clicker online**. Beginning week 2, you must bring a functioning clicker to every class.

10 points will be awarded for correctly answered clicker questions during each class period (with the exception of exam days). The lowest 5 daily scores will be dropped. You will not receive credit if you do not bring your functioning clicker to class, or you do not attend class.

To register online, go to <https://www1.iclicker.com/register-clicker/>

1. Enter your First Name and Last Name in the appropriate fields.
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4. Enter the letters or numbers in the Image Code on the screen.
5. Click the Register button. **An on-screen message confirms that registration was successful.**

Use Frequency AA in class.

Grading

Item	Points	Content
Clicker questions	100*	Varied
Exam 1	50**	Ch 21-25
Exam 2	50**	Ch 26-27
Exam 3	50**	Ch 18-20
Final Exam	100	Ch 18-27
DDE1 worksheet	25***	Vaccines
DDE2 worksheet	25***	IVF
DDE3 worksheet	25***	Environmental Policy
Online Quiz 1	50	DDE1 Reading
Online Quiz 2	50	DDE2 Reading
Online Quiz 3	50	DDE3 Reading
Totals	500	

***Lowest 5 clicker scores dropped**

****Lowest score among Exam 1-3 will be dropped. There is no class after the exam.**

***** Lowest score among DDE 1-3 worksheets will be dropped**

90-100%= A, 88-89.99%= B+, 80-87.99%= B, 78-79.99%= C+, 70-77.99%= C, 68-69.99%= D+, 60-67.99%= D, 0-59.99%= F. Grades will be rounded to 2 significant digits.

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Academic Courtesy

1. Students are expected to arrive for class on time so that lectures start and end according to schedule.
2. Respect the rights of fellow students during the class period.
3. Please avoid talking or other distracting behavior, and turn phones off.
4. Everyone is expected to help maintain the appearance of the classroom. After class, all trash should be removed and discarded appropriately.

Title IX Statement: As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. Please be aware that as a faculty member, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. If you would rather share information about sexual harassment, sexual violence or discrimination to a confidential employee who does not have this reporting responsibility, you can find a list (<https://www.pdx.edu/sexual-assault/get-help>) of those individuals. For more information about Title IX please complete the required student module Creating a Safe Campus (<https://www.pdx.edu/sexual-assault/safe-campus-module>) in your D2L.

Academic Honesty

Cheating or plagiarism of any kind will not be tolerated. See the PSU "Code of Student Conduct and Responsibility" for more information: <http://www.pdx.edu/dos/codeofconduct>. If cheating is observed, the grade for the assignment will be a "0", and cannot be dropped as a lowest score. The student will be reported to University officials as described in the Code (577-031-0142: Procedures for Complaints of Academic Dishonesty).

Tips For Success

1. **Be an active learner.** Read the text chapters associated with each lecture ahead of class. Attend all lectures. You are responsible for all topics discussed in the lecture. Take notes during class. Write down questions that come to mind during the lecture. Identify points in the lecture that you think are the main points. Review your notes after class, incorporating details that

you remember but didn't get written down. While you are reading the textbook, take time to think about what you are reading. How does it fit with what you know already? Combine the information from the lecture and the text into one set of complete notes to review and study. Consider using the Cornell System of note-taking and review: a simple but powerful method for studying. See: http://lsc.cornell.edu/LSC_Resources/cornellsystem.pdf.

2. **Figure out and use your learning strengths.** Learning styles vary from person to person. You might do your best studying through reading, writing, drawing, or through discussion with fellow students. Most likely, it will take some of each to be most successful. Experiment, and use the techniques that work best for you.
3. **Spend time on this course.** Schedule and spend time reading and reviewing course materials. Revisit your notes and think about the logical structure underlying the subjects. Plan on spending a significant amount of time (**10-15 hours/week**) working on this course. Later topics build upon earlier portions of the course: please do not let yourself fall behind.
4. **Ask for help if you need it.** Come to my office hours, find a study partner or study group, use the Discussions board on D2L, etc. You'll make the best progress when you work to identify the areas you need to work on and are active about seeking guidance.
5. **Use the University resources.** Campus services are available to help you with all aspects of your education, see <http://www.pdx.edu/studentaffairs>. PSU's undergraduate advising website is <http://www.pdx.edu/advising>. The Undergraduate Advising and Support Center (UASC), 425 Smith Center, <http://www.pdx.edu/advising/academic-resources-and-services>, offers academic advising and referral, academic support programs, community college relations, disability resource center, athletics advising, study skills workshops, tutorial programs, and student veteran services. The Peer Tutoring and Learning Center offers tutoring in many subjects (including Biology), as well as various workshops, see <http://www.pdx.edu/tutoring/>.

	Date	Scheduled Topics^{1, 2}
1	T Jan 10	Syllabus, Ch 22 Nutrition & Digestion
2	Th Jan 12	Ch 23 Circulation & Respiration I
3	T Jan 17	Ch 23 Circulation & Respiration II
4	Th Jan 18	Ch 24 The Body's Defenses, Intro to DDE1
5	T Jan 24	CH 25: Hormones
6	Th Jan 26	Exam 2 (Ch 21-25)
7	T Jan 31	DDE1: Vaccines
8	Th Feb 2	CH 26: Reproduction and Development, Intro to DDE2
9	T Feb 7	Ch 27: Nervous, Sensory and Locomotor Systems I DDE1 Extra Credit Essay Due
10	Th Feb 9	Ch 27: Nervous, Sensory and Locomotor Systems II
11	T Feb 14	Ch 27: Nervous, Sensory and Locomotor Systems III
12	Th Feb 16	Exam 2 (Ch 26-27)
13	T Feb 21	DDE2: IVF
14	Th Feb 23	Ch 18 Introduction to Ecology and the Biosphere
15	T Feb 28	Ch 19 Population Ecology DDE2 Extra Credit Essay Due
16	Th Mar 1	Ch 19 Population Ecology II (Behavioral adaptations to the environment)
17	T Mar 7	Ch 20 Communities and Ecosystems
18	Th Mar 9	Ch 20 Communities and Ecosystems II (Conservation Ecology)
19	T Mar 14	Exam 3 (Ch 34-38)
20	Th Mar 16	DDE3: Environmental Policy
21	T Mar 21	Final Exam 10:15-12:05 (Ch 18-27) DDE3 Extra Credit Essay Due midnight

¹Lecture topics may change from those listed in the syllabus

²Read the chapter in the text corresponding to the lecture in advance of the class period during which the topic will be presented.

Bi 203-001 Fundamentals of Biology: Evolution and Diversity of Life
Spring 2017 Syllabus
Portland State University
T/Th 10:00-11:20 Location TBD

Course Description An introduction to fundamental principles of evolution, origins, and diversity of life on Earth. Topics include history, development, mechanisms and processes of evolution, patterns of ancestry, diversity and extinction, and surveys of the major life forms including the origin and evolution of modern humans. Fulfills the science requirement for non-majors. This course will not fulfill biology major requirements or pre-allied health requirements for introductory biology. 3 credits.

Instructor

Required items Text: Campbell Essential Biology with Physiology 4th or 5th edition by Jane B. Reece, Kelly A. Hogan, Eric J. Simon, Jean L. Dickey MasteringBiology or other associated digital content associated with this text is not required.
iClicker 2 or iClicker Hybrid
Exams: 4 Scantron forms (Form SC982-E 100 item full page form) #2 pencil, & photo ID. Prefill your forms with your name and student ID.

Course Web Page The PSU online resource "D2L" will be used for posting course materials and grades. Log in at <https://d2l.pdx.edu> with your PSU username and password. Material will be posted by 9am on the morning of the lecture.

