

Department of Natural Sciences
 School of Science, Technology and Mathematics
 Dalton State College



Scheduled Meeting Times			
Type	Time	Days	Where
Class	10:50-12:00 am	MTWR	PH 0112
Lab	08:00-10:40 am	TR	PH 0116
Thursday's Lab will meet every other week			

Prof. Hussein Mohamed

Associate Professor of Plant Biology

Office: Sequoia Hall 141-D

Office Phone: 706-272-2196

Cell Phone: 510-255-1393

Email: hmohamed@daltonstate.edu

TANTATIVE IMPORTANT DATES

Should any changes occur, students will have adequate notice to adjust their schedules

Lecture exam I (Unit I) - Online ----- June 02
Lecture exam II (Unit I & II) - Online ----- June 16
Lecture Exam III (Unit III & IV) - Online ----- June 30

Discussion Schedule

Discussion I ----- June 04
Discussion II ----- June 18
Discussion III ----- July 02
Discussion IV ----- July 16

Semester Project Presentation ----- July 18

Final exam IN CLASS (Chapters 17-21) ----- Thursday July 20

COURSE INSTRUCTOR’S OFFICE HOURS

Monday 12:30 pm – 02:30 pm

Tuesday 12:30 pm – 01:30 pm

Wednesday 04:30 pm – 05:30 pm

Other times may be arranged by appointment, although you are welcome to stop by my office or lab at any time. Questions submitted via email will be responded to as promptly as possible.

Course Description

Ecology is the study of the interactions between organisms and their environment. This course provides a background in the fundamental principles of ecological science, including concepts of population and community ecology, biodiversity, and sustainability. Students will acquire a thorough understanding of the scientific field of ecology, how ecologists conduct research, and the importance of general ecological knowledge. Topics include coevolution of the biosphere, geosphere, atmosphere and hydrosphere; biogeochemical cycles; the flow of energy and materials through ecosystems; regulation of the distribution and abundance of organisms; structure and function of ecosystems; metabolic diversity; productivity; trophic dynamics; models of population growth; and species interactions. Moreover, this course will help to develop an understanding of how scientific methods are used to construct ecological knowledge. The course will also explore some of today's major ecological challenges, and the important research that is being done to address these concerns.

Textbook: Ecology: Concepts Applications, 6th Edition, by Manuel Molles, Jr. McGraw-Hill Science/Engineering/Math. ISBN: 978-0073532493

Lab Manual: Ecology on Campus, Lab Manual, by Robert Kingsolver. Benjamin Cummings. ISBN: 9780805382143. (**NOT REQUIRED**)

Expected learning outcomes

1. Demonstrate an understanding of the scientific method including field and laboratory methods (observation, sampling, recording data, analysis of data and reporting of data).
2. Demonstrate an understanding of basic concepts of ecology, including the structure and function of ecosystems, population dynamics, energy flow through ecosystems and biogeochemical cycles.
3. Demonstrate an understanding of factors which affect species abundance and diversity within a community and describe the various types of interactions between members of a community.
4. Through laboratory experiments and reports, students will demonstrate competence in using relevant technologies and techniques for data gathering and analysis.

Discussion Board

There are 4 discussion assignments designed to engage you in the thought process of some ecological concepts and how those concepts affect the living organisms and their surroundings. Detailed instructions for those assignments have been posted in the discussion module. Make sure to read all these instructions of each assignment very carefully. For each discussion, post your assignment in an assigned folder in the Dropbox area of the course.

CLASS CALENDAR/ASSIGNMENTS CHANGES IN SYLLABUS

While changes to the syllabus after the start of the course are uncommon, *if any changes are made to your syllabus, you will have adequate notice to adjust your schedule.*

