

Three Rivers College

THE COMMUNITY COLLEGE OF SOUTHEAST MISSOURI

BIOL 190-001: Biology for Majors
5 Credit Hours
4 Lecture Hours/1 Lab Hours
Spring 2017

Start: January 17, 2017 – **End:** May 12, 2017
Last Day to Drop: April 21, 2017 – **Last Day to Withdraw:** May 12, 2016

Prerequisite: Take CHEM 111 or higher and ENGL 111 with a minimum grade of “C”.

Instructor:

Ms. Michelle A. Fisher, M.N.S. Associate Professor of Life Sciences

Office Location: A/205F

Phone: (573) 840-9641 Email: mfisher@trcc.edu

(Student email will only be accepted from your TRC Outlook account)

Office Hours:

M, W, F: 10:00 AM – 11:00 AM

T, Th: 10:45 AM – 11:15 AM

Electronic: T, Th: 1:00 PM – 2:30 PM

Class Schedule: Lecture/Lab: T/Th: 8:00 – 10:45 Room A/309

Text and Materials:

Brooker, R.J., Widmaier, E.P., Graham, L.E., Stiling, P.D. (2015). *Principles of Biology*. New York, NY: McGraw-Hill.

Course Description

Catalog Description: A course designed for biology majors and pre-professionals covering cell structure and function, the molecular basis of genetics, cellular energy systems, taxonomy, evolution, ecosystems and ecology. Laboratories will include group projects, case studies, and laboratories related to current topics in biology.

5 Credit Hours/ Contact Hours: Lecture 4 hours, Laboratory 2 hours. Total 6 hours per week.

Course Learning Outcomes:

- Apply the scientific method using basic scientific terminology.
- Investigate the major disciplines in biology.
- Relate the molecular basis of life to cell structure and function.
- Examine the flow of energy through living systems.
- Assess the interdependence between the biotic and abiotic world.

- Organize living organisms based on taxonomic principles.

Course Rationale:

The Biology for Majors course is designed for biology majors and pre-professionals covering cell structure and function, the molecular basis of genetics, cellular energy systems, taxonomy, evolution, ecosystems and ecology.

Grading Scale:

- A=90%-100%
- B=80%-89%
- C=70%-79%
- D=60%-69%
- F=Below 60%

Assignments and Activities:

4 Unit exams (100x4)	400
Laboratories (14x10)	140
In class activities (14x10)	140
Online Chapter Quizzes (17x10)	170
Ecology Project	100
<u>Comprehensive Final Exam</u>	<u>100</u>
Total	1050

Class Attendance Policy:

Attendance will be taken at the beginning of each class. Students whose grade average is within 0.5% of a higher grade will be given the higher grade if they have attended class regularly and have participated in class discussions.

Many graded activities will occur during the class period. Be on time to class and prepared to participate. If you miss an in-class activity, you will receive a zero for that assignment as there is no way to make up these assignments.

With the long class period, it will be necessary to do other activities on test days. This may include lecture, lab, or in-class activity.

Not a traditional classroom: Instead of lecturing in class and sending you home with homework to reinforce learning, lecture material will be covered at home to introduce the topic so that when you come to class, background knowledge can be used to help you “do” science!

Policy for making up missed assignments:

Late work will not be accepted. Lab reports will be due at the end of the hour of the lab meeting. Because this is a laboratory course and the bulk of the work takes place during lab, full attendance is expected. **If you miss lab, you will not be able to make up the evaluation. I will allow each student to miss TWO days and turn in an alternative assignment on Discussion Board.**

ALTERNATIVE ASSIGNMENT: Find an event taking place in the state of Missouri pertaining to the topic of the week. Paragraph 1: Introduce the topic, paragraphs 2-4: describe 3 positive aspects being done in the state regarding this topic, paragraph 5: explain how this topic affects Missouri ecologically, economically and socially.

