Foundations of Biology 2 — BIOSC 0160 Spring 2016

INSTRUCTOR: Dr. Alison Hale
anm116@pitt.edu
Office Phone: 412-624-4591
A117 Langley Hall

OFFICE HOURS:
Monday: 2:30-3:30PM, **A230 Langley Hall**
Wednesday: 3:00-4:00PM, **A230 Langley Hall**

Please note that my office (A117 Langley Hall) has limited accessibility. Therefore, my office hours are in A230 Langley Hall. During office hours, I am present and available to help you with the course material and other course-related issues. Office hours are also available by appointment. Please send me an email with 3 possible time slots that would work for you.

CLASS TIME AND LOCATIONS:
Lecture – Monday and Wednesday: 6:00-7:15PM, L9 Clapp Hall
Recitations – Monday: 7:30-8:20PM, L9 Clapp Hall
Tuesday: 12:00-12:50PM, 169 Crawford Hall
Tuesday: 2:00-2:50PM, A224 Langley Hall
Tuesday: 3:00-3:50PM, A224 Langley Hall

UNDERGRADUATE TEACHING ASSISTANTS:

Recitation	First Name	Last Name	Email Address	Major
Monday 7:20-8:30PM	Keely	Gambler	kcg21@pitt.edu	Pre-pharmacy
	Zach	Gazze	ztg4@pitt.edu	Biology
	Shahm	Raslan	swr14@pitt.edu	Natural Sciences (Pre-med)
Tuesday 12-12:50PM	Cenk	Atillasoy	cma69@pitt.edu	Biology, Psychology (Pre-med)
	Kaushik	Ganesh	kag175@pitt.edu	Biology, Anthropology (Pre-med)
Tuesday 2-2:50PM	Caleb	Radomile	cwr15@pitt.edu	Biology (Genetic counseling)
	John	Villandre	jjv31@pitt.edu	Biology
Tuesday 3-3:50PM	Sonali	Agrawal	soa20@pitt.edu	Biology
	Mary	Sherman	mms170@pitt.edu	Biology (Pre-vet)

COURSE OVERVIEW:
This is the second of a two-semester introductory course in biology. In this course, we will take an evolutionary and ecological perspective to understand the various mechanisms that give rise to organism structure and function. First, we will investigate how genes produce complex phenotypes. Second, we will apply the fundamental principles of evolution to understand how populations and ultimately species change over time. Next, we will study the impact of biotic

and abiotic factors on the interactions of individual organisms with their environment, members of their own species, and individuals of other species. We will conclude with a discussion of Earth's biodiversity, with a special focus on conservation efforts. Throughout the course, we will emphasize the importance of data in understanding biology.

PREREQUISITES:

Letter grade of C or higher in BIOSC 0150 (Foundations of Biology 1) is required before you can take BIOSC 0160. If you have questions about your eligibility to take this course, please speak with your academic advisor as soon as possible.

REQUIRED COURSE MATERIALS:

1. **TEXTBOOK:** Biological Science, 5th edition, by Freeman, Quillin, and Allison.
    - For hardback book - ISBN: 1323162100
    - For looseleaf book - ISBN: 1323162038

2. **MODIFIED MASTERING BIOLOGY:** http://masteringbiology.com. Modified Mastering Biology is an electronic resource that includes the e-textbook plus online homework assignments that will be part of the grading process for this course. If you have never used Mastering Biology before, you will need to create an account. Please create your account using your Pitt username (i.e. the part before the @ sign in your email address).

   Once you have an account, you will be able to access Modified Mastering Biology through Courseweb (On Courseweb home page, see left menu bar "Mastering Biology").

3. **LEARNING CATALYTICS:** This is the student response system that we will use in class. You will need to bring a wifi-enabled device – smart phone, tablet, or laptop – to every class to use Learning Catalytics.

4. **COURSEWEB:** Class notes, supplemental resources, and course grades will be posted on CourseWeb, which can be accessed at http://courseweb.pitt.edu.

Modified Mastering Biology and Learning Catalytics are packaged with the textbook at the University bookstore. If you choose to purchase the textbook from another vendor, you will need to purchase an access code from the publisher for Modified Mastering Biology and Learning Catalytics. You can do this when you register on the Mastering Biology website for the first time.