Problems with D2L access should be directed to OIT:

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Helpdesk Email | Technology Questions & Concerns help@pdx.edu

Location | Mon-Fri 8:00 a.m.-7:00 p.m.

Smith Memorial Student Union

Room 18 (basement level)

1825 SW Broadway

Portland, OR 97201

Learning Objectives

- Apply the scientific method to topics related to evolution and diversity.
- Communicate the biological principles of evolution and diversity to current socially and environmentally relevant issues.
- Demonstrate a command the fundamental biological principles which inform a modern views of evolution.
- Apply scientific concepts around the genetic basis of species diversity to develop informed opinions on related topics in the media and other academic disciplines.
- Critically analyze scientific data presented in both the popular media as well as peer reviewed literature.

Attendance

There will be three in class exams and a final exam. The lowest class exam score will be dropped. The final exam score cannot be dropped. The lowest 4 clicker scores (see below) will be dropped. The lowest DDE worksheet score (see below) will be dropped.

No makeup opportunities for exams, clicker points, or DDE in class worksheets will be given for any reason whatsoever.

Do not take this course if you cannot commit to regular attendance or cannot attend the final exam.

Exams

See schedule below for exam dates. Exams 1-3 will have 25 multiple choice questions. The final exam will have 50 multiple choice questions. Bring scantron forms, pencils, and student ID on exam days.

Deliberative Democracy Exercises (DDE)

3 in-class Deliberative Democracy Exercises (DDE) will examine the science relevant to social policy issues. The exercise itself will involve debating both sides of the policy using what we have learned in class along with the issues presented in the required readings.

1. Each exercise will have assigned readings. A 50 point online open book quiz on material from these readings is due prior to the start of the in-class exercise. Online quizzes are accessed in the "activities" tab of D2L, under "quizzes". Quizzes will be available 1 week prior to the due date (see class schedule at the end of this syllabus). **LATE SUBMISSIONS** for online quizzes will be accepted up to 1 week after the due date with a 25 point penalty applied. Contact Dr. _____ to arrange late submission.
2. You will be required to complete group worksheets during each in-class exercise, worth 25 points each. Worksheets will be graded based on the thoroughness and engagement of the group responses. Your grade will not be influenced or judged on the stance that you take, only on the depth and thoroughness of your responses to the questions on the worksheets, as well as the level of your participation. A single worksheet will be submitted per group. Attendance is required for worksheet submission. Lowest worksheet score will be dropped.

DDE extra credit #1:

2 points each (6 points total). Provide a 250 word reflection on your learning via the DDE. The extra credit DD reflection will open at the end of class on the last day of each DD exercise, and be open for a week for your completion (with the exception of the final DD exercise, which will close for submission at midnight the day of the course final).

DDE extra credit #2:

5 points each (10 points total): Pre- and post- class surveys and tests, available through the D2L survey tool during the 2nd and 10th week of the term. NOTE: You do not need to study or prepare for these in any way! Points will be awarded solely based on completion.

Clicker Questions

In class questions will be asked using the "iclicker" polling system, in which student responses to instructor presented questions will be recorded via iclicker remotes held by each student (see required materials). To receive clicker grades, **you must register your clicker online**. Beginning week 2, you must bring a functioning clicker to every class.

10 points will be awarded for correctly answered clicker questions during each class period (with the exception of exam days). The lowest 5 daily scores will be dropped. You will not receive credit if you do not bring your functioning clicker to class, or you do not attend class.

To register online, go to <https://www1.iclicker.com/register-clicker/>

1. Enter your First Name and Last Name in the appropriate fields.
2. In the "student ID" field, enter your ODIN ID (Use your ODIN username/login, NOT your 9-digit number).
3. Enter your Remote ID, the 8-character alphanumeric code printed below the barcode on the back of your remote, or within the battery compartment.
4. Enter the letters or numbers in the Image Code on the screen.
5. Click the Register button. **An on-screen message confirms that registration was successful.**

Use Frequency AA in class.

Grading

Item	Points
Clicker questions	100*
Exam 1	50**
Exam 2	50**
Exam 3	50**
Final Exam	100
DDE1 worksheet	25***
DDE2 worksheet	25***
DDE3 worksheet	25***
Online Quiz 1	50
Online Quiz 2	50
Online Quiz 3	50
Totals	500

***Lowest 5 clicker scores dropped**

****Lowest score among Exam 1-3 will be dropped. There is no class after the exam.**

***** Lowest score among DDE 1-3 worksheets will be dropped**

90-100%= A, 88-89.99%= B+, 80-87.99%= B, 78-79.99%= C+, 70-77.99%= C, 68-69.99%= D+, 60-67.99%= D, 0-59.99%= F. Grades will be rounded to 2 significant digits.

There will be no exceptions or bumping up of grades for being "close".

Disability

If you have a disability and are in need of academic accommodation: first register with the Disability Resource Center (503) 725-4150, <http://www.drc.pdx.edu>, then notify Dr. _____ to make appropriate arrangements.

To ensure all students with disabilities receive the accommodations they are entitled to, Dr. _____ needs advance notice that you plan on using them. To guarantee accommodation, please confirm that Dr. _____ has received your accommodation letter from the DRC, and notify her at least a week before the exam date with specific testing arrangements.

Note: Students with testing accommodations may take exams at the PSU Testing Center. These exams must be taken the same day as class exams.

Making your testing center appointments: To ensure optimal appointment times, please schedule exams with the testing center and e-mail your appointment times for all 4 exams to Dr. _____ by **5pm on Monday of week 2.**

Academic Courtesy

1. Students are expected to arrive for class on time so that lectures start and end according to schedule.
2. Respect the rights of fellow students during the class period.
3. Please avoid talking or other distracting behavior, and turn phones off.
4. Everyone is expected to help maintain the appearance of the classroom. After class, all trash should be removed and discarded appropriately.

Academic Honesty

Cheating or plagiarism of any kind will not be tolerated. See the PSU "Code of Student Conduct and Responsibility" for more information: <http://www.pdx.edu/dos/codeofconduct>. If cheating is observed, the grade for the assignment will be a "0", and cannot be dropped as a lowest score. The student will be reported to University officials as described in the Code (577-031-0142: Procedures for Complaints of Academic Dishonesty).

Tips For Success

1. **Be an active learner.** Read the text chapters associated with each lecture ahead of class. Attend all lectures. You are responsible for all topics discussed in the lecture. Take notes during class. Write down questions that come to mind during the lecture. Identify points in the lecture that you think are the main points. Review your notes after class, incorporating details that you remember but didn't get written down. While you are reading the textbook, take time to think about what you are reading. How does it fit with what you know already? Combine the information from the lecture and the text into one set of complete notes to review and study. Consider using the Cornell System of note-taking and review: a simple but powerful method for studying. See: <http://tinyurl.com/27yt64g>
2. **Figure out and use your learning strengths.** Learning styles vary from person to person. You might do your best studying through reading, writing, drawing, or through discussion with fellow students. Most likely, it will take some of each to be most successful. Experiment, and use the techniques that work best for you.

3. **Spend time on this course.** Schedule and spend time reading and reviewing course materials. Revisit your notes and think about the logical structure underlying the subjects. Plan on spending a significant amount of time (**10-15 hours/week**) working on this course. Later topics build upon earlier portions of the course: please do not let yourself fall behind.
4. **Ask for help if you need it.** Come to my office hours, find a study partner or study group, use the Discussions board on D2L, etc. You'll make the best progress when you work to identify the areas you need to work on and are active about seeking guidance.
5. **Use the University resources.** Campus services are available to help you with all aspects of your education, see <http://www.pdx.edu/studentaffairs>. PSU's undergraduate advising website is <http://www.pdx.edu/advising>. The Undergraduate Advising and Support Center (UASC), 425 Smith Center, <http://www.pdx.edu/advising/academic-resources-and-services>, offers academic advising and referral, academic support programs, community college relations, disability resource center, athletics advising, study skills workshops, tutorial programs, and student veteran services. The Peer Tutoring and Learning Center offers tutoring in many subjects (including Biology), as well as various workshops, see <http://www.pdx.edu/tutoring/>.