You may only turn in TWO alternative assignments, and they must be completed within 48 hours of the missed day. These assignments will be submitted on the Blackboard Discussion Board. You **MUST** email me to let me know that you have turned in an assignment. After missing twice, a “zero” will be recorded for the days missed. If there is a serious situation that may cause you to miss long periods of time, you need to discuss this with me.

Missed Tests:

Students may make up **one** missed test. All make-up tests must be taken with one week of missing the unit test. **You must make arrangements to take the test within 24 hours of missing the test or you will not be eligible to take a makeup.**

The final exam cannot be made up. The student will earn a score of zero if he/she misses the final exam. If the student cannot complete the course due to injury, illness or tragedy, an incomplete will be given. Arrangements for the completion of the course must be made with the instructor before the end of the next semester. Failure to complete the course will result in a grade of F.

Laboratory:

The student must complete each lab experiment and check out with the instructor. Labs may not be made up due to the difficulty in procuring specimens and supplies. If you miss a lab you will receive a zero.

There will be 10 points assigned to the lab based on your attendance and participation. Five points will be taken off for every 15 minute increment that you are late, beginning with the pre-lab. Additional points will be assigned for completion of the lab write-up so each lab will have a variable number of points, depending on its complexity. **It is very important that you participate in each laboratory.** No points will be earned for simply being a warm body.

Safety:

Safety procedures will be strictly followed in the laboratory. Serious infractions will result in dismissal from the laboratory and zero points for the laboratory portion of the class.

Course Procedures**Research and Plagiarism:**

All assignments which include any material that has been researched and collected from outside sources (e.g. the Internet, books, magazines, interviews, etc.) must be properly documented by clearly citing the sources from which any material was used using APA or CSE.

Plagiarism will not be tolerated. The use of someone else's work must be referenced in any writing component of the class. Using someone else's words in an assignment without proper documentation will result in failure for the assignment. EXAMS ARE NOT TO BE PRINTED!!

Attendance [IR6310]

Federal Regulations governing student Financial Aid programs require the college to adhere to strict guidelines for student classroom attendance.

Any student who misses two consecutive weeks of class during a regular 16-week semester (or the equivalent proportion of class time during a shorter session) will be administratively dropped from the course by the institution. This action will not apply to excused student absences, which are defined as school-sponsored events that are approved by the Dean of Students.

If a student misses more than two hours of class for each credit hour taken (for example, six hours of class time for a three-credit-hour course), the student will be dropped from the course if the instructor decides that the student can no longer succeed as a result of the absences.

Students taking online courses will be expected to complete at least one assignment per week to be considered as attending the course. Non-participation according to the above guidelines will result in the same action of dropping the student from the course.

Students will be notified by email when action has been initiated to remove them from a course for non-attendance. The student will have one week to appeal this decision.

Attendance will be recorded with one of five options selected for each student: Present, Absent, Communicated Absence, Excused Absence, and Cancelled.

1. Present: Student meets the description of active participation as described in the regulation and course syllabus.

2. Absent: No participation and no communication of absence to instructor.

3. Communicated Absence: Student has communicated with the instructor that they will not attend class or participate online but that they intend to return as an active participant. The instructor has the option of allowing the student to make up any missed work. Communicated absences will **not** automatically protect a student from the withdrawal process if the absences meet the previously described withdrawal criteria.

4. Excused Absence: Student has presented to the instructor a form indicating participation in a college-sponsored activity AND the instructor has confirmed against the list provided from the Office of Student Services. The student is allowed to make up the work missed for full credit and is in no way academically punished or has points deducted for the absence.

5. Cancelled: Class Cancelled.

Electronic Devices within the Learning Environment [ISE 6410]

Electronic devices including, but not limited to, laptop/netbook computers, cellular devices, e-readers, and MP3 players will be turned off within the learning environment. Exceptions include the use of such devices for medical emergencies, or contacts which must be maintained due to work requirements. In such cases the student must advise the instructor, and the device must be in "silent mode." The instructor may make adjustments to this policy for specific usage in their unique learning environments. The usage of such electronic devices in relation to approved ADA accommodations is exempt from this regulation.

