BSC 2010 – Integrated Principles of Biology I (PHPB)

Fall 2016

I. Class Meetings

Monday	Period 11	6:15 PM – 7:05 PM	MCCA 3194
Wednesday	Period 11-E1	6:15 PM – 7:55 PM	MCCA 3194

II. BSC Laboratory Courses

The BSC laboratory courses (BSC 2010L and BSC 2011L) are managed separately from the BSC lecture courses. Please read the information available at the BSC Website (http://www.bsc.ufl.edu) for more information on the laboratory courses.

III. Instructor

Jennie DeMarco, PhD
Department of Biology
Office: 417 Carr
Office Hours: M immediately after class or by appointment
E-mail: jennied@ufl.edu

IV. Course Goals and Objectives

The primary goal of this course is to establish a coherent foundation of knowledge in biology and to prepare students for comprehension in advanced biology courses and science in general. Fundamental concepts discussed include the scientific methods by which we come to know things in science, the chemical composition and processes that make up all life, genetic processes and the means of inheritance of traits, the mechanisms and processes of natural selection, and adaptation and evolution of life on Earth An additional course goal is to develop critical thinking skills for development of reasoned thought and for evaluation of life experiences.

Objectives of the course will be achieved if, by its conclusion, students can:

- Describe a scientific hypothesis and identify testable predictions that logically follow
- Compare and contrast the components of prokaryotic and eukaryotic cells and the molecular processes driving cellular structure and functions
- Outline the process and molecular components of key metabolic pathways
- Describe the relationship between genotype and phenotype
- Predict the RNA and protein sequences that will be transcribed and translated from a given gene
- Predict the immediate and long term effects of specific gene mutations
- Discuss the evidence that all living things are descended from a common ancestor
- Describe the driving forces of evolutionary change
- Identify sources of genetic variation in populations and explain how this can be shaped in the presence of natural selection
- Read and evaluate a phylogenetic tree

V. General Education Objectives for Biological Sciences

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

The General Education objectives and the associated Student Learning Outcomes for Biological Sciences are achieved through lectures, in class discussion, interactive "clicker" response systems, and online activities and exercises. The learning objectives and SLOs are further reinforced by inquiry-based and active-learning exercises in the companion laboratory course, BSC 2011L. In particular, the companion lab expands upon development and testing of specific hypotheses.

VI. General Education Student Learning Outcomes

The general education student learning outcomes (SLOs) describe the knowledge, skills and attitudes that students are expected to acquire while completing a general education course at the University of Florida. The SLOs fall into three categories: **content**, **communication** and **critical thinking**.

Every general education course must address all three SLOs. Note that the subject area objectives (detailed above) describe the context within which the SLOs are achieved

Category	Institutional Definition	Institutional SLO
CONTENT	Content is knowledge of the concepts, principles, terminology and methodologies used within the discipline.	Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.
COMMUNICATION	Communication is the development and expression of ideas in written and oral forms.	Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.
CRITICAL THINKING	Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or formulating an opinion or conclusion.	Students analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems.

To assess student performance in meeting these student learning outcomes for this course, students are evaluated by a variety of instruments throughout the course: three exams during the semester, daily graded "clicker" questions used to assess comprehension and reasoning, and graded on-line activities, exercises and assessments. Student Learning Outcomes are further assessed in BSC 2010L, the companion lab course. For example, the Communication SLO is assessed in graded written assessments and in oral presentations in the lab. In combination, BSC 2010 and BSC 2010L provide assessments of all categories of the General Education Student Learning Outcomes.

VII. Expectations

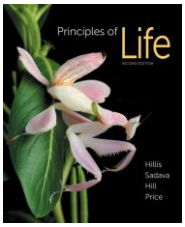
Each student is solely responsible for reading and following the instructions, guidelines and schedules in this syllabus and on the course webpage, or announced in class. Not having read the information in this syllabus or in instructor announcements will not constitute an excuse for missing an assignment, exam, or other assessment. Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information. **Check Announcements in Canvas regularly as e-mail notifications from Canvas do not always go through.**

VIII. E-mail Communication

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

IX. Course Resources

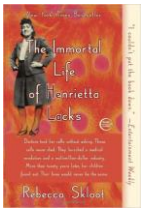
A. Textbook



Principles of Life, 2nd Edition, by Hillis, Sadava, Heller, & Price, Sinauer Associates and W.H. Freeman (publisher). You may purchase either the hardcopy or the online version.

There are current versions of the textbook on reserve at the Marston Science Library. Visit the Reserve Materials area to check out these copies.

Discussion book



The Immortal Life of Henrietta Lacks, by Rebecca Skloot. You may purchase the hardcopy, e-book, or audiobook. This book is available at any of the local bookstores and on Amazon.

