Biology 117, General Biology: Cells, Genetics and Evolution
Section 02: MWF 11:30– 12:20

(08/27/18)

COURSE DESCRIPTION:

An introductory course in the biological sciences covering cells, information coding and transfer, evolution, and diversity of unicellular organisms. This course will emphasize examples from both the plant and animal kingdoms using an integrated approach. Counts for general education only when taken with BIOL 116. Intended for science majors and other well-prepared students.

COURSE INSTRUCTORS:

Susan Bandoni Muench (bandoni@geneseo.edu)
ISC 257, phone 585-245-5309, office hours: Tuesdays 2:00-4:00 and Fridays 8:30-10:30 and by appointment.
Jani Lewis (lewisj@geneseo.edu)
ISC 354, phone 585-245-5310, office hours: Tuesdays 1:00 – 3:00 pm and Fridays 8:00 – 10:00 am and by appointment.

COURSE GOALS:

This course has two main objectives. The first is to increase your biological knowledge and prepare a firm foundation of knowledge for the courses that follow. The second objective is to help you develop the intellectual skills needed for advanced study of biology: to develop the ability to organize information from various disciplines, to fit it into a conceptual framework, to use it in the synthesis of new ideas and to understand how biologists think and approach scientific questions.

LEARNING OUTCOMES FOR BIOL. 117:

Upon completion of this course, students will be able to:

- Demonstrate knowledge and conceptual understanding for selected topics in the following content areas: chemistry of life, cellular structure and function, genetics, mechanisms of evolution and evolutionary history and biological diversity of unicellular organisms.
- Demonstrate readiness for intermediate course work in Biology through using and applying your knowledge and understanding in these same topics in biology through solving problems that call for recognizing correct relationships among variables, or for correctly predicting the outcome of alterations of these variables.
- Demonstrate an understanding of scientific processes through predicting correctly the outcome of an experiment, or through interpreting the results of an experiment.
- Demonstrate adjustment to college expectations through successful completion of course requirements including online tutorials, homework, reading quizzes and chapter review quizzes with increasing independence through the semester.

TEXTBOOK AND MATERIALS:

Textbook: Absolutely required for this course are the eText of Biological Science **(Sixth Edition)** by Freeman et al., Pearson Cummings Publisher and the modified MasteringBiology website access code. This code will have to be entered via the Canvas website for this course. Through the SUNY Geneseo bookstore you have three options for purchasing this text:

1. BIOLOGICAL SCIENCE LL-WMOD.MASTERING | Edition: 6TH 17
Loose-leaf text w/ModifiedMasteringBiology & etext Access Card Package
Author: FREEMAN
ISBN: 9780134528076
Estimated Student Price new: $203.20

2. BIOLOGICAL SCIENCE-MOD.MASTERINGBIOL. | Edition: 6TH 17
ModifiedMasteringBiology & etext Access Card
Author: FREEMAN
ISBN: 9780134294780
Estimated Student Price new: $140.55

3. BIOLOGICAL SCIENCE-WMODIFIED ACCESS | Edition: 6TH 17
Hard copy text w/ModifiedMasteringBiology & etext Access Card package
Author: FREEMAN
ISBN: 9780134577821
Estimated Student Price new: $280.95

If you choose to purchase your text elsewhere, you MUST also purchase access to Modified MasteringBiology as you will have graded tutorials and quizzes to complete there. Modified MasteringBiology also provides many other helpful supplements such as practice tests. The ModifiedMasteringBiology standalone that you can purchase through the bookstore includes the etext. Please note that ***you must have the 6th edition of the MasteringBiology access code***. If you purchase the ModifiedMasteringBiology for the 5th edition, you will not be able to complete quizzes or tutorials. Using the 5th edition of the textbook will not be supported, meaning that you will be responsible for knowing the chapter and page coordination between the fifth and sixth editions. You will have access to ModifiedMasteringBiology even without an access code for the first two weeks of class so if you are facing a delay in purchasing MasteringBiology because of a temporary and verifiable financial emergency you can still register and do the assignments. At the end of 2 weeks if you have not gotten your access code you will lose all your work and credit for what has been done so you must buy your access code within that 2 week period.

