



Department of Geography & Geoinformation Science

Geography of Resource Conservation

GGG 303-001

Spring 2025 - Hybrid

Contact Details for Your Instructor

Name : Maction Komwa, PhD
Office : Exploratory Hall, Room 2414
Email : mkomwa@gmu.edu
Phone : 703-993-5646

Course Details

Class Meeting Times : W | 12:00 – 1:15 pm [In-person]
Location : Exploratory Hall 2312
Credit hours : 3.00
Office Hours : M: 11:00 am -12:00 pm | W 10:30 am – 11:30 am

Graduate Teaching Assistant

Name: Osoro Ogutu
Email: bosoro@gmu.edu
Office hours: Exploratory Hall - Exploratory Hall TBA
Office Hours: TBA

Learning Assistant

Name : Kaylee Hungerford
Email : khungerf@gmu.edu
Office : Exploratory Hall 2400-D
Office Hours: TBA

Course Description:

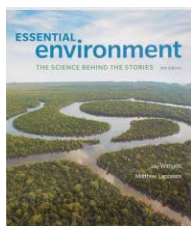
The course provides analysis of world resources distribution, conservation, and preservation; and problems resulting from their natural occurrence and utilization. Uses knowledge from physical and social sciences to develop complex and sophisticated understanding of issues surrounding natural resource exploitation and management, conservation, and preservation.

Course overview

Conservation of Resources and Environment tackles the physical, environmental, economic, and human dimensions of resource availability and use. Unequal distribution and unsustainable practices create complex issues, highlighting the interdependence of humans, technology, and the natural world. Finding synergy between technology and environment is crucial for long-term, sustainable development that safeguards our planet for future generations.

This course takes a geographical approach to examine how resource management impacts our health, economic security, potential for conflict, the environment, and critical issues like biodiversity conservation, climate change adaptation, sustainable urban development, responsible forest management, and global food security.

Required Textbooks:



Essential Environment: The Science Behind the Stories, 6th edition
Jay H Withgott, Matthew Laposata

Published by Pearson (September 15th 2020) - Copyright © 2019

ISBN-13: 9780135213193

Learning Outcomes

Upon completing a Mason Apex course, students will be able to:

- 1. Integrate skills, abilities, theories, or methodologies gained across a Mason student’s undergraduate education to explore complex issues in original ways.
2. Critically analyze the significance of various natural resources in supporting human life and ecosystems, and evaluate the effectiveness of local and global management strategies for sustainable resource use.
3. Demonstrate proficiency in using Geographic Information Systems (GIS) to analyze spatial data and develop effective conservation management and planning strategies.

- Apply critical thinking skills to evaluate the validity, reliability, and limitations of arguments and solutions related to natural resource management and conservation, using both qualitative and quantitative evidence to support their assessments.
- Communicate effectively the results of the student's work with awareness of audience, purpose, and context using an appropriate modality (for example: written, oral, visual, material, embodied, multimodal).

Learning Management Systems

- Canvas is our course management system which provides access to course materials, assignments, and class discussions. You will log in to Canvas using your George Mason username and password through this link: <https://mymasonportal.gmu.edu>.
- If you have computer problems, please contact ITS Support Center <http://itservices.gmu.edu>; Email: support@gmu.edu; | Phone: 703-993-8870.

Class Format

- In-Person Meetings:** We will meet **once a week on Wednesday** from 12:00 pm – 1:15 pm
- Online Resources:** The remaining course materials, including lecture notes, lecture videos, and assigned readings, will be posted on Canvas.

Important Notes:

- Regular Canvas Checks:** While some flexibility is built into this course, it is crucial to check Canvas daily to stay updated on assignments, announcements, and other important information.
- Time Commitment:** Since this is a synthesis course, I strongly encourage you to allocate 8-10 hours per week for completing assignments and readings.

Assignments and Evaluation

Your final grade will be determined by the following components: Each assignment category will be assigned a specific weight in the calculation of your final. See percentage allocated to each assignment category.

