

BIOL100: PRINCIPLES OF BIOLOGY
Spring 2013

GENERAL INFORMATION:

Instructor: Dr. Heather B. Felise (Lecture)
Office: Collier Hall of Science Room 323
Office Hours: Mondays 1-3pm; Thursdays 1-2pm or *by appointment*
Phone: 610-861-1428
Email: feliseh@moravian.edu

Instructor: Dr. Christopher J. Jones (Laboratory)
Office: Collier Hall of Science Room 310
Office Hours: Mondays 9:30-10:30pm or *by appointment*
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Classrooms: Lecture – Priscilla Payne Hurd Academic Complex (PPHAC) Room 116
Lab – Collier Hall of Science (CHOS) Room 301
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 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.

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 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, but it **will not be cumulative** and will also be worth 75 points. Both lecture material and textbook readings are fair game for lecture exams. 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 quizzes will consist of 10 multiple-choice questions and will be given at the beginning of the class period. 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.** 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 Prof. Jones 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 Prof. Jones 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)

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| ➤ 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. |
| ➤ Class Participation/Active Learning Exercises | 100 pts. |

LABORATORY: (~35 % of Final Grade)

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| ➤ 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, January 28th. For instructions visit the following website: <http://home.moravian.edu/public/cit/help/blackboard/bbstudent.asp>. The course ID is BIOL100AB.SP13 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.

BIO100 SPRING 2013 TENTATIVE LECTURE SCHEDULE

DATE	DAY	Lecture Topic	Background Reading
1/14	M	Introduction/What is Science?	Chapter 1
1/16	W	Scientific Thinking	Chapter 1
1/18	F	Biochemistry	Chapter 2
1/21	M	NO LECTURE (Martin Luther King Day)	
1/23	W	Biomolecules	Chapter 2
1/25	F	Quiz 1 /What is a Cell?	Chapter 3
1/28	M	Cell Membranes	Chapter 3
1/30	W	Cell Structure	Chapter 3
2/1	F	EXAM I	Chapters 1-3
2/4	M	Introduction to Energy	Chapter 4
2/6	W	Photosynthesis	Chapter 4
2/8	F	Cellular Respiration	Chapter 4
2/11	M	Cellular Respiration	Chapter 4
2/13	W	Quiz 2 /DNA: What is it and what does it do?	Chapter 5
2/15	F	Gene Expression	Chapter 5
2/18	M	What are mutations?	Chapter 5
2/20	W	Biotechnology	Chapter 5
2/22	F	EXAM II	Chapters 4 & 5
2/25	M	Cell Division/Mitosis	Chapter 6
2/27	W	Meiosis	Chapter 6
3/1	F	Crossing Over & Sexual Reproduction	Chapter 6
3/4-3/8	M, W, F	NO LECTURE (Spring Break)	
3/11	M	Quiz 3 /Mendelian Inheritance	Chapter 7
3/13	W	Mendelian Inheritance	Chapter 7
3/15	F	Translation of Genotypes	Chapter 7
3/18	M	Translation of Genotypes	Chapter 7
3/20	W	EXAM III	Chapters 6 & 7
3/22	F	Darwin's Dangerous Idea	Chapter 8
3/25	M	Mechanisms of Evolution	Chapter 8
3/27	W	Evidence for Evolution	Chapter 8
3/29-4/1	F, M	NO LECTURE (Easter Recess)	
4/3	W	Quiz 4 /Evolution of Behavior	Chapter 9
4/5	F	Cooperation and Altruism	Chapter 9
4/8	M	Sexual Conflict and Communication	Chapter 9
4/10	W	EXAM IV	Chapters 8 & 9
4/12	F	The Origin and Diversification of Life	Chapter 10 (selected reading)
4/15	M	Animal Diversification - Vertebrates	Chapter 11
4/17	W	Animal Diversification - Invertebrates	Chapter 11
4/19	F	Quiz 5 /Plant Diversification	Chapter 12
4/22	M	Microbes	Chapter 13 (selected readings)
4/24	W	Ecosystems	Chapter 15 (selected readings)
4/26	F	Ecosystems	Chapter 15 (selected readings)
4/29	M	FINAL EXAM 1:30pm	Chapters 10, 11, 12, 13, & 15

BIO100 Lab syllabus
Spring 2013
Prof. Jones

Week	Dates	Topic
1	Jan. 15/17	orientation & the scientific method
2	Jan. 22/24	biomolecules
3	Jan. 29/31	enzymes
4	Feb. 5/7	photosynthesis & respiration
5	Feb. 12/14	DNA purification
6	Feb. 19/21	genetic analysis of human genotypes
7	Feb. 26/28	microscopy
8	Mar. 5/7	[no lab – Spring Break]
9	Mar. 12/14	genetics
10	Mar. 19/21	evolution
11	Mar. 26/28	taxonomic classification
12	Apr. 2/4	(special surprise lab!)
13	Apr. 9/11	plant physiology
14	Apr. 16/18	bacterial sampling
15	Apr. 23/25	[make-up lab if necessary]

Life is fluid, so this syllabus is subject to change. I don't anticipate any significant deviations, but remember that it's not written in stone.