

Department of Geography & Geoinformation Science

GGS 321 - Biogeography: Space, Time, and Life

Spring 2019

Name	: Maction Komwa, PhD	Meeting Times	: MW 10:30 am – 11:45 am
Office	: Exploratory Hall, Room 2414	Location	: Exploratory Hall, Room 2310
Email	: mkomwa@gmu.edu	Office hours	: MW 1:30 pm – 3:00 pm
Phone	: 703-993-5646	Credits	: 3.000

Description:

A survey of the relationship between distribution of plants and animals on the earth surface and the physical geography and environmental characteristics. Offered by Geography/Geoinformation Sci. May not be repeated for credit. Equivalent to BIOL 374.

Recommended Prerequisite: GGS 122 or permission of instructor.

Required Textbook:

MacDonald, G.M. 2003. Biogeography: Space, Time and Life. John Wiley & Sons

General Course Content

The science of biogeography is one of the most interdisciplinary endeavors as it links the disciplines of ecology, biology, and geography. The core principles of biogeography are to (i) document the distribution of plants, animals and microbes on the surface of the Earth and (ii) understand the processes that contribute to the variable patterns in distribution of biota. The former principle is a re-visitation of the tools and methodologies employed by naturalists and the subsequent products that they produce. The second principle, the more mechanistic initiative, is the one that is interdisciplinary as the distribution of each biome, community, species and population reflects a unique combination of factors based on biology (e.g., inherent growth and physiology), geography (e.g., role of disparate landscape types in controlling dispersal and migration), and ecology (e.g., interactions among competing species). An added incentive to understand biogeography is the resurgence in a host of applied issues that require biogeographical skills and knowledge, including climate change, conservation of species, invasive species, evolution, biodiversity, and land use planning.

Learning Objectives

- Provide the student with a broad understanding of how physical geography and the environment influence the spatial and temporal distribution of plants and animals on the surface of the Earth
- Develop a knowledge base in biogeography
- develop a framework for understanding how the issues evolved and the consequences for science and policy.
- Identify, examine, and assess the scientific literature relating to biogeography

Breakdown of Course Assignments

Assessment description	% (of final grade)
Written Assignments	15%
Practice Quizzes [In-class and Online]	5%
In-Class Activities, & Participation [No make-up for all In-class activities]	10%
Exam I	15%
Exam II	20%
Research Project [Proposal 5%; Presentation 10%; 20% Final Paper]	35%

Grading Scale							
Grade	Percentage	Grade	Percentage	Grade	Percentage	Grade	Percentage
A+	98 -100%	B+	87 – 89%	C+	78 – 79%	F	below 60%
A	93 -97%	B	83 – 86%	C	70 – 77%		
A-	90 -92%	B-	80 – 82%	D	60 – 69%		

I expect well-written assignments that demonstrate understanding of the concepts and the course material.

Late Policy

You should complete all assignments by due date. There will be no make-up on Quizzes and Exams unless accompanied by compelling evidence or in the case of **University-excused absences**.

Late Written Assignments will be penalized at 5 points per day. Activities more than 5 days late automatically receive zero points. If you submit your assignment past the deadline even if it is 1 minute late, I will consider that as late submission, so you should plan your time accordingly.

Classroom Expectations:

Students are expected to be on time for class. Regular attendance is strongly recommended.

1. Should circumstances arise that make you late, do not disrupt the class as you enter, take the first available seat and do not walk across the room.
2. In the event of any class cancellation, including inclement weather (e.g. snow), the class will resume where we left off, adjustments, if necessary, will be made later.
3. For each hour of in-class time you should anticipate three hours to complete out-of-class work and preparation.
4. Cell Phones and pagers must be turned off during class. Zero tolerance!

Academic Honesty:

George Mason University operates under an honor system, which is published in the University Catalog and deals specifically with cheating, attempted cheating, plagiarism, lying, and stealing. Please familiarize yourself with the honor code, especially the statement on plagiarism (<http://www.gmu.edu/org/honorcouncil/guidelines.htm>).

I will respond to acts of academic misconduct according to university policy concerning plagiarism. In such cases Plagiarism will result in a failing grade of the assignment in question and/or for the course. Make sure you check the instructions through the Blackboard on how to write your term papers. If you have questions about when the contributions of others to your work must be acknowledged and appropriate ways to cite those contributions, please talk with the professor.