	Date	Scheduled Topics^{1, 2}
1	T Apr 4	Syllabus and Ch 13 How Populations Evolve I
2	Th Apr 6	Ch 13 How Populations Evolve II
3	T Apr 11	Ch 14 How Biological Diversity Evolves I
4	Th Apr 13	Ch 14 How Biological Diversity Evolves II
5	T Apr 18	Ch 15: Evolution of Microbial Life
6	Th Apr 20	Exam 1 (ch 13-15)
7	T Apr 25	DDE1: Antibiotic Resistance, online quiz due 10am
8	Th Apr 27	Ch 16: Evolution of Plants and Fungi
9	T May 2	Ch 28: The Life of a Flowering Plant I DD1 Extra Credit Essay Due 11:30am
10	Th May 4	Ch 28: The Life of a Flowering Plant II
11	T May 9	Ch 29: The Working Plant I
12	Th May 11	Ch 29: The Working Plant II
13	T May 16	Exam 2 (Ch 16, 28, 29)
14	Th May 18	DDE2: Pesticides, online quiz due 10am
15	T May 23	Ch 17: The Evolution of Animals I
16	Th May 25	Ch 17: The Evolution of Animals II DD2 Extra Credit Essay Due 11:30am
17	T May 30	Ch 17: The Evolution of Animals III
18	Th Jun 1	Ch 20: Unifying Concepts of Animal Structure and Function
19	T Jun 6	Exam 3 (Ch 17, 20)
20	Th Jun 8	DDE3: Evolution and Diversity, online quiz due 10am
21	T Jun 13	Final Exam 10:15-12:05 DD3 Extra Credit Essay Due 11:59pm

¹Lecture topics may change from those listed in the syllabus

²Read the chapter in the text corresponding to the lecture in advance of the class period during which the topic will be presented.

Bi 211-001 Principles of Biology
Fall 2016 Syllabus
Portland State University
M/W/F 10:00-11:05 CLSB 1A001

Course Description	<p>Principles of Biology 211 is the study of the basic principles of living organisms. The course will study both plants and animals and topics will include cell structure, energy production synthesis, nutrition, genetics, evolution, classification, excretion mechanisms of response, reproduction and development, and ecology. Four hours lecture. This is the first course in a sequence of three: Bi 211, Bi 212, Bi 213 and must be taken in sequence. Expected preparation: Completion or concurrent enrollment in Ch 221 and Ch 227</p> <p>Co-requisite: Bi 214 Principles of Biology Lab</p> <p>4 Credit hours</p>
Instructor	
Contact Information	
Assistant Instructor	
Required items	<p><u>Text</u>: 'Biological Science' by Scott Freeman, 6th edition (Pearson); access code not required, 4th and 5th editions will also suffice.</p> <p><u>iClicker hybrid or iClicker 2</u></p> <p><u>Exams</u>: 4 Scantron forms (Form SC982-E 100 item full page form) #2 pencil, & photo ID</p>
Course Web Page	<p>The PSU online resource "D2L" will be used for posting course materials and grades. Log in at https://d2l.pdx.edu with your PSU username and password. Material will be posted by 9am on the morning of the lecture. Problems with D2L access should be directed to OIT:</p> <p>Phone 24 hours a day, 7 days a week 503-725-HELP (4357)</p> <p>Helpdesk Email Technology Questions & Concerns help@pdx.edu</p> <p>Location Mon-Fri 8:00 a.m.-7:00 p.m. Smith Memorial Student Union Room 18 (basement level) 1825 SW Broadway Portland, OR 97201</p>

- Learning Objectives**
- Describe the importance and roles of chemical bonds and chemical energy in biological processes
 - Define the macromolecules required for cellular processes, and their synthesis and cellular localization
 - Identify cellular structures and their functions
 - Interpret and apply models that illustrate the mechanisms of heredity and gene expression, especially cell division, DNA replication, transcription, and translation
 - Explain the utility of molecular biology in human health and biotechnology
 - Explain how genetic information influences traits in individuals and their offspring
 - Effectively utilize the vocabulary of cellular and molecular biology and genetics

Exams There will be three class exams (50 multiple choice questions) and a final exam (75 multiple choice questions). Do not take this course if you cannot attend all 4 exams. See schedule below for exam dates. **No makeup exams will be given for any reason whatsoever.**

Clicker Questions In class questions will be asked using the “iclicker” polling system, in which student responses to instructor presented questions will be recorded via iclicker remotes held by each student (see required materials). To receive clicker grades, **you must register your clicker online.** Beginning on the 3rd class day, you must bring a functioning clicker to every class (except exams).

5 points will be awarded for correctly answered clicker questions during each class period (with the exception of exam days). The lowest 5 daily scores will be dropped. You will not receive credit if you do not bring your functioning clicker to class, or you do not attend class.

To register online, go to <https://www1.iclicker.com/register-clicker/>

1. Enter your First Name and Last Name in the appropriate fields.
2. In the “student ID” field, enter your ODIN ID (Use your ODIN username/login, NOT your 9-digit number).
3. Enter your Remote ID, the 8-character alphanumeric code printed below the barcode on the back of your remote, or within the battery compartment.
4. Enter the letters or numbers in the Image Code on the screen.
5. Click the Register button. **An on-screen message confirms that registration was successful.**

Use Frequency AA in class.

**Deliberative
Democracy (DD)
Exercises**

3 in-class Deliberative Democracy (DD) exercises will examine the science relevant to social policy issues. The exercise itself will involve debating both sides of the policy using what we have learned in class along with the issues presented in the required readings. Clicker remotes are required on DD exercise days.

1. Quizzes: Each exercise will have assigned readings made available on D2L a week prior to the activity. A 15 point online open book quiz on material from these readings is due prior to the start of the in-class exercise. Online quizzes are accessed in the "activities" tab of D2L, under "quizzes". Quizzes will be available 1 week prior to the due date (see class schedule at the end of this syllabus). No late submissions will be accepted. Lowest DD Quiz score will be dropped.
2. Worksheets: You will be required to complete group worksheets during each in-class exercise, worth 15 points each. Worksheets will be graded based on the thoroughness and engagement of the group responses. Your grade will not be influenced or judged on the stance that you take, only on the depth and thoroughness of your responses to the questions on the worksheets, as well as the level of your participation. A single worksheet will be submitted per group. **Attendance is required for worksheet submission**. Late arrivals will be given pro-rated credit based on the time of arrival. Lowest worksheet score will be dropped.

DD extra credit:

2 Surveys (5 points each): Pre- and post- class surveys will be available through the D2L survey tool during the 2nd and 10th week of the term. NOTE: You do not need to study or prepare for these in any way! Points will be awarded solely based on completion.

3 Essays (2 points each): Provide a 250 word reflection on your learning via the DD exercise. The extra credit DD reflection will open at the end of class on the last day of each DD exercise, and be open for a week for your completion (with the exception of the final DD exercise, which will close for submission at midnight the day of the course final).

**Active Learning
Exercises**

5 in class active learning exercises will occur on the indicated dates. Worksheets will be distributed at the start of class which will guide students through the reinforcement of particularly challenging topics. Students will work in small groups to solve problems built around core concepts and encourage a deep understanding of the course material while developing higher-order thinking skills.

