

BIOL100: PRINCIPLES OF BIOLOGY
Fall 2013

GENERAL INFORMATION:

Instructor: Dr. Heather B. Felise (Lecture)
Office: Collier Hall of Science Room 323
Office Hours: Tuesdays and Thursdays 9 – 10am; Fridays 1 - 3pm or by appointment
Phone: 610-861-1428
Email: feliseh@moravian.edu

Instructor: Dr. Bruce Carney (Lab)
Office: Priscilla Payne Hurd Academic Complex (PPHAC) 202
Office Hours: Tuesdays 4-5pm and Thursdays 11:30am-12:30pm or by appointment
Phone: TBA
Email: carneyb@moravian.edu

Classrooms: Lecture – Memorial Hall Room 302
Lab – Collier Hall of Science (CHOS) Room 300
Time: Lecture - MWF 11:45am – 12:35 pm
Lab – T 12:45 – 3:45pm (section LA) **OR** R 12:45 – 3:45pm (section LB)

REQUIRED MATERIALS:

Textbook: *What is Life? A Guide to Biology*, by Jay Phelan, W.H. Freeman and Company, 2013. Second Edition. Registration and access to this course within the online BioPortal associated with your textbook is required. If you purchased your textbook through the Moravian College Bookstore your access card is bundled with your textbook.

To sign up for this course on the BioPortal:

1. Go to <http://courses.bfwpub.com/phelan2e.php> (Mac users need to use Firefox).
2. Click on the link "REGISTER AN ACTIVATION CODE."
3. You will be prompted to follow the on-screen instructions to find this course. Start by selecting the school's state/province, the school name, then instructor, course, and/or section.
4. Enter the activation code that came with your textbook. You will also be asked to enter your email address, choose a password and then you are ready to go!
5. You can also purchase access on the website by clicking on the "PURCHASE" link.

Classroom Clicker: Response card NXT with backlight by Turning Technologies. Students may rent or purchase from the Moravian College Bookstore.

COURSE DESCRIPTION: This course will provide an introduction to a broad range of topics in the biological sciences, including biomolecules, metabolism, genetics, molecular biology, evolution, biodiversity and ecology. But overall, I hope this course will instill a lifelong enthusiasm for science and a solid base of knowledge for application beyond the classroom in the years ahead.

COURSE OBJECTIVES:

By the end of this course students will have:

- a knowledge of and ability to apply the scientific process
- the ability to objectively analyze and interpret data
- the confidence to independently evaluate scientific claims made by others and/or society
- the means to recognize pseudoscience and anecdotal observations
- an appreciation of how science changes and will continue to change in the future

LECTURE:

Attendance and participation: It is my experience that those students who do not show up for class, do not perform well in class. Therefore to further encourage you to attend class you will receive **75 points for attending lecture and actively participating in class**. Students are allowed a maximum of four absences during the semester. If you miss class more than the allowed number of absences, 25 points will be deducted from your lecture attendance grade and 10 points will be deducted for each additional absence. ***Please note that absences are not divided into excused and unexcused. If you arrive late to class after attendance has been taken, you will be marked absent for the class.***

Active Learning Exercises: In this class I will be using a variety of teaching strategies, including both traditional lecture and active learning pedagogies. Therefore some of these activities will require active involvement on your part. It is my hope that you find these approaches interesting and engaging and that they enable you to be more successful in this course. Active learning techniques that will be used in this course include the following:

Clicker Questions – Multiple-choice questions will be embedded within lectures to provide an opportunity for students to test their newly acquired knowledge as well as allowing me to gauge student comprehension and to adjust the remainder of the lecture accordingly.

Think, Pair, Share – Students think about a question and then share their thoughts with one or two other students. Often this will be followed by a class debriefing of responses.

Brainstorming – Class discussion to generate ideas about a topic. Responses will be recorded on the blackboard.

Small Group Problem Based Activities – Students will work together in a small group setting to investigate a scenario or solve a problem provided by the instructor.

Reading Reflections – Written summaries of a scientific news stories and/or reading assignments. These will also include student's personal opinions or reflections of the article.

