

## Department of Geography & Geoinformation Science

### GGG 307-001/507-001 Sustainable Development | Spring 2019

#### Instructor Contact Details

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#### Course Details

Meeting Times : W – 7:20 pm – 10:00 pm  
Location : Exploratory Hall 2103  
Office hours : MW - 1:30 – 3:00 pm  
Credits : 3.000

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#### Catalog 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.

#### Student Learning Objectives:

Upon course completion, a student will be able to:

- Examine critically the 17 newly minted UN Sustainable Development Goals
- Understand the historical evolution, key theories, and concepts of sustainable development.
- Articulate the major issues affecting sustainable development and how sustainable development can be achieved in practice.
- Identify and apply methods for assessing the achievement of sustainable development
- Discover the science, technology, economics, and politics underlying the concepts of sustainability.
- Understand the implications of overuse of resources, population growth and economic growth and sustainability.
- Explore the challenges the society faces in making transition to renewable resource use.
- 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 in both oral and written forms, applying appropriate rhetorical standards (e.g., audience adaptation, language, argument, organization, evidence, etc.)

**Required Course Materials:** Exploring Sustainable Development: Geographical Perspectives. Edited by Martin Purvis and Alan Grainger.

**Recommended Textbook:** Sustainability: A Comprehensive Foundation by Tom Theis and Jonathan Tomkin, Editors.

The instructor has selected additional required readings that are placed under “Content” through the Blackboard [<https://mymasonportal.gmu.edu>].

## Teaching and Assessment

**GGG 307/507** is being offered as a combined undergraduate and undergraduate course. Our weekly meetings will comprise lectures, group or student-led discussions, guest lecturers, and class videos. Active participation is required in all sessions for students to pass this course.

## Grading Policy

The following grading criteria will be used to determine your final grade:

Your performance in the course will be evaluated from the following components:

| Assessment  | % (of final grade) | Assessment  | % (of final grade) |
|---|--------------------|---|--------------------|
| Written Assignments to readings, lectures, discussions, videos etc.                         | 10%                | Written Assignments to readings, lectures, discussions, videos etc.                         | 10%                |
| In-Class Activities, & Participation [ <i>No make-up for all In-class activities</i> ]      | 5%                 | In-Class Activities, & Participation [ <i>No make-up for all In-class activities</i> ]      | 5%                 |
| Online Discussion [ <i>Discuss course concepts with classmates by responding to posts</i> ] | 5%                 | Online Discussion [ <i>Discuss course concepts with classmates by responding to posts</i> ] | 5%                 |
| Short Quizzes   | 5%                 | Short Quizzes   | 5%                 |
| Exam 1  | 15%                | Exam 1  | 15%                |
| Midterm Exam  | 20%                | Midterm Exam  | 20%                |
| Group Presentation  | 10%                | Draft Paper   | 5%                 |
| Final Exam  | 30%                | Final Paper   | 25%                |
| No Final Paper  | -                  | Student Presentation  | 10%                |
| <b>Total</b>  | <b>100</b>         | <b>Total</b>  | <b>100</b>         |

## Cut-off values for your final Letter Grade

**GGG 307:** A (93%) A- (90%) B+ (87%) B (83%) B- (80%) C+ (77%) C (70%) D (60%) F (<60%)  
**GGG 507:** A (93%) A- (90%) B+ (87%) B (83%) B- (80%) C+ (77%) C (70%) D (60%) F (<60%)

## Exams:

*GGG 307 students* - There will be 3 Exams [Exam 1, Mid Term and Final Exam].

*GGG 507 students* - 2 Exams will be administered for graduate students - [Exam 1 and Mid Term]. Details of the exams will be discussed in class.

## In-class Simulation Activities

Additionally, there will be reading assignments from time to time derived from your textbook and assigned articles that will be posted through the Blackboard. Through the discussion/debate and simulation activities, students will have the opportunity to gain an in-depth understanding of another person's perspective on the subject matter.