The activities will utilize roughly 15 minutes of class time. Participation in these activities will be assessed with questions derived from the worksheets using the iClicker remote, and points earned will be integrated into the clicker scores.

Grading

Item	Points (each)	Points (total)
Clicker questions (23)*	5	90
Lecture Exams (3)**	100	200
Final Exam (1)	150	150
DD Worksheets (3)**	15	30
DD Online Quizzes (3)**	15	30
Totals		500

* lowest 5 scores in this category will be dropped

** lowest score in this category will be dropped

90-100%= A, 88-89.99%= B+, 80-87.99%= B, 78-79.99%= C+, 70-77.99%= C, 68-69.99%= D+, 60-67.99%= D, 0-59.99%= F. Grades will be rounded to 2 significant digits.

There will be no exceptions or bumping up of grades for being "close".

Attendance

There will be three in class exams and a final exam. The lowest class exam score will be dropped. The final exam score cannot be dropped. The lowest 5 clicker scores (see below) will be dropped. The lowest DD worksheet score (see below) will be dropped.

No makeup opportunities for exams, clicker points, or DD in class worksheets will be given for any reason whatsoever.

	Date
Exam 1	Fri Oct 14, 10am
DD1	Mon Oct 17, 10 am
Exam 2	Wed Nov 9, 10am
DD2	Mon Nov 14, 10am
Exam 3	Wed Nov 30, 10am
DD3	Fri Dec 2, 10am
Final Exam	Tues Dec 6, 8am

Do not take this course if you cannot commit to regular attendance or cannot attend exams and DD's.

Labs

Bi 214 is a co-requisite lab course for Bi 211. Though the course has a separate instructor and you'll receive a separate grade, you must register for Bi 214 in addition to Bi 211.

You must attend the first lab to maintain your spot in this class. You may be dropped from the course if you do not arrive in the first 15 minutes.

Disability

If you have a disability and are in need of academic accommodation: first register with the Disability Resource Center (503) 725-4150, <http://www.drc.pdx.edu>, then notify Dr. _____ to make appropriate arrangements.

To ensure all students with disabilities receive the accommodations they are entitled to, Dr. _____ needs advance notice that you plan on using them. To guarantee accommodation, please confirm that Dr. _____ has received your accommodation letter from the DRC, and notify her at least a week before the exam date with specific testing arrangements.

Note: Students with testing accommodations may take exams at the PSU Testing Center. These exams must be taken the same day and overlap with the time period as class exams.

Making your testing center appointments: To ensure optimal appointment times, please schedule exams with the testing center and e-mail your appointment times for all 4 exams to Dr. _____ by **5pm on Monday of week 2**.

Academic Courtesy

1. Students are expected to arrive for class on time so that lectures start and end according to schedule.
2. Respect the rights of fellow students during the class period.
3. Please avoid talking or other distracting behavior, and turn phones off.
4. Everyone is expected to help maintain the appearance of the classroom. After class, all trash should be removed and discarded appropriately.

Academic Honesty

Cheating or plagiarism of any kind will not be tolerated. See the PSU "Code of Student Conduct and Responsibility" for more information: <http://www.pdx.edu/dos/codeofconduct>. If cheating is observed, the grade for the assignment will be a "0", and cannot be dropped as a lowest score. The student will be reported to University officials as described in the Code (577-031-0142: Procedures for Complaints of Academic Dishonesty).

Tips For Success

1. **Be an active learner.** Read the book ahead of class. Attend all lectures. You are responsible for all topics discussed in the lecture, even if they do not appear in the online notes. Take notes during class – do not rely on the printed-out class notes alone. Write down questions that come to mind during the lecture. Identify points in the lecture that you think are the main points. Review your notes after class, incorporating details that you remember but didn't get written down. While you are reading the textbook, take time to think about what you are reading. How does it fit with what you know already? Combine the information from the lecture and the text into one set of complete notes to review and study. Consider using the Cornell System of note-taking and review: a simple but powerful method for studying. See: <http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note-Taking-System.pdf>
2. **Figure out and use your learning strengths.** Learning styles vary from person to person. You might do your best studying through reading, writing,

drawing, or through discussion with fellow students. Most likely, it will take some of each to be most successful. Experiment, and use the techniques that work best for you.

3. **Spend time on this course.** Schedule and spend time reading and reviewing course materials. Revisit your notes and think about the logical structure underlying the subjects. Plan on spending a significant amount of time **(20-30 hours/week)** working on this course. Later topics build upon earlier portions of the course; please do not let yourself fall behind.
4. **Ask for help if you need it.** Come to my office hours, talk to your TA, find a study partner or study group, use the Discussions board on D2L, etc. You'll make the best progress when you work to identify the areas you need to work on and are active about seeking guidance.
5. **Use the University resources.** Campus services are available to help you with all aspects of your education, see <http://www.pdx.edu/studentaffairs>. PSU's undergraduate advising website is <http://www.pdx.edu/advising>. The Undergraduate Advising and Support Center (UASC), 425 Smith Center, <http://www.pdx.edu/advising/academic-resources-and-services>, offers academic advising and referral, academic support programs, community college relations, disability resource center, athletics advising, study skills workshops, tutorial programs, and student veteran services. The Peer Tutoring and Learning Center offers tutoring in many subjects (including Biology), as well as various workshops, see <http://www.pdx.edu/tutoring/>.

	Date	Scheduled Topics ¹	Lab (Bi 214)
1	M Sep 26	Introduction, Syllabus, & Chapter 1: Biology and the Tree of Life	1: Orientation. Microscopes, microfossils and living micro-organisms
2	W Sep 28	Chapter 2: Water and Carbon: The Chemical Basis of Life	2: Plant pigments and pH.
3	F Sep 30	Chapter 3: Proteins Structure and Function	
4	M Oct 3	Chapter 4: Nucleic Acids and the RNA World	
5	W Oct 5	Chapter 5: An Introduction to Carbohydrates	3: DNA purification, protein folding.
6	F Oct 7	Chapter 6: Lipids, Membranes, and the First Cells	
7	M Oct 10	Chapter 7: Inside the Cells (In class Active Learning Exercise)	
8	W Oct 12	Chapter 8: Energy and Enzymes: An Introduction to Metabolism (In class Active Learning Exercise)	4: Cellular respiration
9	F Oct 14	Exam 1: Chapters 1-8,	
10	M Oct 17	Deliberative Democracy #1 Metabolism: High Fructose Corn Syrup, DD1 Quiz Due 10am	
11	W Oct 19	Chapter 9: Cellular Respiration and Fermentation	5: Cell division
12	F Oct 21	Chapter 9: Cellular Respiration and Fermentation continued (In class Active Learning Exercise)	
13	M Oct 24	Chapter 10: Photosynthesis, DD1 essay due 10am	
14	W Oct 26	Chapter 11: Cell-Cell Interactions	6: Genetics
15	F Oct 28	Chapter 12: The Cell Cycle (In class Active Learning Exercise)	
16	M Oct 31	Chapter 13: Meiosis	
17	W Nov 2	Chapter 14: Mendel and the Gene	7: Genetic transformation
18	F Nov 4	Chapter 15: DNA and the Gene: Synthesis and Repair	
19	M Nov 7	Chapter 16: How Genes Work	
20	W Nov 9	Exam 2: Ch 9-16,	8: Monitoring gene expression
21	F Nov 11	No Class, Veterans Day Holiday	
22	M Nov 14	Deliberative Democracy #2 HeLa Cells: Henrietta Lacks, DD2 Quiz Due 10am	
23	W Nov 16	Chapter 17: Transcription, RNA Processing, and Translation (In class Active Learning Exercise)	9: Bioinformatics
24	F Nov 18	Chapter 26: Bacteria and Archaea Chapter 18: Control of Gene Expression in Bacteria	
25	M Nov 21	Chapter 19: Control of Gene Expression in Prokaryotes (In class Active Learning Exercise), DD2 essay due 10am	
26	W Nov 23	Chapter 20: The Molecular Revolution: Biotechnology and Beyond	Lab 10: DNA, restriction enzymes, and electrophoresis
27	F Nov 25	No class Thanksgiving Holiday	
28	M Nov 28	Chapter 33: Viruses (In class Active Learning Exercise)	
29	W Nov 30	Exam 3: Ch 17-20, 26, 33	No Labs this Week
30	F Dec 2	Deliberative Democracy #3 Genetic Engineering: CRISPR/Cas-9, DD3 Quiz Due 10am	
31	T Dec 6	Final Exam: Comprehensive. 8am-9:50am, DD3 essay due midnight	

¹Lecture topics may change from those listed in the syllabus

Principles of Biology

Portland State University

Bi 212: Principles of Biology II Winter 2017

Instructor

Lecture Teaching Asst.