Course materials: Other course materials will be available within the Canvas System https://canvas.geneseo.edu/courses/9744. Self-help guides are available through the Canvas system website as well, https://wiki.geneseo.edu/display/cit/Canvas+Self+Help+Documents

Tophat access: You will be using a program called Tophat to record your participation during lectures. You will have to register for this access but it is free. You should have received an invitation to join the class called BIOL11702F2018. The join code is 053300. We ask that you enter your G number as well starting with G00 (two zeroes) when you join the course. You can then log into Tophat during class to answer questions. Please keep an eye out for the emailed invitation. If you haven't received it please email Dr. Lewis or Dr. Muench stating this.

EVALUATION	
Graded work:	**Contribution:**
Exams (4 in class, one final, of which 4 will count)	80%
Day-to-Day activities (including reading quizzes and online homework)	20%

EVALUATION (ADDITIONAL INFORMATION)

Overview: One-fifth of your grade will come from keeping up with assigned readings, and from using the online supplements. For each chapter, there will be a reading quiz and a tutorial consisting of several independent components. In addition, there may be some in-class quizzes and some work products from group discussion in class. More information is provided about each component below. Most importantly, however, you MUST complete the day-to-day activities in order to earn a grade higher than a C+.

Reading quizzes: Reading quizzes are short online assessments consisting mostly of multiple choice and other objective questions, and covering each of the assigned chapters in the textbook. The role of the reading quizzes is to ensure that everyone has a common foundation of basic knowledge for class. This in turn will mean that we can employ active learning strategies, and we can spend more time on the more challenging topics that will better prepare you to take the exams. Reading quizzes represent a foundation, not an endpoint; earning a high grade on a reading quiz indicates a solid foundation, not mastery of the subject.

Reading quizzes will usually open at 7:00 am on a Sunday, Tuesday or Thursday or both before or during the time we are covering that chapter (see schedule below) and close at 11:00 am the next day (Monday, Wednesday or Friday, respectively). A list of the quizzes and dates will be provided separately from this document on the page, "Things to do this week" but in general you will have 1 to 2 quizzes per week. During the semester there may be "bonus" quizzes for assessment purposes. We will clearly mark these as bonus quizzes and you will get credit for simply attempting these. However, all other quizzes not marked bonus are graded as described below.

Quizzes will be scored on a pass-fail basis. All scores greater than 60% will receive credit; scores less than 60% will not. The point of pass-fail grading is to keep the focus on preparing for class and not on the scores. A low score on the reading quiz should alert you to weaknesses in your current understanding. If you find you cannot read before taking a reading quiz, it is still worth taking the quiz. First, you might pass anyway, and second, even if you do not, this will allow you to rework quiz questions for practice before the test.

Tutorials: Tutorials are completed through the ModifiedMastering system, and are designed to promote good study habits and give opportunities to practice skills needed for the tests. Tutorials are designed to take approximately one hour of your time, and although points per assignment may vary, we record percentages, so each tutorial will contribute the same amount toward your final grade. Unlike the quizzes, the tutorials offer hints and allow multiple tries. However, to encourage you to use the tutorial as a tool for studying, they are set to apply a small penalty both for opening hints and for repeated attempts. Tutorials are not timed, and there is a broader window of time to complete them. However, all tutorials will close three days before a test in order to make the answers available for studying, and once answers are available, no credit can be obtained for completing the tutorial. Like the quizzes, it is worth doing the tutorials even if you do not have time to get the highest possible score. Similar to the quizzes you can rework the tutorials for practice after the due dates. Tutorials cannot be reopened for review until after the due date, so we cannot extend the deadline for some without penalizing others. Leaving tutorials until the last minute is a bad idea because you may not have time to complete them.

Adaptive follow up: Quizzes and tutorials may be linked to an adaptive follow-up. These are additional questions related to any questions for which you have given an incorrect answer. They carry no additional credit and do not affect your grade, even if you do not complete them. Instead their role is to provide targeted extra practice tailored to your particular needs.

