BIOL 1000: Principles of Biology – Fall 2020

Lecture and Lab: Online – 8/19/2020 – 12/11/2020

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Office hours: M 10:00AM– 12:00PM; T 10:00-10:50; W 1:00-2:00PM
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- I encourage all students to contact me for any class-related issues. I can be contacted by phone, email, or via appointment. If I do not answer my phone, please leave me a voicemail message.

TEXTBOOKS AND OTHER REQUIRED MATERIALS

Course Fee - $20

Lecture

1. Textbooks:
   - *Biology* from Openstax College
   - Download free .pdf copies of these books at https://openstax.org/details/books/biology-2e
2. Computer/Moodle access for class notes
3. Northwest college email
   - I often send class-wide emails to your Northwest email address. Please check this NWC email regularly.
4. Microsoft PowerPoint to view lecture slides
   - If you do not have PowerPoint, the latest version can be downloaded for free from the NWC Portal.
5. Windows Media Player or another video player to view lectures provided in .MP4 format

Laboratory.

6. Eight virtual labs will be completed using simulations in Labster
   - https://www.labster.com/
   - Cost to each student is **$49 for one year of access** to eight labs
7. The remaining four labs will be completed in Moodle

COURSE DESCRIPTION

This one semester course is designed to introduce the general principles of biology to non-science majors and to fulfill Northwest's lab science requirement for those students. This semester we will be using Moodle software to teach this class online. The course material is presented within the context of the human experience and covers cell biology, physiology, genetics, evolution, ecology, and the interaction of humans with their environment.

CATALOG DESCRIPTION

Students learn principles that are important for achieving sound scientific reasoning and methodology. Students study the following topics: cell biology, physiology, genetics, evolution, ecology, and the interactions of humans with their environment. All topics are considered within the context of the human experience. This course will fulfill the lab science general education requirement for students not specializing in the biological or physical sciences or health and physical education (3 hrs. lec, 2 hrs. lab).

GENERAL EDUCATION OBJECTIVES

- A student who successfully completes this class is expected to achieve the following General Education outcomes:
  1. Explain the principles of the scientific method.
  2. Formulate and test ideas through analysis and interpretation of data.
  3. Use scientific and quantitative logic to examine contemporary problems.
  4. Use quantitative data analysis as the basis for making critical judgments and drawing conclusion.
  5. Examine the impact of technology on science and society.

COURSE INSTRUCTIONAL APPROACH

The online curriculum is designed to be taught with active and inquiry-based instructional approaches using the MOODLE Learning Platform. This course will have incomplete lectures available as PowerPoint slides and completed PowerPoint lectures available as .MP4 videos. No classroom meetings will be held. The laboratory section will be completed through virtual websites online or using simple materials that you can easily obtain or may already have. During class you will be working alone and online, completing activities and readings that will help you organize and learn biological concepts. Most of the themes we will work with this semester are covered in your textbook. Thus, the textbook is the primary source of material for the class however; I do occasionally include topics not covered within the text. Although we do not meet face-to-face, you will be interacting with other students in the class via a message board. Do not hesitate to ask questions or add information that is relevant to the topic being studied. The success of the class depends on your active engagement and participation. Although the instructional and learning framework of this course is different than traditional introductory courses, some characteristics are similar. You should still read the text to be prepared for each class section. You will also need to read the lab instructions to be prepared for each lab. The course will still be evaluated using your scores on exams, laboratory assignments and participation in class discussions via Moodle.