B. Classroom Response System (Clicker)

We will use the Learning Catalytics Classroom Response System for quiz questions during class or to assign specific homework questions. LC allows students to use a cell phone (text messaging), laptop, tablet, smartphone, or an iPod touch to participate in class. Dr. DeMarco will provide instructions on how to register for Learning Catalytics during the first week of class.

C. Course Website (e-Learning)

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

X. Communicating with your instructor

When you have a question about any assignments, due dates, and/or grades please check the following sources **first** to see if it is already answered, **before** e-mailing or asking your Instructor:

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

If you still cannot find the answer to your questions:

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

XI. Assessments and Grading

A. Exams

There will be three "midterm" exams. The midterm exams will be administered during the normal semester and during the normal class meeting times. Each exam will cover material from lecture, the online discussions, homework, activities, and the assigned reading in the textbook. Exam will be worth approximately 47.6 % of the total course grade.

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

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

Exams will be available for review by appointment for one week after the exam date; specific times for exam review will be announced following each exam. Exams will **not** be available for review after the semester has ended.

Make-up Exams: No make-up exams will be given without prior permission or documentation of illness. Students that will be missing an exam due to a pre-arranged university-approved excused absence (sports, etc.) should let the instructor know **a minimum of two weeks in advance**. These students may be required to take the make-up exam *before* the scheduled in-class exam.

In case of illness on exam day, a letter from the student's primary care provider is required. This letter must state that the student was unable to complete the exam on the scheduled date (i.e., a letter stating only that the student was seen in a clinic is not sufficient). A personal matter requires a note from the Dean of Students (P202 Peabody Hall). These notes must be received within five business days after the exam. Make up exams may be short-answer or essay format.

B. Comprehension Quizzes

Students will receive up to 9.5 % of the total course points for participation in online comprehension quizzes. Each quiz will be allowed three attempts and the highest score received will be recorded for that quiz. All quizzes must be completed by the stated due date and time for credit. Extensions will NOT be given because of technical or personal issues that occur within 24 hours of the assignment deadline. Most quizzes will also have a set time limit, so make sure you have time to devote to that assignment before you begin. You are expected to work by yourself on the quizzes and cheating will not be tolerated.

C. Homework Assignments

Students will receive 19 % of their total course grade from homework assignments. A variety of homework assignments will be announced on the course website. Unless otherwise stated, homework is due at the beginning of class on the date it appears in the schedule on the course website. A total of 12 homework assignments will be assigned for the course (4 per unit), worth 10 points each. **Late homework will NOT be accepted.**

D. In-Class Activities

In-class activities include (but are not limited to) discussions, case studies, data analysis and interpretation, and participation in group projects. In-class activities with a point value will typically be announced on the course website, but there may be unannounced activities in addition to clicker questions. A total of 12 in-class activities will be assigned for the course (4 per unit), worth 10 points each and totaling 19 % of the course grade. **In-class activities require class attendance and CANNOT be made-up if class is missed.**

E. In-Class Quiz Clicker" Questions

Students will receive 4.8 % of the total course points for participation in the in-class questions that are to be answered using the classroom response system (Learning Catalytics, see above). Questions may be assigned as homework at the discretion of the instructor. Specifically, 30 points total will be awarded for in-class questions; 10 points from each lecture unit of the course. The points earned will reflect the proportion of LC questions answered correctly in class. Each question posed will be scored as 0.75 LC points for participation with an additional 0.25 LC points for a correct answer. For each course lecture unit, full in-class question credit (10 course points) will be awarded to all students achieving 75% of the total possible LC points from that unit; those achieving less than 75% will receive course points in proportion to their achieved THM points (e.g. 50% of LC points earned = 5 course points for one lecture unit).

Students may not make up LC questions, regardless of the reason (e.g., absence, malfunctioning cell phone, forgot to register, etc.). It is the student's responsibility to regularly check (i.e., daily or weekly) their gradebook in LC to ensure that their submissions were correctly received, and to contact LC support to resolve any issues with submissions not being properly recorded in the LC gradebook in a timely manner.

F. Extra Credit

Extra credit MAY be offered at the discretion of the instructor. Any extra credit available will be offered to ALL students in the course.

G. Grading

Assessment	Points per Unit	Total Point	% of Total Points
Exams	100	300	47.6
Quizzes	20	60	9.5
Homework	40	120	19.0
Activities	40	120	19.0
In-class questions	10	30	4.8
TOTAL	210	630	100.0

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

match the grade issued for that assignment. If there is a discrepancy you must let us know within ONE week of the grade being posted on eLearning.

Minimum grade cutoffs are listed below. Because each exam is curved individually (see section IX-A, above), the scores for the course as a whole will not be curved (i.e. these grade cutoffs will not be lowered, so don't ask). However, these cutoffs will not be raised; in other words, if you receive 90% of the possible points, you are guaranteed to earn an A grade.

Final scores will NOT be rounded (i.e., 89.99% is not 90%).

