Bi 212-002: Principles of Biology II

Winter 2016    Portland State University

Instructor       Dr. Mandy Cook
Email            use D2L online course email
Office Hours     W 4-6 PM, SRTC 238B or by appointment

Lectures         Section 002: MW 1840-2030, Cramer Hall 71, CRN 45432
                  (Section 001: MWF 1000-1105, CLSB 1A001, CRN 45431)

Pre- and co-requisites
Bi215: Principles of Biology Laboratory II
Chemistry 221 and 227 (or concurrent enrollment)

Course Materials
REQUIRED: “Biological Science” by Scott Freeman, 5th edition
REQUIRED: i>clicker (or i>clicker2 or i>clicker+); Reef polling not supported
REQUIRED: four # SC982-E Scantrons (full page); #2 pencil; photo ID
REQUIRED: Laboratory materials, posted on D2L
OPTIONAL: MasteringBiology course access

Course Description
The Principles of Biology sequence (Bi 211/214, 212/215, and 213/216) introduces the foundations of life science. In Bi 212/215 we examine the development, evolution, and ecology of living organisms. Specific topics include development, evolutionary processes, phylogenetics, animal diversity and morphology, and plant diversity and morphology.

Learning Objectives
Upon completion of Bi 212 and Bi215, 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
- Describe the four evolutionary processes that change allele frequencies in populations
- Define a species and describe phylogenetic trees
- Compare and contrast lifecycles of different organismal groups
- Describe the diversification of plant and animal life
- 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, and phylogenetics

Skills Development
During Bi212 and Bi215, 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
- Communicate an understanding of phylogenetics through the generation of a formal species account
- Scientifically dissect preserved plant and animal specimens
• 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 Page
I will use the PSU online resource “Desire 2 Learn (D2L)” for posting daily notes, announcements, exam grades, and other course materials. Log in at http://www.pdx.edu/psuonline/ or directly at https://d2l.pdx.edu.

Important Dates

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<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Jan 10</td>
<td>Drop deadline (course not on transcript)</td>
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<tr>
<td>Jan 18</td>
<td>MLK Jr. Day – No lecture; Monday labs are rescheduled</td>
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<tr>
<td>Jan 27</td>
<td>Lecture Exam 1</td>
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<tr>
<td>Feb 17</td>
<td>Lecture Exam 2</td>
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<td>Feb 21</td>
<td>Grading option change/withdraw deadline</td>
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<tr>
<td>Mar 9</td>
<td>Lecture Exam 3</td>
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<tr>
<td>Mar 14</td>
<td>Final Exam 1930-2120 Cramer Hall</td>
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Grading
Classroom response (“i>clicker”) questions: 10%
Class exams (best 2 of 3): 30% each (total of 60%)
Comprehensive final exam: 30%

Exams
There will be three class exams. Your lowest class exam score will be dropped. If you are unable to make it to a class 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 class exams or the final exam, you should not take Bi212 this term.

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.

Incompletes
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 incomplete. See the PSU Bulletin for more information: http://www.pdx.edu/oaa/psu-bulletin.

Classroom Response
Each lecture session will include questions to be answered using the required i>clickers. The first week’s questions will not be graded, but weeks 2-10 will. Your lowest 3 session scores 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. Clickers cannot be shared by students. 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 online, and associate it with your PSU ODIN ID login name by Wednesday of Week 1. To register online, go to http://www.iclicker.com/ and click the ‘Register’ button.

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). For example, if your PSU email address happens to be gangnamstyle1996 at pdx.edu, your ODIN ID is gangnamstyle1996.
3. 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.
4. 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.
5. 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.

Classroom Policies

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 occurs, the grade for the assignment will be a zero, and will not 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 Misconduct).

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

Schedule
Students are expected to arrive for class on time so that lectures and labs begin and end according to schedule. Since the Collaborative Life Sciences Building (CLSB) 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; lab benches should be left clean and organized.

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/, and then notify Dr. Cook to make appropriate arrangements. Students with testing accommodation must take exams at the PSU Testing Center on the same day as scheduled lecture exams. No exceptions. Schedule exams at the PSU Testing Center (UCB 340) as soon as possible to ensure a spot.
Emergency Info
In case of emergency, dial 503-725-4404. The physical address of Cramer Hall is:
1721 SW Broadway, Portland, Oregon 97201

Tips for Success

If you are unfamiliar with college coursework, I recommend you stop by PSU’s Learning Center (http://www.pdx.edu/tutoring/). Located on the second floor of the PSU Library, room 245, they can help you with your current coursework, and can assist you in developing effective learning strategies.