RECITATIONS:

Recitations supplement the material taught in lecture. Most recitation sessions will consist of an activity that students will complete on their own or with a partner. Material from the recitation may appear on exams and it is to your benefit to attend.

ASSIGNMENTS:

MODIFIED MASTERING BIOLOGY HOMEWORK: There will be seven Mastering Biology homework assignments over the course of the semester. The due dates for these assignments are listed on the course schedule (see below). These assignments will be completed through Modified Mastering Biology and will be graded. At the end of the semester, your final percentage on the homework assignments will be determined and you will receive this percentage of the 35 possible homework points towards your final grade. Mastering Assignments are due by 11:59PM on Sundays (see below). *Late assignments will not be accepted and receive no credit.*

LEARNING CATALYTICS: This class relies heavily on active learning. You will be completing problems, analyzing data, using scientific literature, etc. each day in lecture. These activities are designed to supplement the material being discussed in lecture. These activities are accessed online in class through your wifi-enabled device (laptop, tablet, smartphone, etc.).

One of the activities from each class will be selected for grading. Each activity is worth 2 points. 70% of the score is based on completion of the question, while 30% is based on correctness. If you are not in class, you will receive a zero. *There are no make-ups.* Learning Catalytics will be used beginning on the second day of class, but will not count towards your course grade until after the Add/Drop period. Your two lowest scores will be dropped.

EXAMS: There will be three midterm exams and a comprehensive final exam given during the week of finals. All exams will be made up of 50 multiple choice questions. For each exam, you must bring: No. 2 pencil, your PeopleSoft number, and photo ID. *There are no make-up exams.* The dates for all exams are provided below to allow you to plan ahead. If you miss an exam, you may substitute your comprehensive final exam grade for the missed exam. This can only be done for one exam. If you miss more than one exam, you will receive a zero on the other missed examinations.

You MUST take the final exam. The final exam time cannot be moved or changed. The only valid reasons for missing the final exam are under exceptional circumstances of severe illness, personal trauma, or (rarely) University business. Such excuses must be discussed with the instructor and documented (doctor's note, etc.). Oversleeping, writing down the date incorrectly, forgetting to attend the examination, and minor illnesses are NOT considered to be excused absences. Students without a valid excuse who miss the final exam will receive a score of zero on the final.

To challenge an exam question, you will need to submit your request in writing using the form provided on Courseweb. You must include a detailed justification for the correctness of your answer, including references to either the lecture notes (by date) or to the text used in the course (by page, paragraph). You should also refer to the question number on the exam and then present your case. All challenges must be received no later than 3 days after the results of an exam are posted. I answer all challenges by email.

GRADING:

All grades are assigned based on the points earned on the exams and assignments. There are no bonus points or extra credit points available.

Mastering Biology Homework	35 points
Learning Catalytics	40 points
3 midterm exams	150 points
Final exam	50 points
TOTAL	**275 points**

If the mean performance of all students in the course is below 75%, scores will be adjusted up such that the class mean is normalized to 75%. For example: If the class average is 200 points, which is 6 points below the 206 points needed for 75%, then 6 points are *added* to each student's point total. There are no other curves or grade adjustments in the course.

Following any adjustments in points, the total percentage will be calculated, and final grades will be determined according to the grading scale below. *Final grades are **NOT** subject to negotiation.*

GRADING SCALE

Final Percentage	Letter Grade
98-100%	A+
92-97%	A
90-91%	A-
88-89%	B+
82-87%	B
80-81%	B-
78-79%	C+
72-77%	C ← Minimum grade required for course to count towards BIOSC major
70-71%	C-
68-69%	D+
62-67%	D
60-61%	D-
59% and below	F

G GRADES

The Dietrich School of Arts & Sciences guidelines state that G grades are to be given only when students who have been attending a course and have been making regular progress are prevented by circumstances beyond their control from completing the course after it is too late to withdraw. Students who wish to petition for a G grade must submit, *in writing*, a specific request for this grade change and documentation for your reason(s). You will be required to make arrangements in person for the specific tasks you must complete to remove the G grade. You will be expected to sign documentation that will include the date by which work must be

completed. Failure to complete work by the date specified could result in a zero recorded for the missed work and your final grade will be calculated based on this score.

