Biology 110 – WEB – Summer 2012
Biology: Basic Concepts and Biodiversity

Biology 110 is a four credit course. The course will utilize web-based tutorials and laboratory/recitation sessions. The goal of this course is to introduce you to fundamental concepts that are common to all organisms and to explore the biological diversity of life on Earth.

Lecture Instructor: Dr. Denise Woodward (contact through ANGEL)

Laboratory Teaching Assistant: Sara Lynn Nicole Farwell - Lab Teaching Assistant (contact through ANGEL)

Course Materials

Important! Safari and Google Chrome are NOT reliable browsers for use with many of the online materials for this course. Firefox is the best browser to use for this course.

Mastering Biology Access: If you purchased a new copy of the 9th edition of Campbell Biology, you will have received a printed access code inside the *MasteringBiology* Student Access Kit. If you wish to use an older version of the textbook, or chose not to use a textbook, then you will need to purchase a separate code for access to Mastering Biology. To purchase a code on-line, go to www.masteringbiology.com , click on the register "STUDENT" button and the next window will give you the option to purchase a code. Click on the picture of the textbook, you do not need access to Virtual Labs, you can decide if you would like to have the etext (~$93.50) or not (~$48.50). You will use your purchased access code to set up a student account and join the class **BIOL110SUMMER2012**. You must use your PSU Access Account ID, i.e. xyz123 (**NOT** your 9-digit student ID number) as your student ID for Mastering Biology. Failure to properly format your Mastering Biology account will result in the loss of any points associated with an incorrect ID. Only points earned under your access account ID will be credited.

Optional Textbook: Reece, J et al. 2011. Campbell Biology. Ninth Edition. Pearson Benjamin Cummings, San Francisco, CA. The prior edition can also be used. The textbook is not required but some students have found it to be a valuable supplement to the online tutorials to the course so page numbers have been provided.

Online Lecture Tutorials and Lab Modules: The format of this course is designed to let you know, on a regular basis, how you are progressing through the course (and to let us know how you are doing with the material). We will use on-line computer tutorials to guide you through the course.

Each tutorial has a series of questions to test your understanding of the material and provide you with feedback to help you better understand the topics covered. These questions are posted on ANGEL. Think carefully before you select an answer; these questions are designed to let you know if your level of understanding is adequate. These questions are **NOT** graded, however, you should try to answer the questions correctly because your performance on the questions is an indication of the effort you are putting into the course and your understanding of the material.

This course stresses concepts and it is critical that you understand the material; memorization alone will not be sufficient.

"Lecture" Assignments

Quizzes and Exams: You will be responsible for understanding all material presented in the online lectures and posted on the course website. There will be 8 quizzes (35 points each) and 2 exams (a midterm exam worth 110 points and a final cumulative exam worth 220 points).

On-line Homework via Mastering Biology: There will be assigned activities and reading questions within the on-line Mastering Biology course. These assignments are selected to help you with difficult concepts but are in no way comprehensive of all the material presented during the lecture. Each assignment will have a due date and you must complete the assignment by the due date to receive full credit. Each week, you can earn a maximum of 10 points for the Mastering homework but there will be more than 10 points worth of questions. This means you do not need to get every question correct to earn the maximum number of points. You can earn a maximum of 90 points total for homework.

"Lab" Assignments

This component of Biology 110 is designed to provide students with experience into how biologists formulate hypotheses,

how they gather, summarize, and analyze data to test these hypotheses and how this process is used to address important questions in the world around us. You will make extensive use of the web in learning how to collect and make sense of biological information that affects life around the world. In working through this material you will make use of several online tools that include Penn State's course management system (ANGEL), along with GoogleDocs and Voicethreads. Because the summer session is a bit compressed we urge you to work each day on both lab and lecture material; your TA can help you with laboratory concepts that you find difficult, so feel free to contact her (through ANGEL) with your questions.

There are ten modules associated with the lab portion of the course and we will begin the first module immediately. All modules have an assignment that you must submit for grading.

- In some cases the material will be submitted in a dropbox in ANGEL.
    - Submit your final draft of the assignment and all portions of an assignment should be contained in a single document. If you submit portions of the assignment individually or you make multiple submissions, you will lose 5 points. Please contact your TA with an explanation if you submit the wrong version. If you have questions about how to create a single document, please contact your TA well before the due date.
    - It is your responsibility to make sure that your submission has been uploaded into ANGEL properly. Documents that are not submitted properly will be considered late and will lose 50% of the total points.
- In other cases, you will be asked to take an online quiz in ANGEL.
    - You may see similar questions on the lecture midterm as you see on the quizzes, so be sure you understand any quiz question that you miss.
- The due dates of all assignments are given in the course schedule.
    - Late assignments will be graded, but you will lose 50% of the possible points each day they are late. If you anticipate not being able to make the deadline contact your TA well in advance.

Academic Integrity:

Professional behavior includes academic integrity. Academic dishonesty is not limited to simply cheating on a quiz and/or assignment. The following is quoted directly from the "PSU Faculty Senate Policies for Students" regarding academic integrity and academic dishonesty: “Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts. Academic integrity includes a commitment by all members of the University community not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others.”