ATTENDANCE POLICY

Attendance in an online class must be defined differently from a traditional class. In a traditional classroom, you would be present for 5 hours of classroom and laboratory each

week. To do well, most students would need to spend a minimum of one hour of preparation for each hour in class. You should not expect to spend less time since this class is taught online. This class will take as much work and time as a traditional classroom section. I will monitor participation, expecting you to have been online at least ***two times per week*** and to have posted at least ***three discussion responses per Unit***. A strong association exists between participation and grades. Students who do not actively get involved in the class should not expect to do well in this course. I hope you do not try and test this well-supported hypothesis. **If you are unable to log on and participate in this class, for whatever reason, I expect you to contact me and make me aware of the reason.**

GRADING SYSTEM AND POLICY

Grading is accomplished by combining all points earned for lecture exams, lab reports, and class discussion responses and converting this sum to a percentage score. Course grades will be generated according to the following scheme.

Syllabus Quiz	@ 10 points	= 10 points
6 Lecture Exams	@ 100 points each	= 600 points
12 Lab Reports*	@ 30 points each	= 300 points
Participation in class discussions**	@ 5 points per post	= 90 points
Total Points Possible		= 1000 points

*the two lowest lab grades will be dropped before a final average is calculated
** 3 discussion responses are required per unit (see Discussion Forum section for additional details)

Grading Scale

Letter Grade	Total Points Earned
A	930-1000
A-	900-929
B+	870-899
B	830-869
B-	800-829
C+	770-799
C	730-769
C-	700-729
D+	670-699
D	630-669
D-	600-629
F	<600

Students may determine how they are progressing at any point in the semester by dividing the number of points earned by the number of points attempted and multiplying the result by 100. For example, if a student has earned a total of 257 points on the first three 100 points lecture tests, the student's average grade would be 257/300 x 100 = 85.67%.

Although I will enter your test scores into Moodle, you should keep track of your progress throughout the semester. I will manually calculate your average at the end of the semester, as Moodle has been incorrect in the past (although this is rare).

During the course of the semester there will be opportunities to earn extra points on all exams. **Additional extra credit assignments will NOT be provided.**

Your final average in this course will be calculated using **ONLY** the points earned for correct responses on the lecture exams, laboratory reports, and discussion posts. As your grade depends strictly on the metrics already described, I cannot and will not consider effort, desire, or grades you may have received in other classes. In addition, no points will be available based on your negotiating skills, improvement shown throughout the semester, or appeals to victimhood or personal sympathy. I will not raise your grade because I "like you," nor will I lower your grade because I don't. **If you are unwilling to abide by the grading system that has been established for this class, or accept a grade based on the scale outlined above, please drop this class.**

RULES FOR EXAMS

Exams will consist of 55 multiple choice questions answered in Moodle. As this is an online course it is very difficult to prohibit students from using PowerPoint notes or the textbook on the major exams. Therefore, these resources **are permitted** for use when taking your exams. However, each exam is to be taken alone, and without the assistance of your friends, family or classmates.

All exams will be timed; therefore, it is imperative that you study and prepare for these exams in the same way that you would have for a closed book and closed note exam in a face-to-face classroom setting. You will only have **60 minutes** to complete each of the six exams throughout the course and you will be timed out after 60 minutes. **There will not be enough time to look up every answer in your book and/or notes so you will have to study and prepare to complete most of the exam's questions from your memorization of the material**. All six exams are proven to be easily completed in 30-40 minutes by students who have studied and learned the material, therefore no time extensions will be granted.

Remember that in Moodle you will need to start your exam at least 60 minutes prior to the final expiration time (all exams close at 10:00PM MST) to receive your full allotted time. For example, if you start your exam at 9:30PM prior to the assigned deadline of 10:00PM, you will only have 30 minutes to take that particular exam.

Please make sure that you are using either Firefox or Google Chrome as your browser while attempting the major exams. Internet Explorer often crashes and does not save your submitted exam responses. Internet Explorer is not recommended for students working with Moodle.

Important: Once you start a major exam it is important to stay in that window. Leaving the exam once you have started and going to a new window either in the course or to another online site often causes a loss of all your saved exam responses up to that point.

