Topics in Freshwater Sciences: Death and Life of the Great Lakes
Freshwater 190

Time and location: Tues/Thurs, Time 0900-1030, Lapham 258, Kenwood Campus

Instructor: John Janssen
Office: Great Lakes Research Facility Room 1013

Office Hours: generally right before and after class, or by appointment

Office Phone: 382-1733   E-Mail: jjanssen@uwm.edu

Class Attributes:
• 3 credit units, consent required to audit
• Undergraduate status

Course Description: A select history of Great Lakes ecosystem change.

Course Objective: This course is intended to enable students to be well-informed lay-persons on Great Lakes environmental issues, their history, and possible futures in light of risk and uncertainty of freshwater issues.

Intended Learning Outcomes (ILOs):
1. Communicate with scientists to understand how data and data analyses are used by experts and public stakeholders.
2. Learn history of Great Lakes environmental issues.
3. Identify current and potential future Great Lakes environmental issues.

Natural Sciences General Education Requirements (GER)
This course is designed to satisfy the Natural Sciences component of UWM’s General Education Requirements (GER). The Academic Program and Curriculum Committee’s GER Composite Documents describes these courses in the following way:

A branch of science concerned with the physical world and its phenomena and with discovering the laws governing them. The branches of Natural Sciences—such as astronomy, geosciences, biological sciences, chemistry, physics—that deal primarily with matter, energy, and their interrelations and transformations; with living organisms and vital processes; with the laws and phenomena relating to organisms, plants and animal life; with the physical processes and phenomena of particular systems; and with the physical properties and composition of nature and its products.

Through the course’s learning outcomes, Topics in Freshwater – Frshwr 190 meets the following criteria for the Natural Sciences GER:

Criterion 1: Understand and apply the major concepts of a natural science discipline, including its breadth and its relationship to other disciplines. (ILOs 2, 3)
Criterion 3: Demonstrate an understanding of the process of generating and testing data, and apply this knowledge to the solution of problems. (ILO 1, 3)

Criterion 4: Discuss and assess the limitations of data and the possibility of alternative interpretations. (ILO 1, 3)

Criterion 5: Apply ethical reasoning to questions, concepts, and practices within a natural science discipline. (ILOs 1, 3)

How Freshwater 190 achieves and assesses Natural Sciences GER Outcomes:
Students who enroll in Freshwater 190 will become well informed on Great Lakes environmental issues, their history, and possible futures. Students are asked to:
• Read and think critically about a diverse range of environmental issues affecting the Great Lakes;
• Make meaningful connections between historical environmental issues and the future of the Great Lakes;
• Understand the relationship between these issues and policies effecting the Great Lakes;
• Participate in meaningful dialogue with classmates and apply ethical reasoning about Great Lakes issues and the regional and global impacts;
• Recognize that science could and should affect policy, but that producing quality science has cost, which needs to be balanced with anticipated benefits of research.

The following activities will enable students to understand, extrapolate and engage in meaningful communication about Great Lakes issues. To demonstrate mastery of the course objectives students put their learning into practice by:
• Participating in thoughtful discussion in the classroom, including sharing individual Great Lakes Stories;
• Construct a powerpoint presentation and poster on a significant Great Lakes issue.
• Identifying and relating historical Great Lakes issues and interpreting novel situations in freshwater systems via presentations and exams.

University of Wisconsin System Shared Learning Goals for Students Goal #3
Effective Communication Skills including listening, speaking, reading, writing, and information literacy. (ILOs 1, 3)

The poster and powerpoint presentation will measure the student’s skills in effective communication, especially speaking, writing and information literacy. The following criteria will be used to assess the poster:
1. Persuasively integrates a research topic within the context of a Great Lakes issue.
2. Effectively translates Great Lakes science content.
3. Communicates topic effectively to a broad audience.
4. Demonstrates college-level writing and information literacy competencies including proper citation of sources, word choice, and organization.

Course materials:
• Egan, Dan, The Death and Life of the Great Lakes.
University of Wisconsin-Milwaukee School Of Freshwater Sciences

- On line materials TBD and contemporary readings as they emerge. For example, the issue oil pipes on the lakebed with the possibility of their rupture.

Time commitment for the course:
- Attendance is mandatory because of necessary instructor-student engagement.
- Time in classroom 3 hrs per week* 15 = 45 hrs
- Time for completing assignments = 5 hr per week x 15 = 90
- Student project: 20 hr
- Undergraduate student total: 145 hr

Requirements:
Classroom assignments will be given at the class a week prior so students can undertake the readings in the context of the upcoming project and lecture (not applicable for the first meeting).

Exams are essay/problem solving in nature and are based on a combination of classwork and readings.

Poster/powerpoint project: Presentation and illustration of an issue of Great Lakes environmental concern.