**Online Class Discussions** – There will be weekly discussions unless otherwise stated through the Blackboard. I will lead the discussion by posting a topic related to the concepts and readings of the week. You will then follow-up with thought-provoking comments that foster interaction and discussion and demonstrate participation in class. Your original post should focus on the topic of the week. Additionally, I encourage you all to read other student's posts and make a short response to their posts. Be sure to post on time. Late posts will not be graded. Strictly - no make-up for this assignment.

## Final Project

The final project is a unique opportunity for students to utilize and apply the concepts learned in class.

Students will design a project proposal that addresses a real-world development challenges involving sustainability. The focus of the research project can be any topic that will promote sustainability practices. Details of the project will be posted through the Blackboard.

- ✧ **GGG 307 students** - will complete the project in groups of 3-4. You will form a group based on the theme of your research interest for this course.
  - No final written paper will be required - Group Presentation Only.
- ✧ **GGG 507 students** – this will be an individual project. – Both presentation and Final Paper will be required.

*Note: SafeAssign (Blackboard Plagiarism Prevention Tool) will be used to check all your written submissions for plagiarism.*

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.

### **Academic Integrity**

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>).

### **Email Policy**

GMU faculty and staff may only correspond with students through the students' GMU assigned email accounts. Emails sent from other accounts will not necessarily be answered. Course information will be shared via email. Please notify me if you would like your email to remain private and not shared with your classmates. Gmail or Yahoo accounts etc. will not be acknowledged.

### **University 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/>] and other Learning Services within GMU.
- iv. University Catalog: <http://catalog.gmu.edu/> |
- v. University Policies: <http://universitypolicy.gmu.edu/>

### **Students with Disabilities**

George Mason welcomes students with disabilities into the University's educational programs. If you are a student with a disability and you need academic accommodations, please contact the Office of Disability Services (ODS) at 703-993-2474. All academic accommodations must be arranged through the ODS. All students with questions or concerns about this class are encouraged to set up a time to meet with the professor, preferably during the first two weeks 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](mailto:cde@gmu.edu).

## Tentative Schedule & Readings

The schedule presented below is subject to change at the discretion of the instructor. Every effort will be made to announce changes in advance, however, students are responsible for changes. Students should regularly check the course Blackboard account as information related to the class including schedule and assignment changes will be communicated there or through the GMU email.