	Topic	Text
Week 1: May 22 – May 25		
	Introduction to course - What is Ecology (an overview)	Ch. 1
	Life on Land	Ch. 2
<i>May 23 (T) Lab #1</i>	<i>Describing a population: Needle length in Conifers</i>	
<i>May 1925 (R) Lab #2</i>	<i>Seed germination for competition experiment (Lab 11)</i>	
Week 2: May 29 – June 1		
Monday May 29, No Class – Memorial Day		
	Life in Water	Ch. 3
	Population Genetics and Natural Selection	Ch. 4
<i>May 30 (T) Lab #3</i>	<i>Estimating population size: Mark-recapture simulation</i>	
Friday June 2: Test 1 (online) Chapters 1-4		
Sunday June 4 @ 11:59 PM. Discussion 1: Everglades Due		
Week 3: June 5 – June 8		
	Temperature relations	Ch. 5
	Water relations	Ch. 6
<i>June 06 (T) Lab #4</i>	<i>Prep: effect of rhizobium on legumes (Lab 9)</i>	
<i>June 08 (R) Lab #5</i>	<i>Population Growth</i>	
Week 4: June 12 – June 15		
	Energy and Nutrient Relations	Ch. 7
	Social Relations	Ch. 8
<i>June 13 (T) Lab #6</i>	<i>Demography of campus tree</i>	
Friday June 16: Test 2 (online) Chapters 5-8		
Sunday June 18 @ 11:59 PM. Discussion 2: Gulf of Mexico: Troubled Water Due		
Week 5: June 19 – June 22		
	Population Distribution and Abundance	Ch. 9
	Population dynamics	Ch. 10
<i>June 20 (T) Lab #7</i>	<i>Plant niches on a disturbance gradient</i>	
<i>June 22 (R) Lab #8</i>	<i>Groups presentations: Earth biome project</i>	

CLASS CALENDAR/ASSIGNMENTS

Week	Topic	Text
Week 6: June 26 – June 29		
	Population growth	Ch. 11
	Species abundance and Diversity	Ch. 16
<i>June 27 (T) Lab #9</i>	<i>Effect of rhizobium on legumes</i>	
Friday June 30: Test 3 (online) Chapters 9-10-11-16		
Sunday July 02 @ 11:59 PM. Discussion 3: Biological Diversity Due		
Week 7: July 03 – July 06		
	Species Interactions and Community Structure	Ch. 17
	Primary production and energy flow	Ch. 18
July 4 (T)	No Lab 4th of July – College Closed	
<i>July 06 (R) Lab #11</i>	<i>legumes Competition within and between species</i>	
Week 8: July 10 – July 13		
	Nutrient cycling	Ch. 19
	Succession and Stability	Ch. 20
<i>July 11 (T) Lab #12</i>	<i>Physical properties of soils</i>	
Sunday July 16 @ 11:59 PM. Discussion 4: Integrated Pest Management (IPM) Due		
Week 9: July 17 - July 20		
	Global Ecology	Ch. 21
Final exam <u>IN CLASS</u> (Chapters 17-21) Thursday July 20		

Dalton State College - Biology Department
BIOL 3500 – Ecology
Land Biomes Project

Group Members:

1.	2.
3.	4.

INTRODUCTION

A *biome* is a region that can be identified by characteristic climatic conditions, flora and fauna (plants and animals). The distribution patterns are strongly correlated with climate patterns and other abiotic factors. The environment of these organisms consists of both abiotic and biotic factors. *Abiotic factors* include physical characteristics, such as temperature, weather, and altitude. *Biotic factors* include other organisms in the environment and the food supply.

You will be working in groups to explore different Earth's biomes. Each group will focus their research on the climate, soil type, typical flora and fauna, as well as the world distribution of their biome. Each group will present the assigned biome to the class in a creative manner as power-point.

Your objective is to present your biome as an important component of the biosphere. Your task will consist of the following responsibilities:

1. Search for major components (biotic and abiotic) of your biome as follows:
 - a. name of the biome
 - b. world distribution of the biome (you may include a map)
 - c. climate of the biome (i.e. average temperature & precipitation)
 - d. typical flora (plants)
 - e. typical fauna (animals)
 - f. ecological concerns, current & future conservation efforts
2. Present the assigned biome to the class in a creative manner as a power-point. In addition to the major info about your biome, your presentation should include visuals (pictures, diagrams of statistical data, video clips...etc).
3. Each group will choose one plant or animal that lives in their biome and make a separate flyer that describes the organism, its adaptations, ecological concerns, conservation efforts to protect this organism. Pictures should be included if at all possible.

