

Course Syllabus, Vernal Term 2019 C.E. (Last Modified 27 March 2019 C.E.)

Estrella Mountain Community College
BIO182: General Biology for Majors II (Hybrid, 4 Credit Hours)
Section Number 17202
Lecture: W 17:30 – 18:45 MON125
Laboratory: W 19:00 – 21:40 MON125

All enrolled students are required to fully read and comply with the information found herein. Further, all enrolled students are responsible for knowing and abiding by college policies included in the college catalog and the student handbook. If information in this syllabus is changed, a notification will be posted on the course website.

Course Description

This course treats principles of structure and function of living things at cellular, organismic, and higher levels of organization. It involves a detailed exploration of the mechanisms of evolution, biological diversity, biology of organisms, and ecology.

Prerequisites: Grade of "C" or better in BIO181.

Instructor Information

Ty C.M. Hoffman, Ph.D.
ty.hoffman@estrellamountain.edu
Office Hours: By appointment via email

Course Objectives

- Explain and apply the scientific method to solve problems in biological context.
- Explain and compare characteristics common to living organisms and levels of organization.
- Identify and describe the basic principles of evolution.
- Analyze the relationships between the genetics of populations and evolution.
- Analyze the processes of speciation.
- Describe how the hierarchical classification scheme is used to categorize organisms.
- Describe how DNA (deoxyribonucleic acid) research has modernized bio-systematics.
- Compare and contrast the general characteristics of each of the living domains and kingdoms.
- Relate the structure of organisms to the way they function.
- Explain how the life-histories of organisms are adapted for different environments.
- Relate the complexity of behavior to the overall complexity of an organism.
- Describe the ecological roles played by organisms in each kingdom.
- Compare basic ecological principles at the population and community levels of organization.
- Describe and compare energy relationships and the cycling of materials in ecosystems.
- Demonstrate knowledge of laboratory safety skills and procedures.
- Practice principles of scientific method while conducting laboratory activities and experiments.
- Perform laboratory activities using relevant laboratory equipment, chemical reagents, and supplies to observe biological specimens, to measure variables, and to design and conduct experiments.
- Operate light microscopes, prepare wet-mount slides, and use stains.
- Exhibit ability to use pipettes and other volumetric measuring devices, chemical glassware, balances, pH meters or test papers, spectrophotometers and separation techniques such as chromatography and/or electrophoresis to perform activities relevant to other course competencies.
- Develop graphing skills by hand and/or using appropriate computer software.
- Analyze and report data generated during laboratory activities and experiments.

Learning Outcomes

By successfully completing this course, the student will gain a deeper understanding of evolution and its central importance in biology, will become familiar with basic concepts of phylogeny, will learn major anatomical and physiological features that characterize major biological taxa, and will be able to appreciate the diversity of life in the context of an ecological interconnectedness of all life.

Course Websites

As stated on Canvas, you will be using my own (non-Canvas) website in addition to Canvas. The URL for the general site is:

<http://www.tycmhoffman.com>

From that site, you can find the link to your specific section. Be sure to bookmark the site, so you can access it even if Canvas is down. **You are REQUIRED to check the website daily**, even if nothing changes. The website includes (or will include) various resources to help you succeed. It is also where official announcements will be posted (whether I make those announcements in class or not). Failure to notice an announcement posted on the website will not be a valid excuse, so check the website frequently.

You are also required to enroll in my Modified Mastering Biology course. If you don't already have access to Mastering Biology, then you will need to purchase access first. **In either case, start by logging on to Canvas** and choosing your BIO182 course. Within the Canvas course, choose the MyLabs and Mastering link, then use links on that page to enroll in my course. **Make sure that you enroll using the same first and last name that are used in Canvas.** After enrolling, you will use Canvas to access the Mastering course throughout the term. **DO NOT TRY ANY OTHER METHOD OF ENROLLING IN MY MASTERING COURSE.** If you run into any problems and need to contact Pearson support, be sure to let the representative know that this is a Modified Mastering Biology course that is linked to Canvas at EMCC.