All University and Departmental policies regarding academic integrity/academic dishonesty apply to this course and the students enrolled in this course. Refer to the following URLs for further details on the academic integrity policies at PSU of the Eberly College of Science: http://www.science.psu.edu/academic/Integrity/Policy.htm

Each student in this course is expected to work entirely on her/his own while taking any quiz, to complete assignments on her/his own effort without the assistance of others unless directed otherwise by the teaching assistant, and to abide by University, College and Department of Biology policies on academic integrity and academic dishonesty. If you have any questions about an assignment, please ask. Academic dishonesty can result in assignment of “F” by the course instructors or "XF" by Judicial Affairs as the final grade for the student. Students are responsible for ensuring that their work is consistent with Penn State's expectations about academic integrity.

Assignment of Grades:

Lecture material counts for 70% of your course grade; the remaining 30% will come from the laboratory exercises (300 points), for a total of 1000 points*. If you do not pass lab (your score is less than 60%), you will not pass the course, regardless of your grade in the lecture portion of the class. The grading scale (in points) is:

A	930 - 1000	C+	770 – 799
A-	900 - 929	C	700 – 769
B+	870 - 899	D	600 – 699
B	830 - 869	F	Less than 600
B-	800 - 829		

If the class mean is below 75%, then grades will be assigned with the mean being a "C". There are **no** extra credit points available in this course. **In extraordinary circumstances, a final grade may be based upon fewer than the total number of points available*.

Biology 110 Weekly Schedule – Summer 2012

Weekly Schedule	Tutorial Readings, Lab Modules and Assignments	Suggested Textbook Readings for Lecture Material
Week 1 June 11- June 17	*Orientation activities on ANGEL (5 points) due at 11:00PM EST on Friday, June 15th* Tutorial 1 - Life and Natural Selection Tutorial 14 – Antiquity of Life Tutorial 25 – Mitosis/Cell Cycle Regulation Tutorial 2 - Heredity and Life Cycles *Mastering Biology assignments(10 points) for these tutorials (plus Introduction to Mastering Biology) due at 11:00PM EST on Friday, June 15th* Lab Module 01: Introduction *Module 01 Assessment 1 and Assessment 2 (10 points total) due at 11:00PM EST on Friday, June 15th*	 Chap 1: 11-17 Chap 25: 510-514 Chap 12: 230-234 Chap 13
Friday June 15 – Sunday June 17	**Quiz #1 (covers Tutorials 1, 14, 2, 25)**	**See Quiz information sheet on ANGEL**
Week 2 June 18-June 24	Tutorial 3 - Mendel and Modern Genetics Tutorial 4 - Predicting Phenotypes and Genotypes Tutorial 5 - The Complex Expression Patterns of Multiple Alleles Tutorial 6 - Pedigree Analysis *Mastering Biology assignments (10 points) for these tutorials due at 11:00PM EST on Friday, June 22nd* Lab Module 02: The Scientific Method Lab Module 03: Descriptive Statistics *Lab Module 02: Assessment (15 points) and Module 03: Assessment (20 points) due at 11:00PM EST on Friday, June 22nd*	Chap 14: 262-266 Chap 14: 266-271 Chap 14: 271-275 Chap 14: 276-279
Friday June 22 – Sunday June 24	**Quiz #2 (covers Tutorials 3-6)**	**See Quiz information sheet on ANGEL**
Week 3 June 25- July 1	Tutorial 7 - Chromosome Behavior and Sex Chromosomes Tutorial 8 - Chromosome Behavior and Gene Linkage Tutorial 9 - Genes in Populations Tutorial 10 - Genetic Change in Populations Tutorial 11 - Genetics and Natural Selection *Mastering Biology assignments(10 points) for these tutorials due at 11:00PM EST on Friday, June 29th* Lab Module 04: Graphs Lab Module 05: Inferential Statistics *Lab Module 04: Assessment (30 points) and Module 05: Assessment (30 points) due at 11:00PM EST on Friday, June 29th*	Chap 15: 286-292 Chap 15: 292-296 Chap 23: 468-475 Chap 23: 475-480 Chap 22: 455 -461 Chap 23: 480-484
Friday June 29 – Sunday July 1	**Quiz #3 (covers Tutorials 7-11)**	**See Quiz information sheet on ANGEL**