PRESENTATION:

1. Each group has approximately 10-15 minutes to make their presentation
2. Individual organism flyer needs to be printed and distributed to all students in the class at the time of the presentation.
3. All members of the group must speak in the presentation.

EVALUATION:

All groups, when not making presentations, are acting members of the evaluation team and are responsible for completing the summary sheet on the biomes and the organism flyer.

Grading:

Item	Points
1. Research info sheet: (individual)	15 Points
2. Biome presentation: (group) Check presentation's rubric	50 Points
3. Organism flyer: (individual)	15 Points
4. Complete bibliography: (group)	10 Points
5. Complete summary sheets: (individual)	10 Points
Total points	100 points

RESOURCES:

- The textbook Environment: The science behind the stories. Withgott & Lapsata. 5th Edition. Person Education. 2008.
- Encyclopedias: The Media Center has a large collection of books and science encyclopedias that you may find helpful. There is a set of encyclopedias on biomes.

- **Online Resources: Be sure to establish the authority of any site that you visit.**

<http://www.ucmp.berkeley.edu/glossary/gloss5/biome/grasslan.html>

http://www.blueplanetbiomes.org/world_biomes.htm

<http://www.cotf.edu/ete/modules/mseese/earthsysflr/biomes.html>

<http://earthobservatory.nasa.gov/Laboratory/Biome/>

- **Rainforest**

<http://www.rain-tree.com>

<http://www.snowcrest.net/geography/slides/biomes/index.html>

<http://www.ucmp.berkeley.edu/glossary/gloss5/biome/forests.html#tropical>

<http://www.ups.edu/biology/museum/worldbiomes.html>

- **Temperate Deciduous Forest**

http://www.needham.mec.edu/nps_web_docs/high_school/cur/Bio96_97/P5/forest/Forest.html

<http://www.snowcrest.net/geography/slides/biomes/index.html>

<http://www.ucmp.berkeley.edu/glossary/gloss5/biome/forests.html#temperate>

<http://www.ups.edu/biology/museum/worldbiomes.html>

- **Taiga (Evergreen Coniferous Forest, Boreal Forest)**

<http://www.snowcrest.net/geography/slides/biomes/index.html>

<http://www.mobot.org/MBGnet/sets/taiga/body.htm>

<http://www.ups.edu/biology/museum/worldbiomes.html>

- **Grassland**

<http://www.snowcrest.net/geography/slides/biomes/index.html>

<http://www.ucmp.berkeley.edu/glossary/gloss5/biome/grasslan.html>

<http://www.ups.edu/biology/museum/worldbiomes.html>

- **Desert**

<http://www.snowcrest.net/geography/slides/biomes/index.html>

<http://www.ucmp.berkeley.edu/glossary/gloss5/biome/deserts.html>

<http://www.ups.edu/biology/museum/worldbiomes.html>

- **Tundra**

<http://www.snowcrest.net/geography/slides/biomes/index.html>

<http://www.ucmp.berkeley.edu/glossary/gloss5/biome/tundra.html>

<http://www.ups.edu/biology/museum/worldbiomes.html>

- **Wetlands**

http://www.jlhs.nhusd.k12.ca.us/Classes/Science/Net_Lessons/Biomes/wetlands.html

<http://www.epa.gov/OWOW/wetlands/contents.html>

- **Biome Map**

<http://cissus.mobot.org/MBGnet/biome/map.htm>

<http://www.snowcrest.net/geography/slides/biomes/index.html>

Land Biome Summary Sheet

Student Name: _____

Biome	World Distribution	Average Temperature	Average Precipitation	Typical Flora	Typical Fauna	Ecological Concerns	Conservation Efforts

Land Biome Summary Sheet

Student Name: _____

Biome	World Distribution	Average Temperature	Average Precipitation	Typical Flora	Typical Fauna	Ecological Concerns	Conservation Efforts

Questions:

Which biome do you think has the greatest ecological concerns? Why?

Which biome do you think is the most challenging for humans to live in? Why?