EXAM DUE DATES

Each unit (including exams, lab submissions, and discussion posts) close at 10:00PM Mountain Standard Time on the following dates

Unit One Exam: All assignments due Sunday, September 6
Unit Two Exam: All assignments due Sunday, September 20
Unit Three Exam: All assignments due Sunday, October 4
Unit Four Exam: All assignments due Sunday, October 25
Unit Five Exam: All assignments due Sunday, November 16
Unit Six Exam: All assignments due Thursday, December 11

COMPLETION OF LABS

Eight of our 12 labs will be completed in Labster (https://www.labster.com/). Point totals for each lab will be calculated and submitted automatically in Labster. On the Monday following the end of each unit I will convert all lab scores to a 30-point scale and post updated grades in Moodle.

The remaining four labs will be posted in Moodle as .pdf files (see the schedule on **page 8**). Each of these labs have been designed for home completion and no special safety precautions are required. Two of these labs are "virtual" and involve computer-based research or simulations, the remaining two require you to solve problems and/or draw and submit images of microscopic slides that I have provided. At Northwest College each lab section is scheduled for 1 hour and 40 minutes, although some may require less time, I have done my best to create labs that would fit into a single lab period.

LAB DUE DATES

Labs must be completed and submitted in Labster or Moodle no later than at 10:00PM MST on the following dates

Labs 01 and 02: Completion due Sunday, September 6
Labs 03 and 04: Completion due Sunday, September 20
Labs 05 and 06: Completion Sunday, October 4
Labs 07 and 08: Completion due Sunday, October 25
Labs 09 and 10: Completion due Sunday, November 16
Labs 11 and 12: Completion due Thursday, December 11

MISSED EXAMS AND LABS

Missing an exam is very serious. A full credit makeup exam will be allowed only for an excused absence or serious illness. You must provide the reason why will be unable to take an exam before the final deadline to complete that exam or in the case of a medical emergency as soon as you are physically able to call or email me. All college-sponsored activities must be excused in advance.

Missed exams and labs not dealt with in the above manner will not be considered excused. Exams missed because of unexcused reasons can still be made up but will be worth only 75% of a normal exam, will not include bonus questions, and **must be completed before the end of the next unit**. For example, if you miss the Unit Two exam, you will need to complete the make-up exam before the end of Unit Three or will receive a zero for that exam.

Late labs will NOT be accepted and will not receive credit. However, keep in mind your two lowest lab grades will be dropped.

DISCUSSION FORUM

Your posting on the discussion board takes the place of attendance and classroom conversation. I will post several discussion topics on Moodle for each of our six units. **You will be required to post three responses to one or more of these topics.** In addition, you will need to submit:

1. one post in the student introductions section during week one and
2. an informal course evaluation during the final two weeks of the semester

Credit for your postings will be based on both quantity (as described above) and quality. Postings such as "Really nice job :-)", "I agree" or "Good point" and the like are very weak postings and will not be accepted as a response. Your responses should be thoughtful. It may share another point of view. It uses examples and details to make its point. Discussion postings MUST take place throughout the week of the discussion. Therefore, all discussion for Unit One will close on **September 6th at 10:00PM**, the same time Exam One and Labs 1 and 2 are due.

Some things I consider when grading discussion forums:

1. Participants use appropriate academic writing style (correct capitalization, punctuation, spelling, and grammar) in all messages so that others clearly understand and do not misconstrue comments that are being posted.
2. Participants express ideas in ways that are sensitive to the perspective of others. Disagreements are inevitable but if you do not treat others respectfully, your discussion forum will be given a zero.
3. Participants keep the dialogue focused and contribute comments/questions that move the discussion forward or into deeper reflection.
4. Participants clearly base comments on assigned readings and refer to them in the discussion.

5. Participants respond to comments of others and actively engage and encourage the response of others.
6. Participants refrain from using an authoritarian or judgmental style of writing that discourages open group discussion.
7. Participants provide comments in a timely manner so that others have an opportunity to read and respond to submitted comments. In other words, participants should not submit their first discussion comments late in the week. You will also be expected to read all of the discussion posts from everyone. Please note that grammar includes things like capitalization, punctuation, verb tense agreement, and so on. Use proper English and not texting language for this course.

