Biology 117, General Biology: Cells, Genetics and Evolution
Section 02: MWF 10:30 – 11:20 a.m.

(08/20/19)

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 INSTRUCTOR:

Dr. Salvador Z. Tarun, Jr. (tarun@geneseo.edu)
ISC 139D, phone **585-243-6483**, office hours: **Monday 4 – 6 pm**, **Wednesday 4:20 – 5:20 pm** 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.

The organizing framework and means in accomplishing these objectives effectively is the Bloom's Taxonomy of Learning, a practical and powerful set of metacognitive skills that guides the pedagogical structure of the course and is critically required for deep understanding of General Biology.

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.
- Use models to explain complex biological phenomena.
- 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: $146.65

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: $280.00

Purchasing the Modified MasteringBiology is essential 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 an earlier edition, you will not be able to complete quizzes or tutorials. We will not provide support for using the 5th edition of the textbook.

A two week trial subscription to modified mastering biology is available. If you must wait to purchase your MasteringBiology access code, you can still register using the temporary subscription. However, at the end of two weeks, you must put in an access code or risk losing all work done up to that point.

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

Top Hat access: We will be using a program called Top Hat to record your participation during lectures. You will have to register for this access but it is free to you. You should have received an invitation to join the class called BIOL117_02 Fall 2019. The join code is **023697**. In most cases your G number will already be in the roster as well as your student ID. If it is not, then we ask that you enter your G This number starts with G00 (two zeroes). 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. Tarun 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 (20%) of your grade will come from low-stakes quizzes, homework and participation measures. These are designed to incentivize you to keep up with assigned readings, attend class, and review outside of class. These quizzes, homeworks and participation measures are not optional, and you must complete the day-to-day activities in order to earn a grade higher than a C+.

Reading quizzes: The role of the reading quizzes is to help you get ready for class so get more out of the experience. Reading quizzes are short online assessments consisting of multiple choice questions, and covering each of the assigned chapters in the textbook. Reading quizzes open at least 48 hours before their respective due dates and close at 11:59 pm the day before the scheduled lecture. In order to put the emphasis on readiness, quizzes are scored on a pass-fail basis. All scores greater than 60% will receive credit; scores less than 60% will not. Quizzes are timed. If you complete the reading quiz, you will be able to rework it for practice later, so it is worth completing them even if you are not able to prepare. In addition, if you complete all of the reading quizzes in a quarter, you will receive a small bonus.

Tutorials: Tutorials are designed to promote good study habits and give opportunities to practice skills needed for the tests and are also completed through the ModifiedMastering system. Tutorials are intended to take approximately one hour of your time, and each tutorial will contribute the same amount toward your final grade. Tutorials offer hints and allow multiple tries, but you will receive more credit if you don't use these. Tutorials are not timed, and are open for approximately three weeks. Leaving tutorials until the last minute is a bad idea because you may not have time to complete them.They are due two business days before a test, with a late penalty of 33% per day after the due date. If you complete the tutorials, you can rework the tutorials for practice after the due dates. Tutorials will reopen for review after the initial due date but only if you have completed them first. In addition, if you complete all of the tutorials in a quarter, you will receive a small bonus.

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.

Participation: Active engagement in the classroom enhances learning and retention of class material, and research shows that attendance is strongly correlated with grades in introductory biology courses. Some days we will use survey technology in class to record answers to questions posed in class. The **TopHat** software that we use will allow you to respond with your laptop, tablet or phone. Other days, we may collect a **paper submission** from individuals or small groups. For either format, you will get credit even if your answers are wrong, although you will need to answer at least half of the questions posed in class to receive credit. If you encounter problems with TopHat, you can record your answers on paper and submit them at the end of class on the same day.

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.

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. The lowest score will be dropped for quizzes, tutorials and participation, and there is a small bonus for completing all of the quizzes and tutorials. See the policy section for information about missing quizzes, tutorials and participation.

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 "curve."

≥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.

-

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, Felicia Pascale and Nosheib Jadoon are the SI leaders for this section. Additional information will be provided during the first week of class.

- **WEEKLY FOCUSED WORKSHOPS:** There will be workshops offered several times each week that focus on mastering difficult concepts using active, hands-on approach. The same workshop will be offered several times per week (including weekends) and a schedule will be announced the first week of classes. We strongly advise you get into the habit of coming to at least one of these workshops per week.