Supporting Texts (See note about textbooks on the course website)

Campbell Biology in Focus (2nd ed.), by Urry, et al. (ISBN 0321962753)

Biology 182 Laboratory Manual, by Smith (**REQUIRED**, and available only at the EMCC bookstore)

Attendance and Punctuality

If you fail to attend the first meeting, and you fail to notify me of that absence prior to the first meeting, you may be withdrawn from the class. If you miss more than two meetings (whether for excused absence or not), you will be withdrawn from the class. I expect you to attend every lecture. Doing so is important to earning a satisfactory grade. I also expect you to appear in the classroom or laboratory early enough so that you are completely ready to begin the activity at the scheduled beginning of class. If you walk through the door at the time the class is scheduled to begin, then you are late. Tardiness is rude and disruptive, and it will result in loss of points. Chronic tardiness will result in withdrawal from the class. If you are unable to make it to class on time, then you have enrolled in the wrong section. No one who is not enrolled in this course may attend.

Electronic Devices

During the lecture portion of any class period (i.e., whenever I am talking), I will not tolerate any student using a cell phone, electronic tablet, or any other such device. If I see you doing so, I will give you a warning. If it becomes a chronic problem, you will be withdrawn from the class.

Rules Consent Form

You will not be allowed to stay in the class unless you electronically submit the Rules Consent Form found on the website. I cannot overstate how important it is to fully read and understand that form. You can easily receive a zero if you take this lightly. Believe me; it happens every term.

Scoring

	With Attendance	Without Attendance
Examinations	4 @ 15% each; 60% total	4 @ ca. 16.3% each; ca. 65.2% total
Hybrid Activities	9 @ ca. 0.9% each; 8% total	9 @ ca. 0.97% each; ca. 8.7% total
Laboratory Activities	13 @ ca. 0.62% each; 8% total	13 @ ca. 0.67% each; ca. 8.7% total
MasteringA&P Online Activities	17 @ ca. 0.47% each; 8% total	17 @ ca. 0.51% each; ca. 8.7% total
MasteringA&P Chapter Quizzes	17 @ ca. 0.47% each; 8% total	17 @ ca. 0.51% each; ca. 8.7% total
Punctual Attendance	16 @ 0.5% each; 8% total	N/A

Grades

The minimum final scores for the respective letter grades are given below.

86%	A
76%	B
66%	C
56%	D

My Absolutely Rigid Policy on Missing Lecture Examinations

It's important for everyone to be aware of the policy regarding make-up lecture examinations. If you fail to complete a scheduled lecture examination by the deadline for that examination, there will be no official penalty for missing the examination. However, it is my strict policy that multiple-choice lecture examinations may be taken only when they are scheduled to be taken (i.e., per the most recently updated syllabus). This means that all make-up lecture examinations will consist of short-answer or essay type questions. NO MAKE-UP LECTURE EXAMINATION WILL EVER BE A MULTIPLE- CHOICE TEST. To ensure that you fully understand my policy, please re-read the previous sentence. The material treated on a make-up examination will be the same material treated on the corresponding multiple-choice version. In that sense, one can say that the make-up examinations are therefore no more difficult. But for many students in my experience, scores on short-answer tests are significantly lower than those on multiple-choice tests. This is because doing well on a short-answer test requires that you truly know what you're talking about. Guessing is much less likely to net you a correct answer. I'm telling you this, on the one hand, to make the official policy known. But even more importantly, I'm telling you this to strenuously dissuade you from missing a lecture examination for any but the most unavoidable of reasons. Doing well in this class REQUIRES that you make the class a priority. Therefore, if you'd like to receive a good grade, you would do well to save excuses for the other things that might coincide with the test dates, not vice-versa.

Laboratory

You must be concurrently enrolled in Section 17203. The laboratory portion of the course will take place in the same room as the lecture portion.

