

# GGG 303-001: Conservation of Resources and Environment

Spring 2016

Department of Geography & GeoInformation Science

## Instructor Contact Details

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## Course Details

Meeting Times : T | R 3:00 – 4:15 pm  
Location : RB 111  
Office hours : T | R 1:30 -2:30 pm  
Credits : 3.000

## Teaching Assistant Contact Details

Name : Zachary Toll | Email: ztoll@masonlive.gmu.edu  
Office: Exploratory Hall GTA Office Space # 1102 G  
Office hours: R, 4:30 – 6 PM

**Required Textbook:** Natural Resources Conservation; Management for a Sustainable Future (10th Edition).

Daniel D. Chiras, John P. Reganold

ISBN-13: 978-0132251389 ISBN-10: 0132251388 Edition: 10<sup>th</sup>

Available at the George Mason University (GMU) Bookstore or on Amazon

**Prerequisites:** At least 30 total credit hours, completion or concurrent enrollment in all university general education courses or permission of instructor.

## Course description

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 addresses the physical, environmental, economic and human aspects of the availability and use of resources. The conservation and use of natural resources involves all aspects of problems resulting from their unequal distribution or unwise use. Humans exist in an interdependent world where technology and the natural resources must work in a supportive and balanced manner or both the environment and the human population will suffer. Humankind must find ways to make technology and the natural environment work synergistically in order to guarantee long-term sustainable development that does no permanent harm to our living space.

In order to address this major topic in a sophisticated and holistic manner a number of subjects must be included in the discussion. The way in which resources are used has a major impact on the quality of life (including health and safety); the economic well-being of all peoples of the world; the level and type of conflicts that occur among peoples and nations; and the long-term protection of the total ecosystem.

## Learning Outcomes

As a GMU Synthesis course, this course will require students to synthesize the knowledge, skills and values gained from the Mason Core curriculum and expand each student's ability to master new content, think critically, and develop life-long learning skills across the physical and social sciences. Upon completing this synthesis course, students will achieve learning outcomes enabling them to:

1. Understand the importance of various natural resources and how they are managed at a local or global scale.
2. Understand a global distribution of the earth's resources.
3. Evaluate and analyze the impact of resource exploitation.
4. Understand the concepts of conservation planning and sustainability of human utilization of natural resources
5. Apply critical thinking skills to evaluate the quality, credibility and limitations of an argument or a solution using appropriate evidence or resources.
6. Communicate effectively in both oral and written forms, applying appropriate rhetorical standards (e.g., audience adaptation, language, argument, organization, evidence, etc.)

### Grading and Assignments

There will be two in-class examinations (a midterm and a final), one final group presentation and group paper on a topic of your group interest based on the concepts and themes of the course. Additionally, students will also complete homework assignments consisting of short papers based on assigned readings or other exercises.

### Grading Policy

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

Assessment	Points	% (of final grade)
Assignments (6)	120	20
Class Participation	20	5
Discussion Group Exercises (4)	20	5
Midterm Exam	100	15
Draft Review (Group Paper)	20	5
Final Exam	100	20
Group Research Topic/Proposal	20	5
Final Group Paper	100	25

### Grading Scale

Grade	Percentage	Grade	Percentage	Grade	Percentage	Grade	Percentage
A+	98 -100%	B+	88 – 89%	C+	78 – 79%	F	below 60%
A	93 -97%	B	83 – 87%	C	70 – 77%		
A-	90 -92%	B-	80 – 82%	D	60 – 69%		

*All late submission will be downgraded to 5 points for each day.*

Short Writing Assignments will provide an opportunity for students to apply the concepts presented in lectures and to develop problem-solving and critical thinking skills. The Blackboard will be used to check detailed instructions and submission of these assignments.

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

All Exams will not be cumulative, however, students are required to have a working knowledge of concepts discussed in class throughout the semester. No make-up Exams will be given without a valid reason that is supported by documented evidence.

### Group Semester Project

A group will comprise three - four students who will make a final presentation about conservation of a natural resource topic as per class discussion. The project will consist of a series of assignments, which will be completed in your small groups. The details for the assignments are presented below:

- i. One page or less description of a problematic topic of your group choice relevant to conservation and use of environmental resources. In your write-up identify a problem statement or research questions. Show why the problem is problematic. Motivate your readers to see the problem's importance. You will also complete an annotated bibliography of at least 4 scholarly sources in APA Style to demonstrate that you have started working on your research project.
- ii. Final Group Presentation. Each group will present their term project relevant to conservation or environmental management subject of interest to you. The team will be given 15 minutes of PowerPoint presentation including Q&A.
- iii. Group Final Written Paper. This will be a written team project relevant to conservation or environmental management. Details of the group project will be discussed in class.

### **Class Participation**

You will be evaluated on your participation in class during our discussions. I am expecting each to be actively engaged in the discussion process during each class. You cannot participate fully if you don't show up for classes. Class participation will be graded accordingly: answering questions as well as asking questions, active listening while others are talking, bringing up points of interest for discussion either in class or through the Blackboard Discussion Forum. Such being the case it is very important that you do your reading assignments prior to class.

**A sign-in sheet will be** circulated at every class. It is your responsibility to sign it. Any absence unless it is a major emergency must have prior approval by the faculty. Note, missing 60% or more of the classes will result in a grade of S/A. At the end of the semester, to meet the presentation requirement of Synthesis course, students will present concisely their paper or projects in the form of Group Presentation. The presentation should be highly organized.