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 – MacVittie College Union 354B: sancilio@geneseo.edu
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
Disability Services Office	services for students with documented needs for extra time to take exams and/or distraction-free settings. – Erwin 22: disabilityservices@geneseo.edu
English for Speakers of Other Languages	assistance with English fluency for students new to English as the primary language of instruction

DATE	Tentative In-Class TOPICS
08/26	Syllabus and course metacognition overview (Bloom's Taxonomy of Learning). Please bring your laptop to access CANVAS or a printed copy of this syllabus with you today!
08/28	**Chapter 1** - Biology and the Tree of Life
08/30	**Chapter 2** – Water and Carbon: The Chemical Basis of Life
09/02	No classes - Labor Day
09/04	**Chapter 2** continued & start **Chapter 3** – Protein Structure and Function
09/06	**Chapter 3** continued and start **Chapter 6** – Lipid, Membranes, and the First Cells
09/09	**Chapter 6** continued and start **Chapter 7** – Inside the Cell
09/11	**Chapter 7** continued and start parts of **Chapter 8** - Introduction to Enzymes
09/13	**Chapter 12** – The Cell Cycle (Knowing the differences between mitosis and cellular fission)
09/16	**Chapter 13** – Meiosis
09/18	EXAM I (Coverage: Chapters 1, 2, 3, 6, 7, part of 8 and part of 12)
09/20	**Chapter 13** continued
09/23	**Chapter 14** – Mendel and the Gene
09/25	**Chapter 14** continued
09/27	**Chapter 14** continued (Solving genetics problems). Start **Chapter 4** - Nucleic acids and the RNA World
09/30	**Chapter 4** continued. Start **Chapter 15** – DNA and the Gene
10/02	**Chapter 15** continued
10/04	**Chapter 16** – How Genes Work
10/07	**Chapter 16** continued (Solving problems)
10/09	EXAM II (Coverage: Chapters 4, 13, 14, 15, 16)
10/11	**Chapter 17** – Transcription, RNA processing, and Translation (17.2, and 17.3: RNA processing and translation; 17.4 and 17.5: tRNA and ribosomes)
10/14	No Class - Fall Break
10/16	**Chapter 17** continued
10/18	**Chapter 18** - Control of Gene Expression in Bacteria
10/21	**Chapter 18** continued (negative vs. positive gene regulation: a comparison)
10/23	**Chapter 8** – Energy and Enzymes revisited
10/25	**Chapter 8** – Energy and Enzymes revisited
10/28	**Chapter 9** – Cellular Respiration and Fermentation (9.1, 9.2 and 9.3: Overview and details of cellular metabolism)
10/30	**Chapter 9** continued (9.4 and 9.5: Citric Acid Cycle and Electron Transport Chain)
11/01	**Chapter 9** continued (9.5 and 9.6: Chemiosmosis and Fermentation)
11/04	**Chapter 10** – Photosynthesis (10.1, and 10.2: Intro. to Photosynthesis)
11/06	**Chapter 10** continued (10.3, & 10.4 Photosynthesis, details and sugar production)
11/08	**Chapter 10** continued (Finish and compare respiration and photosynthesis)
11/11	**Chapter 22** – Evolution by Natural Selection
11/13	EXAM III (Coverage: Chapters 8, 9, 10, 17, 18)
11/15	**Chapter 22** continued

11/18	**Chapter 23** – Evolutionary Processes
11/20	**Chapter 23** continued
11/22	**Chapter 24** - Speciation
11/25	**Chapter 24** continued
11/27	No Classes - Thanksgiving Break
11/29	No Classes - Thanksgiving Break
12/02	**Chapter 25** - Phylogenetics and the History of Life
12/04	**Chapter 25** continued
12/06	Catching up and review
12/09	EXAM IV – (Coverage: Chapters 22, 23, 24 and 25)
12/13	FINAL EXAM, 3:30 – 6:00 pm

IMPORTANT DATES

Aug. 30	Drop/Add Period Ends
Sept. 02	Labor Day - no class
Sept. 18	Exam I
Oct. 14	Fall Break – no class
Oct. 09	Exam II
Oct. 16	Midsemester
Nov. 06	Last day to withdraw from full semester courses
Nov. 13	Exam III
Nov. 27 - 29	Thanksgiving break - no classes
Dec. 09	Exam IV;
Dec. 13	Final Exam 3:30 – 6:00 pm

DATE	**Outside Class Assignments**
08/26	All Tutorials for Chapters 1, 2, 3, 6, 7 & 12 are open. 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.
08/29	Reading Quiz on Chapter 1 due at 11:59 pm.
09/03	Reading Quiz on Chapter 2 due at 11:59 pm
09/05	Reading Quiz on Chapter 6 due at 11:59 pm
09/08	Reading Quiz on Chapter 7 due at 11:59 pm
09/10	Reading Quiz on Chapter 8 sections 8.1, 8.2 and 8.3 due at 11:59 pm
09/12	Reading Quiz on Chapter 12 due at 11:59 pm
09/14	Tutorials for Chapters 1, 2, 3, 6, 7, 8 (sections 8.1, 8.2 and 8.3) & 12 due at 11:59 pm
09/16	Reading Quiz on Chapter 13 due at 11:59 pm
09/22	Reading Quiz on Chapter 14 due at 11:59 pm.
09/26	Reading Quiz on Chapter 4 due at 11:59 pm.
09/29	Reading Quiz on Chapter 15 due at 11:59 pm.
10/03	Reading Quiz on Chapter 16 due at 11:59 pm.
10/05	Tutorials for Chapters 4, 13, 14, 15 due at 11:59 pm