Level of student engagement and participation in these activities will be considered when assessing the student's participation grade for the course.

Lecture Exams: There will be four lecture exams, each worth 75 points, given during the designated lecture sessions (Please see the attached course schedule). The 5th exam will be given during the final exam period and **will not be cumulative**. This 5th lecture exam will also be worth 75 points. Both lecture material and assigned textbook readings are fair game for lecture exam questions. Lecture exams will be a combination of multiple-choice and short-answer essay questions.

In the event of special needs (such as medical excuse or family emergency) make-up exams will be given, but arrangements must be made **in advance** with Prof. Felise and **documentation for the absence, e.g. a doctor's note, is required**. If there is an emergency please contact me ASAP. **Make-up exams may be oral** and will be given at a time I deem appropriate.

Quizzes: There will be five quizzes throughout the course each worth 10 points. The dates for these quizzes are listed on the lecture schedule. The quiz format and the types of questions, e.g. multiple-choice or short answer, will vary. The lowest quiz grade will be dropped at the end of the course. Therefore there will be **no make-up quizzes**. In the event of an absence this will be the quiz grade that is dropped at the end of the course.

LABORATORY:

General: Student's will typically work in groups of four on the laboratory exercises and then submit a single group report. All students in the group will need to sign the group report. Students may choose their own groups. But if a group is disruptive and/or is not actively participating in the experiment, the instructor reserves the right to assign groups. There is no laboratory manual for the course. **Laboratory exercises will be posted in advance on Blackboard and students are expected to print, read and bring these exercises with them to lab unless otherwise specified**. This does not include the lab exercise for the first week of class.

There is to be NO food, drink or use of cell phones in the lab!

Attendance: Each student is required to attend lab and take an active role in performing the exercises offered. In order to meet this requirement it is necessary that you arrive for lab on time and remain engaged in the work until the scheduled lab period ends. If you arrive late, leave early, or appear disengaged from the effort of the group it is customary to reduce the student's score on that exercise relative to that received by other members of the group. The amount of this reduction is at the discretion of the instructor and will depend upon the degree to which the student's absence or lack of engagement impacted the work of the group.

Please let the instructor know **in advance** if you will miss lab due to a field trip, sporting event or other school-related function. In the event of an unforeseen circumstance, such as an illness, make-up labs will be offered at the instructor's discretion, but **documentation for the absence, e.g. a doctor's note is required**.

Laboratory notebook: Students are required to bring a bound notebook to lab. This will be maintained throughout the course and **may be used when taking the laboratory final exam**. In your notebook you should record the title and date of the experiment, purpose of the experiment and your data from the experiment. **Lab notebooks will be turned in the last week of class**. Your notebooks will be returned during the final examination period for use with your laboratory final exam. There should be no loose pages in your notebook, all pages should be bound and or taped into your notebook.

Lab reports: The content and nature of the lab report will be dictated and outlined in the laboratory exercise. But in general the following guidelines should be followed:

- Include the date, title and names of students in the group on the first page.
- Every student must sign the report indicating they are satisfied with the contents.
- Use “we” not “I” in your group report.

GRADING: The final grade in the course will be based upon the following items:

LECTURE: (~65% of Final Grade)

➤ Lecture Mid-term Exams 1-4 (4 x 75 points each)	300 pts.
➤ Lecture Final Exam (not cumulative)	75 pts.
➤ Lecture Quizzes	40 pts.
➤ Class Attendance	75 pts.
➤ Biology in the News! Journal and Presentation	60 pts.
➤ Class Participation/Active Learning Exercises	100 pts.

LABORATORY: (~35 % of Final Grade)

➤ Laboratory Reports (12 lab reports x 25 points each)	300 pts.
➤ Laboratory Final Exam	50 pts.

Grading Scale

%	GRADE
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
59% & below	F

BLACKBOARD: All information, including announcements, lecture slides, study guides, and grades for this course will be posted on Blackboard. You must register for this course on Blackboard during first week of class. ***Your opportunity to register will expire on Monday, September 9th.*** For instructions visit the following website: <http://home.moravian.edu/public/cit/help/blackboard/bbstudent.asp>. The course ID is BIOL100AB.F13 and the enrollment code is "biology". ***When registering, please use the email account where you would like to receive course notifications.*** I frequently send out notifications via email.