MCCD Policies and Procedures

Estrella Mountain and all Maricopa Community Colleges are governed by the same policies and procedures which include information about nondiscrimination, compliance with regulations, health concerns, admissions, residency guidelines, financial assistance, academic advising, assessment, articulation, registration, tuition and fees, refunds, attendance, grading, records, and scholastic and disciplinary standards. These policies can be found in the academic catalog and student handbook and it is each student's responsibility to be informed of this information.

General Education Abilities

EMCC recognizes seven general education areas that our courses address. Targeting these abilities will not only advance students' academic success, but help them to be more productive in their careers. Each semester, one of these abilities is targeted for campus-wide assessment.

Communication
Composition/Writing
Quantitative Reasoning
Critical Inquiry
Information Literacy
Technological Literacy
Social, Civic and Global Responsibility

For more information, visit <http://www.estrellamountain.edu/employees/committees/saac/gen-ed-abilities>.

Participation Policy

Being successful in a hybrid course requires a great amount of self-discipline, and students are expected to spend about three times as many hours outside of class as will be spent in class. These hours outside of class should be devoted to listening to lecture recordings, revising notes, studying slides shows, reading, and completing assignments.

Technology Policy

Students who take online courses need reasonable computer competence and good study, Internet, and reading comprehension skills to be successful. Skills specific to individual courses may also be required; for example, proficiency with a word processing package may be needed for an online English course.

Please visit **Is Your Computer Ready for E-Learning?** (<http://www.estrellamountain.edu/academics/distance-learning/orientation>) for complete list of requirements.

Your instructor is not the technology support staff. Questions and problems concerning technology, computers, Canvas, software, etc. must be directed to the Information Commons in Estrella Hall: 623-935-8150. A 24/7 Maricopa Canvas help desk is also available at My .Maricopa.edu.

It is the student's responsibility to be proficient in using Canvas, its required processes, and Microsoft programs to be successful in an online/hybrid learning environment. Students need to be proactive in ensuring they are skilled in Canvas' processes in order to complete all assignments on time. Technology excuses for late or incomplete assignments will not be accepted.

Communication Policy

Every MCCC student has been issued an active Maricopa Gmail account through My.Maricopa.edu. All Communications initiated from CANVAS and official school notifications will come via your Maricopa.edu account. Every student must check their Gmail account daily, or strongly recommend you forward all maricopa.edu to a personal email address so you can review messages daily. You can expect an answer within two business days.

Please visit Gmail at Maricopa (<http://www.estrellamountain.edu/academics/classes/getting-started>) to learn how to set up your Gmail.

Canvas Notifications Policy

Canvas Notification Preferences allow you to select how and when to be notified (via email, text message, twitter or Facebook) when there's an announcement or a message sent from within Canvas. Students will be notified whenever there is a change in a due date, an updated assignment, or a message sent from within Canvas.

Canvas supports notification through email, SMS text message, twitter, and Facebook. Canvas. You can choose to receive notification alerts immediately, daily, weekly, or never.

Please follow these steps:

- Click the Setting tab on the top of orange bar.
- Click Notifications locates on the left side of navigation
- Review/update all the notification
- Click Save Preferences

You can also visit this tutorial for Notification Preferences:

<http://guides.instructure.com/s/2204/m/4144//73162-how-do-i-set-my-notification-preferences>

Academic Integrity Policy

All students assume as part of their obligation to the college the responsibility to exhibit in their academic performance the qualities of honesty and integrity. All forms of student dishonesty are subject to disciplinary action. Students are responsible for familiarizing themselves with EMCC's Students Rights and Responsibilities (<http://www.estrellamountain.edu/students/policies/rights-responsibilities>).

Academic misconduct includes but is not limited to misconduct associated with the classroom, laboratory, or clinical learning process. Some examples of academic misconduct are cheating, plagiarism, and excessive absences. For more information, please refer to the Student Handbook, Section 2.3.11

(<https://chancellor.maricopa.edu/public-stewardship/governance/administrative-regulations/2-students/2.3-scholastic-standards/2.3.11-academic-misconduct>).