Course Description

The Principles of Biology sequence (Bi 211, 212, and 213, along with labs Bi 214, 215 & 216) introduces the foundations of life science. In Bi 212 we examine the development, evolution and ecology of living organisms. Specific topics include plant and animal development, natural selection, speciation, form & function of organisms, biodiversity, and the introduction of major phyla.

Pre- & co-requisites

Chemistry 221 and 227 (or concurrent enrollment)

Co-requisite: Bi 215, Principles of Biology II Laboratory

Required items

Text: 'Biological Science' by Scott Freeman, 6th edition (Pearson)

Classroom response: i>clicker plus (<http://www.iclicker.com>). (*note: iclicker2 remotes will also work. The iclickerREEF iclickerGO apps will NOT work for this class. You MUST have a clicker to get your answers counted*).

Exams: Four Scantron forms SC982-E (the full-page form, available at PSU Bookstore), #2 pencils, & photo ID

Not required: "Study Guide for Biological Science" 6^e
"Mastering Biology" access code

Learning Objectives

Upon completion of Bi 212 and Bi 215, students should be able to:

- Describe the underlying processes determining the reproduction and development of different organisms
- Define the evolutionary mechanisms representing the basis of biodiversity
- Identify cellular structures, organs and their functions in various organisms
- Compare and contrast life cycles of different organismal groups
- Explain the physiological processes in plants

- Explain how genetic information influences traits in individuals and their offspring
- Effectively utilize the vocabulary of developmental biology, evolution, cellular and molecular biology, and genetics

Skills Development

During this course, students will learn how to:

- Identify key organismal groups
- Create tables and graphs for reporting experimentally derived data
- Communicate observations, experimental design, execution and outcomes using a formal laboratory report format
- Apply common laboratory tools and physiological assays
- Work cooperatively to solve scientific problems and carry out organized experimentation
- Grasp scientific presentations
- Read and analyze selections from the primary scientific literature

Course Web Pages

I will use the PSU online resource “Desire 2 Learn (D2L)” for posting the lab manual, daily notes, announcements, exam grades, and other course materials. Please log in at: <https://d2l.pdx.edu>

Lectures

Section 1 (CRN 45431): MWF 10:00 – 11:05, CLSB 1A001
 (Section 2 (CRN 4532): MW 18:40 – 20:30, Hoffman Hall)

Important Dates

Jan 15	Drop deadline (course not on transcript; 100% refund)
Jan 16	MLK Jr. Day – <u>Monday labs are rescheduled</u>
Feb 03	Lecture Exam 1
Feb 22	Lecture Exam 2
Feb 26	Withdraw/grading option change deadline
Mar 15	Lecture Exam 3
Mar 21	Final Exam 8:00 AM-9:50 PM, CLSB Room 1A001

A more detailed academic calendar can be viewed here:
<https://www.pdx.edu/registration/calendar>

Grading

Lecture (total 80%)
 Classroom response (“clicker”) questions: 10%
 Small group exercises: 15%
 Class exams (best 2 of 3): 25% each (total of 50%)
 Final exam: 25%

Exams

There will be three midterm exams, and one final exam (see schedule for dates). Your lowest midterm exam score will be dropped. If you are unable to make it to a midterm exam for any reason, it will be dropped as your lowest score. **No make-up exams will be given.** The final exam will cover the whole course, and cannot be dropped. If you know that you will need to miss two midterm exams or the final exam, you should not take Bi212 this term.

Classroom Response

Each lecture session will include questions to be answered using the required “i-clickers”. The first two week’s questions will not be graded, but weeks 3-10 will. Your lowest three day-scores from weeks 3–10 will be dropped. If you are unable to make it to class for any reason, that day’s clicker score will be dropped as one of your three lowest scores. **Missed clicker questions cannot be made up.** You must be physically present to answer clicker questions. Any instance of cheating with clickers will result in a zero for the final clicker grade.

i>clicker registration: To receive clicker grades, you must register your clicker via the link in the course D2L site. Login to D2L, click on this course (Bi212 – Principles of Biology), and find the iclicker registration link on the left hand sidebar. Click on the link and follow instructions.

Small Group Work

There will be five in-class small group exercises (see schedule for dates). The top four scores will be counted for your grade. If you miss one of these exercises for any reason, that day’s score will be dropped as your lowest. **Missed group exercises cannot be made up.**

Grading Policy

Grades will be assigned according to the percentage of possible points earned. As a rough guide, the top score on any given exam can be thought of as 100%. If you earn at least 90% of the highest score you will receive an A- or higher; if you earn at least 80% you will receive a B- or higher; if you earn at least 70% of the possible points you will receive a C- or higher; if you earn at least 60% of the possible points you will receive a D- or higher.

PSU’s policy on the temporary grade of Incomplete (“I”) is strictly adhered to in this course. Please note, you must be passing the course (with a C- or better) in order to be eligible for an “I” grade. See PSU Bulletin for more information:
<https://www.pdx.edu/registration/students>.

Disability

If you have a disability and are in need of academic accommodation: first register with the Disability Resource Center (503)725-4150, <http://www.drc.pdx.edu>, then notify Dr. _____ to make appropriate arrangements. *Note:* exams taken at the PSU Testing Center must be taken at the same time as class exams. **No exceptions.** Schedule exams at the Testing Center as soon as possible to ensure a spot. If for some reason you are unable to schedule any of your exams at the Testing Center for the appropriate time, let me know as soon as possible so I can arrange an alternative testing location.