Course Assignment(s)	Percentage (%)
Discussion Forum and Class Activities	8%
GIS for Environmental Applications Lab	15%
Exam 1	10%
Exam 2	15%
Final Research Project with Scaffolding Assignments	
<ul style="list-style-type: none"> Topic description 	1%
<ul style="list-style-type: none"> Annotated Bibliography 	2%
<ul style="list-style-type: none"> Literature Review Summary 	3%
<ul style="list-style-type: none"> Draft 	4%
<ul style="list-style-type: none"> Peer-Review 	2%
<ul style="list-style-type: none"> Research Paper 	25%
Group Poster Open Presentation	15%

Grading Scale

Range	Letter Grade	Grade description	Range	Letter Grade	Grade description
93 - 100	A	Excellent	77 - 79	C+	Satisfactory
90 - 92	A-	Very Good	70 - 76	C	Satisfactory
87 - 89	B+	Good with merit	60 - 69	D	Just OK
83 - 86	B	Good	<60	F	Failure
80 - 82	B-	Above satisfactory			

Description of Assignments [Allocated Grades – See above]

1. Exams

You'll demonstrate your understanding of the course material through two exams (Exam 1 and Exam 2). These

exams will be primarily objective, featuring questions that assess your ability to analyze, apply, and synthesize concepts covered in lectures, videos, homework assignments, and reading materials. Expect a variety of question formats, including multiple choice, matching, fill-in-the-blank, and short answer questions.

2. Active Learning Through Discussion

This course fosters active learning through engaging class discussions and online interactions.

- **Online Discussions:** Participate in online discussions with your classmates on thought-provoking questions related to the course material. Detailed instructions, including prompts and response guidelines, will be provided on the Canvas discussion board.
- **In-Class Discussions:** Actively participate in class discussions as part of in-class activities.

Class Participation Grade: Both online and in-class discussions will contribute 5% towards your final grade.

Your Participation:

- **Initial Post:** Analyze the provided prompt and share your insights.
- **Responses:** Respond thoughtfully to at least 2-3 classmates' posts, building on their ideas or offering new perspectives.

Respectful Dialogue:

- We encourage a supportive and respectful learning environment.
- Present your opinions clearly and acknowledge diverse viewpoints.

Instructor Involvement:

- I will monitor discussions and provide general comments to guide the conversation.

3. Term Research Project and Project Poster Presentation

While our class lectures will introduce a broad range of topics in resource conservation geography, they won't have time to delve deeply into each one. To address this, you'll collaborate in teams on a research project that allows you to explore a specific conservation and management issue in greater detail. We'll dedicate time in Week 2 or 3 to guide you in selecting a suitable topic and structuring your research process.

Through this project, you'll gain practical research experience in areas like time management, problem-solving, and oral presentation within a research framework. Evaluation will emphasize both the depth of your research and your ability to connect classroom concepts to real-world challenges in conservation and environmental operations. Look for detailed instructions and a grading rubric for the final research paper on Canvas.

Project Length and Collaboration:

Team Projects: Research papers should be 15-17 pages long (excluding title page and references). While each team member may have different academic interests, successful teams will collaborate effectively to produce a cohesive final product. All members are expected to contribute equally to the research and writing. At the end of the semester, you will complete a group collaboration questionnaire assessing your own role, engagement, and any challenges encountered during the research and writing process. The instructor will provide guidance on research organization throughout the semester.

Individual Projects: If you choose to work individually, the research paper should be 8 pages long (excluding title page and references). All other instructions, including the collaboration questionnaire, remain the same.

Formatting and Presentation:

Formatting: All final papers must adhere to APA style guidelines, using a 12-point font in Arial or Times New Roman with double-spacing throughout.

Sample Topics: Check Canvas for previous semester research paper topics and issues to inspire your project selection.

Final Presentations: Towards the end of the semester, you'll have the opportunity to present your research findings to your classmates in a 15-minute presentation. We'll discuss specifics like the presentation schedule and sign-up process in class.

