



Department of Geography & Geoinformation Science

GG5 507-001

Fall 2022

Geographic Perspectives for Sustainable Development

Name	:	Maction Komwa, PhD	Meeting Times	:	R   4:30 pm – 7:10 pm
Office	:	Exploratory Hall, Room 2414	Location	:	Exploratory Hall 2310
Email	:	<a href="mailto:mkomwa@gmu.edu">mkomwa@gmu.edu</a>	Office hours	:	R (1:30 pm – 3:00 pm)
Phone	:	703-993-5646	Credits	:	3.00

**Graduate Teaching Assistant**

Name : TBA

Email : [TBA](#)

Virtual Office hours: TBA

**Course Description:**

Sustainability lies at the intersection of the environment, society, and economics. This course explores the concepts of sustainable development at different geographical scales (local, national, and international). We examine the applications, indicators, measurement tools of sustainable development for analysis and decision making in support of environmentally sustainable development from a geographic perspective. Case studies and problem-solving exercises will be used to stimulate learning and provide practical experience in addressing sustainable development issues.

*This course is cross-listed with other courses such as: GGS 307-001, GGS 505-001, and EVPP 490-004.*

**Required Textbooks:**

Exploring Sustainable Development: Geographical Perspectives.

Edited by Martin Purvis and Alan Grainger.

Any additional course materials will be posted through the Blackboard.

**Learning Outcomes**

Upon course completion, a student will be able to:

- Examine the dimensions of sustainability, including society, environmental, and economic issues.
- Examine the 17 newly minted UN Sustainable Development Goals from the Millennium Development Goals.
- Understand the historical evolution, time-line, key theories, and concepts of sustainable development.
- Provide practical skills to use GIS for sustainable development research.
- Demonstrate an understanding of course concepts and approaches of sustainability of societies on different scales: local, regional and global scale issues.
- Analyze arguments, similarities, and disagreements in the sustainability debate.
- Develop skills that will enable students to understand attitudes on individuals, society and their role regarding causes and solutions in the field of sustainable development.
- Apply critical thinking skills to evaluate the quality, credibility and limitations of an argument or a solution using appropriate evidence or resources.
- Communicate effectively on major sustainability issues through class simulation activities, semester project, and weekly discussions.

## Learning Management Systems

- Blackboard is our course management system which provides access to course materials, assignments, and class discussions. You will log in to Blackboard 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](mailto:support@gmu.edu); | Phone: 703-993-8870.

## COVID-19 Requirements

There are currently no Covid-19-related university-wide policies that will affect teaching and learning, however, students are encouraged to check the [Safe Return to Campus](#) site to keep track of any updates and changes.

## Course Activities

The course is designed to engage students with pre-class (online), in-person and post-class activities. These activities are graded and the instructor expects students to prepare well, read assigned materials before class meeting, participate in all assigned activities and work independently online to complete all assigned activities and discussions through the Blackboard by due dates. Some activities will require team work and such activities will be specified by the instructor.

The online class activities will provide students with a different style of self- such as reviewing course material, practicing and participating in online discussions.

**Additionally**, the course will involve **experiential learning component**, which will provide hands-on activities using geospatial technologies, local engagement such as visiting campus projects that address sustainability issues such as the Mason Food Desert, Hydroponic Projects. Students will also have the opportunity to visit the Sustainable Agriculture Farm in Alexandria.

## Course Assignments and Grading Breakdown

Students are expected to submit high quality assignments during this course via the Blackboard. All assignments are to be completed according the dates outlined in the syllabus

Course Assignment Requirements Description	Allocated Percentage
Discussion Forum	5%
Reading Reflection Summaries	5%
Experiential Learning Activities (ELA) - [GIS for Sustainable Development Labs, fieldwork, Class Debate/Simulation Activities]	18%
Exam 1	15%
Exam 2	20%
Final Research Paper	10%
<ul style="list-style-type: none"> <li>• <i>Topic description (No grade), Annotated Bibliography (1%), Draft (2%), Research Paper (22%)</i></li> </ul>	25%
Discussion Leader	2%