BIOMES PROJECT: Organisms & Their Adaptations

Student Name: _____

Organism	Biome/habitat	Adaptations	Interesting fact(s)

LAND BIOMES PROJECT
Research Information Sheet (Group: Biome)

Name _____

Biome: _____

Group Members: _____

World Distribution	
Average temperature	
Average precipitation	
Typical flora (plants)	
Typical fauna (animals)	
Ecological concerns	
Current conservation efforts	
Future conservation efforts	

LAND BIOMES PROJECT**Research Information Sheet (Group: Organism)**

Name _____

Biome: _____

Group Members: _____

Organism English name: _____

Organism Scientific name: _____

General physical description	
Habitat description	
Distribution (world or within biome)	
Adaptations	
Interesting fact(s)	

LAND BIOMES PROJECT

Research Information Sheet

BIBLIOGRAPHY

NOTE: You **must** list all resources you use.

Plagiarize is a crime.

Name _____

Biome: _____

Group Members: _____

LAND BIOMES PROJECT PRESENTATION RUBRIC

Student Name: _____

	EXCELLENT (4)	GOOD (3)	FAIR (2)	POOR (1)
CONTENT	All required information is presented.	Most of the required information is presented.	Some of the required information is presented.	Hardly any required information is presented.
ORGANIZATION	Presentation is well organized and easy to follow. Transition between topics is smooth.	Presentation is organized and easy to follow but transition between topics is not smooth.	Presentation is somewhat organized but hard to follow.	Presentation is very unorganized and difficult to follow.
EYE CONTACT	Eye contact is made throughout the entire presentation. No part of the presentation is read.	Eye contact is made throughout most of the presentation. Some of the presentation is read.	Eye contact is made only during some of the presentation. Most of the presentation is read.	No eye contact is made throughout the entire presentation and all of it is read.
VISUAL AID	Visual aid is creative, colorful, easy to read, and used effectively.	Visual aid is colorful, readable and used somewhat effectively.	Visual aid is lacking color, difficult to read, and not used effectively.	Visual aid is not used at all in the presentation.
VOICE	Presentation is loud and given at a slow pace that's easy to follow.	Presentation is audible and given at a good pace.	Presentation is barely audible and given at a fast pace.	Presentation is inaudible and given at a pace too fast to follow.

POINTS : _____ **X 2.5. TOTAL PRESENTATION'S POINTS (out of 50)** _____

COMMENTS:

ATTENDANCE POLICY:

Attendance is required. You are expected to be in class on time and stay until class is dismissed. *Not all of the information given in a chapter of the book will be covered. Details of pertinent information will be given in the lectures. Therefore, it is important to attend class and take notes.* Attendance will be taken every class period. Absence from class, even for legitimate reasons, has an impact on your overall learning and sharing of information in class. *If you are absent for any reason, it is expected that you get notes and handouts from a classmate.* Class absences will negatively impact overall grade in the course.

COURSE EVALUATION:

Course evaluation will be based on homework assignments, short writing assignments, and exams. Final grades will be based on the total points obtained at the end of the semester out of the total available points. A grading curve will be applied if **absolutely** necessary and only at the end of the semester.

GRADING SYSTEM:

A	B	C	D	F
90 -100%	80-89%	70 – 79%	60 – 69%	<60%

GRADE BREAKDOWN:

Component	%
Class attendance	10
Lecture Exams (3x10% each)	30
Lecture Assignments	10
Lab Quizzes/reports/attendance	15
Discussion	15
Class Final Exam	20
Total	100

MAKE-UPS:

Make-ups for exams will be allowed for reasonable and verifiable excuses. Examples of reasonable excuses are: medical emergency, family death, illness that requires doctor's care. I will not allow a make-up for any unreasonable excuse.

EXAMS AND QUIZZES:

Exams and quizzes will consist of multiple choice and short answer questions. Exams and quizzes dates will be announced at least one class period in advance.

EXTRA CREDIT:

No extra credit will be available.

CELL PHONES:

No play/text/whatever on your phone throughout class. If you have an emergency situation that may require receiving a call or message during class, let me know BEFORE class starts.

