

**MISSISSIPPI VALLEY STATE UNIVERSITY**  
**Department of Natural Sciences & Environmental Health**

**GENERAL INFORMATION**

**COURSE NAME:** Bio 411 and 411L Ecology

**TERM AND YEAR:**

**CLASS TIME:**

**LOCATION:** STC ROOM 2209

**INSTRUCTOR:** Dr. Mark A. Dugo

**E-mail:** [madugo@mvsu.edu](mailto:madugo@mvsu.edu); [mark.a.dugo@gmail.com](mailto:mark.a.dugo@gmail.com)

(use my gmail until further notice)

**OFFICE HOURS:** Posted on door, or through e-mail appointment

(use my gmail until further notice)

**Credit Hours:** 3 hr lecture; 1 hour lab

**Prerequisites:** BI 111, BI 112

**REQUIRED TEXT:** Ecology: The Experimental Analysis of Distribution and Abundance (6th Edition); by Charles J. Krebs. ISBN 10: 0321507436 ISBN 13: 9780321507433

**COURSE DESCRIPTION**

Study of the major biomes of the world with emphasis on the relationship between the living and non-living components of ecosystems. The significance of biodiversity in relation to fundamental ecological principles is critically examined.

**COURSE GOALS (BI 411 AND BI 411L)**

1. Envision the broad scope of ecology and its overall relevance to the field of biology.
2. Understand the nature of geographic distributions of species and the factors that limit distributions including biotic and abiotic factors.
3. Understand organizational hierarchy of ecosystems from individuals to populations to communities.
4. Understand the nature of interactions at the population and community level.
5. Appreciate the role of thermodynamics in regulating community function.
6. Appreciate the importance of ecosystem health as it relates to human health, and learn about human values as they relate to ecology.

**STUDENT LEARNING OUTCOMES**

**upon completion of BI 411 and BI 411L the student should be able to:**

1. Define the science of ecology.
2. Discuss the analysis of geographic distributions and abiotic and biotic factors that limit species distributions.
3. Discuss properties of populations and population interactions.
4. Discuss properties of community structure and factors that regulate communities.
5. Discuss the importance of ecological health as it relates to human health.
6. Students will be critical thinkers

## **CRITERIA FOR GRADING**

**(Lecture separate grade from Lab)**

<b><u>Test/Assignment</u></b>	<b><u>% of Final Grade</u></b>
Class Attendance/Cooperation/Participation	10%
Assignments/Quizzes	30%
Test 1, Test 2 [Mid-Term Exam] and Test 3	40%
Final Comprehensive Exam	20%

**(Lab; separate grade from lecture)**

<b><u>Test/Assignment</u></b>	<b><u>% of Final Grade</u></b>
Class Attendance/Cooperation/Participation	15%
Assignments/Quizzes	20%
Lab Reports	45%
Final Comprehensive Exam	20%

### **Grading Scale:**

<b>% of Total Points</b>	<b>Final Grade</b>
90.0-100.0%	A
80.0-89.9%	B
70.0-79.9%	C
60.0-69.9%	D
<60.0%	F

### **Important Dates:**

October 1- 5	Mid-Semester Examinations
November 19-23	Fall Break/Thanksgiving Recess
December 3-7	Final Exams

## **COURSE OUTLINE (Lecture)**

### **What is Ecology**

Chapter 1. Introduction to the Science of Ecology

Chapter 2. Evolution and Ecology

Chapter 3. Behavioral Ecology

### **Geographic Distributions**

Chapter 4. Analyzing Geographic Distributions

Chapter 5. Factors that Limit Distributions I: Biotic

Chapter 6. Factors that Limit Distributions II: Abiotic

Chapter 7. Distribution and Abundance

### **The Problem of Abundance: Populations (condensed)**

Chapter 8. Population Parameters and Demographic Techniques

Chapter 9. Population Growth

Chapter 10. Species Interactions I: Competition

Chapter 11. Species Interactions II: Predation  
Chapter 12. Species Interactions III: Herbivory and Mutualism  
Chapter 13. Species Interactions IV: Disease and Parasitism  
Chapter 14. Regulation of Population Size