Disability Policy

If you have a documented disability, including a learning disability, and would like to discuss possible accommodations, please contact the Disability Resource Center (KOM B-125) at 623.935.8863 or 623.935.8928 VP or drc@estrellamountain.edu.

To ensure equal access, all required course materials provided in web links are expected to meet AA Standard of Compliance with the Web Content Accessibility Guidelines (WCAG) 2.0. All internal and external course links should be evaluated by the WAVE Web Accessibility Evaluation Tool. Course materials are expected to be in compliance, or an alternative option provided upon a student's request. Students with disabilities must have an equally effective and equivalent educational opportunity as those students without disabilities. Students experiencing difficulty accessing course materials because of a disability are expected to contact the course instructor so that a solution can be found that provides all students equal access to course materials and technology.

Information for Pregnant or Parenting Students: If you are a pregnant or parenting student you are protected under Title IX regarding classroom accommodations. Please request please contact the Disability Resource Center (KOM B-125) at 623.935.8863 or 623.935.8928 VP or drc@estrellamountain.edu.

Sexual Harassment

Sexual harassment is any unwelcome, verbal or physical conduct of a sexual nature that is sufficiently severe, persistent, or pervasive that it alters learning conditions and creates a hostile environment or reasonably interferes with, limits, or deprives a student of the ability to participate in or benefit from any educational program or activity.

Maricopa County Community College District's (MCCCD) Preventing Sexual Harassment and Sexual Violence course is now available to all students. Please check for your self-enrollment link in your Message Center within your Online Student Center via My.Maricopa.edu.

Students should report any discrimination and/or harassment they experience and/or observe to the Vice President of Student Affairs/Title IX Coordinator, Dr. Patricia Cardenas-Adame, located in Estrella Hall room 221, 623-935-8812.

Updated 2/8/2019

Public Safety

The EMCC Public Safety Department provides assistance and security for people on campus, protection of district and personal property, traffic control, visitor assistance, operation of a lost and found function, loss prevention and loss reporting, identification of safety hazards, training and orientation of employees and students. The Public Safety building is located at the North-end of Parking Lot A and can be reached at (623) 935-8915.

For more information visit: <https://www.estrellamountain.edu/mems>.

Disclaimer

This syllabus is subject to change. Students will be notified of any changes to this syllabus. The student is responsible for making note of all such announcements concerning syllabus revisions.

Schedule of Lectures (This could change before or after the term starts.)

Date	Topic(s) for lecture
16 January 2019 C.E.	Ch. 19: Descent with Modification
23 January 2019 C.E.	Ch. 20: Phylogeny
30 January 2019 C.E.	Ch. 21: The Evolution of Populations
06 February 2019 C.E.	Ch. 22: The Origin of Species Ch. 23: Broad Patterns of Evolution
13 February 2019 C.E.	Examination 1 Ch. 24: Early Life and the Diversification of Prokaryotes
20 February 2019 C.E.	Ch. 25: The Origin and Diversification of Eukaryotes
27 February 2019 C.E.	Ch. 26: The Colonization of Land by Plants Ch. 27: The Rise of Animal Diversity
06 March 2019 C.E.	Examination 2 Ch. 28: Plant Structure and Growth
13 March 2019 C.E.	Vernal Hiatus (No meeting)
20 March 2019 C.E.	Ch. 29: Resource Acquisition, Nutrition, and Transport in Vascular Plants
27 March 2019 C.E.	Ch. 30: Reproduction and Domestication of Flowering Plants
03 April 2019 C.E.	Ch. 31: Plant Responses to Internal and External Signals
10 April 2019 C.E.	Examination 3 Ch. 40: Population Ecology and the Distribution of Organisms
17 April 2019 C.E.	Ch. 41: Species Interactions
24 April 2019 C.E.	Ch. 42: Ecosystems and Energy
01 May 2019 C.E.	Ch. 43: Global Ecology and Conservation Biology
08 May 2019 C.E.	Examination 4

Schedule of Laboratory Activities (This could change before or after the term starts.)