Disciplinary actions related to the violation of this regulation may include but are not limited to: a verbal warning to the student(s); the student(s) being asked to leave the learning environment; reductions in the grade for an assignments or examinations.

Student Code of Conduct [SR 2610]

Three Rivers College created for its students a Student Code of Conduct to clearly communicate to students what is expected of them. All students should go to <http://www.trcc.edu/forms/policiesregs/SR2610.pdf> to review the student code of conduct regulation and the list of expectations for students.

Harassment (Title IX) [GAR 1240]

It is the policy of Three Rivers College and its Board of Trustees that each employee and student be allowed to work and attend the college in an environment free from any form of improper discrimination. All students should go to <http://www.trcc.edu/forms/policiesregs/GAR1240.pdf> to review the student harassment regulation.

Academic Assistance:

Academic Resource Commons (ARC): Located in ARC with a library, computer resource center with printing, and web access. Visit <http://www.trcc.edu/arc/> for more information, call 573-840-9654, email library@trcc.edu or send questions via text to 573-298-6105.

Tutoring and Learning Center (TLC): Located on the second floor of the ARC, drop in tutoring is available for math, English, accounting, and some science classes on M-Th from 7:30 AM-7:30 PM and F from 7:30 AM -5 PM. Additional computers with internet access are available for your use. You can call 573-840-9638 or email tlc@trcc.edu with general questions. Distance tutoring during normal hours is available; dial 573-840-9638 to speak directly with a tutor or through Blackboard by selecting *TLC Distance Learning*. You can also email writing@trcc.edu with questions specific to writing and writing assistance.

ACHIEVE Program: Located on the second floor of the ARC. Provides free services to eligible students. Find information about services and eligibility at <http://www.trcc.edu/studentsuccess/achieve.php>.

Technical Difficulties: If you have difficulties accessing myTRCC, student email, or Blackboard, call 573-840-9605 or visit Login Assistance for more information (<http://www.trcc.edu/loginhelp/>). For all other non-login Blackboard issues, email blackboard@trcc.edu.

Students with Disabilities: Three Rivers College complies with the Americans with Disabilities Act. If you need accommodations or academic adjustments due to a documented disability, please call the Office of Disabilities Accommodations at 573-840-9608 for assistance.

Three Rivers College inspires, prepares, and empowers students to succeed through open access to high-quality learning opportunities that meet the needs of the communities we serve.

The instructor reserves the right to modify the assignments and other course criteria to create the best learning environment possible.

**Biology for Majors
Course Outline
Spring 2017-Modified 03/24/2017**

Learning Module Quizzes due on Tues at 8AM. 3 attempts for best score	Chapter	Tuesday – Discussion/Activity	Thursday - Lab
An Introduction to Biology	1 Quiz due 1/17 @ 8 AM	1/17 Syllabus, Lab Safety, Introductions, Class Procedures (Online quizzes, 1-min Paper, Q&A, Active Learning, Cases, Labs, & Current Events) Case: Case-in Point Case: Love Potion #10	1/19 Active Learning: Hypothesis Testing & Statistical Analysis
The Chemistry of Life	2, 3 Quiz due 1/24 @ 8 AM	1/24 1-min Paper Q&A Active Learning: Fatty Acids, Nutrition, & Health Case: Sweet Indigestion	1/26 Lab: Scientific Inquiry with Termites
Cell Structure	4 Quiz due 1/31 @ 8 AM	1/31 1-min Paper Q&A Active Learning: Organelles & Illness	2/2 Lab: Cell and Microscopy
Cell Membrane	5 Quiz due 2/7 @ 8 AM	2/7 1-min Paper Q&A Active Learning: Transport Proteins on Strike! Case: Osmosis is Serious Business	2/9 Lab: Osmosis & Diffusion Exam #1 (Chaps. 1-5) – Due 2/16 Current Event
Enzymes & Cellular Respiration	6 Quiz due 2/14 @ 8 AM	2/14 1-min Paper Q&A Active Learning: Energy & Enzymes Case: The Mystery of the Seven Deaths	2/16 Lab: Cellular Respiration (Vernier 11B) & Effect of Temperature on Respiration (Vernier 23B)
Photosynthesis	7	2/21 1-min Paper Q&A	2/23 Lab: Photosynthesis Lab