## Grades will be assigned based on the distribution scheme below

Range	Letter Grade	Grade description	Range	Letter Grade	Grade description
>=93	A	Excellent	77 - 79.9	C+	Above satisfactory
90 – 92.9	A-	Very Good	70 - 76.9	C	Satisfactory
87 - 89.9	B+	Good with merit	60 - 69.9	D	Just OK
83 - 86.9	B	Good	<60	F	Fail
80 - 82.9	B-	Above satisfactory			

## Final Research Paper

One of the most important components as a Graduate student is to work on a research paper. Through this course, you will have the opportunity to conduct a thorough research on a topic aligned to sustainability. There will be so many topics that will be discussed in class such as Renewable Energy and the Sustainable Campus, Reduce, Reuse and Recycle, Sustainable Waste Management, Sustainable Cities, Sustainable Business, Climate Change, Food Systems, Life Cycle Assessment, etc. Once you have picked a topic and write

a short description (one-page in length), your instructor will provide you feedback and approval. Additionally, you will be required to present your project to the class at the end of the semester. Full details of the presentation including format will be posted through the Bb.

Evaluation of this paper will depend heavily on the depth of your research and ability to link class concepts to real world issues of sustainable development.

Full instructions for the research project will be posted through the blackboard.

*Note: Term projects* should be 15 or so pages long (excluding title page and references). Points will be deducted accordingly if students will not follow instructions.

## Discussion Board

Class discussion is an important part of any college experience. You will have a structured opportunity to interact with each other through guided questions related to class topics. Post your initial topic- related and thought-provoking comments that foster interaction and discussion. This will demonstrate your class participation as a whole including each week's assigned readings. *Absolutely, no make-up will be given for Discussion Forum.* Your postings will be evaluated according to the scientific content, critical thinking and concept application based on the following criteria:

- *Unacceptable (0 points); poor (1 point); good (3 points) and excellent (5 points). For a full rubric, check the Blackboard.*
- *Each Discussion topic will have instructions on how to write and submit the posting and your response.*

## Exams

- There will be two non-cumulative, closed book Exams. Each exam will contain objective (multiple-choice) and short-answer questions, Fill-in the blank questions. These exams will be monitored and taken both in class and through the Blackboard. The exam will be timed, due on the date shown on the course calendar or through the blackboard. Skipping an exam will drastically affect your final grade!
- There will be NO Final Exam for Graduate Students since you will be working on your research semester project.

## Reading Reflection

The material covered each week is outlined on the course calendar (Blackboard or in the syllabus). I expect you to read the relevant parts of the assigned topics/chapter and other articles prior to class so that you can participate in class discussion and to reflect metacognitively on what you have read and absorb information by describing the following:

1. Most important concepts issues, factual information from the reading and justify your choices **(4 points)**
2. Identify some aspects of the reading you don't understand and briefly discuss why these are confusing elements of the topic/reading **(4 points)**
3. Pose a question to the reading – what is your curiosity about the topic, concept(s) from the readings? **(2 points)**

Your reading will be completed in advance before class meeting. Assessment of this assignment will be as follows:

- 10 points full credit for doing a great job (summary of ~250 words) turning on time, and demonstrating some actual reflection
- 5 points if the assignment is late, short, incomplete or lacks reflection
- 0 points are awarded for no show/submission

In your assignments, I expect you to cite all sources using APA-format. We will have a session on how to correctly use APA-format. I encourage you all to attend a library orientation, which will assist you if you are unsure of literature citation standards. In the academia, it is very important for you to remember that at the end of every writing assignment or presentation you include a complete reference list.

## GIS for Sustainable Development Lab Assignments

Many issues that we will be discussing in this course impacting sustainable development can be analyzed and mapped within a geographic context. This could provide an integrative framework in the decision-making for policy makers for sustainable development at local, national and global scale. You will have the opportunity to learn and understand the role of geospatial information in contributing to sustainable development agenda.