EVALUATION (ADDITIONAL INFORMATION), continued
In-class work products or questions: Some days we will use survey technology in class to record participation. The TopHat software that we use will allow you to respond with your laptop, tablet or phone. Other days, we may collect a work product from individuals or small groups. These exercises are designed to encourage attendance and active participation. We believe that active engagement in the classroom, even in large classes such as this, enhances student learning and will help you achieve a better understanding and retention of the material.
Practice tests and dynamic studying modules: In the MasteringBiology, there are many additional opportunities for practice, including the dynamic studying modules and practice tests for each chapter. These will not be graded, but will help you assess how well you have learned the subject matter for the tests.
Lecture Exams: There will be four exams, each covering roughly one-quarter of the course and consisting of multiple-choice questions, given during class time. Although there is no comprehensive exam in this class, the material is naturally cumulative, and you will not succeed in learning later topics if you have not mastered earlier topics. For example, understanding evolutionary biology in the fourth quarter depends on having a good foundation of genetics learned in the second and third quarters.
Final exam: This course will not have a comprehensive final exam, and instead will have the option of replacing ONE earlier exam score. Exams on all four quarters will be offered during the final exam time, but you will have the opportunity to replace only your lowest score.

MONITORING YOUR PROGRESS
Grades: You will be able to track your performance through the semester using the MyCourses and MasteringBiology gradebooks. Use the MasteringBiology gradebook to monitor your progress with the quizzes and tutorials. Remember that you need at least a score of 60% on each of these to have them count towards your grade. Note that we do not schedule make up quizzes, tutorials and in-class assignments for any reason (see policy section). There are enough points offered to allow you to drop you lowest quiz, tutorial and participation assignment each quarter without penalties. The gradebook in MyCourses can be used to track your progress toward your overall grade each quarter. Use the Reports tab in MyCourses to get a detailed look at your progress to date. Grades will follow the following point distribution, usually without adjustment or "curving."

≥93% = A	90-92.9% = A-	87-89.0%, = B+	83-86.9% = B	80-82.9% = B-
77-79.9% = C+	73-76.9% = C	70-72.9% = C-	60-69.9% = D	<60% = E.

Note that there are no extra credit assignments or other methods of adjusting the final grade for any reason.

COURSE ASSISTANCE: There are many ways of obtaining help in Biology 117, but all involve your taking the first step. Here are your options:

- **OFFICE HOURS:** Both professors have regularly scheduled office hours in order to provide assistance one-on-one or to small groups of students. We welcome the opportunity to provide assistance outside of class. Please direct your questions about course content to the instructor who has lectured on the particular topic,

and direct questions about general course issues such as making up exams to the instructor who is not lecturing at the moment.

- **TUTORING:** Tutors will provide supportive activities and extra help several times a week. Additional information will be provided during the first week of class.

- **SUPPLEMENTAL INSTRUCTION:** Supplemental instruction (SI) will also be available for this class. The SI sessions are structured, student-led reviews of content that incorporate study skills. William Blanding and Felicia Pascale are the SI leaders for this section. Additional information will be provided during the first week of class.

GENERAL ASSISTANCE: The College provides many support services for any issues that may affect your academic performance. The following table outlines problems you may encounter during the semester and people to consult if this occurs:

Help resources	Problems
Dr. Leonard Sancilio, Dean of Students	family emergencies or health issues that will keep you out of class for a significant period of time
Health Center	physical and mental health
Counseling Center	problems adjusting to college, homesickness, making difficult decisions as well as traditional mental health diagnoses such as depression, anxiety or eating disorders
Dr. Tabitha Buggie-Hunt	services for students with disabilities
Dr. Irene Belyakov	assistance with English fluency

IMPORTANT DATES

Sept. 01	Drop/Add Period Ends
Sept. 03	Labor Day - no class
Sept. 19	Exam I
Oct. 08	Fall Break – no class
Oct. 15	Exam II
Oct. 17	Midsemester
Nov. 07	Last day to withdraw from full semester courses
Nov. 14	Exam III
Nov. 21 – 25	Thanksgiving break - no classes
Dec. 10	Exam IV; Last day of regularly scheduled class
Dec. 14	Final Exam 8:00 – 10:30 am