| Date        | Topic description   | Readings /Assignments   |
|-------------|---|---|
| 01/23       | Introductions and Course Overview <ul style="list-style-type: none"> <li>What is Sustainable Development?</li> </ul>  | -   |
| 01/30       | The Concept of Sustainable Development <ul style="list-style-type: none"> <li>Sustainable Development as an Ambiguous Compromise</li> <li>An Introduction to Economic Growth</li> <li>Questions about Sustainable Development</li> <li>Time-line for Sustainable Development</li> </ul>   | Chapter 1<br>Guest – Office of Sustainability<br>Sustainable Mason<br>In-class Activity   |
| 02/6        | Geographic Perspectives and Sustainable Development <ul style="list-style-type: none"> <li>Overview</li> <li>Geography &amp; Pursuit of More Sustainable Development</li> </ul> The UN Sustainable Development Topics <ul style="list-style-type: none"> <li>Sustainable Development Goals</li> <li>The United Nations and Global Sustainability</li> </ul> | Read Chapter 2<br>Development Knowledge Platform (Topics)<br><a href="https://sustainabledevelopment.un.org/topics">https://sustainabledevelopment.un.org/topics</a><br>In-class Activity on SDGs |
| 02/13       | <b>Exam 1</b><br>Geographic Perspectives and Sustainable Development <ul style="list-style-type: none"> <li>The role of Spatial Scale in Sustainable Development</li> <li>Interaction between different Spatial Levels</li> </ul>   | Read Chapter 3  |
| 02/20       | Sustainable Agriculture <ul style="list-style-type: none"> <li>Overview and Modern Agriculture</li> <li>Sustainable Farming: Different Places, Different Solutions</li> <li>Food Miles and Sustainability</li> <li>Greater Resource Efficiency and agricultural production</li> </ul>   | Chapter 8<br><i>In-class Activity</i>   |
| 02/27       | Making Cities More Sustainable <ul style="list-style-type: none"> <li>The Patterns of Urbanization Around the World</li> <li>Urban Problems &amp; Challenges</li> <li>Participation in the Search for Sustainable Urban Development</li> <li>Resilient cities – What makes a city sustainable, green, and resilient?</li> </ul>                             | Chapter 6<br><i>In-class Activity</i>   |
| 03/6        | <ul style="list-style-type: none"> <li>Case Study: Curitiba Sustainable city</li> <li>Case Study: Ankara Landfill Gas to Energy</li> </ul>  | Chapter 6<br><i>In-class Activity</i>   |
| 03/11-03/17 | <b>Spring Break</b>   |   |
| 03/20       | Climate Change, Energy and Sustainable Development <ul style="list-style-type: none"> <li>Climate Change: A Threat to Sustainable Development</li> <li>Adaptation to Current and Future Climate Regimes</li> <li>Mitigating Climate Change</li> <li>Scales of Change: Theory and Practice on Climate Change</li> </ul>                                      | Chapter 11<br>Additional Reading check Blackboard<br><i>In-class Activity</i>   |
| 03/27       | <b>Mid-Term Exam</b>  |   |

| <b>Date</b> | <b>Topic description</b>  | <b>Readings /Assignments</b>  |
|-------------|---|---|
| 04/3        | Simulation Activity on Climate Change – Paris Agreement<br><br>The concept of Planetary Boundaries <ul style="list-style-type: none"> <li>• Growth Dynamics</li> <li>• Case of Energy</li> <li>• Population Dynamics</li> </ul>   | Chapter 11<br>Handout on the Simulation check the Bb.<br><br>Rockstrom et al., “Planetary Boundaries: Exploring the Safe Operating Space for Humanity”<br>Steffen, "How defining Planetary Boundaries can Transform our Approach to Growth” |
| 04/10       | Tools, Systems, and Innovation for Sustainability [Measuring Sustainability] <ul style="list-style-type: none"> <li>• How do we measure sustainability?</li> <li>• Sustainability Indicators</li> </ul><br>Life Cycle Assessment <ul style="list-style-type: none"> <li>• Overview of LCA</li> <li>• Application of LCA</li> <li>• The Challenges of Sustainable Supply Chain Management</li> </ul> | Check articles through the Blackboard<br><br><i>In-class Activity</i>   |
| 04/17       | Life Cycle Assessment continued<br>Simulation Activity on LCA   | Check articles through the Blackboard<br><i>Simulation Activity – check Handout through the Bb.</i>   |
| 04/24       | Business Capital and Sustainable Economic Development  <br><b>Corporate Sustainability</b> <ul style="list-style-type: none"> <li>• Business and Environment</li> <li>• Corporations and Ecological Sustainability</li> </ul><br><b>Group Presentation I</b>  | Read Chapter 7<br><br>Check articles through the Blackboard<br>Corporate Responsibility Report for Walmart, <a href="https://corporate.walmart.com/">https://corporate.walmart.com/</a>   |
| 05/1        | <b>Group Presentation II</b>  |   |
|             | <i>Submit Final Paper by Sunday 5/5</i>   |   |
| 05/8        | <b>Final Exam [GGS 307 Students Only] - [7:30 pm– 10:15 pm]</b>   |   |

All additional course readings are available online through the Blackboard  
Instructions on **ALL Assignments / Quizzes / In-Class Activities** and due dates will be posted through the Blackboard. You should always check the Blackboard.