

**GENERAL EDUCATION COURSE PROPOSAL**  
UNIVERSITY OF MARY WASHINGTON

Use this form to submit **EXISTING** courses for review. If this course will be submitted for review in more than one category, submit a separate proposal for each category.

<b>COURSE NUMBER:</b>	<b>FSEM 100</b>		
<b>COURSE TITLE:</b>	<b>WATER RESOURCES</b>		
<b>SUBMITTED BY:</b>	Jackie Gallagher	<b>DATE:</b>	Jan 30 2008
<i>This course proposal is submitted with the department's approval. (Put a check in the box to the right.)</i>			<b>X</b>
<i>If part of a science sequence involving two departments, both departments approve.</i>			

**THIS COURSE IS PROPOSED FOR (check one).**

<b>First-Year Seminar</b> ( <i>indicate in the rationale if this will also count for major credit</i> )	<b>X</b>
<b>Quantitative Reasoning</b>	
<b>Global Inquiry</b>	
<b>Human Experience and Society</b>	
<b>Experiential Learning</b>	
<b>Arts, Literature, and Performance: Process</b>	<b>or</b>
	<b>Appreciation</b>
<b>Natural Science</b> ( <i>include both parts of the sequence</i> )	

**NOTE:** See the report entitled "General Education Curriculum as Approved by the Faculty Senate," dated November 7, 2007, for details about the general education categories and the criteria that will be used to evaluate courses proposed. The report is available at [www.jtmorello.org/gened](http://www.jtmorello.org/gened).

**RATIONALE:** Using only the space provided in the box below, **briefly** state why this course should be approved as a general education course in the category specified above. *Attach a course syllabus.* **Submit this form and attached syllabus electronically as one document to John Morello ([jmorello@umw.edu](mailto:jmorello@umw.edu)).** All submissions **must** be in electronic form.

Water Resources deals with a variety of issues surrounding the distribution, quality, use and misuse of water. This is a good topic for a freshman seminar: almost everyone knows something about water use, and detailed knowledge can be gained relatively quickly through case studies. The physical nature of water as a resource will be considered, followed by management issues, problems of distribution and quality and their solutions, and finally specific examples of interest (e.g. water and terrorism, the bottled water industry, global climate changes). This class will not count for major credit.

In this seminar, participatory discussion-based learning will be encouraged. Students will engage in class discussion based on assigned readings, and will lead discussion themselves on two occasions. They will learn how to read academic articles or chapters critically, paying attention to arguments, evidence, and sources. Students will assimilate and synthesize data while developing ideas for their own literature-based paper, which will be presented to the class. This should provide a good grounding for future research.

## **FSEM 100: Water Resources Syllabus**

Meeting time and place

Dr. Jackie Gallagher  
Email: [jgallagh@umw.edu](mailto:jgallagh@umw.edu)  
Office Hours: TBA

Office: Monroe 307E  
Phone: 654-1493

### **Course Description:**

Water is now considered to be the critical issue for the 21<sup>st</sup> century, arguably more important than energy or climate change. This seminar is an introduction to global water issues – especially its quality, overabundance or the lack of it – in a format designed to encourage active engagement and ownership of material. We will consider the distribution of water on earth, its movement through the hydrologic cycle, and the physical processes that govern these factors. Through assigned readings and articles found by students, we will then move through other pertinent topics: legal issues surrounding water rights and ownership, water management (mainly involving avoidance of flooding), water shortages and solutions, and pollution. Where possible, actual case studies will be used to illustrate the basic topics, and an optimistic viewpoint will be maintained! Students are expected to attend class and participate, to complete readings and assignments, and to research and write a paper on a problem of their own choosing.

### **Objectives:**

1. This course is a freshman seminar and is limited to 15 first year students at any time.
2. Students will learn how to read academic articles or chapters critically, paying attention to arguments, evidence, and sources.
3. Students will engage in class discussion based on assigned readings, and will lead discussion themselves on two occasions. Arguments and critiques will be respectful and constructive.
4. Students will read from a variety of sources and learn to pull together material to build a cohesive argument.
5. Students will research and write a literature review based paper on an approved topic dealing with some aspect of water resources, and will then present that information to the class. Suitable books, journals and news articles will be used for this endeavor.