### Make-up and late assignment policies:

- Due dates are explicitly stated. Assignments in this course (which are listed above as “Labs”) will be accepted past the ascribed due date until April 28th. No work will be accepted past that date. Late penalties are assigned in a two-tiered system.
- Assignments turned in **within seven (7) days will result in a 25% deduction** for the assignment. Assignments **later than seven (7 -14 days) will result in a 50% deduction** and **after 14 days** will result into **75% deduction**.
- Technical excuses ("computer system error", “didn’t submit correctly on Blackboard”, etc.) will not be accepted as reasons for late work. You are expected to start the work early. **Never underestimate the time you will spend on the assignments.** If you cannot complete the assignment on time, it can sometimes be better to turn in partially completed work than nothing at all.
- If you are ill or physically indisposed and cannot complete an exam (midterm or final) during the allotted time, you must notify the instructor before class for you to have a chance to make up the exam. **Make-up exams will be given only for University approved excused absences.** No late quizzes and discussions are accepted.
- Late assignment policy may seem strict, but it is in your best interest to turn in everything on time to avoid falling irrecoverably behind. Please contact the instructor if you are struggling and you will receive aid as best as the instructor can provide.

### A “Life Happens Pass”

You will be given a “Life Happens Pass” for only 1 written assignment. This kind of arrangement is due to the unprecedented period that everyone is going through (COVID-19). Therefore, an automatic 72-hour extension will be given as long as you inform your instructor in writing.

### Incompletes (IN) Grades

Incomplete (IN) grades will be assigned only in cases of compelling and documented need, in accordance with policies set forth in the University Catalog. For details regarding incomplete grades, please visit Undergraduate Academic Affairs through this website: <https://chssundergrad.gmu.edu/other-forms/incompletes>

### All students are expected to:

- Review the course material and follow the course calendar.
- Work at full pace to avoid missing class activities.
- Be active participants in discussion forum throughout the course period.
- Communicate with you instructor to ask for help or clarification of an assignment or class activities.
- Respect the privacy of other classmates and the instructor in this virtual classroom.
- Re-read your responses in the discussion forum carefully before postings them.
- Express differences of opinion in a polite and sensible way.
- Keep an open mind to the constructive criticism from classmates and use it to improve your work.
  - We are in this class to share information and learning from each other.
  - By sharing and discussing each other’s ideas, you will be able to examine your own thoughts and feelings hence, making the course interesting and enjoyable!
- Use good grammar and spelling in all your assignments and discussions.
- Write your messages in formal language.

### 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/>). The Honor Code Pledge reads as follows:
  - *To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason*

*University Community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set for this Honor Code: Student Members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.*

- 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.*

### Students with Disabilities

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](mailto:ods@gmu.edu) | Phone: (703) 993-2474.

### GMU Nondiscrimination Policy

George Mason University is committed to providing equal opportunity and an educational and work environment free from any discrimination on the basis of race, color, religion, national origin, sex, disability, veteran status, sexual orientation, gender identity, age, 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.

### 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](mailto:cde@gmu.edu).

### 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 Blackboard – 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

### 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>

## Tentative Course Calendar

Week   In-class Meeting		Topic description	Readings	Assignment short description and due date
1	8/25	Course Overview	Syllabus	<b>Online Discussion - Self-introduction [8/31]</b>
		An Introduction to Sustainability	Chapter 1	
2	9/1	What is Sustainable development?	Chapter 1  <i>Mapping the Sustainable Development Goals Relationships [Check Article through the BBB]</i>	<b>Online Discussion 1:</b> - Initial Post due Wednesday - Comments due Sunday  <b>GIS Application – Complete Tutorial – 9/4</b>
		<ul style="list-style-type: none"> <li>Pillars of Sustainability</li> <li>Sustainable Development Timeline</li> <li>The UN Sustainable Development Goals (SDGs) &amp; Indicators</li> </ul> <i>Intro to ArcGIS Pro – hands-on class activity - ELA</i>		
3	9/8	Geography and Sustainable Development	Chapter 2	<b>Online Discussion 2:</b> - Initial Post due Wednesday - Comments due Sunday  <b>Reading Reflection #1 – 9/11</b>
		<ul style="list-style-type: none"> <li>Why Geography matters in Sustainable Development?</li> </ul> <i>Mapping the Sustainable Development Goals – hands-on class activity ELA</i>		
4	9/15	Measures for Measuring Sustainable Development <ul style="list-style-type: none"> <li>Tools and Systems for measuring Sustainability</li> <li>The Role of Spatial Scale and Spatial Interaction in Sustainable Development</li> </ul> <b>Exam 1 Review</b>	Chapter 3 Check additional reading materials through the Blackboard Some sections from Chapter 1	<b>Online Discussion 3:</b> - Initial Post due Wednesday - Comments due Sunday  <b>GIS Application - Poverty Mapping (Indicators) – 9/18</b>
5	9/22	An Introduction to Life Cycle Assessment	<i>Life Cycle Assessment to Ensure Sustainability of Circular Business Models in Manufacturing [Check Article through the BB]</i>	<b>Discussion Leader(s) – Check the Roster through the BB</b>  <b>Exam 1 – through the Bb – due 9/25</b>  <i>Submit your Research Topic Description – 9/</i>
		The Circular Economy		
6	9/29	Sustainable Agriculture for the 21 <sup>st</sup> Century <ul style="list-style-type: none"> <li>Modern Agriculture</li> <li>Sustainable Farming Systems: Different Places, Different Solutions</li> </ul> <i>GIS Application on Food Security – Hands-on Activity - ELA</i> Guest Speaker	Chapter 8	<b>Discussion Leader(s) – Check the Roster through the BB</b>  <b>Reading Reflection #2 – 10/1</b>  <b>Start Food Production Mapping Assignment</b>