INCOMPLETES

- The grade of Incomplete (I) represents incomplete work and is a temporary grade. In the instances where a grade of (I) is requested, documented evidence of medical or family emergency must be provided, and the student must have a passing grade in the course. The student must complete the requirements by the following midterm, or a final grade will be averaged with all missing assignments recorded as a zero.

ACCESS TO COMPUTERS FOR ACADEMIC COURSES

- The college has multiple computer labs available on campus, including the library. Student who experience problems with home computers should plan to accomplish their assignments at the college.

ACCOMODATIONS FOR STUDENTS WITH SPECIAL NEEDS

- Northwest College is dedicated to removing barriers and opening access for students with disabilities in compliance with ADAAA and Section 504 of the Rehabilitation Act. It is the student's responsibility to make an appointment with the Disability Support Services (DSS) Coordinator to provide documentation of a disability (whether it is psychiatric, learning, mobility, health related or sensory) and to inquire about accommodations for courses each semester. To contract the DSS Coordinator, call 754-6135 or stop by the Student Success Center located in the lower level of Colter Hall.
- Students should notify the instructor of any special needs during the first week of class.

ACADEMIC MISCONDUCT

- Academic misconduct is not tolerated in any of my classes, or at Northwest College. Academic misconduct includes but is not limited to: inappropriate use of a college computer, cheating, plagiarism and or collusion and falsification of information. Students are responsible for adhering to all policies and procedures in the Northwest College Student Handbook.

UNIVERSAL SYLLABUS INFORMATION

https://www.nwc.edu/academics/docs/Northwest%20College%20Universal%20Syllabus%20Information.pdf

LECTURE AND LAB SCHEDULE*

Units	Weeks	Lecture Chapters	Lab Assignments#
	8/19/2020 – 8/22/2020	Read the Syllabus/Student Introductions	No Lab
One	8/23/2020 – 9/5/2020	Ch 1 - Study of Life	Lab 01 - Experimental Design
		Ch 2 - Chemical Foundation of Life	
		Ch 3 - Biological Macromolecules	Lab 02 - Introduction to Food Macromolecules
Two	9/6/2020 – 9/19/2020	Ch 4 - The Cell	Lab 03 - Cell Structure: Cell Theory and Internal Organelles
		Ch 10 - Cell Reproduction	
		Ch 11 - Meiosis and Sexual Reproduction	Lab 04 - Mitosis: Using a toxic compound from the yew tree in cancer treatment
		Ch 13.2 - Chromosomal Basis of Inherited Disorders	
Three	9/20/2020 – 10/3/2020	Ch 33 - The Animal Body	Lab 05 - Human Tissues and the Integumentary System@
		Ch 38 - Musculoskeletal System	Lab 06 - Virtual Frog Dissection@
Four	10/4/2020 – 10/24/2020	Ch 14 - DNA Structure and Function	Lab 07 - Protein Synthesis
		Ch 15 - Genes and Proteins	
		Ch 12 - Mendel's Experiments and Heredity	Lab 08 - Mendelian Genetics@
Five	10/25/2020 – 11/14/2020	Ch 18 - Evolution and the Origin of Species	Lab 09 - Evolution: Are you related to a sea monster?
		Ch 19 - The Evolution of Populations	Lab 10 - Stickleback Evolution@
Six	11/15/2020 – 12/10/2020	Ch 44 - Ecology and the Biosphere	Lab 11 - Marine Biology: Investigate a massive fish death
		Ch 45 - Population and Community Ecology	Lab 12 - Competition: Learn to identify and quantify competition between species

** These schedules are tentative and may require modifications as the semester progresses*

 # - all labs completed within Labster except those denoted with an @ symbol (Labs 5, 6, 8, and 10)