### **Expectations:**

- Attendance and participation are required – if you will miss class, phone or email me beforehand. Points will be deducted for each class missed; arrival later than 15 minutes after the start time, without prior permission, will count as a missed class.
- Preparation for class discussion is essential. Complete the reading, and as you read take notes: these might be questions, disagreements, comments or other examples you relate to this reading. The notes can be handwritten but must be legible; you will hand them in at the end of class, after our discussion. You might find it useful to include a short summary of the reading, but the point of your notes is to provide discussion material.
- Discussion: in class, all students may express their interest, enthusiasm or lack thereof, confusion or disappointment in the reading material. I hope the class be fun and the information valuable. Malicious or inappropriate behavior will not be tolerated. Generally, discussion will be lead by a student; everyone will lead twice. Preparation for leading

discussion requires slightly more in-depth reading of the required article. Everyone will need to listen, question, respond, explain, argue – in order for the seminar to run smoothly.

- Written assignments and final presentation: I will provide details regarding deadlines, format and evaluation methods well before each is due. A draft of your paper is required; while not specifically graded, not handing in a draft will result in a reduction of your final grade by 10%.
- News articles are to be found from current sources but may be worldwide and must involve a topic dealt with in class. The point is to keep you thinking about water issues while you function in daily life; sources include hardcopy newspapers, the internet and academic journals. All students should look at each article (posted on Blackboard) but need not read them in detail.

**Evaluation:**

- 30% Participation – complete the weekly reading, prepare notes & comments on it, and join the classroom discussion
- 10% Lead discussion twice during the semester (topic & reading will be assigned)
- 20% Critical reviews of readings: you are required to critique, thoughtfully and thoroughly, two readings during the semester. You will need to understand the material in the reading and the argument of the author; you may need to complete additional reading to do so. The review should be 2-4 pages long; a grading rubric will be provided.
- 5% News articles; throughout the semester you'll be looking for current events involving water. These might be newspaper or internet articles or publications in academic journals; they might be local, regional or global in scope. You will find at least three such articles and provide them for me to post on Blackboard so others can read them
- 30% Paper; on a place or on an issue involving water. The topic must be approved, deadlines must be met, a draft is required, and a specific format must be followed: details to come!
- 10% Presentation based on the paper, in either poster or power point format.

**Midterm grades** will be considered unsatisfactory if they are below 70% using this weighting scheme.

**Final grades** will be given using the following grading scheme:

<b>Percent</b>	<b>Grade</b>	<b>Percent</b>	<b>Grade</b>
93-100 %	A	73-76.9 %	C
90-92.9 %	A-	70-72.9 %	C-
87-89.9 %	B+	67-69.9 %	D+
83-86.9 %	B	60-66.9 %	D
80-82.9 %	B-	<59.9%	F
77-79.9 %	C+		

**Email** will be sent to UMW addresses. Please check your email regularly.

**Blackboard** will be used to post readings and news articles and for discussion

The **Honor Code** will be followed, although students are expected to discuss ideas together and will read some of the same papers. Written work that is handed in for a grade should be your own. Please pledge accordingly.

### **Disabled students**

The Office of Disability Services has been designated by the University of Mary Washington as the primary office to guide, counsel, and assist students with disabilities. If you receive services through that office and require accommodations for this class, please make an appointment with me as soon as possible to discuss your approved accommodations. I will hold any information you share with me in strictest confidence unless you give me permission to do otherwise.

If you have not made contact with the Office of Disability Services and have reasonable accommodation needs, I will be happy to help you contact them. The office will require appropriate documentation of a disability.

Office of Disability Services, 209 George Washington Hall, 540-654-1266; [ods@umw.edu](mailto:ods@umw.edu)

### **Required Texts:**

Peter H. Gleick, 2006. *The World's Water, 2006-2007*. Island Press. Fifth volume in the Pacific Institute's series.

Fred Pearce, 2006. *When the Rivers Run Dry: water – the defining crisis of the twenty-first century*. Beacon Press.

Marq de Villiers, 2000. *Water: the fate of our most precious resource*. Mariner Books.

### **Recommended Books:**

Robert Glennon, 2002. *Water Follies: Groundwater pumping and the fate of America's fresh waters*. Island Press.