Week 4 July 2– July 8	Tutorial 12 - What is a Species? Tutorial 13 - Mechanisms of Macroevolution Tutorial 16 - Carbon and Life Tutorial 17 - From Gene to Protein *Mastering Biology assignments (10 points) for these tutorials due at 11:00PM EST on Friday, July 6th* Lab Module 06: Integration *Lab Module 06: Assessment (30 points) due at 11:00PM EST on Friday, July 6th*	Chap 24: 488-498 Chap 25: 525-52 Chap 3: 46-50, Chap 4: 58-66 Chap 16: 311-316 , Chap 17: 328-334, 337-341
Friday July 6- Sunday July 8	**Quiz #4 (covers Tutorials 12, 13, 16, 17)**	**See Quiz information sheet on ANGEL**
Midterm Exam	**The midterm exam can be taken on any day from Monday, July 9 – Friday July 13. The midterm exam will be 40 questions and worth 110 points. It will cover the material through Tutorials 1- 14, 16-17.**	**See Exam information sheet on ANGEL.**
Week 5 July 9 – July 15	Tutorial 18 - Prokaryotes I - Cellular and Genetic Organization Tutorial 19 - Prokaryotes II -Structure and Function Tutorial 20 - Prokaryotes III - Evolution and Early Metabolism *Mastering Biology assignments (10 points) for these tutorials due at 11:00PM EST on Friday, July 13th* Lab Module 07: Science and Media *Module 07: Assessment (30 points) due at 11:00PM EST on Friday, July 13th*	Chap 12: 236-237 Chap 27 Chap 54: 1198-1199
Friday July 13 – Sunday July 15	**Quiz #5 (covers Tutorials 18-20)**	**See Quiz information sheet on ANGEL**

Week 6 July 16 – July 22	Tutorial 21 - Energy I – Thermodynamics Tutorial 22 - Energy II - Cellular Respiration (Glycolysis) Tutorial 23 - Energy III - Cellular Respiration (Krebs Cycle & Electron Transport Chain) Tutorial 24 - Metabolic Regulation and the Endosymbiotic Theory Tutorial 26 - Subcellular Specialization *Mastering Biology assignments (10 points) for these tutorials due at 11:00PM EST on Friday, July 20th* Lab Module 08: Applied Knowledge - Climate Change *Lab Module 08: Assessment (35 points) due at 11:00PM EST on Friday, July 20th*	Chap 8: 142-156 Chap 9: 163-169 Chap 9: 170-179 Chap 8: 157 –159, Chap 9: 181 Chap 25: 516 –517 Chap 6: 99 – 118
Friday July 20 – Sunday July 22	**Quiz #6 (covers Tutorials 21-24, 26)**	**See Quiz information sheet on ANGEL**
Week 7 July 23-July 29	Tutorial 27 - Protists I - Kingdoms Euglenozoa, Alveolata, and Slime Molds Tutorial 28 - Energy IV - Photosynthesis (Light Reactions) Tutorial 29 - Energy V – Photosynthesis (Calvin Cycle) Tutorial 30 - Protists II - Kingdoms Stramenopila, Rhodophyta, and Chlorophyta *Mastering Biology assignments(10 points) for these tutorials due at 11:00PM EST on Friday, July 27th* Lab Module 09: Applied Knowledge –Pandemics *Lab Module 09: Assessment (35 points) due at 11:00PM EST on Friday, July 27th*	Chap 28: 575-584, 594 – 596 Chap 10: 184-197 Chap 10: 198 – 203 Chap 28: 585-592

Friday July 27- Sunday July 29	**Quiz #7 (covers Tutorials 27-30)**	**See Quiz information sheet on ANGEL**
Week 8 July 30- Aug 5	Tutorial 31 - Plants I - Evolution and Diversity, Bryophytes Tutorial 32 - Plants II - Seedless Vascular Plants Tutorial 33 - Plants III - Seeded Vascular Plants Tutorial 34 – Plants IV – Angiosperms Tutorial 35 - Fungi I - Evolution and Diversity, Phyla Chytridiomycota and Zygomycota Tutorial 36 - Fungi II - Phyla Ascomycota and Basidiomycota *Mastering Biology assignments (10 points) for these tutorials due at 11:00PM EST on Friday, August 3rd* Lab Module 10: Research Project *Lab Module 10: Project Topic (Lesson 04) + Project Outline (Lesson 05) (15 points total) due at 11:00PM EST on Friday, August 3rd*	Chap 29:600-610 Chap 29:610-615 Chap 30: 618-625 Chap 30: 625-628, Chap 38: 802-806 Chap 31: 636-644 Chap 31: 644-652
Friday Aug. 3 - Sunday Aug 5	**Quiz #8 (covers Tutorials 31-36)**	**See Quiz information sheet on ANGEL**
Week 9 Aug 6-Aug 10	Tutorial 37- Animals I - An Overview of Phylogeny and Diversity Tutorial 38 - Animals II - Parazoa, Radiata, and Acoelomates Tutorial 39 - Animals III - Pseudocoelomates, Mollusks, and Annelids Tutorial 40 - Animals IV- Arthropods and Echinoderms Tutorial 41 - Animals V - Deuterostomes: Chordates *Mastering Biology assignments(10 points) for these tutorials due at 11:00PM EST on Friday, August 10th* Lab Module 10: Research Project (continued) *Lab Module 10: Final Project (Lessons 06 and Lesson 07) (45 points total) due at 11:00PM EST on Friday, August 10th*	Chap 32: 654-661 Chap 33: 666-676 Chap 33: 677-684 Chap 33: 684-694 Chap 34
	The Final Exam is Friday, August 10th – Sunday, August 12th. The exam is cumulative and covers all material covered in the course. There will be 70 questions and it is worth 220 points.	