

# **VALDOSTA STATE UNIVERSITY BIOLOGY DEPARTMENT ECOLOGY & EVOLUTION SYLLABUS BIOL 3250 – Fall 2021**

*Instructor Name: Emily Rose, Ph.D.*

*E-mail address: erose@valdosta.edu*

*Office Location: Bailey Science Building 2211*

*Office Hours: Tuesday 3:30-5:30 /Thursday 11:00-2:00pm and by appointment*

*Lecture location: Bailey Science Center 2020*

*Lecture times: Tuesday & Thursday 2:00-3:15pm*

*Lab location: Bailey Science Center 3018 or 3019- Biology computer lab*

*Lab Sections/times: Monday 10:00am-12:50pm (sec D), Monday 2pm-4:50pm (sec E),  
Wednesday 9:30-12:20pm (sec F)*

## **Course Overview:**

BIOL 3250. Ecology and Evolution. 4 Hours. Prerequisites: BIOL 1107, 1107L, BIOL 1108, 1108L, and BIOL 3200. An introduction to major topics in ecology and evolution, including population, community, and ecosystem ecology; Darwinian theory of evolution through natural selection; microevolution and macroevolution. Computer and field labs will provide exposure to both evolutionary theory and field ecology.

## **Required Materials:**

Text: Ecology: Evolution, Application, Integration by David Krohne, Oxford University Press

Excel- Provided by VSU through your email account

Online simulations through SIMBIO for the lab- will be provided for free this semester

## **Tentative Plan for the Course Format:**

We will be meeting face-to-face for lecture and labs. We will have several labs that will include fieldwork outside. Students will be required to have access to Excel either on their own machines, in a computer lab or by remote accessing the lab computers to complete assignments. If there are changes to the course format due to COVID-19 you will be notified by Dr. Rose via email and announcements on BlazeVIEW, in addition to the official University emails. If you are unable to attend class in person due to illness, you are responsible for contacting Dr. Rose directly to make arrangements. Online accommodations will only be made for students who have VSU approval.

## Course Learning Objectives:

This course covers a wide range of topics within the realm of ecology and evolution and allows student to develop their own ideas through a peer-reviewed research grant writing process. The laboratory portion offers students the opportunity to get directly involved with ecological experimentation and techniques, while diving into the evolutionary theory using a variety of simulations and activities.

By the end of the semester, each student will:

- 1) Develop a better understanding of ecological and evolutionary concepts and cultivate critical thinking skills through the scientific method.
- 2) Operate scientific instruments and equipment commonly used in biological experimentation.
- 3) Understand the basis of evolutionary ecology theory and its application.
- 4) Translate analyzed data into meaningful scientific results, synthesize a literature review, develop their own questions/hypotheses.
- 5) Compose a research grant and build upon their scientific writing skills.
- 6) Work on their ability to convey ideas and educate others while giving presentations.

These course objectives are aimed to fulfill the VSU General Educational outcomes 3,4,5 and 7. This course's set of learning objectives support the outcomes 1, 2 and 5 of the [VSU Selected Educational Outcomes for the B.S. Degree in Biology](#).

## Important dates:

<b>Exams</b>	<b>Research Grant and Peer Review due dates</b>
Exam 1: September 7 <sup>th</sup> (T)	Grant Meeting 1: Topic and 5 papers for literature review due in your google folder prior to meetings scheduled in Lab 5 or 6
Exam 2: October 7 <sup>th</sup> (R)	Grant Meeting 2: Annotated Bibliography & Hypotheses due on Blazeview by Lab 7 (SUN 10/17 midnight)
Exam 3: November 9 <sup>th</sup> (T)	Grant submitted on Blazeview 11/3 by midnight (W) Grant Peer Reviews due on Blazeview by 11/17 by midnight
Exam 4/Final: December 8 <sup>th</sup> (W) 2:45 – 4:45 pm	Presentations due by 11/28 SUN by midnight on google folder Peer review of presentations due by TUES 12/7 midnight on BV
Lab Midterm: 10/4 & 10/5 Lab Final: 11/29 & 11/30	Final version of grant due SUN 12/5 by midnight via Blazeview (address peer review & Dr. Rose's comments in final edits)

## Grade Determination:

<b>Assessment</b>	<b>Points</b>	<b>Grading Scale:</b>
Participation in Lab and Lecture	25	≥ 9000 pts, A 8000-8999, B 7000-7999, C 6000-6999, D <6000 pts, F
Research Grant (90), Final edits (30), Grant Peer Review (20), 1 <sup>st</sup> meeting papers (10), Annotated Bibliography (20)	170	
Grant Presentation (40), Presentation Peer Review (15)	55	
Exam 1,2,3 (100pts each), Final/Exam 4 (150 pts)	450	
Lecture and Laboratory Assignments	100	
Lab Midterm and Lab Final (100pts each)	200	
<b>Total Points</b>	<b>1000</b>	

**Participation:** Points for participation will be given based on your preparedness and your contribution to the lecture and lab activities. This includes participating in the chat or poll sections of the lecture on BBcollaborate (if we move virtual) and also your level of helping to collect the data and work as a team member during the lab assignments. I will be taking attendance for the COVID contract tracing for all of our class meetings and points will be deducted for students who are chronically late or missing class. Points will be deducted if you come to class or lab late. If you are not prepared for lab or are disrespectful to your fellow classmates or professor you will lose participation points.