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Weight</th>
<th>Learning objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>First poster draft Due 15 March</td>
<td>20%</td>
<td>Identify current or potential future Great Lakes environmental issue. Preliminary draft</td>
</tr>
<tr>
<td>Written critique of classmates posters and powerpoints. (weekly, starting 27 March)</td>
<td>20%</td>
<td>Communicate with classmates and critique poster drafts from classmates.</td>
</tr>
<tr>
<td>Penultimate draft of poster - instructor gives feedback and student must respond to critique</td>
<td>10%</td>
<td>Constructive response to constructive critiques.</td>
</tr>
<tr>
<td>Final Poster due 27 April</td>
<td>20%</td>
<td>Communicate with faculty and non-class students.</td>
</tr>
<tr>
<td>Final exam – based on book and student posters and presentations</td>
<td>30%</td>
<td></td>
</tr>
</tbody>
</table>

Evaluation: Final grades will be made based on the accumulated total points throughout the course.

Grading scale:
- A: 90-100%, A-: 87-89%
- B+: 83-86%, B: 80-82%, B-: 77-79%
- C+: 73-76%, C: 70-72%, C-: 67-69%
- D+: 63-66%, D: 60-62%
- F: 0-59%
Tentative Course Schedule and general assignments

<table>
<thead>
<tr>
<th>Tentative Course Schedule and general assignments</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>January</strong></td>
<td></td>
</tr>
<tr>
<td>Week of 22</td>
<td>Your Great Lakes Story: a class inventory by individual</td>
</tr>
<tr>
<td>Week of 29</td>
<td>Poster and Powerpoint development by individual</td>
</tr>
<tr>
<td><strong>February</strong></td>
<td></td>
</tr>
<tr>
<td>Week of 5</td>
<td>Poster and Powerpoint development by individual</td>
</tr>
<tr>
<td>Week of 12</td>
<td>Poster and Powerpoint development by individual</td>
</tr>
<tr>
<td>Week of 19</td>
<td>Poster and Powerpoint development by individual</td>
</tr>
<tr>
<td>Week of 26</td>
<td>Poster and Powerpoint development group critique</td>
</tr>
<tr>
<td><strong>March</strong></td>
<td></td>
</tr>
<tr>
<td>Week of 5</td>
<td>Poster and Powerpoint development</td>
</tr>
<tr>
<td>Week of 12</td>
<td>Practice presentations</td>
</tr>
<tr>
<td>Week of 19</td>
<td>Spring Break</td>
</tr>
<tr>
<td>Week of 26</td>
<td>Presentations 1 and 2</td>
</tr>
<tr>
<td><strong>April</strong></td>
<td></td>
</tr>
<tr>
<td>Week of 2</td>
<td>Presentations 3 and 4</td>
</tr>
<tr>
<td>Week of 9</td>
<td>Presentations 5 and 6</td>
</tr>
<tr>
<td>Week of 16</td>
<td>Presentations 7 and 8</td>
</tr>
<tr>
<td>Week of 23</td>
<td>Presentations 9 and 10</td>
</tr>
<tr>
<td><strong>April 27</strong></td>
<td>Annual UWM Undergraduate Research Symposium</td>
</tr>
<tr>
<td><strong>May</strong></td>
<td></td>
</tr>
<tr>
<td>Week of 30</td>
<td>Presentations additional</td>
</tr>
<tr>
<td><strong>May 15</strong></td>
<td>Final Exam 1230-1430</td>
</tr>
</tbody>
</table>

Course policy:

- Academic Integrity: Plagiarism will not be tolerated in this class and students involved will receive a zero grade. Severer cases will be submitted to the University for further scrutiny.

- The scope and disciplines of student academic misconducts are specified in Chapter UWS 14 and UWM implementation provisions (Faculty Document 1686) and http://www4.uwm.edu/secu/SyllabusLinks.pdf. UWM Disciplinary Guidelines can be found in the Office of the Dean of Students, Mellenpamp Hall, Rm 118.

- Class Etiquette: We expect that you will conduct yourself in the same manner that you yourself would like to be treated. Class disruptions will not be tolerated as it erodes the educational environment for everyone.

- Finality of Grade: All grades, once released on D2L or PAWS, are final except in cases of clerical error.

- Late penalty: 10% deduction of your score you would receive with an on-time submission per each full day from the deadline. No score after seven full days from the deadline.

- Special Accommodation: Any student who feels he or she may need an accommodation based on the impact of disability, religion, or other civic duty should contact Instructor privately as early as possible to discuss his or her specific needs. A student should notify
University of Wisconsin-Milwaukee School Of Freshwater Sciences

Instructor, within the first three weeks of the beginning of class, of the specific days or dates on which he or she will request relief from an examination or academic requirement for a religious observance. The student notification will be kept confidential.

- Other Notice:
  - Make-ups will be allowed at the discretion of Instructor when a pre-approval has been obtained or in case of emergency with written proof
  - Other unspecified matters will be handled according to the University policies listed on http://www4.uwm.edu/secu/SyllabusLinks.pdf
- If you are having any trouble in class, please see Instructor as soon as possible