Classroom and University Policies

- Academic Honesty** Cheating or plagiarism of any kind will not be tolerated. See the PSU Code of Conduct: <http://www.pdx.edu/dos/codeofconduct>. If cheating is observed, the grade for the assignment will be a “0”, and cannot be dropped as a lowest score. The student will be reported to University officials as described in the Code (577-031-0142: Procedures for Complaints of Academic Dishonesty).
- Academic Courtesy** Respect the rights of fellow students during the class period. Please avoid talking and other distracting behavior, and turn phones off.
- When contacting your professor or TA by email or text, be sure to include the essentials of polite written communication: a greeting/salutation of some sort, enough background information to make your request or comment easily understood, a sign-off that includes your name as you wish to be addressed, and correct punctuation, spelling, and grammar. A polite message is much more likely to receive a speedy response.
- Schedule** Students are expected to arrive for class on time so that lectures and labs start and end according to schedule. Since the Collaborative Life Sciences Building is separate from the main Portland State campus, it is important that you carefully plan your schedule to account for the extra travel time required. Information about transportation options can be found here: <https://www.pdx.edu/transportation/>.
- Facilities** Everyone is expected to help maintain the appearance of the classroom and laboratory. After class, all trash should be removed and discarded appropriately, and lab benches should be left clean and organized.
- Lost and Found** If you have lost an item at CLSB, first check with your instructor or TA to see if it was turned in. You may also leave a message at the OHSU Department of Public Safety Lost & Found voicemail line at 503-494-0881, or email them at pubsafe@ohsu.edu. Your call will be returned once the Lost & Found administrator checks for your item.
- Safe Campus Module** Portland State University is committed to creating a safe campus for all students, and as part of this you are required to complete the Safe Campus Module in D2L. Log in to D2L, and under "My Courses," you'll find a sub-tab titled "Ongoing." Under the "Ongoing" sub-tab, you will see a course titled "Creating a Safe Campus." Click on this course and follow the prompts to complete the module.
- Emergency information** In case of emergency, if you are inside CLSB dial **503-494-4444**. If you are outside the building or walking back to campus dial **911**. **PSU 24 hour Campus Safety: emergency 503-725-4404, non-emergency 503-725-4407**

Creating an equitable learning environment:

- Discussion in this class will be conducted in adherence to the University nondiscrimination policy.
- We should respect diverse points of view. We do not need to come to an agreement on any particular issues: we can agree to disagree.
- Our use of language should be respectful of other persons or groups. (As your instructor, I will not let injurious statements pass without comment.)
- You need not represent any group, only yourself, though you may choose to represent a group if you wish.
- If you feel uncomfortable about any aspect of the class environment, it is your responsibility to discuss it with the instructor.

Other PSU Resources

- Student Health and Counseling: 503-725-2800, <https://www.pdx.edu/shac/>
- Women's Resource Center: 503-725-5672, <http://www.pdx.edu/wrc/>
- Global Diversity and Inclusion, 503-725-5919, <http://www.pdx.edu/diversity/>
- C.A.R.E Team: <http://www.pdx.edu/dos/care-team>

Course Schedule

Week	Dates	Scheduled Topics: Lecture topics may change from those listed in the syllabus, but exams and small groups will take place as scheduled.
1	Jan 09 – Jan 13	Lecture: Animal & Plant Development Text: Chapter 21 Lab: 1: Developmental Biology
2	(Jan 16 MLK) Jan 18 – Jan 20	Lecture: Natural Selection; Evolutionary Processes Text: Chapters 22 & 23 Lab: 2: Natural Selection.
3	Jan 23 – Jan 27	Lecture: Speciation Text: Chapter 24 Lab: 3: Cnidarians, Platyhelminthes, Nematodes, and Annelids Wednesday, Jan 25: Small groups #1: Deliberative Democracy Part 1: Initial position and identify needed information
4	Jan 30 – Feb 03 EXAM	Lecture: Phylogenies & The History of Life; Protists Text: Chapters 25 & 27 Lab: 4: Mollusks Monday, Jan 30: Small groups #2: Deliberative Democracy Part 2: Bring information together, come to consensus HOUR EXAM 1 on Friday, Feb 03
5	Feb 06 – Feb 10	Lecture: Taxonomy and Introduction to Animals; Protostomes Text: Chapters 30 & 31 Lab: 5: Arthropods
6	Feb 13 – Feb 17	Lecture: Deuterostomes Text: Chapter 32 Lab: 6: Phylogeny and Comparative Anatomy of Deuterostomes Friday, Feb 17: Small groups #3: Phylogenetic Trees
7	Feb 20 – Feb 24 EXAM	Lecture: Plant Form and Function Text: Chapter 34; review Chapter 10 “Photosynthesis” on your own!! Lab: 7: Photosynthesis and Plant Pigments HOUR EXAM 2 on Wednesday, Feb 22
8	Feb 27 – Mar 03	Lecture: Plant Reproduction; Phylogeny (Green Algae & Plants) Text: Chapters 38 & 28 Lab: 8: Vegetative Structure & Function Monday, Feb 27: Small groups #4: Deliberative Democracy Part 1: Initial position and identify needed information
9	Mar 06– Mar 10	Lecture: Water & Sugar Transport; Plant Nutrition Text: Chapters 35 & 36 Lab: 9: Stomatal Density Monday, Mar 06: Small groups #5: Deliberative Democracy Part 2: Bring information together, come to consensus
10	Mar 13 – Mar 17 EXAM	Lecture: Plant Sensory Systems Text: Chapter 37 Lab: Lab 10: Reproduction; SPECIES ACCOUNTS DUE HOUR EXAM 3 on Wednesday, Mar 15
Finals	Mar 20 – Mar 24	Final Exam (Comprehensive) Tue, Mar 21 8:00 AM – 9:50 AM

**PLEASE THINK TWICE BEFORE YOU PRINT OUT THE LECTURE PDFs!
PLEASE HELP SAVE PAPER – AND OUR FORESTS!**

If you must print, double check settings to print 4 slides per page, and print double-sided if possible.

Tips for Success

Be an active learner. Read the book ahead of class. Attend all lectures. You are responsible for all topics discussed in the lecture, even if they do not appear in the online notes. Take notes during class – do not rely on the printed-out class notes. Write down questions that come to mind during the lecture. Identify points in the lecture that you think are the main points. Review your notes after class, incorporating details that you remember but didn't get written down. While you are reading the textbook, take time to think about what you are reading. How does it fit with what you know already? Combine the information from the lecture and the text into one set of complete notes to review and study. Consider using the simple and powerful Cornell System of note-taking and review: <http://tinyurl.com/27yt64g>

Figure out and use your learning strengths. Learning styles vary from person to person. You might do your best studying through reading, writing, making or drawing models, or through discussion with fellow students. Most likely, it will take some of each of these to be most successful. Experiment, reflect on the outcomes, and use the techniques that work best for you.

Spend time on this course. Schedule and spend time reading and reviewing course materials ahead of class. During class, take careful, organized notes. After class, revisit your notes, and think about the logical structures underlying the subjects. Plan on spending a significant amount of time (10-12 hours/week) working on this course. Later topics build upon earlier portions of the course: do not let yourself fall behind.

Ask for help if you need it. Come to my and your TA's office hours, find a study partner or study group, use the Discussions board on D2L, etc. You'll make the best progress when you work to identify the areas you need to work on, and are active about seeking guidance.

Use the University resources. Campus services are available to help you with all aspects of your education, see <http://www.pdx.edu/studentaffairs>. PSU's undergraduate advising website is <http://www.pdx.edu/advising>. The Undergraduate Advising and Support Center (UASC), 425 Smith Center, <http://www.pdx.edu/advising/academic-resources-and-services>, offers academic advising and referral, academic support programs, community college relations, disability resource center, athletics advising, study skills workshops, tutorial programs, and student veteran services. The Peer Tutoring and Learning Center offers tutoring in many subjects (including Biology), as well as various workshops, see <http://www.pdx.edu/tutoring/>.



Bi 213: Principles of Biology III, Spring 2017

Instructor

Lecture Teaching Asst.

Course Description The Principles of Biology sequence (Bi 211, 212, & 213, along with labs Bi 214, 215 & 216) introduces the foundations of life science. In Bi 213 and 216 we examine how biotic and abiotic factors impact living organisms and the physiological underpinnings that allow organisms to survive. Specific topics include ecology, physiology, organismal systems (water balance, gas exchange, nervous, circulatory, endocrine), community and population ecology, biodiversity and conservation.