**Lecture and Lab assignments:** For most lab exercises, you will be required to perform graphing/data analysis and/or writing assignments. Some of these you will complete in lab while others will require additional work after lab. These assignments will be explained in detail during lab, and due at the beginning of the following class meeting unless otherwise noted. Instructions on how to turn in the assignment will be explained when the assignment is given (primarily submitted via the Blazeview assignments link, in the SIMBIO platform, completed in the google folder, etc.). I reserve the right to adjust the evaluation criteria in the event of extenuating circumstances. There will be a few readings for lecture that require you to contribute discussion questions prior to meeting for class.

**Exams:** All lecture exams 1,2,3 will start of lecture 2pm and close at the end of class at 3:15pm and administered in person. The Final/Exam 4 will be administered on-line and will be open note. Lab exams will be in person in the computer lab and it will be open note but timed.

**Make-Up Work:** Make up work or alternative assignments will be determined by the professor and at the sole discretion of the professor. These assignments may or may not exactly duplicate the original and will not entitle other students to the same alternatives since they may not have experienced the same situations.

## Classroom and lab Policies:

These guidelines are for your safety and the safety of those around you.

1. No eating or drinking in the lecture or lab.
2. Use hand sanitizer when you enter, wash your hands after the exercises for lab.
3. Know where emergency/first aid equipment and disposal receptacles are for lab. Any injuries should be reported to me immediately!
4. Please dress appropriately for field days. I recommend comfortable closed-toed shoes or water shoes if appropriate for the specific lab, always have drinking water, and some will want to bring sunscreen and/or bug repellent. In addition, fieldtrips are often hot or cold (depending on the time of semester) and may require walking to a destination, so you should dress accordingly.
5. Please respect those around you and wear a mask when in the classroom, computer lab or when within 6 feet outside during the lab.
6. Although we are using a lot of technology for our class, please avoid using your phones or computers for anything else during our class time. You will miss important hints for the exams if you are not paying attention so do not use your phone or computer for non-class related material. We have a lot of focus on and juggle so you need to be 100% committed and focused to the course during your 5.5 hours with me each week.

## Course Policies:

### **Title IX Statement**

Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title 3 IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: the Director of the Office of Social Equity, titleix@valdosta.edu, 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31698, 229-333-5463.

### **Academic Integrity Statement**

Cheating, plagiarism, copying and any other behavior that is contrary to University standards of behavior will not be tolerated ( Academic Honesty Policies and Procedures). Students caught violating any aspect of the Academic Integrity Code will be penalized in all cases. Penalty ranges from “0” on an assignment to “F” for the course without regard to a student’s accumulated points. Students may also face expulsion. It is the student’s responsibility to become familiar with the policies of the university regarding academic integrity and to avoid violating such policies. By taking this course, you agree that all required course work may be subject to submission for textual similarity review to Turnitin, a tool within BlazeVIEW. For more information on the use of Turnitin at VSU see Turnitin for Students.

### **Students with Disabilities**

Students requiring classroom or testing accommodations because of documented disabilities should discuss their needs with the instructor at the beginning of the semester. If you need accommodations for an exam, you must communicate this information with me at least 1 week before the exam. Students not registered must contact the Access Office, Farber Hall, Phone; 245-2498. Website: <http://www.valdosta.edu/access/>

### **Additional Academic Support**

The Academic Support Center (ASC) offers all VSU students **free peer tutoring** in core curriculum courses, including math, writing (any subject), chemistry, biology, foreign languages and more. **Please bring your assignments, textbooks, and homework to tutoring sessions.** Also available are **free, one-hour seminars** for help with **study skills, time management**, and a variety of other topics. Visit our office on the main campus, located in Odum Library, 2<sup>nd</sup> floor, or call 229-333-7570 for an appointment. We also offer 24/7 access to ThinkingStorm, a professional, online tutoring company. To make appointments for either VSU tutors or ThinkingStorm tutors, click the link “Free Tutoring” in Blazeview (under “resources” or “more.”). VSU’s Academic Support Center is also offering online tutoring, see instructions: <https://www.valdosta.edu/administration/finance-admin/campus-wellness/documents/asc-online-tutoring-.pdf>

### **Mental Health Awareness**

As a student, you may experience a range of challenges that can interfere with learning, such as strained or violent relationships, death and loss, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events

may diminish your academic performance and/or reduce your ability to participate in daily activities. VSU services are available and treatment does work. You can learn more about confidential mental health services available on campus at: <http://www.valdosta.edu/student/student-services/counseling-center/>. 24 hour emergency help is also available through the University Police at 229-259-5555 who will contact on-call counselors or appropriate resources for support.