GENERAL INFORMATION:

CLASSROOM CONDUCT:

- Class begins at 6:00PM. Please arrive on time so that disruptions are kept to a minimum.
- Cell phones should be silenced.
- All wifi-enabled devices should be used exclusively for Learning Catalytics and/or taking notes ONLY. Even if your device is silent, the screen can be visually distracting to other students around you. Students found using their device for other purposes will be asked to turn off the device for the remainder of the class period.
- Lecture handouts will be posted on Courseweb prior to each lecture. If you prefer to take notes on the handouts, you should print the handouts prior to class.

ACADEMIC INTEGRITY POLICY: Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, noted below, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz, exam or paper will be imposed. For the full Academic Integrity policy, go to www.provost.pitt.edu/info/ai1.html.

E–MAIL COMMUNICATION POLICY: I will rely on e-mail for communication with you. Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to http://accounts.pitt.edu, log into your account, click on Edit Forwarding Addresses, and follow the instructions on the page. Be sure to log out of your account when you have finished. (For the full E-mail Communication Policy, go to www.bc.pitt.edu/policies/policy/09/09-10-01.html.)

DISABILITY SERVICES: If you have a disability for which you are, or may be, requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union, 412–648–7890/412–383–7355 (FTY), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

LECTURE SCHEDULE:

The list of topics is subject to revision as the term progresses.

Please note the dates and times of the exams to avoid any scheduling conflicts.

Week	Date	Topic	Assigned Reading	Mastering Biology Assignment
1	6-Jan	Introduction to course DNA and the gene: Synthesis and repair	Ch. 15	
2	11-Jan	How genes work	Ch. 16	Assignment 1: *Due Jan. 17 @ 11:59PM*
	13-Jan	Transcription, RNA processing, and translation	Ch. 17	
3	18-Jan	NO CLASS - Martin Luther King Jr. Day *Add/drop period ends on 1/19*		
	20-Jan	Transcription, RNA processing, and translation	Ch. 17	
4	25-Jan	Control of gene expression in bacteria	Ch. 18	Assignment 2: *Due Jan. 31 @ 11:59PM*
	27-Jan	Control of gene expression in eukaryotes	Ch. 19	
5	1-Feb	Genomics and beyond	Ch. 21	
	3-Feb	**Exam 1**		
6	8-Feb	Evolution by natural selection	Ch. 25	Assignment 3: *Due Feb. 14 @ 11:59PM*
	10-Feb	Evolutionary processes	Ch. 26	
7	15-Feb			
	17-Feb	Speciation	Ch. 27	
8	22-Feb	Phylogenies and the history of life	Ch. 28	Assignment 4: *Due Feb. 28 @ 11:59PM*
	24-Feb			
9	29-Feb	Green algae and land plants	Ch. 31	
	2-Mar	**Exam 2**	None	
	7-Mar	NO CLASS - Spring Break	*Enjoy!*	
	9-Mar			
10	14-Mar	An Introduction to Ecology *Monitored withdrawal ends on 3/16*	Ch. 52	Assignment 5: *Due Mar. 20 @ 11:59PM*
	16-Mar			
11	21-Mar	Behavioral Ecology	Ch. 53	
	23-Mar	Population Ecology	Ch. 54	
12	28-Mar			Assignment 6: *Due Apr. 3 @ 11:59PM*
	30-Mar	Community Ecology	Ch. 55	
13	4-Apr			
	6-Apr	**Exam 3**		
14	11-Apr	Ecosystems and global ecology	Ch. 56	Assignment 7: *Due Apr. 17 @ 11:59PM*
	13-Apr	Biodiversity and conservation biology	Ch. 57	
15	18-Apr	Case study	TBA	
	20-Apr			
16	25-Apr	Final Exam Review Session		
	27-Apr	**Final Exam, 6:00-7:15PM**		

RECITATION SCHEDULE:

The list of topics is subject to revision as the term progresses. The recitation for this class is *required*. During recitation, you will perform activities that expand upon course material.
Please only attend the recitation for which you are enrolled.

Week	Topic
2	DNA Synthesis, Transcription
3	NO RECITATION - MLK Jr. Day
4	Translation, Lac Operon
5	Exam Review Session
6	Natural Selection
7	Population Genetics
8	Interpreting Phylogenetic Trees
9	Exam Review Session
	NO RECITATION - Spring Break
10	Climate Change
11	DryadLab: Survivorship in the Natural World
12	Population Growth models
13	Exam Review Session
14	Food Webs
15	Case Study