Date	Laboratory Activity
16 January 2019 C.E.	Darwin Secret Notebook
23 January 2019 C.E.	Bean There, Done That
30 January 2019 C.E.	Natural Selection: Arizona Toothpicks
06 February 2019 C.E.	None
13 February 2019 C.E.	Microbiology Part I
20 February 2019 C.E.	Microbiology Part II
27 February 2019 C.E.	Microbiology Lab Part II Review Questions
06 March 2019 C.E.	Invertebrate Lonely Hearts Description
13 March 2019 C.E.	None
20 March 2019 C.E.	Diversity of Life: Plants
27 March 2019 C.E.	Food Tasting
03 April 2019 C.E.	The Botany of Desire I
10 April 2019 C.E.	The Botany of Desire II
17 April 2019 C.E.	Demography Spreadsheet
24 April 2019 C.E.	Snowball Earth
01 May 2019 C.E.	The One Degree Factor

Schedule of Hybrid Activities (This could change before or after the term starts.)

Date	Hybrid Activity
16 January 2019 C.E.	None
23 January 2019 C.E.	None
30 January 2019 C.E.	How Quantum Physics Can Teach Biologists About Evolution
06 February 2019 C.E.	Why Don't Animals Have Wheels?
13 February 2019 C.E.	None
20 February 2019 C.E.	NPR Recording: Bacteria
27 February 2019 C.E.	None
06 March 2019 C.E.	Invertebrate Lonely Hearts Milestone 1
13 March 2019 C.E.	None
20 March 2019 C.E.	None
27 March 2019 C.E.	Invertebrate Lonely Hearts Milestone 2
03 April 2019 C.E.	Basics of GM Foods Zoo Field Trip
10 April 2019 C.E.	None
17 April 2019 C.E.	See Otter Case Study
24 April 2019 C.E.	Invertebrate Lonely Hearts Milestone 3
01 May 2019 C.E.	None

Assignments (sorted by due date)