10/10	Reading Quiz on Chapter 17 due at 11:59 pm
10/17	Reading Quiz on Chapter 18 due at 11:59 pm
10/22	Reading Quiz on Chapter 8, sections 8.4 and 8.5 due at 11:59 pm
10/27	Reading Quiz on Chapter 9 due at 11:59 pm
11/03	Reading Quiz on Chapter 10 due at 11:59 pm
11/09	Tutorials for Chapters 8 (sections 8.4 and 8.5) 9, 10, 16, 17 and 18, due at 11:59 pm
11/10	Reading Quiz on Chapter 22 due at 11:59 pm
11/17	Reading Quiz on Chapter 23 due at 11:59 pm
11/24	Reading Quiz on Chapter 24 due at 11:59 pm
12/01	Reading Quiz on Chapter 25 due at 11:59 pm
12/05	Tutorials for Chapters 22, 23, 24, and 25 due at 11:59 pm

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.

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 the Office of Disability Services (disabilityservices@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.

IMPORTANT POLICIES FOR BIOLOGY 117

Policies are designed to ensure fairness and consistency in responding to situations you may encounter. For each policy below, we provide an explanation of the underlying logic. 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.

Classroom etiquette: Our goal is to create a classroom environment in which everyone can learn. Your choices in lecture affect the learning experiences of other students in the class as well as your own. Wherever possible, please arrive on time, stay throughout class, and limit conversation in class to directed class discussions. Mute or silence your devices. 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.

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 the behavior of other students around you is affecting your learning, let them know, and please tell us as well. If you disrupt the lecture or are distracting others around you, you may be asked to leave.

Copyright Notice: Many of the materials that are provided to students in this course have been created by Dr. Salvador Tarun, Jr. and fellow Biol. 117 instructors, or by the publisher of our textbook. Students would be best to assume that all course materials are protected by legal copyright. Copyright will be

indicated by a "©DATE AUTHOR" on the document. Copyright protection means that reproduction of this material is prohibited without the author's consent. Thus, students are prohibited from sharing or posting copyrighted material to any websites outside our course Canvas site. Students are also prohibited from reproducing material to be shared with other more limited groups (e.g. sorority/fraternity test bank). Be aware that UUP (Union of University Professionals, the union representing faculty on this campus) is seeking to take legal action against these and other sites, and that posting or selling copies of materials to such sites may put a student in legal jeopardy.

Communication: Check your e-mail daily in order to ensure that you receive important updates and reminders, and set Canvas to provide daily emails or texts. The best ways to communicate with instructors are face-to-face (before or after class or during office hours) or email. We each teach several classes therefore when sending us emails, please include your name and Biol. 117. Please recognize also that we have lives outside of our jobs, and emails sent outside of business hours may not be answered until the next business day.

Missing exams: All four exams are required. Sometimes it may be necessary to miss an exam. To make up an exam, you will need to explain your absence, and may need to provide documentation. Examples of valid reasons for missing exams include (but are not limited to) personal illness, death or serious illness in your family, representing the college, religious observances, and required training for work or military service. Where you can anticipate your absence in advance, discussion of alternative arrangements should take place ahead of the exam. For emergencies arising on the day of the exam, contact us as soon as possible (i.e., within 24 hours). Wherever possible we will have you take the same exam as other students as this provides you with a better assessment of how you are doing. However, to be fair to other students, this can only happen if you can make up your test quickly so that they can get their exams back. 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 in addition to (not instead of) your repeated final.

Missing quizzes, tutorials and participation: The benefits of completing reading quizzes and tutorials and participating in class come from completing them on time. The benefits of class participation come primarily from the learning experiences in class. Because there are direct benefits of completing these items on schedule, and because there are more opportunities to earn points through quizzes, tutorials, and participation than there are points available, there generally is no opportunity to make these up. One quiz, one tutorial and 1 day of participation scores will be dropped per quarter. We do not require explanation or documentation for these absences but also do not add to the total number. In our experience, almost everyone will need to use most or all of their dropped participation scores to cover necessary absences. The default is to start with one drop per quarter, but if you are out for multiple days in one quarter, we can transfer drops from other quarters to compensate. If you will be absent and unable to attend class or complete the online activities for a prolonged period of time, please contact us along with the Dean of Students, Dr. Sancilio. Similarly, if you are working with Disabilities Services and have accommodations related to attendance, please meet with us to discuss your accommodations.

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. Academic dishonesty devalues other students' efforts to succeed in the class. 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 Biol. 117 is an entry point to the Biology major, we ask that you 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 definition or policies cannot serve as an excuse.

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.