TENTATIVE SCHEDULE		
DATE	**In Class - TOPIC**	**Outside Class**
08/27	Syllabus and Biological Case Studies. Please bring your laptop or a printed copy of this syllabus with you today!	All Tutorials for Chapters 1, 2, 3, 6, 7, 8 & 12 are open. They will close Saturday, September 15 at 11:59pm with NO exceptions. You can review them after the closing date. Also there will be adaptive follow-ups that will appear at this time. They are for your practice but meant to be of help. No penalty for not doing them. MasteringBiology Introduction and Chap. 1 Tutorials and quiz open. Quiz 1 opens Monday, August 27 at 7:00 am and closes Wednesday, August 29 at 11:00 am.
08/29	Chapter 1 - Biology and the Tree of Life. Case study - Life: The Final Frontier	
08/31	Start Chapter 2 & 3 and Part 1 of Case study: "Sickle Cell Anemia: A fictional reconstruction" Bring: copy of case study on Sickle Cell Anemia to class	Chap. 2 & 3 Quiz, Chap. 2 & 3 opens Thursday, August 30 at 7:00 am and closes August 31 at 11:00 am.
09/03	No classes - Labor Day	
09/05	Chap. 2 & 3 and case study continued.	Bonus quiz – pH problems opens 09/01 at 7:00 am and closes 7:00 am on 09/05. Please note that these are different times from all other quizzes!
09/07	Chap. 6 and parts of chapter 7 concerned with the nucleus	Chap. 6 & 7 Mastering Tutorial Quiz on Chap. 6 & 7 opens September 6 at 7:00 am and closes September 7 at 11:00 am.
09/10	Chap. 6 and 7 continued.	
09/12	Chap. 8 - introduction to enzymes.	Quiz on Chap. 8 opens Tuesday, September 11 and closes Wednesday, September 12 at 11:00 am.
09/14	Chapter 12 – Cell cycle –Knowing the differences between mitosis and cellular fission.	Quiz on Chap 12 opens Thursday, September 13 at 7:00 am and closes Friday, September 14 at 11:00 am.
09/17	Chapter 13 – Meiosis - Case study: Baby Doe v. The Prenatal Clinic	Chapter 13 quiz due before class at 11 am.
09/19	Exam I Chapters 1, 2, 3, 6, 7, part of 8 and part of 12.	Alternate arrangements can be made for those observing Yom Kippur. Please come see us by 09/17. Mastering tutorials for chapters 4, 13, 14, and 15 open Sept. 20, close Oct. 11 at 11:59 pm.
09/21	Chapter 13 – Meiosis, continued.	Chapter 13 quiz due before class at 11 am.
09/24	Chapter 14 – Mendelian Genetics – Case study: TBA	Chapter 14 quiz due before class at 11 am. Note Monday due date.
09/26	Chapter 14 – Mendelian Genetics, continued	Chapter 4 quiz opens Sept. 27.

09/28	Chapter 14 – Mendelian Genetics. Solving genetics problems; start nucleic acids.	Chapter 4 quiz due 11:00 am.
10/01	Chapter 4, Nucleic acids. Chapter 15 – DNA and the Gene - Case study: Classic Experiments in Molecular Biology	Chapter 15 quiz opens Oct. 2.
10/03	Chapter 15 – DNA and the Gene - Case study: Case study: Putting the pieces together.	Chapter 15 quiz due 11:00 am. Chapter 16 quiz opens Oct. 4.
10/05	Chapter 16 – How genes work.	Chapter 16 quiz due before class at 11:00 am.
10/08	Fall Break – No class	
10/10	Chapter 16 – How genes work. Solving problems.	Tutorials for chapters 4, 13, 14, 15 and 16 close Thursday Oct. 11 at 11:59 pm with NO exceptions.
10/12	Case Study: Decoding the Flu Chap. 17.2, and 17.3: RNA processing and translation. Chap. 17.4 and 17.5: tRNA and ribosomes	Quiz on Chap. 17 due before class at 11:00 am
10/15	Exam II Chapters 4, 13, 14, 15.	All Mastering Tutorials for Chaps. 17, 18, 9, and 10 close Nov. 10 at 11:59 pm, no exceptions! They will be open for review right after closing.
10/17	Chap. 17 continued.	
10/19	Chapter 18 Control of Gene expression in bacteria	Quiz on Chap. 18 Due before class at 11:00 am
10/22	Chapter 18 continued – negative vs. positive gene regulation: a comparison.	
10/24	Chapter 8 – Energy and Enzymes revisited – Case study: Patrick Paralyzed	Quiz on Chap. 8 (yes a second quiz but only on feedback inhibition) – due before class at 11:00 am
10/26	Chapter 8 – Energy and Enzymes revisited – Case study: Patrick Paralyzed	
10/29	Case Study: The mystery of the seven deaths. Chap. 9.1, 9.2 and 9.3: Overview and details of cellular metabolism.	Quiz on Chap 9 Due before class at 11:00 am. Note Monday due date.
10/31	Case Study: The mystery of the seven deaths cont. Chap. 9.4, 9.5 and 9.6: Respiration and fermentation.	
11/02	Case Study: The mystery of the seven deaths cont. Chap. 9.4, 9.5 and 9.6: Respiration and fermentation.	
11/05	Case Study: Tougher Plants. Chap. 10.1, and 10.2: Intro. to photosynthesis.	Quiz on Chap 10 Closes at 11:00 am before class. Note Monday due date.