RECORDING OF CLASS SESSIONS:

A student shall not, without my express authorization, make or receive any recording, including but not limited to audio and video recordings, of any class, co-curricular meeting, organizational meeting, or meeting with me. Furthermore, it is not permissible to post my class lectures/course materials on the web.

ACADEMIC DISHONESTY POLICY:

Cheating and plagiarism will not be tolerated. Any person caught cheating will receive a zero for that assignment. Additional punishments may be given as determined by the instructor (including an “F” for the class). Each student is responsible for authenticating any assignment submitted to an instructor. The inability to authenticate your work, should an instructor request it, is sufficient ground for failing the assignment.

ACADEMIC SUCCESS CENTERS

Academic Success Centers are located throughout the college. **Don’t wait to get academic help.** I will be available during office hours and tutorial centers offering a wide variety of tutorial services are available at each campus. However, it should be noted that these resources are not for making up for missed classes.

REQUEST FOR ACCOMMODATION:

Any student whose disability falls within the American Disabilities Act (ADA) and requires accommodations should contact the Office of Services for Students with Disabilities. Please contact: Andrea Roberson. Pope Student Center. 706-272-2524. aroberson@daltonstate.edu. Requests for accommodations should be submitted to the instructor within the first two weeks of the course. Accommodations cannot be applied retroactively. With that in mind, you are encouraged to seek assistance from the Disabilities Office as soon as possible, and to present the accommodations memo to your instructor immediately upon receiving it. Presenting a memo after the fact will not entitle you to redo work or retake exams with accommodations.

WORKFORCE DEVELOPMENT STATEMENT

If a student receiving aid administered by the DSC Workforce Development Department drops this class or completely withdraws from the College, the Add-Drop/Withdrawal form must be taken to the Workforce Development Office first. The office is located in the Technical Education Building, Room 140 and their hours are 9:00 AM. - 12:15 PM and 1:30 PM - 3:00 PM, Monday, Tuesday, and Thursday, and 8:30 AM - 12:00 noon on Friday. Their phone number is 272-2635.

DROP/WITHDRAWAL POLICY:

Students wishing to withdraw from the course may do so without penalty until the mid-point of the semester, and a grade of **W** will be assigned. After that point, withdrawal without penalty is permitted only in cases of extreme hardship as determined by the Vice President for Academic Affairs; otherwise a grade of **WF** will be issued. (At Dalton State College, the Hardship Withdrawal process requires students to withdraw from all classes at the college.) The proper form for dropping a course is the **Schedule Adjustment Form**, which can be obtained at the Enrollment Services Office in Westcott Hall. The Schedule Adjustment

Form must be submitted to the Enrollment Services Office. Students who disappear, completing neither the official withdrawal procedure nor the course work, will receive the grade of F.

This instructor will not withdraw students from the class. Withdrawal from any Dalton State College classes is a student responsibility.

COMPLETE WITHDRAWAL STATEMENT:

The proper form for withdrawing from all classes at the college after the official drop/add period but before the published withdrawal date is the **Schedule Adjustment Form**. *All students must* meet with a staff member at the Office of Academic Resources in the Pope Student Center to initiate the withdrawal process. After meeting with the staff member, students will then finalize the withdrawal process in the Enrollment Services Office.

ETHICAL CONDUCT

Academic Dishonesty: Cheating and plagiarism are a part of the Dalton State Code of Student Conduct, which can be found in its most updated form at <http://daltoncampuslife.com/student-conduct/>. ANY assistance provided or given in any way toward work in a class constitutes cheating, unless such behavior is authorized by your instructor. Additionally, any use of the ideas or words of others should be noted, or this will constitute plagiarism. For more details on what Dalton State considers to be Academic Dishonesty, please review the Code of Student Conduct. Instructors will assign grades based on classroom performance. Additional sanctions may be provided as a learning experience from the Student Conduct process. Borrowing another students' work or collaborating on an assignment not designated as collaborative is unacceptable. Furthermore, presenting work that was completed for another class, while not plagiarism technically, is not the same as presenting original work, and is therefore unacceptable.