Be an active learner. Read relevant materials 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. Try the Cornell System of note-taking and review: a simple but powerful method for studying. See: http://lsc.sas.cornell.edu/LSC_Resources/cornellsystem.pdf or http://lsc.cornell.edu/Sidebars/Study_Skills_Resources/SKResources.html

Figure out and use your learning strengths. Learning styles vary from person to person. You might do your best studying through reading, writing, or 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.

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.

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.

Use the University resources. Campus services are available to help you with all aspects of your education, see http://www.pdx.edu/studentaffairs. The Undergraduate Advising and Support Center (UASC), 425 Smith, 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 veteran services. The Learning Center offers tutoring in many subjects (including Biology), as well as various workshops, see http://www.pdx.edu/tutoring/.
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<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Scheduled Topics</th>
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<td>Lecture topics may change from those listed in the syllabus. Exams will be given as scheduled.</td>
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<tr>
<td>1</td>
<td>Jan 4 – Jan 8</td>
<td><strong>Lecture:</strong> Animal &amp; plant development; <strong>Text:</strong> Chapters 22, 23, &amp; 24; <strong>Lab:</strong> 1: Orientation; Developmental biology</td>
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<td>2</td>
<td>Jan 11 – Jan 15</td>
<td><strong>Lecture:</strong> Natural selection; Evolutionary processes; <strong>Text:</strong> Chapters 25 &amp; 26; <strong>Lab:</strong> 2: Natural selection</td>
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<td>3</td>
<td>Jan 18 – Jan 22</td>
<td><strong>Lecture:</strong> Speciation; <strong>Text:</strong> Chapter 27; <strong>Lab:</strong> 3: Cnidarians, platyhelminthes, nematodes, &amp; annelids; No lecture or labs on Monday, Jan 18 (MLK, Jr. Day) MONDAY LABS ARE RESCHEDULED</td>
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<td>4</td>
<td>Jan 25 – Jan 29</td>
<td><strong>Lecture:</strong> Phylogenies &amp; the history of life; Protists; <strong>Text:</strong> Chapters 28 &amp; 30; <strong>Lab:</strong> 4: Molluscs; <strong>HOUR EXAM 1 on Wednesday, January 27</strong></td>
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<td>5</td>
<td>Feb 1 – Feb 5</td>
<td><strong>Lecture:</strong> Taxonomy &amp; introduction to animals; Protostomes; <strong>Text:</strong> Chapters 33 &amp; 34; <strong>Lab:</strong> 5: Arthropods</td>
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<td>6</td>
<td>Feb 8 – Feb 12</td>
<td><strong>Lecture:</strong> Deuterostomes; <strong>Text:</strong> Chapter 35; <strong>Lab:</strong> 6: Phylogeny &amp; comparative anatomy of deuterostomes</td>
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<td>7</td>
<td>Feb 15 – Feb 19</td>
<td><strong>Lecture:</strong> Plant form &amp; function; Photosynthesis; <strong>Text:</strong> Chapters 37 &amp; 10; <strong>Lab:</strong> 7: Photosynthesis &amp; plant pigments; <strong>HOUR EXAM 2 on Wednesday, February 17</strong></td>
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<td>8</td>
<td>Feb 22 – Feb 26</td>
<td><strong>Lecture:</strong> Plant reproduction; Phylogeny (Green algae &amp; plants); <strong>Text:</strong> Chapters 41 &amp; 31; <strong>Lab:</strong> 8: Vegetative structure &amp; function</td>
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<td>9</td>
<td>Feb 29 – Mar 4</td>
<td><strong>Lecture:</strong> Water &amp; sugar transport; Plant nutrition; Plant sensory systems; <strong>Text:</strong> Chapters 38, 39, &amp; 40; <strong>Lab:</strong> 9: Stomatal density</td>
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<td>10</td>
<td>Mar 7 – Mar 11</td>
<td><strong>Lecture:</strong> Fungi; <strong>optional review session after Exam 3 on March 9</strong>; <strong>Text:</strong> Chapter 32; <strong>Lab:</strong> 10: Reproduction; SPECIES ACCOUNTS DUE; <strong>HOUR EXAM 3 on Wednesday, March 9</strong></td>
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<tr>
<td>Finals</td>
<td>Mar 14 – Mar 18</td>
<td><strong>FINAL EXAM (Comprehensive)</strong>; <strong>MONDAY, March 14 1930 – 2120</strong></td>
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