University Services

George Mason University has a number of academic support and other resources to facilitate your success. Some of these resources are presented below:

- i. Counseling and Psychological Services [<http://caps.gmu.edu/>]
- ii. Learning Services, University Career Services [<http://careers.gmu.edu/>]
- iii. Writing Center [<http://writingcenter.gmu.edu/>] and other Learning Services within GMU.
- iv. University Catalog: <http://catalog.gmu.edu/>
- v. University Policies: <http://universitypolicy.gmu.edu/>

Absences & Accommodations

Students are expected to attend all classes and to complete all assignments on time. Absences may have an adverse effect on grades in a course including failure.

Excused absences: In certain circumstances, absences may be excused. These include:

- **Absence for religious observances:** Students must notify their professors in writing at the beginning of the semester of religious observances that conflict with classes. Students who cannot be accommodated should discuss the matter with a dean.
- **Absence for athletic travel:** Student-athletes must provide their professors with a travel letter at the beginning of the semester which highlights potential absences. Students who cannot be accommodated for some or all absences should discuss the matter with the relevant Academic Coordinator for Student-Athletes.
- **Absence for documented illness:** Students who miss multiple classes due to prolonged illness should seek medical care and provide documentation of such to the Dean's Office, which will communicate with the student's professors. A prolonged absence may necessitate the student's withdrawal from the course or from the University for the semester.
- **At the discretion of the professor:** There may be cases where an absence is undocumented but is, nevertheless, excused by the professor (e.g., absence due to a death in the family). Students should initiate a conversation with their professors about the nature and duration of the absence, in advance of the absence whenever possible.

When absences are excused, students remain responsible for all assigned work, and shall be provided with the opportunity to make up, without penalty, any work that they have missed.

Students with Disabilities

Students with documented and qualifying learning, physical and psychological disabilities should contact the Disability Services (ODC), which arranges for reasonable accommodations in accordance with the Americans with Disabilities Act and University policies. In order to arrange accommodations in each course, the student must present his/her professors with a letter from the ODC outlining the recommended accommodations at the beginning of the semester. Disability Services (ODC) website: <http://ods.gmu.edu/> / Student Union Building I (SUB), Room 2500. Telephone: (703) 993-2474.

Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking:

As a faculty member, I am designated as a "Responsible Employee," and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator per University Policy 1412. If you wish to speak with someone confidentially, please contact one of Mason's confidential resources, such as Student Support and Advocacy Center (703-380-1434) or Counseling and Psychological Services (CAPS) (703-993-2380). You may also seek assistance from Mason's Title IX Coordinator by calling 703-993-8730 or emailing cde@gmu.edu.

COURSE SCHEDULE

*This Schedule is subject to change. Any changes will be announced over email & Blackboard

Date	Lecture and Lab Topics	Readings
01/23	Introduction to the course	
01/28	Introduction and history of biogeography	Chapter 1
01/30 & 02/4	Physical factors that shape life on earth <ul style="list-style-type: none"> • Discussion of the physical factors that shape life on earth including light, temperature, moisture, salinity, and their interactions. 	Chapter 3 In-class Simulation Activity Fieldwork
02/6 & 02/11	Biological Interactions <ul style="list-style-type: none"> • The roles of biological processes such as predation, competition in shaping the distribution of life on Earth. 	Chapter 4 In-class Simulation Activity Campus Fieldwork
02/13 & 02/18	Disturbance Factors	Chapter 5
02/20	Exam I	-
02/25 & 02/27	Changing continents and climates	Chapter 7 In-class Simulation Activity
03/4 & 03/6	Communities, Formations, and Biomes	Chapter 6 In-class Simulation Activity Campus Fieldwork
03/11 – 03/17	Spring Break	-
03/18 & 03/20	Dispersal, Colonization, and Invasion	Chapter 8
03/25	In-class Simulation Activity	-
03/27 & 04/1	Evolution, speciation, and extinction	Chapter 9 In-class Simulation Activity
04/3	Individual Project Research	-
04/8	Exam II	-
04/10 & 04/15	Description/Interpretation of Biogeographic Distributions	Chapter 13 Campus Fieldwork
04/15 & 04/17	The Geography of Biological Diversity	Chapter 14 In-class Simulation Activity
04/17	Guest Lecture	-
04/22	Individual Project Research Discussion	-
04/24 & 04/29	Biogeography & Conservation Challenge	In-class Simulation Activity
05/1	Presentation	-
05/6	Presentation	-

Instructions on *ALL Assignments, Quizzes* due dates will be posted through the Blackboard. You should always

check the Blackboard.