4. GIS For Environmental Applications – 5 Assignments

Environmental and conservation challenges require innovative solutions. This course equips you with powerful tools for resource management and conservation: Geographic Information Systems (GIS) and remote sensing. Through hands-on GIS lab assignments, you'll gain practical experience using geospatial technologies to tackle real-world environmental and conservation issues.

Key benefits:

- Learn essential GIS skills for resource management.
- Gain a deeper understanding of conservation practices.
- Apply geospatial tools to analyze environmental data

Late/Make-up Assignments Policy

Due Dates: All assignment due dates are clearly marked in the syllabus and on Canvas.

Flex Days [“Life Happens Pass”

- You have 2 "flex days" to use throughout the semester. These allow you to submit an assignment up to 48 hours late (without penalty) for any reason (except online discussions).

Late Penalties:

- After using your flex days, late assignments will be penalized:
 - **1st day late:** 90% credit
 - **Each additional day late:** 5% credit deducted (until no points remain)

Extenuating Circumstances: If you have a serious reason for missing a deadline (medical emergency, etc.), contact the instructor as soon as possible.

Course Communication & Privacy

- Students are required to regularly check their Mason email account /Canvas for announcements or updates related to the course.
- Students must use their Mason email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.
- You should feel free to send me email if you have any questions regarding something that you do not understand. Although I will not instantly answer your e-mail, I will reply to your e-mail within 48 hours and if you don't get my response please feel free to remind me or ask to confirm if I have received your email.

Student Responsibilities:

- Stay engaged with material, discussions, and deadlines.
- Respect classmates and express opinions courteously.
- Value and learn from diverse perspectives.
- Communicate clearly and professionally in writing.

Student Support Services

George Mason University has several 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. The Writing Center <http://writingcenter.gmu.edu/>
- iv. University Catalog: <http://catalog.gmu.edu/>
- v. University Policies: <http://universitypolicy.gmu.edu>

Academic integrity:

The following statement is adapted from the Stearns Center for Teaching and Learning. No grade is important enough to justify academic misconduct. The integrity of the University community is affected by the individual choices

made by each of us. Mason has an Honor Code, which you can read fully at the Office for Academic Integrity (<https://oai.gmu.edu/mason-honor-code/>).

It is expected that you understand these definitions. If you have any doubts about what constitutes cheating, plagiarism, stealing, or lying in the academic context, please see your professor. *Acts of academic dishonesty in this course may be penalized with failure of either the work in question or the entire course.*

Disability Accommodations

Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. If you are seeking accommodations for this class, please first visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu

Diversity and Inclusion

George Mason University is committed to providing equal opportunity and an educational and work environment free from any discrimination on the basis of gender expression and identity, race, economic status, sex, sexuality, ethnicity, national origin, first language, religion, age and ability, marital status, pregnancy status, or genetic information. George Mason University shall adhere to all applicable state and federal equal opportunity/affirmative action statutes and regulations.

Sexual Harassment, Sexual Misconduct, and Interpersonal Violence

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 (703- 993-2380). You may also seek assistance from Mason’s Title IX Coordinator by calling 703-993-8730 or emailing cde@gmu.edu.

Student Privacy

George Mason University strives to fully comply with FERPA by protecting the privacy of student records and judiciously evaluating requests for release of information from those records. Please see George Mason University’s student privacy policy <https://registrar.gmu.edu/students/privacy>.

Name and Pronouns Use

Mason is a community of learners of all genders and gender expressions. If you wish, please share your name and gender pronouns with me through the *Self-introduction Assignment* [Check Canvas – Discussion Board] and indicate how best to address you in class and via email. I use [**He / him / his**] for myself and you may address me as “[**MK**]”, “[**Dr./Prof. [MK]**” in email and verbally. If you are in transition of changing your name and gender pronouns, please keep me posted during the semester so that I can address you accordingly.