### **Student Online resources**

VSU cares about student success both on and offline, and a variety of resources are available to help students both academically and personally during the Spring 2020 semester.

One of the best resources is VSU's Coronavirus FAQ page located at <https://www.valdosta.edu/health-advisory/faq.php>, Information is available there about internet access, academics, and services, among many other options, including how you can access the Brightspace Pulse app that will allow you to view BlazeVIEW on your smartphone (see <https://www.d2l.com/products/pulse/>). A website devoted to the health and wellness of VSU students can be seen at <https://www.valdosta.edu/administration/finance-admin/campus-wellness/student-resources.php>.

To help students get acclimated to online learning, the University System of Georgia created a quick guide for students to access online courses at <https://sites.google.com/westga.edu/student-guide-online-learning/home>. In BlazeVIEW, all VSU students have a course with guides for how to use tools in BlazeVIEW; search for "VSU BlazeVIEW Student Tutorial Spring 2020."

### **Student Opinion of Instruction Statement**

At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available through SmartEvals. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators, and they will be able to access results only after they have submitted final grades. Before final grade submission, instructors will not be able to see any responses, but they can see the percentage of students who have or have not completed their SOIs. While instructors will not be able to see student names, an automated system will send a reminder email to those who have yet to complete their SOIs. Students who withdraw or drop a course will also be sent invitations to complete the Dropped Course Survey. Complete information about the SOIs, including how to access the survey, is available on the [SOI Procedures webpage](#).

# Fall 2021 Schedule- Dr. Rose's Ecology & Evolution course (BIO3250)

## General Disclaimer

**Note:** The professor reserves the right to make changes to this syllabus as necessary.

Monday/Tuesday Lab	Tuesday Lecture	Thursday Lecture	Research Grant	Assignments
<b>8/16 &amp; 8/17</b> LAB 1: Introductions, Syllabus, Excel	<b>8/17</b> CHAPTER 1: Intro to ECOLOGY	<b>8/19</b> CHAPTER 4 & 5 Intro to BIOMES		<b>Practice excel graphing assignment due on BV before Lab 2(10)</b>
<b>8/23 &amp; 8/24</b> Lab 2: Comm Eco analyses	<b>8/24</b> CHAPTER 16: What is a species and phylogenetics?	<b>8/26</b> CHAPTER 16: Species Diversity- Community Ecology	Start thinking about topics and possible questions	<b>Bahamas Diversity Data due on BV before Lab 3 (10)</b>
<b>8/30 &amp; 8/31</b> Lab 3: Species Diversity Fieldwork	<b>8/31</b> CHAPTER 17: Ecological Succession	<b>9/2</b> Finish Chapters and Review for Exam	Start finding papers about your biome	<b>Stats and graphs from class data due on BV before Lab 4 (10)</b>
<b>9/6 Monday:</b> Labor Day-No Labs <b>9/7 Tuesday:</b> No Lab	<b>9/7</b> <b>EXAM 1: Biomes and Ecosystems</b>	<b>9/9</b> Grant proposal lecture and Q&A	Schedule your time slot for Lab 5 or 6's meetings	
<b>9/13 &amp; 9/14</b> Lab 4: Mark/Recapture	<b>9/14</b> CHAPTER 10: Life History Strategies	<b>9/16</b> CHAPTER 8: Demography	<b>Must have 5 papers picked out/uploaded with ideas for grant before meeting (10)</b>	<b>Turn in Lab 4 Mark/Recap data before Lab 5 on BV (10)</b>
<b>9/20 &amp; 9/21</b> Lab 5: Life History & First Grant Proposal meetings	<b>9/21</b> CHAPTER 9: What limits population growth?	<b>9/23</b> CHAPTER 12: Coevolution- Predator & Prey	First meetings in Lab 5 or Lab 6	<b>Turn in Lab 5 Tables and graph on BV before Lab 6 (10)</b>
<b>9/27 &amp; 9/28</b> Lab 6: Isle Royale (Simbio) & First Grant Proposal meetings	<b>9/28</b> CHAPTER 13: Coevolution- Mutualism	<b>9/30</b> CHAPTER 11: Competition	Find 20 papers to help support your grant question, start Annotated Bibliography	<b>Isle Royale Simbio postlab questions by Friday (5)</b>
<b>10/4 &amp; 10/5</b>  <b>LAB MIDTERM (on labs 1-6)</b>	<b>10/5</b> Finish Lectures and Exam Review Day	<b>10/7</b> <b>EXAM 2: Ecological Parameters</b>	Write Annotated Bibliography and shape it into background info for Lit Review section	
<b>10/11 &amp; 10/12</b> No Labs: Fall Break! (work on grant 😊)	<b>10/12</b> Fall Break! No Lab or Lecture	<b>10/14</b> CHAPTER 2(I): Darwin and Evolution	<b>Annotated Bibliography and list of questions and hypotheses DUE prior to Lab 7 (20)</b>	
<b>10/18 &amp; 10/19</b> Lab 7: Second Grant Proposal meeting to design methods with Dr. Rose	<b>10/19</b> CHAPTER 2 (II): Genetic Drift & Natural Selection	<b>10/21</b> CHAPTER 2 (III): Intro to Evolutionary Analyses (HWE)	Finish intro, work on proposed project (question, methods, possible outcomes) sections	