Marc Reisner, 1993. *Cadillac Desert: the American West and its disappearing water*. Penguin Books

Shiva, Vandana. 2002. *Water Wars: Privatization, Pollution, and Profit*. South End Press.

### **Journal Resources:**

Our library has numerous journals and periodical publications relating to water, including Virginia water data and water resources journals from several countries. In 'journal finder' enter 'water' or 'water resources' as a portion of the title and a list will appear. Many articles are available online. We will discuss library resources at the beginning of the course.

### **Web Resources:**

<http://www.epa.gov/ow/> U.S. Environment Protection Agency Office of Water web page

<http://water.usgs.gov/> United States Geological Survey (USGS) Water Resources web page

[http://ec.europa.eu/environment/water/index\\_en.htm](http://ec.europa.eu/environment/water/index_en.htm) European Commission Water Information System for Europe (WISE) web page

<http://www.worldwater.org/> The Pacific Institute's webpage on worldwide freshwater resources

<http://www.water.org/> WaterPartners International (U.S. based non-profit working for clean water)

**News to Watch:**

Students are expected to collect news articles (hardcopy or online) during the semester for discussion in class. Often, pre-existing issues continue through time. Some examples:

Lake Lanier, Georgia (e.g.

[http://www.ajc.com/metro/content/metro/stories/2008/01/26/lanier\\_0127.html](http://www.ajc.com/metro/content/metro/stories/2008/01/26/lanier_0127.html))

Alabama-Georgia-Florida water (e.g.

[http://www.wsfa.com/Global/story.asp?S=7764591&nav=menu33\\_2](http://www.wsfa.com/Global/story.asp?S=7764591&nav=menu33_2))

Salton Sea, CA (e.g.

<http://www.mydesert.com/apps/pbcs.dll/article?AID=/20080125/NEWS0701/801250361/-1/newsfront>)

Water in Saudi Arabia (e.g. <http://europe.theoil Drum.com/node/3520>)

Water in the Great Lakes (e.g. <http://www.washingtonpost.com/wp-dyn/content/article/2008/01/26/AR2008012601748.html?hpid=topnews>)

**Class schedule:**

The following outline of topics is subject to change, depending on our progress and global events. Case studies from around the world will be used to illustrate the issues. Most of the readings are short and very accessible; you are expected to complete them all.

Week	General topic	Readings
1	Water as a resource: who uses it, where, for what?	Pearce 1: The human sponge Gleick data tables
2	Global distribution of water; the hydrological cycle; storage and movement	Pearce 3: Riding the water cycle De Villiers 2: The natural dispensation De Villiers 3: Water in history
3	Surface water: natural stream flows and wetlands	Gleick 2: Going with the flow Pearce 10: Lake Chad
4	Ground water: aquifers and fossil water	Glennon 2: Human reliance on groundwater Glennon 3: How does a river go dry? Pearce 5: India: a colossal anarchy
5	Water rights; ownership; management of water	Gleick 5: Environmental justice and water Glennon: All's fair in love and water De Villiers 14: The United States and its neighbors
6	Water rights; ownership; management of water - continued	Reisner: Cadillac Desert (excerpt) Glennon: the tragedy of law and the commons
7	Quantity: too much	Gleick 4: Floods and droughts Pearce 9: The common wealth
8	Quantity: too little	De Villiers 6: The Aral Sea Pearce 21: Aral Sea Pearce 25: Sewage on tap Pearce 26: Closed basins and closed minds
9	Quality: the need for clean water	TBA (history of sanitation; laws over clean water) EPA website

10	Quality: pollution	Pearce 7: The world's largest mass poisoning De Villiers 5: Unnatural selection
11	Engineering solutions?	Pearce 6: Halliburton's job for Qaddafi Pearce 15: Wonders of the world Pearce 17: Dams that cause floods Gleick 3: Desalination
12	Water wars	Gleick 1: Water and terrorism Gleick: Conflict chronology De Villiers 11: The Middle East Pearce 20: Swords of Damocles
13	Bottled water	Gleick: Bottled water update News articles TBA
14	Water and climate change	Pearce 14: Changing climate De Villiers 4: Climate, weather, and water
15	Future issues?	Gleick 6: Water risks that face business and industry De Villiers 16: Solutions and manifestos Pearce 34: Water ethics
Final Period	Final presentations (10 mins each)	