### **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/> | 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.

## Tentative Outline of Topics and Reading Assignments and due dates

<b>Date</b>	<b>Topic Description</b>	<b>Assignment   Assessment</b>
<b>1/19</b>	Course Overview	Ungraded Class Assignment
<b>Chapter 1: Introduction to Natural Resource Conservation: Themes &amp; Concepts</b>		
<b>1/21</b>	Natural Resource Conservation & Management: Past, Present & Future	
<b>1/26</b>	History of the Resource Conservation, Environmental, and Sustainability Movements Natural Resources Classification	<b>Assignment # 1</b> Issues & Analysis Discussion: Contrasting Views of Natural Resource Management [A Nature-Centered & Human-Centered View]
<b>Chapter 2: Economics, Ethics &amp; Critical Thinking</b>		
<b>1/28</b>	Natural Resource & Environmental Economics Tools for Creating a Sustainable Future	Issues & Analysis Discussion: Common Property Resource Problems – The Tragedy of the Commons
<b>2/2</b>	Cost-Benefit Analysis & Assigning Value to Natural Resources and Ecosystem Services	Issues & Analysis Discussion: Using Economic Tools to Assess Environmental Issues
<b>Chapter 4: World Population</b>		
<b>2/4</b>	The Human Population Challenge As World's Population Booms, Will Its Resources Be Enough? Human Population Characteristics & Implications	Spatial Thinking Activity: Mapping Population Data
<b>2/9</b>	Resource-based Theories of Population The Population Clock: Film -- <a href="http://www.pbs.org/video/2365524413/">http://www.pbs.org/video/2365524413/</a>	<b>Assignment # 2</b> Issues & Analysis Discussion: Demographics of Environmental Views & Values
<b>Chapter 10 &amp; 11 - Water: Resources and Pollution</b>		
<b>2/11</b>	World Spatial Variation in Water Supply & Storage Managing Water Resources Sustainably	
<b>2/16</b>	Water Quality, Pollution and Their Sources	Issues & Analysis Discussion: 1. The Zebra Mussel 2. Invisible Threat: Toxic Chemicals in the Great Lakes
<b>2/18</b>	Legislating Water Pollution Control Frontline Video: Discussion on Water Quality in Iowa <a href="http://www.pbs.org/video/2365012718/">http://www.pbs.org/video/2365012718/</a>	<b>Assignment # 3</b> Issues & Analysis Discussion: Going Green - From Toilet Water to Tap Water
<b>Chapter 14: Forest Management</b>		
<b>2/23</b>	Forests use & The U.S. Forest Service Principles of Sustainable Forestry	--
<b>2/25</b>	Forest Management	Issues & Analysis Discussion: The pros & cons of developing genetically superior trees
<b>3/1</b>	Forest Management continued Film: The Greatest Good Part I & II video [Pinchot - "The Fight for Conservation"] <b>Midterm Exam Review</b>	<b>Assignment # 4</b> Issues & Analysis Discussion: Banking on Disaster – The Case Study of the Amazon Rainforest
<b>3/3</b>	<b>Midterm Exam</b>	
<b>3/8-10</b>	<b>Spring Break</b>	
<b>Chapter 22: Nonrenewable Energy Resources</b>		
<b>3/15</b>	Global Energy Sources Energy use in the Industrial Age and Late Twentieth Century	--
<b>3/17</b>	The Energy Nuclear Energy Option: Is it Sustainable?	Issues & Analysis Discussion: The Legacy of Chernobyl

<b>Date</b>	<b>Topic Description</b>	<b>Assignment   Assessment</b>
<b>Chapter 23: Renewable Energy</b>		
<b>3/22</b>	Energy Conservation & Energy Efficiency	<b>Assignment # 5</b>
<b>3/24</b>	Energy Futures	Issues & Analysis Discussion: 1. The Three Gorges Dam 2. Going Green: Hydro Electric Vehicles
<b>3/29</b>	Seven Myths about Alternative Energy	Issues & Analysis Discussion: The Hydroelectric Power in DRC: Grand Inga
<b>Chapter 19: Global Warming &amp; Climate Change</b>		
<b>3/31</b>	Global Energy Balance & the Greenhouse Effect	--
<b>4/5</b>	Projected Impacts of Global Warming	<b>Assignment # 6</b> <b>Submit your Group Draft Paper</b>
<b>4/7</b>	International Climate Change Discussion & IPCC	Issues & Analysis Discussion: National Security & Climate Change
<b>Chapter 5 -- World Hunger: Solving the Problem Sustainably</b>		
<b>4/12</b>	World Hunger Dimensions of the Problem Natural Resources for Agricultural Production	Issues & Analysis Discussion: The Green Revolution
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<b>4/14</b>	Environmental Impacts of Food Production Increasing Food Supplies Sustainably	Issues & Analysis Discussion: Implications of feeding more people by concentrating on plant-breeding and animal-breeding programs
<b>Biodiversity and Habitat</b>		
<b>4/19</b>	An Overview of Biodiversity and Habitat What is being done to preserve biodiversity?	Issues & Analysis Discussion: The Mass Extinction of Freshwater Mussels
<b>4/21</b>	Final Project Group Presentation	
<b>4/26</b>	Final Project Group Presentation	<b>Final Group Paper (due)</b>
<b>4/28</b>	Final Project Group Presentation Course Review	
<b>5/3</b>	Reading Day	
<b>5/5</b>	<b>Final Exam</b> [1:30 pm – 4:15 pm]	

### **Syllabus Changes**

The course instructor reserves the right to make changes as necessary to the course content and office hours during the course of the term. If these changes are made they will be immediately notified to students through individual emails or the blackboard explaining the nature of the change(s).

**Note:** Assignment due date will be included in the assignment handout instructions/blackboard. You will be required to upload your short paper assignment(s) through the Blackboard unless otherwise instructed.