Point Range (%)	Letter Grade
≥ 90.00	A
≥ 86.66	A–
≥ 83.33	B+
≥ 80.00	B
≥ 76.66	B–
≥ 73.33	C+
≥ 70	C
≥ 66.66	C–
≥ 63.33	D+
≥ 60	D
≥ 56.66	D–
< 56.66	E

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

H. Special Treatment

Please do not request individual special treatment regarding grading at the end of the semester; **we do not adjust grades for individuals for any reason**. Plan to do well on all exams and other assessments from the beginning of the semester; if you are having difficulty in the class, please let your instructors know *before* the exams rather than after.

XII. Academic Honesty

All students registered at the University of Florida have agreed to comply with the following statement:

> *"I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."*

In addition, on all work submitted for credit the following pledge is either required or implied:

> *"On my honor I have neither given nor received unauthorized aid in doing this assignment."*

If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx#honesty.

XIII. Attendance

Students are expected to attend all classes and are responsible for all material covered during the lecture, including announcements. **In addition, your attendance is necessary to earn points for "clicker" quizzes; such points cannot be made up.** Students are strongly encouraged to read the assigned chapters before coming to class as this will make it easier to comprehend the lecture material. If you miss class, visit the e-Learning site for any lecture notes and course announcements.

XIV. Time Commitment

The UF College of Liberal Arts and Sciences expects that each student will devote 3-4 hours per week per credit-hour to each course, including time in lectures and labs. Because BSC 2010 is 3 credits, each student should therefore expect to devote 9-12 hours per week to this course. A recommended time allocation is below.

Activity	Hours per Week
Lectures	3
Online Exercises	1-2
Textbook Readings	2-3
Review and Study	2-4

If you find yourself spending more than 12 hours per week on average on these activities, discuss this with your course instructor to see if you can refine your study habits. If you find yourself spending less than 9 hours per week on average, you should recognize that you may have difficulty learning and comprehending the material in this time, and this will probably be reflected in poor performance on the various assessments, causing you to receive a lower overall course grade.

XV. Conduct in Class

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

Use of electronic devices in class to take notes or otherwise participate in classroom activities is approved. Approved electronic devices are laptop computers, cell phones, smart phones, tablets, iPod touch, and voice recording devices. Other uses of these devices or the use of unapproved devices will be considered disruptive. Unapproved electronic devices include video recorders, digital cameras and MP3 players. Students who use unapproved devices in class will be considered disruptive. Multiple disruptions will be considered grounds for the assignment of a failing grade.

XVI. Accommodations for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: http://www.dso.ufl.edu/drc/. Note that the student should provide documentation of a requirement for accommodation **by the second week of classes**. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

XVII. Counseling Center

Many students experience test anxiety and other stress related problems. "A Self Help Guide for Students" as well as a diverse array of support systems are available through the UF Counseling and Wellness Center (3190 Radio Road, 392-1575, http://www.counsel.ufl.edu/).

XVIII. Lecture Schedule

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

Week	Day	Date	Topic	Chapter
			Unit 1: Cells and Biochemistry Lectures	1-6
1	M	22 Aug	Principles of Life	1
	W	24 Aug		
2	M	29 Aug	The Building Blocks of Life	2-3
	W	31 Aug		
3	M	5 Sep	**Labor Day-NO CLASS**	
	W	7 Sep	Cells, Prokaryotic Cells, and Eukaryotic Cells	4
4	M	12 Sep	Cell Membranes and Signaling	5
	W	14 Sep		
5	M	19 Sep	Respiration and Photosynthesis	6
	W	21 Sep		
6	M	26 Sep	**Unit 1 EXAM - In Class**	**1-6**
			Unit 2: Genetics Lectures	7-13
	W	28 Sep	Mitosis and Meiosis	7
7	M	3 Oct	Mendelian Genetics	8
	W	5 Oct		
8	M	10 Oct	Chromosomes and Linkage	9
	W	12 Oct		
9	M	17 Oct	Search for DNA, Replication, Central Dogma	10
	W	19 Oct		
10	M	24 Oct	Transcription and translation	7,9
	W	26 Oct		
11	M	31 Oct	Gene expression, mutations, and genomes	9, 11, 12, 13

	W	2 Nov	**Unit 2 EXAM - In Class**	**7-13**
			Unit 3: Evolution Lectures	15-20
12	M	7 Nov	Intro to Evolution and Natural Selection	15
	W	9 Nov		
13	M	14 Nov	Species and Speciation	17
	W	16 Nov		
14	M	21 Nov	Phylogenies	16
	W	23 Nov	**Thanksgiving-NO CLASS**	
15	M	28 Nov	History of the Earth	18
	W	30 Nov		
16	M	5 Dec	Origins and Early Diversity of Life	19
	W	7 Dec	**Unit 3 EXAM - In Class**	**15-20**