Classroom Behavior: Dalton State is committed to respect via the Roadrunner Respect pledge. To learn more, please visit <http://daltoncampuslife.com/roadrunner-respect/>.

“I pledge to show my fellow Roadrunner students, faculty, staff, and administration respect by treating others the way they want to be treated and by thinking about others first before making decisions that might affect them”.

OFFICIALLY APPROVED DSC GROUPS AND ACTIVITIES

When students are engaged in officially approved Dalton State groups or activities that require them to participate in events off campus during school days, they shall be treated similarly to any faculty or staff member acting in that same capacity. Thus, just as faculty and staff have excused absences from their regular work schedules, students shall be excused from class without penalty if they are off campus representing Dalton State College in an approved, official capacity during their regular class time. Examples include presenting a paper or otherwise participating in a conference, attending a University System student affairs event, participating in intercollegiate competition (athletic or academic), participating in an approved field trip, etc.

The student needs to provide the following information to the instructor prior to the date when he/she will be absent from class:

- Notification of the event (in the case of athletics, students should provide each instructor a schedule of away events at the beginning of the semester or as soon as possible after the schedule is available);
- estimated time of departure from and return to campus (for example, if a student has an

away game in the evening and will not be leaving campus until 3:00, he/she will not be excused from classes prior to that time on that day; similarly, if the event is in the morning and the student will be returning to campus during the day, he/she is expected to attend any class scheduled after the return trip); and

- contact information for the person or organization sponsoring/authorizing the student's participation in the event.

DISABILITY SUPPORT SERVICES

Students with disabilities or special needs are encouraged to contact **Disability Support Services**. In order to make an appointment or to obtain information on the process for qualifying for accommodations, the **student** should visit the Disability Support Services Library Guide at <http://www.libguides.daltonstate.edu/Disability> or contact the Coordinator of Disability Support Services:

Andrea Roberson, Coordinator. Pope Student Center, lower level 706/272-2524
aroberson@daltonstate.edu <http://libguides.daltonstate.edu/c.php?g=24716&p=149667>

Workforce Innovations Opportunity Act: Questions regarding students receiving financial assistance through the Workforce Innovations Opportunity Act should be directed to 7062956840.

TITLE IX INFORMATION:

Sex Discrimination, Harassment, & Assault

Sexual harassment is unwelcome, gender-based verbal or physical conduct that is sufficiently severe, persistent or pervasive that it has the effect of interfering with, denying or limiting someone's ability to participate in or benefit from the college's educational program and/or activities, and is based on power differential (quid pro quo), the creation of a hostile environment, or retaliation. Sexual misconduct is a form of sexual harassment prohibited by Title IX. Sexual misconduct refers to "physical sexual acts perpetrated against a person's will or where a person is incapable of giving consent due to the victim's use of drugs or alcohol. An individual also may be unable to give consent due to an intellectual or other disability." Sexual misconduct includes dating violence, domestic violence, rape, sexual assault, sexual battery, stalking, and sexual coercion.

Reporting Options

Call 911 if you are in an emergency situation

Dalton State Public Safety (this report is not confidential)

Tech Building- Upper Level - 706-272-4461 Online Sexual Assault Report -

<https://dynamicforms.ngwebsolutions.com/ShowForm.aspx?RequestedDynamicFormTemplate=3fe5724c-a8bd-4a31-9c25-1a3d35110a51>

If you would like to report to Dalton State Administration: (this report is not confidential)

Report Title IX complaint online: http://daltonstate.edu/campus_life/student-conduct-about.cms

Report Student-on-Student Title IX complaint in person:

Brittanie Lee, Office of Student Life. Coordinator for Student Responsibility & Service/ Deputy Title IX Coordinator Pope 113. balee@daltonstate.edu, 706-272-2999

Report Title IX complaint involving Faculty or Staff in person:

Faith Miller, Human Resources. Director of Human Resource/ Title IX Coordinator Memorial 122: fmiller@daltonstate.edu 706-272-2034

If you would like to talk with someone confidentially:

Dalton State Counseling & Career Services: Academic Resources: Lower Pope:

counseling@daltonstate.edu 706-272-4429 <http://libguides.daltonstate.edu/Counseling>