	Quiz due 2/21 @ 8 AM	Active Learning: Mapping Photosynthesis	
DNA Structure	9 Quiz due 2/28 @ 8 AM	2/28 1-min Paper Q&A Active Learning: Nucleic Acid Structure & Martian DNA	3/2 Lab: DNA Extraction & Gel Electrophoresis (procedure explained)
Protein Synthesis	10, (11) Quiz due 3/7 @ 8 AM	3/7 1-min Paper Q&A Active Learning: Protein Synthesis	3/9 Lab: Gel Electrophoresis
		3/14 SPRING BREAK	3/16 SPRING BREAK
Mitosis & Meiosis	13 Quiz due 3/21 @ 8 AM	3/21 1-min Paper Q&A Active Learning: Mitosis – Editing for Accuracy	3/23 Lab: Genetic Abnormalities
Patterns of Inheritance	14 Quiz due 3/28 @ 8 AM	3/28 1-min Paper Q&A Active Learning: Practice Mendelian Genetics Problems Exam #2 (Chaps. 6,7,9 & 10) – Due 3/23 Current Event	3/30 Lab: Genetics Problems & REEBOPS
Population Genetics	19 Quiz due 4/4 @ 8 AM	4/4 Introduction to Ecology Project: Local Impacts of Flooding Initial Attitudes Survey Preparatory Activity: Initial Ideas	4/6 Lab: Hardy-Weinberg Activity
Origin of Species	20 Quiz due 4/11	4/11 Ecology Project: Unit 1: Hydrologic Cycle Extension: 2-page paper	4/13 Easter Break

	@ 8 AM	on our local watershed, drinking water quality, and human threats	
Taxonomy & Systematics	21 Quiz due 4/18 @ 8 AM	4/18 Ecology Project: Unit 2: Fluvial Processes that Shape the Natural Landscape	4/20 Lab: Classification Exam #3 (Chaps. 13, 14, 19-21) – Due 4/27 Current Event
Animal Behavior	42 Quiz due 4/25 @ 8 AM	4/25 Ecology Project: Unit 3: How Streams Change Extension: Examine the profile of the Mississippi River & assess flood hazards	4/27 Lab: Animal Behavior
Ecology & Ecosystems Exam 4 – due 5/10	43, 46 Quiz due 5/2 @ 8 AM	5/2 Ecology Project: Unit 4: Hazards from Flooding Prepare Educational Presentation	5/4 “Swampeast” Missouri Exam #4 (Chaps. 42, 43, 46) – Due 5/17 Current Event
		5/9 Ecology Project: <i>Unit 5: The Ecology of Flooding: Tying abiotic and biotic factors together</i>	5/11 Ecology Project Presentations: Educational presentation on flooding in our area
5/17 Final Exam 8:00-9:50	Ecology Project: Post Attitudes Survey & Self-Evaluation		

*In note of the course outline: I am currently a Ph.D. student studying sustainability education. This semester, I will be taking courses in advanced research methods and completing a practicum course in adopting interdisciplinary modules that address sustainability and climate change through the 2017 InTeGrate Faculty Mentoring Network. Participants in the mentoring network will focus on how to use data-driven modules designed by the InTeGrate Project in undergraduate biology courses. The mentoring program will allow me to customize and implement activities in my own classroom. With that said, there may be times that I deviate from the above course outline to implement activities that may be of benefit to student learning, as well as my own professional development. There may be an occasion where the implementation may look for data to measure student learning. Students that wish to participate in the research will be asked to sign an IRB.