<b>10/25 &amp; 10/26</b> Lab 8: Darwin's Finches & mutations in HIV (Simbio)	<b>10/26</b> CHAPTER 6(I): Behavioral Ecology-Mating Systems	<b>10/28</b> CHAPTER 6(II): Behavioral Ecology-Heritability	See Dr. Rose for help or edits. Finish first "overview" and final "conclusions" paragraphs.	<b>Postlab questions from both simbio labs by Friday (10)</b>
<b>11/1 &amp; 11/2</b> Lab 9: (Simbio) Sickle Cell & HWE	<b>11/2</b> CHAPTER 7: Ecology of Genetic Variation	<b>11/4</b> Finish lectures, Review & Design Animal Behavior lab experiments	<b>GRANT IS DUE (90) 11/3 by midnight</b> via Blazeview assignments link!	<b>Postlab questions from simbio sickle cell by Friday (5)</b>
<b>11/8 &amp; 11/9</b> Lab 10: Animal Behavioral Lab, Part II: Data Analysis and Presentations	<b>11/9</b> <b>EXAM 3: Ecological Parameters</b>	<b>11/11</b> CHAPTER 17: Biomagnification & Pollution	Work on peer review of grants.	<b>Animal behavior lab: Collected data and presentations (15)</b>
<b>11/15 &amp; 11/16</b> Lab 11: Water Quality fieldwork and testing	<b>11/16</b> CHAPTER 17: Ecotoxicology	<b>11/18</b> Chapter 21: Climate Change	<b>Grant Peer Review (15) DUE 11/17 by midnight on BV!</b>	<b>Graphs from water quality testing data on BV before Lab 12 (10)</b>
<b>11/22 &amp; 11/23</b> Lab 12: Nutrient Pollution (Simbio)	<b>11/23</b> Chasing Coral Documentary	<b>11/25</b> <b>HAPPY THANKSGIVING!</b>	<b>Record &amp; Submit your presentation video (40) DUE SUN 11/28 by midnight!</b>	<b>Postlab questions from simbio nutrient pollution by end of lab (5)</b>
<b>11/29 &amp; 11/30</b> <b>LAB FINAL</b> (on lab 8-12 content, using all lab skills for graphing and stats)	<b>11/30</b> CHAPTER 22: Conservation Biology	<b>12/2</b> Finish lectures, review for final, and any questions about grant assignments	Make changes from peer review/Dr. Rose's comments. <b>Final Grant (30) DUE on BV SUN 12/5 by midnight</b>	<b>Presentation Peer Review (15) DUE Tuesday 12/7 by midnight on BV</b>
<b>FINALS WEEK:</b>	<b>FINAL/EXAM 4 online WEDNESDAY 12/8 2:45-4:45</b>			

## How to Succeed in this Course:

- To be able to recreate graphs/figures, concepts, and examples from lecture on the exams I highly recommend that you recopy your notes/Dr. Rose's ppts into a well-organized and concise study guide. You should also be practicing and interpreting any of the equations that we have covered in the course to make sure you understand the concepts in addition to the plugging in of numbers.
- Although lab exams are open note, you will need to trouble shoot and execute all of the skills we have learned during the labs so take good notes and practice the activities before the lab exams. You will want to review what we did, why we did it, how we did it and what we found in lab.
- Get ahead!!! The deadlines for every assignment this semester are listed in the syllabus calendar so there is no reason to turn in assignments late. Start assignments early to get feedback on them before they are due. Do not blame Blazeview for taking too long when loading your file at midnight.
- Ask questions during class or come to office hours. If you cannot make it to office hours, please email Dr. Rose and schedule a meeting for when you are free.