Pre- & co-requisites Chemistry 221 and 227 (or concurrent enrollment)
Co-requisite: Bi 216, Principles of Biology III Laboratory

Required items Text: 'Biological Science' by Scott Freeman, 6th edition (Pearson)
Classroom response: i>clicker plus (<http://www.iclicker.com>).
note: iclicker2 remotes will also work. The iclickerREEF and iClickerGo apps will NOT work for this class. You must have a clicker to get your answers counted.
Exams: Four Scantron forms SC982-E (the full-page form, available at PSU Bookstore), #2 pencils, & photo ID
Not required: "Study Guide for Biological Science" 6^e
"Mastering Biology" access code:

Learning Objectives Upon completion of Bi 213 and Bi 216, students should be able to:

- Recognize and be able to discuss the connections between organismal structure and function
- Understand the importance of information flow in biology
- Understand how abiotic factors select for organismal adaptation and impact functional biology
- Have a general understanding of animal physiological systems
- Comprehend how organisms interact with one another and their environments as individuals and as systems
- Compare and contrast levels of ecology
- Understand basic global cycles
- Find the connection of biology to "the real world" and your lives

- Understand and experience the “nature of science” and the process of science

Skills Development

During this course, students will learn how to:

- Generate hypotheses and test them experimentally
- Understand and create tables and graphs for reporting experimentally derived data (quantitative reasoning)
- Communicate science
- Apply common laboratory tools and skills
- Collect and record data that is precise and accurate
- Work cooperatively to solve scientific problems and carry out organized experimentation
- Present information in a manner that is understandable to non-scientists as well as your peers
- Read and analyze selections from the primary scientific literature
- Learn to decipher between reliable and non-reliable sources of scientific information
- Engage in productive, respectful discourse with peers and instructors
- Think critically and creatively to solve and test problems

Course Web Pages

I will use the PSU online resource “D2L” for posting the lab manual, daily notes, announcements, exam grades, and other course materials. Log in at <https://d2l.pdx.edu>. **Check D2L regularly!**

Lectures

Section 1 (CRN 65042): MWF 10:00 – 11:05, CLSB 1A001
 (Section 2 (CRN 65043): MW 18:40 – 20:30, Cramer Hall 71)

Important Dates

April 9	Drop deadline (100% refund)
April 14	Exam 1
May 1	Exam 2
May 19	Exam 3
May 21	Withdraw/grading option change deadline
May 29	Memorial Day (no class, Monday labs will be rescheduled)
June 5	Exam 4
June 13	Final Exam

A more detailed academic calendar can be viewed here: <http://www.pdx.edu/registration/calendar>

Grading

Course Reflection	5
Reading Quizzes:	40
Classroom Participation/Clicker Questions:	50
Small Group Work:	75
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Exams - Best 3 out of 4 @ 40 points each:	120
Final Exam	60
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Total Points Possible	350

Exams

There will be four midterm exams, and one final exam (see schedule for dates). Your lowest midterm exam score will be dropped. If you are unable

to make it to a midterm exam for any reason, it will be dropped as your lowest score. **No make up exams will be given. The final exam will cover the whole course, and cannot be dropped.** If you know that you will need to miss two midterm exams or the final exam, you should not take Bi213 this term.

Classroom Participation Each lecture session will include questions to be answered using the required *i-clickers*.

Week 1 clicker questions will not be graded; weeks 2 - 10 will count toward your grade. You will receive 0.7 points for incorrect answers and 1.0 point for each correct answer. At the end of the term, if you have earned 75% or more of the possible clicker points, you will receive full clicker points. **Missed clicker questions cannot be made up.**

You must be physically present to answer clicker questions. **Any instance of cheating with clickers will result in a zero for the final clicker grade.**

i>clicker registration: To receive clicker grades, you must register your clicker via the link in the course D2L site and associate it with your PSU ODIN ID name by Friday of Week 1.

There are two ways to register:

- 1) Login to D2L, click on this course (Bi213 – Principles of Biology III), and find the iclicker registration link in the iclicker registration module under Activities/Course Content. Enter your Remote ID. The Remote ID is the 8-character alphanumeric code printed below the barcode on the back of your remote, or within the battery compartment. This should link automatically to your D2L account.
- 2) Or, To register online, go to <http://www.iclicker.com/> and click the 'Register' button.
 - Enter your First Name and Last Name in the appropriate fields.
 - In the "student ID" field, enter your ODIN ID (Use your ODIN username/login, NOT your 9-digit number). For example, if your PSU email address happens to be *kittens09@pdx.edu*, your ODIN ID is *kittens09*.
 - Enter your Remote ID. The Remote ID is the 8-character alphanumeric code printed below the barcode on the back of your remote, or within the battery compartment.
 - Enter the letters or numbers in the Image Code on the screen. You can request another image if you find the first hard to read, or play an audio reading of it instead.
 - Click the Register button. An on-screen message confirms that registration was successful. Your PSU Odin ID login is now associated with your unique i>clicker remote ID, and your clicker answers can now be graded.

Small Group Work

There will be 6 in-class small group exercises, each with an associated quiz (see schedule for dates). **Your lowest small group work day scores (worksheet and quiz) will be dropped from your grade.** You must be present to get group work points. **Missed group exercises cannot be made**

up. You will be working with Learning Assistants in the classroom for small group activities. You will be expected to participate and interact with the learning assistants and your group positively and respectfully. If students are not engaging in a respectful way, the LAs will be required to address the situation and group work points will be deducted.

Online Quizzes

Throughout the course there will be 8, 5-point online reading quizzes, and 6, 5-point quizzes related to small group work. They are all to be taken through D2L. These quizzes must be completed by the announced due date and time to get the points. **There will be no make-up or late quizzes.** We will announce these in class and on D2L. You will have 24 hours to take the quiz (**always 9:00am-9:00am**). Once you begin the quiz you will have 90 minutes to complete the quiz. You may not make multiple attempts at the quiz.

Grading Policy

Grades will be assigned according to the percentage of possible points earned. As a rough guide, the highest cumulative score can be thought of as 100%. If you earn at least 90% of the highest score you will receive an A- or higher; if you earn at least 80% you will receive a B- or higher; if you earn at least 70% of the possible points you will receive a C- or higher; if you earn at least 60% of the possible points you will receive a D- or higher.

PSU's policy on the temporary grade of Incomplete ("I") is strictly adhered to in this course. Please note, you must be passing the course (with a C- or better) in order to be eligible for an "I" grade. See the PSU Bulletin for more information: <http://www.pdx.edu/oaq/psu-bulletin>.

Disability

If you have a disability and are in need of academic accommodation visit: <http://www.pdx.edu/drc/prospective-students>. You may also contact the Disability Resource Center (DRC) front desk at 503-725-4150, email them at drc@pdx.edu, or stop by their office at S.M.S.U. 116. **First** register with the DRC, **then** notify Dr. _____ to make appropriate arrangements. *Note:* exams taken at the PSU Testing Center must be taken at the same time as class exams - **no exceptions**. Schedule exams at the Testing Center as soon as possible to ensure a spot. If for some reason you are unable to schedule any of your exams at the Testing Center for the appropriate time, let me know as soon as possible so I can arrange an alternative testing location.

Classroom and University Policies

Academic Honesty

Cheating or plagiarism of any kind will not be tolerated. See the PSU Code of Conduct: <http://www.pdx.edu/dos/codeofconduct>. If cheating is observed, the grade for the assignment will be a "0", and cannot be dropped as a lowest score. The student will be reported to University officials as described in the Code (577-031-0142: Procedures for Complaints of Academic Dishonesty).

Academic Courtesy

Respect the rights of fellow students during the class period. Please avoid talking and other distracting behavior, and turn phones off.