11/07	Case Study continued: Tougher Plants Chap. 10.2, 10.3, & 10.4 Photosynthesis, details and sugar production.	
11/09	Finish and compare respiration and photosynthesis	Chapter 22 quiz opens Nov. 11. Note Monday due date.
11/12	Chapter 22 – Evolution by Natural Selection.	Chapter 22 quiz due at 11 am
11/14	Exam III Chapters 9, 10, 16, 17.	Tutorials for chapters 22, 23, 24 and 25 open on Nov. 15.
11/16	Chapter 22 continued.	Chapter 23 quiz opens Nov. 18. Note Monday due date.
11/19	Chapter 23 – Evolutionary Processes. Case study: PKU Carriers: How Many Are in Your Hometown?	Chapter 23 quiz due at 11 am
11/21	No Classes - Thanksgiving Break	
11/23	No classes - Thanksgiving Break	
11/26	Chapter 23 – Evolutionary Processes.	Chapter 24 quiz opens Nov. 27
11/28	Chapter 23 – Evolutionary Processes. Start chapter 24, speciation	Chapter 24 quiz due at 11 am Chapter 25 quiz opens Nov. 29.
11/30	Chapter 24 -- Speciation. Case study: What is a Species? Speciation and the Apple Maggot Fly	Chapter 25 quiz due at 11 am
12/03	Chapter 25 - Phylogenetics and the History of Life.	
12/05	Chapter 25 - Phylogenetics and the History of Life.	
12/07	Catching up and review	Tutorials for chapters 22-25 due Dec. 6 with no exceptions.
12/10	Exam IV – Chapters 22, 23, 24 and 25	
12/14	Final Exam, 8:00 – 10:30 am	

Note: The schedule of topics may be subject to change. If so, the content coverage of exams will be adjusted, rather than the exam dates. Similarly, dates for quizzes and tutorials sometimes need to change. Schedule changes are announced by email and in class.

IMPORTANT POLICIES FOR BIOLOGY 117

Accommodations: SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will also be made for medical conditions related to pregnancy or parenting. Students should contact Dean Buggie-Hunt in the Office of Disability Services (tbuggieh@geneseo.edu or 585-245-5112) and their faculty to discuss needed accommodations as early as possible in the semester. Students who have been using English as their primary language of instruction for less than 6 years and who are taking active steps to improve their English (such as enrolling in Writing 101 or 201) can have extra time for taking exams in this section of Biol. 117 by special arrangement.

Professional behavior in the classroom: Your choices in lecture affect the learning experiences of other students in the class as well as your own. While this is true for any college class, the problems are especially acute in very large classes like Biology 117. Please arrive on time, stay throughout class, and limit conversation in class to directed class discussions. Mute your laptop and silence or turn off your phone. If you have an emergency for which you need your cell phone to be turned on, or for which you must leave early, let the instructor and the people sitting around you know as a courtesy.
The use of technology in class has many educational benefits, and using laptops, phones or other technology for viewing class materials during lecture is permitted. Texting, use of social media, checking e-mail, shopping, playing games and other non-class related uses of technology not only reduce your class participation, they can also distract those around you. If you disrupt the lecture or are distracting others around you, you may be asked to leave. If the behavior of other students around you is affecting your learning, let them know, and please tell us as well.