Week	Assignment	Note	Due Date	Penalty for Lateness
01	Laboratory 01 Darwin Secret Notebook	LM	16 Jan. before leaving	no credit
02	Laboratory 02 Bean There Done That: Hardy-Weinberg Simulation	LM	23 Jan. before leaving	no credit
03	Hybrid 01 How Quantum Physics Can Teach Biologists About Evolution	LM	30 Jan. 17:30	10% per week
03	Laboratory 03 Natural Selection: Arizona Toothpicks	LM	30 Jan. before leaving	no credit
03	Online Activities Chapter 19	MB	30 Jan. 23:59	0.5% per hour
03	Quiz Chapter 19	MB	30 Jan. 23:59	0.5% per hour
03	Online Activities Chapter 20	MB	30 Jan. 23:59	0.5% per hour
03	Quiz Chapter 20	MB	30 Jan. 23:59	0.5% per hour
04	Hybrid 02 Why Don't Animals Have Wheels?	LM, CW	06 Feb. 17:30	10% per week
04	Online Activities Chapter 21	MB	06 Feb. 23:59	0.5% per hour
04	Quiz Chapter 21	MB	06 Feb. 23:59	0.5% per hour
05	Online Activities Chapter 22	MB	13 Feb. 23:59	0.5% per hour
05	Quiz Chapter 22	MB	13 Feb. 23:59	0.5% per hour
05	Online Activities Chapter 23	MB	13 Feb. 23:59	0.5% per hour
05	Quiz Chapter 23	MB	13 Feb. 23:59	0.5% per hour
06	Hybrid 03 NPR Recording: Bacteria	CW	20 Feb. 17:30	10% per week
06	Laboratory 04 Microbiology Lab Part II	LM	20 Feb. before leaving	no credit
06	Online Activities Chapter 24	MB	20 Feb. 23:59	0.5% per hour
06	Quiz Chapter 24	MB	20 Feb. 23:59	0.5% per hour
07	Laboratory 05 Microbiology Lab Part II Review Questions	LM	27 Feb. 17:30	10% per week
07	Online Activities Chapter 25	MB	27 Feb. 23:59	0.5% per hour
07	Quiz Chapter 25	MB	27 Feb. 23:59	0.5% per hour
08	Hybrid 04 Invertebrate Lonely Hearts Milestone 1	CW	06 Mar. 23:59	no credit
08	Online Activities Chapter 26	MB	06 Mar. 23:59	0.5% per hour
08	Quiz Chapter 26	MB	06 Mar. 23:59	0.5% per hour
08	Online Activities Chapter 27	MB	06 Mar. 23:59	0.5% per hour
08	Quiz Chapter 27	MB	06 Mar. 23:59	0.5% per hour
09	Vernal Hiatus (nothing due)			
10	Laboratory 06 Diversity of Life: Plants	LM	20 Mar. before leaving	no credit
10	Online Activities Chapter 28	MB	20 Mar. 23:59	0.5% per hour
10	Quiz Chapter 28	MB	20 Mar. 23:59	0.5% per hour
11	Laboratory 07 Plant Labeling Sheet	LM	27 Mar. 17:30	10% per week
11	Laboratory 08 Food Tasting Experiment	HO	27 Mar. before leaving	no credit
11	Online Activities Chapter 29	MB	27 Mar. 23:59	0.5% per hour
11	Quiz Chapter 29	MB	27 Mar. 23:59	0.5% per hour
12	Hybrid 06 Basics of GM Foods	CW	03 Apr. 17:30	10% per week
12	Hybrid 07 Zoo Field Trip	LM	03 Apr. 17:30	10% per week
12	Online Activities Chapter 30	MB	03 Apr. 23:59	0.5% per hour
12	Quiz Chapter 30	MB	03 Apr. 23:59	0.5% per hour
12	Hybrid 05 Invertebrate Lonely Hearts Milestone 2	LM, CW	07 Apr. 23:59	no credit
13	Laboratory 09 Botany of Desire	LM	10 Apr. before leaving	no credit
13	Online Activities Chapter 31	MB	10 Apr. 23:59	0.5% per hour
13	Quiz Chapter 31	MB	10 Apr. 23:59	0.5% per hour
14	Hybrid 08 See Otter Case Study	LM	17 Apr. 17:30	10% per week
14	Laboratory 10 Demography Spreadsheet	CW	17 Apr. 23:59	no credit
14	Online Activities Chapter 40	MB	17 Apr. 23:59	0.5% per hour
14	Quiz Chapter 40	MB	17 Apr. 23:59	0.5% per hour
15	Laboratory 11 Demography Questions	LM	24 Apr. 17:30	10% per week
15	Laboratory 12 Snowball Earth	HO	24 Apr. before leaving	no credit
15	Hybrid 09 Invertebrate Lonely Hearts Milestone 3	CW	24 Apr. 23:59	no credit
15	Online Activities Chapter 41	MB	24 Apr. 23:59	0.5% per hour
15	Quiz Chapter 41	MB	24 Apr. 23:59	0.5% per hour
16	Laboratory 13 The One Degree Factor	LM	01 May before leaving	no credit
16	Online Activities Chapter 42	MB	01 May 23:59	0.5% per hour
16	Quiz Chapter 42	MB	01 May 23:59	0.5% per hour
FW	Online Activities Chapter 43	MB	08 May 23:59	0.5% per hour
FW	Quiz Chapter 43	MB	08 May 23:59	0.5% per hour

Key to Notes

CW: Consult the course website (www.estrellamountain.edu/hoffman/commonfiles/bio182/bio182hybrids.html) for information.

HO: This assignment involves material that will be handed out.

LM: Use the laboratory manual to complete this assignment.

MB: This assignment must be completed on the Mastering Biology website.

***No credit will be given for any coursework submitted after 23:59 on 08 May.**