Recording and/or sharing class materials

Electronic video, image capture, and/or audio recording is not permitted during in-class meeting unless the student obtains permission from the instructor.

As a faculty member who will spend a lot of time creating course material for classroom use, unauthorized sharing of any of my course materials outside the class would violate important ethical standards including the Mason Honor code

Absences & Accommodations

- **Religious Holidays:** Please refer to George Mason University’s calendar of religious holidays and observations (<http://ulife.gmu.edu/calendar/religious-holiday-calendar/>). It is the student's responsibility to speak to the instructor in advance should their religious observances impact their participation in class activities and assignments.
- **Absence for documented illness:** Students who miss multiple virtual 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 professor(s). 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.

Tentative Course Schedule *Faculty reserves the right to alter the schedule as necessary, with notification to students.*

Week Date		Topic Description	Readings	Homework Due date & Time [11:59 pm]
1	Jan 21- 26	Course Overview	Syllabus	Discussion – Self -intro Check Canvas – Discussion Folder
		Science and Sustainability: An Introduction to Environmental Science & Conservation	Chapter 1	
2	Jan 27 – Feb 2	Science and Sustainability: An Introduction to Environmental Science & Conservation	Chapter 1	Discussion # 1 [Class Activity] GIS Software Installation
		Environmental Ethics Sustainability & Our Future	Chapter 1 Article	Topic description and ideas – in-class
3	Feb 3 - 9	New Tools for Resource Management (GIS & Remote Sensing	Article (s)	GIS Lab 1 – Intro to GIS Discussion # 2
		Conservation: History and Future	Article Chapter 1	
4	Feb 3 10 -16	Economics, Policy, and Sustainable Development	Chapter 5	Debate about the State of Nature Class Activity #3
		Economics, Policy, and Sustainable Development	Chapter 5	
5	Feb 17 - 23	Tragedy of the Commons	Article(s)	Test 1 End of Week 5 [On-line]
		Test 1		
6	Feb 24 – Mar 2	Human Population & Conservation	Chapter 7	Annotated Bibliography Discussion # 4
		Human Population – GIS Hands-on Activity	Chapter 7	
7	Mar 3 - 9	Fresh Water, Oceans, and Coasts	Chapter 12	GIS Lab 2
8	Mar 10 - 16	Spring Recess (no classes)		
9	Mar 17 - 23	Soil, Agriculture and the Future of Food	Chapter 7	Literature Review – Research Project – Discussion # 5
		Soil, Agriculture and the Future of Food – GIS Hands-on Activity	Chapter 7	
10	Mar 24 - 30	Biodiversity and Conservation Biology	Chapter 8	GIS Lab 3 Discussion # 6
		Biodiversity and Conservation Biology – GIS Hands-on Activity	Chapter 8	
11	Mar 31 – Apr 6	The Global Climate Change	Chapter 14	Draft

Week Date		Topic Description	Readings	Homework Due date & Time [11:59 pm]
12	Apr 7 - 13	The Global Climate Change – Simulation Activity		GIS Lab 4
13	Apr 14 - 20	Exam 2 Start Forests, Forest Management and Protected Areas	Chapter 9	Exam 2 [In-Class] Peer -Review
14	Apr 21 - 27	Forests, Forest Management and Protected Areas – GIS Hands-on Activity	Chapter 9	Final GIS Lab # 5 – due 12/1
15	Apr 28 – May 4	Renewable Energy Alternatives	Chapter 16	Final Class Activity
16	May 5 - 11	Final Group Poster Presentation		
		Submit your Final Paper May 11		

Note:

- Discussion assignments will be assigned periodically throughout the semester, focusing on selected topics. These assignments will involve online forum discussions to explore the selected topics in depth.
- Prompts for each discussion assignment will be announced as needed. For all online discussions, your initial posting is due by Thursday, and you are required to respond to at least two of your classmates' initial posts by Sunday.

The instructor reserves the right to make changes to this syllabus at any time and any changes made will be communicated to the students through the Canvas