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Communication: Check your e-mail daily in order to ensure that you receive important updates and reminders. The best ways to communicate with instructors are face-to-face (before or after class or during office hours) or email. Please include your name and Biol. 117 in all e-mails sent to us as we each receive hundreds of emails from students per day between this class and others that we teach. Please recognize also that we have responsibilities outside of our jobs, and emails sent at night or on weekends may not be answered immediately.

Missing exams: All four exams are required, and making up an exam requires a valid excuse, and may require documentation. Examples of valid reasons for missing exams include (but are not limited to) personal illness, death or serious illness in the family, representing the college, religious observances, and required training for work or military service. Where possible, discussion of alternative arrangements should take place ahead of the exam. For emergencies arising on the day of the exam, you MUST contact us within 24 hours to arrange an alternative time to take your exam. In fairness to other students, you have an obligation to make up your test at the earliest possible opportunity, within 1-2 days of returning to classes. In the event that you cannot make up your test promptly (generally 2-3 business days), we reserve the option to require that you make up the exam for that quarter during the final exam period.

Missing quizzes, tutorials and participation: Because there are more opportunities to earn points through quizzes, tutorials, and participation than there are points available, there is no opportunity to make these up. In general, one quiz, one tutorial and 1 day of participation scores will be dropped per quarter. Most people will need to drop some of these to cover necessary absences. Take into consideration the possibility of sports activities, sickness and family emergencies before electing to miss any quizzes, tutorials or class participation opportunities as the number you can drop will not change if you have an illness or emergency after using up your allotment. If you will be absent and unable to complete the online activities for a prolonged period of time, please contact us along with the Dean of Students, Dr. Sancilio.

Appealing grades: Any graded work may be submitted for re-evaluation along with a written appeal. The basis for your appeal will usually be either (1) ambiguity in class notes or reading materials, or (2) ambiguity in the test question. The appeal should contain a brief written explanation of your concerns, including your reading of the ambiguous written material, and why you answered the question the way that you did. Appeals should be turned in within one week of receiving the graded work. When you submit your written appeal, we will schedule an individual conference to discuss it.

Academic dishonesty: Academic dishonesty includes both cheating as well as misrepresenting your identity. Cheating here refers to violating the rules of exams, including collaboration, copying from other students' work, or consulting outside sources. Misrepresenting your identity includes taking online quizzes for others or having them complete assignments for you, having another person earn participation points for you, or sending another person to take your exam. Because of the role of Biology 117 as an entry point to the Biology major, you must present identification during exams. The penalty for cheating or misrepresenting your identity will be a grade of zero on the quiz or exam involved. Because academic dishonesty is defined in detail here, claiming ignorance of the policies cannot serve as an excuse.

Policy limitations: Policies are designed to address common issues and concerns. We cannot anticipate every possible problem that may arise, and therefore policies can have limits and exceptions. If you are experiencing problems in completing class work for any reason, please drop by office hours or make an appointment to talk with one of us to discuss your situation.

VERY IMPORTANT INFORMATION ABOUT POLICIES FOR THE BIOLOGY MAJOR:

Biology and Biochemistry Proficiency: Students must have a C+ or better average in their **first two REQUIRED Biology lecture courses at SUNY Geneseo** to remain as Biology or Biochemistry majors. For most this is Biol 117 and Biol 119 but for those accepting AP credits or transfer students it could be other combinations.

Minimum Competence Requirement: To graduate with a biology major, students must attain a grade of C- or better in all required biology courses (excluding electives). A grade of C- must be achieved in any course before it can be used as a prerequisite for another course. A student may only repeat a required biology course or related requirement once for major credit and the course must be taken at the next offering of the class. If a student does not earn at least a "C-" on the second taking of the class, she/he will not be able to complete the major.