When contacting your professor or TA by email, be sure to include the essentials of polite written communication: a greeting/salutation of some sort, enough background information to make your request or comment easily understood, a sign-off that includes your name as you wish to be addressed, and correct punctuation, spelling, and grammar. **A polite message is much more likely to receive a speedy response.**

Schedule

Students are expected to be present every day in class and arrive for class on time so that lectures and labs start and end according to schedule. Since the Collaborative Life Sciences Building is separate from the main Portland State campus, it is important that you carefully plan your schedule to account for the extra travel time required. Information about transportation options can be found here: <http://www.pdx.edu/transportation/clsb>.

Facilities

Everyone is expected to help maintain the appearance of the classroom and laboratory. After class, all trash should be removed and discarded appropriately, and lab benches should be left clean and organized.

Lost and Found

If you have lost an item at CLSB, first check with your instructor or TA to see if it was turned in. You may also leave a message at the OHSU Department of Public Safety Lost & Found voicemail line at 503-494-0881, or email them at pubsafe@ohsu.edu. Your call will be returned once the Lost & Found administrator checks for your item.

Safe Campus Module

Portland State University is committed to creating a safe campus for all students, and as part of this you are required to complete the Safe Campus Module in D2L. Log in to D2L, and under "My Courses," you'll find a sub-tab titled "Ongoing." Under the "Ongoing" sub-tab, you will see a course titled "Creating a Safe Campus." Click on this course and follow the prompts to complete the module.

Emergency Information

In case of emergency, if you are inside CLSB dial **503-494-4444**. If you are outside the building or walking back to campus dial **911**.
PSU 24 hour Campus Safety: emergency 503-725-4404, non-emergency 503-725-4407

Other PSU Resources

Student Health and Counseling: 503-725-2800, <https://www.pdx.edu/shac/>
Women's Resource Center: 503-725-5672, <http://www.pdx.edu/wrc/>
Global Diversity and Inclusion, 503-725-5919, <http://www.pdx.edu/diversity/>
C.A.R.E Team: <http://www.pdx.edu/dos/care-team>

Principles 213, Spring 2017 Course Schedule

Daily topics subject to change – changes will be posted on D2L. Exam and small group days will not change. *Readings are to be done BEFORE class! They will be the subject of the reading quizzes		
	Weekly in-class agenda	Reading assignments, quizzes and labs
Week 1 April 3 - 7	M: Introduction to Ecology W: Form & Function *Guest Speaker: Dr. Suzanne Estes, PSU Biology & LSAMP Director F: Small Groups #1: Who said what?! Literature & Sources	Small group Quiz #1: Due Fri 4/7 @9am Ch. 49.1-49.2 Ch. 39 (all except counter-current heat exchangers) Lab: 1 - Data Processing/Stats
Week 2 April 10 - 14 EXAM 1	M: Water & Electrolyte Balance W: Water & Excretion *Guest Speaker: Dr. Jason Podrabsky, PSU Biology, Provost's Office F: Exam #1	Reading Quiz #1: Due Wed 4/12 @9am Ch. 40 (all except 40.4) Lab: 2 - Diffusion, Osmosis & Tonicity
Week 3 April 17 -21	M: Nutrition W: Gas Exchange *Guest Speaker: Dr. Brad Buckley, PSU Biology F: Small Groups #2: Dead Zones, DDP1a	Reading Quiz #2: Due Wed 4/19 @9am Small group Quiz #2: Due Fri 4/21 @9am Ch. 41.3 (p.860-69) Ch. 42.1-2 (p. 874-80) Lab: 3 - Nutrition
Week 4 April 24 - 28	M: Gas Exchange & Circulation W: Small Groups #3: Dead Zones, DDP1b F: Gas Exchange & Circulation	Small group Quiz #3: Due Wed 4/26 @9am Reading Quiz #3: Due Fri 4/28 @9am Ch. 42.4 (p. 884-91) Lab: 4 – Gas Exchange, Hypoxia
Week 5 May 1 - 5 EXAM 2	M: Exam #2 W: Nervous System F: Nervous System, Muscles *Guest Speaker: Dr. Daniel Schweigert, Holistic Sports Medicine	Reading Quiz #4: Due Fri 5/5 @9am Ch. 43 Lab: 5 - Functional Anatomy of Muscles
Week 6 May 8 -12	M: Muscles, Chemical Signals W: Chemical Signals F: Small Groups #4: Endocrine Disrupting Chemicals, DDP2a *Guest Speaker: Catherine Dayger-Forbes, Graduate Student, PSU Biology	Reading Quiz #5: Due Wed 5/10 @9am Small group Quiz #4: Due Fri 5/12 @9am Ch. 45.1-2 Ch. 46 Lab: 6: Homeostasis
Week 7 May 15 – 19 EXAM 3	M: Small Groups #5: Endocrine Disrupting Chemicals, DDP2b W: Chemical Signals F: Exam #3	Small group Quiz #5: Due Mon 5/15 @9am Reading Quiz #6: Due Wed 5/17 @9am Ch. 46 Lab 7: Behavioral Ecology I
Week 8 May 22 - 26	M: Reproduction & Behavioral Ecology *Guest Speaker: Dr. Michael Murphy, PSU Biology W: Behavioral Ecology & Community Ecology F: Small Groups #6	Reading Quiz #7: Due Wed 5/24 @9am Small group Quiz #6: Due Fri 5/26 @9am Ch. 47 Ch. 50, 51 Lab 8: Behavioral Ecology II
Week 9 May 29 – June 2 No class Monday, Memorial Day	M: NO CLASS W: Community & Global Ecology *Guest Speaker: Dr. Anne Thompson, PSU Biology F: Global Ecology & Biodiversity	Reading Quiz #8: Due Wed 5/31 @9am Ch. 52 Ch. 53-54 Lab 9: Scientific Writing; No Class or Labs on Monday

Week 10 June 5 - 9 EXAM 4	M: Exam 4 W: Putting it all together... *Guest Speaker: Dr. Todd Rosenstiel, PSU Biology & CLAS Dean's Office F: Final Review	Ch. 53-54 Lab 10: Behavioral Ecology Project Presentations
Finals Week FINAL EXAM	Tuesday: June 13th 8:00-9:50am	

Before you print out the lecture slides, please consider if you really need them printed – conserve paper and trees! If you do print, print double-sided with multiple slides per page.

Tips For Success

- 1. Be an active learner.** Read the book ahead of class. Attend all lectures. **You are responsible for all topics discussed in the lecture, even if they do not appear in the online notes.** I expect you to be an active participant in your education. This means that coming to class, paying attention and collaborating with myself, the TAs, the Learning Assistants, and your peers is fully expected.

 - Take notes during class – do not rely on the printed-out class notes. Write down questions that come to mind during the lecture. Identify points in the lecture that you think are the main points. Review your notes after class, incorporating details that you remember but didn't get written down.
 - When we do clicker questions and you are asked to talk with your neighbors – talk with them, more heads together may come up with get the right (or a better!) answer – if you don't understand your peer's reasoning – ask them. Further, taking the time to explain your thoughts or a concept to others is a great way to learn.
 - Small group work days are important days where you will have the chance to gain further conceptual understanding of the material in different ways, and experience interacting and working collaboratively with your peers and Learning Assistants.
 - Three lecture days/week are dedicated time for you to learn the material – why throw that time away by surfing Facebook or Grumpy Cat? Please don't do this, or text message during class – those things will still be there at 11:05am. Build up your attention spans!
 - While you are reading the textbook, take the time needed to really think about what you are reading. How does it fit with what you know already? If it is not clear, consult an additional source; sometimes just seeing the same information in a different way helps immensely. Combine the information from the lecture and the text into one set of complete notes to review and study. Consider using the simple and powerful Cornell System of note-taking and review: <http://tinyurl.com/27yt64g>
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