### **Distribution and Abundance at the Community Level**

Chapter 18. Community Structure in Time: Succession  
Chapter 19. Community Structure Space: Biodiversity  
Chapter 20. Community Dynamics I: Predation and Competition in Equilibrial Communities  
Chapter 21. Community Dynamics II: Predation and Competition in Non- Equilibrial Comm.  
Chapter 22. Ecosystem Metabolism: Primary Production  
Chapter 23. Ecosystem Metabolism II: Secondary Production  
Chapter 24. Ecosystem Metabolism III: Nutrient Cycles  
Chapter 25. Ecosystem Dynamics under Changing Climates  
Chapter 26. Ecosystem Health and Human Impacts

### **LAB**

**Introduction to some of the tools necessary for the design of population/community ecology experiments. These tools include:**

**Sampling procedures**

**Data collection**

**Data analysis**

**Hypothesis testing**

### **CLASS ATTENDANCE (Lecture and Lab)**

(See Class Attendance Policy from the Mississippi Valley State Catalog). One hundred percent (100%) **PUNCTUAL** class attendance is expected of all students in all scheduled classes and activities. Instructor will keep attendance records and any absence for which a student does not provide written official excuse is counted as an unexcused absence. Students must understand that **EVEN WITH AN OFFICIAL EXCUSE OF ABSENCE, THEY (STUDENTS) ARE RESPONSIBLE FOR WORK REQUIRED DURING THEIR ABSENCE. YOU MUST BE PREPARED FOR TESTS OR QUIZES UPON YOUR RETURN.**

*Before entering class, your cell phones and pagers must be turned off/silent. No phone equipment should be visible on your person. If you leave this class to answer your cell phone, you will be graded as absent for the entire class.*

*Any student engaging in non-productive or threatening behavior or behavior considered by the instructor to be disruptive to the learning environment will be removed from the classroom.*

### **MAKE-UP WORK POLICY**

No make-up tests will be given unless justifiable excuse with written document (REQUEST FOR AN EXCUSED ABSENCE from DIVISION OF UNDERGRADUATE STUDIES) is given. Excuses are limited to extreme emergencies such as being sick or hospitalized (with proofs from physician and/or hospital), or family member passing. Excuses from the Dormitory Counselor will not be acceptable. The students who are traveling on university's business (conferences, band,

choir, etc.) must inform the professor in advance (at least one week) prior to travel. Students are expected to take quizzes or exams before travel or the next class period if you have been excused by the professor. Make-up tests must be taken no later than the second class meeting after each test date.

### **ACADEMIC DISHONESTY**

**Cheating** will not be tolerated and will result in a grade of **zero**. An **F for the class** will be assigned to any student who cheats during any of the quizzes and/or examinations! All cases of academic dishonesty will be reported to the appropriate academic affairs office in accordance with University policy. **Cheating of any kind is absolutely NOT allowed. Students caught cheating run the risk of failing the class for the entire semester. Suspension or removal from the school is also possible (p 83 Student Handbook).**

### **PLAGIARISM POLICY**

Plagiarism is scholarly theft when students don't acknowledge the use of a secondary source. Any written or oral presentation in which the writer or speaker does not distinguish clearly between original and borrowed material constitute plagiarism. Because students, as Scholar, Facilitator, Reflective Thinker and Life Long Learners frequently use concepts and facts developed by others scholars, plagiarism is not the mere use of another's facts and ideas, it is grossly unethical. It is plagiarism when students present work of others as if it were their own. Plagiarism is a serious offense and any act of plagiarism may lead to a failing grade on the paper and in the course, as well as other disciplinary actions.

### **Grade Appeals**

Any student who believes s/he has been graded unfairly, even after talking with me, may appeal that grade by following the procedures set out by the University in the Student Handbook. It is your responsibility to prove that you deserve a higher grade. Keep all copies of your work.

### **STUDENTS WITH DISABILITIES**

Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester.

For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr. via phone or email at 662-254-3005.

### **DIVERSITY POLICY**

All students, regardless of religious affiliation, race, color, nationality, creed or sexual orientation must feel safe within this space. Please conduct all discussions with regard to the right to human dignity and respect for all individuals.

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Syllabus subject to change at any point at the discretion of professor. This syllabus does not constitute a contract with the University. It contains guidelines. The instructor reserves the right to make changes as necessary.