CLASS POLICIES:

Cell phones: *As a courtesy to the professor, turn all cell phones OFF before class! No calls or texting during class.* If you are observed texting during class you will be asked to leave the classroom. If this occurs, you will not receive credit for attendance.

Academic Integrity: I expect all class members to adhere to the Moravian College policy on academic honesty (please see **Student Handbook**). If dishonesty is observed on a student's exam, a course grade of an F will be assigned and the individual will not be allowed to withdraw from the course. If dishonesty is observed on an assignment the student will receive a zero for that assignment.

Disability Support: Students who wish to request accommodations in this class for a disability should contact Elaine Mara, Assistant Director of Learning Services for Disability Support at 1307 Main Street or by calling 610-861-1510. Accommodations cannot be provided until authorization is received from the Academic Support Center.

****Any portion of this syllabus is subject to change at the discretion of the instructors.**

August 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
	Introduction/What is Science? Chpt. 1	LAB: Orientation & Scientific Method	Scientific Thinking Chpt. 1		Scientific Experiments Chpt. 1	
		Notes:				

September 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
	Labor Day - No Class	LAB: Biomolecules	Quiz 1 /Chemistry and Water Chpt. 2		Biomolecules Chpt. 2	
8	9	10	11	12	13	14
	Biomolecules Chpt. 2	LAB: Enzymes	What is a cell? Chpt. 3		EXAM 1	
15	16	17	18	19	20	21
	Introduction to Energy Chpt. 4	LAB: Photosynthesis & Respiration	Photosynthesis Chpt. 4		Cellular Respiration Chpt. 4	
22	23	24	25	26	27	28
	Cellular Respiration Chpt. 4	LAB: DNA Purification	Quiz 2 /DNA: What is it and what does it do? Chpt. 5		Gene Expression Chpt. 5	
29	30					
	Biotechnology Chpt. 5					
	Notes:					

October 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
			EXAM 2		Cell Division/Mitosis Chpt. 6	
6	7	8	9	10	11	12
	Meiosis Chpt. 6	LAB: Microscopy	Meiosis Chpt. 6		Crossing Over and Sexual Reproduction Chpt. 6	
13	14	15	16	17	18	19
	Fall Recess - No Class	Fall Recess - No Labs	Quiz 3/ Mendelian Inheritance Chpt. 7		Mendelian Inheritance Chpt. 7	
20	21	22	23	24	25	26
	Mendelian Inheritance Chpt. 7	LAB: Genetic Analysis of Human Genotypes	Translation of Genotypes Chpt. 7		EXAM 3	
27	28	29	30	31		
	Darwin's Dangerous Idea Chpt. 8	LAB: Evolution	Darwin's Dangerous Idea Chpt. 8			
		Notes:				

November 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					Four Mechanisms of Evolution Chpt. 8	
3	4	5	6	7	8	9
	Quiz 4 /Adaptation and Natural Selection Chpt. 8	LAB: Taxonomic Classification	Evidence for Evolution Chpt. 8		Class Discussion	
10	11	12	13	14	15	16
	EXAM 4	LAB: (special surprise lab!)	The Origin and Diversification of Life Chpt. 10		Animal Diversification - Invertebrates Chpt. 11	
17	18	19	20	21	22	23
	Animal Diversification - Invertebrates Chpt. 11	LAB: Organismal Diversity	Animal Diversification - Vertebrates Chpt. 11		Quiz 5 /Plant Diversification Chpt. 12	
24	25	26	27	28	29	30
	Thanksgiving Recess - No Class	No Labs - Thanksgiving Recess	Thanksgiving Recess - No Class		Thanksgiving Recess - No Class	
	Notes:					

December 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
	Microbes Chpt. 13	LAB: Bacterial Sampling	Microbes and Infectious Diseases Chpt. 13		Ecosystems Chpt. 15	
8	9	10	11	12	13	14
			FINAL LECTURE and LAB EXAMS 8:30am			
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				
		Notes:				