Week   In-class Meeting		Topic description	Readings	Assignment short description and due date
7	10/6	<i>Campus Tour on Sustainable Agriculture Projects - ELA</i> Guest Speaker	<i>Check Additional Articles and Videos through the Blackboard</i>	<i>Submit your Research Annotated Bibliography – 10/9</i>
8	10/13	Making Cities More Sustainable: People, Plans and Participation <ul style="list-style-type: none"> <li>The goals of Sustainable Communities</li> <li>Case Studies on Sustainable Cities <ul style="list-style-type: none"> <li>Curitiba, Amsterdam, Denmark</li> </ul> </li> </ul>	Chapters 6 <i>Check Additional Articles and Videos through the Blackboard</i>	<b>Online Discussion 4:</b> - Initial Post due Wednesday - Comments due Sunday <i>Discussion Leader(s) – Check the Roster through the BB</i> <i>Submit your Food Production Mapping Assignment – 10/16</i>
9	10/20	Business, Capital and Sustainable Economic Development <ul style="list-style-type: none"> <li>Business and the Environment</li> <li>Corporate Social Responsibility</li> </ul> <i>Campus Tour on Sustainable Built Environments - ELA</i>	Chapter 8 <i>Check Additional Articles and Videos through the Blackboard</i>	<b>Online Discussion 5:</b> - Initial Post due Wednesday - Comments due Sunday <i>Discussion Leader(s) – Check the Roster through the BB</i> <b>Graduate Students – Submit your Draft – 10/23</b>
10	10/27	1. Climate Change, Energy and Sustainable Development 2. The Planetary Boundaries <i>GIS Application on Climate Change – Hands-on Activity - ELA</i> <b>Exam II Review</b>	Chapter 11 <i>Check Additional Articles and Videos through the Blackboard</i> <i>Check Pre-Readings in preparation for Climate Change Simulation</i>	<b>Reading Reflection #3 – 10/30</b> <i>Start Climate Mapping Assignment</i> <i>Discussion Leader(s) – Check the Roster through the BB</i>
11	11/3	<i>Climate Change Simulation Activity - ELA</i>	<i>Assigned Script and Complete the Climate Change Pre-Readings</i>	<b>EXAM 2 - in class</b> <b>Graduate Students – Submit your Peer-Review/Comments- 11/6</b>
12	11/10	Future Perspectives: Developing Sustainable Development <b>Final Exam Review</b>	Chapter 13 <i>Check Additional Articles and Videos through the Blackboard</i>	Preparation for Final Project Presentation – Group Meetings <i>Submit your Climate Mapping Assignment – 11/13</i>
13	11/17		Final Presentation -1	
14	11/24		Thanksgiving – No Classes	
15	12/1		Final Presentation -2	
16	12/8		Final Exam [4:30 – 7:10 pm]	

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