BBE 3480: International Watershed Boundary Issues: Mexico

Meets bi-weekly during the Spring Semester 2016, with an “embedded” one week trip to the Mexico / Arizona region, May 16-21, 2016.

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On-site partners:

**Mexico/Arizona border:** The Sonoran Institute, Tucson, AZ; Pro Natura, Baja, Mexico

The Sonoran Institute leads the Colorado River Delta Restoration project in southern Arizona and Mexico. They have helped to arrange field trips to restored wetlands, river and delta sites, study opportunities and cultural experiences for students during the week.

[http://www.sonoraninstitute.org/where-we-work/mexico-colorado-river-delta.html](http://www.sonoraninstitute.org/where-we-work/mexico-colorado-river-delta.html)

General Course Description
The course is proposed as an "embedded" study abroad class that serves as an on-campus class with two short study abroad trips. It will meet bi-weekly during the spring semester in St. Paul with a May trip to the Arizona/Mexico border. We will study international trans-boundary watershed issues during the semester with a weeklong May trip to the Colorado River Delta Restoration project. We will also study water management issues along other watersheds on the southern US/Mexico boundary.

Major topics areas:

Water management, ecological restoration, conservation, international relations and agriculture will be some of the main topics covered.

Water Resource Management:

Ecological Restoration and conservation issues will be studied in relation to restoration of the Colorado River Delta where water has been over withdrawn by the United States for water supply to the point that the river does not flow all the way to the ocean anymore. The result was degradation to the delta ecosystem in Mexico. Also Mexico needs to desalinize water in order to use it for drinking and irrigation.
at that point because the river is too saline. Restoration efforts and water management in the Delta will be examined in detail.

International relations in regard to these trans-boundary watersheds will also be examined. Governmental water institutions will be studied at as well as non-profit watershed management organizations in the southern U.S. and Mexico. Water management for irrigation to supply agriculture will be investigated along with the consequences for river flow and aquatic life in the southern U.S. Rivers such as the Colorado and Rio Grande.

Travel logistics.

The May trip will require a flight to Yuma, Arizona and meeting the partner staff near the Mexico border. Some of the Arizona / Mexico border study will be done on the U.S. side of the boundary near Yuma. Field trips into Mexico will be done with coordination from partner organizations who can guide the trips and ensure safety, the Sonoran Institute and ProNatura.

Liberal Education Requirements fulfilled by this course:

Environment Theme Requirements:
- The course raises environmental issues of major significance such as watershed management, ecological restoration and water supply issues.
- The course gives explicit attention to interrelationships between the natural environment and human society, particularly agricultural impacts of water withdrawal and nutrient loading. The conflicts between water extraction, agriculture and the environmental health of aquatic ecosystems are examined in detail.
- The course introduces underlying scientific principles of hydrology, watershed management and aquatic ecology.
- Students explore the limitations of technologies and the constraints of science on the public policy issues being considered, namely the difficulties of restoring lakes and rivers that have been altered by pollution and hydrologic changes.
- Students learn how to identify and evaluate information sources such as hydrologic and water quality data as well as the advantages and disadvantages of different management strategies.
- Students demonstrate an understanding that solutions to environmental problems will only be

1) Global Perspectives Theme Requirements:
- The course focuses on environmental issues that impact our neighboring countries with focus on Mexico. We’ll spend one week in and around the Mexico border. Prior to departure we’ll meet bi-weekly during the semester learning about international boundary watershed issues.
- The course addresses particular issue and problems with respect to the Colorado River along the Mexico border. The issues of downstream impacts of agriculture and irrigation will be examined. Along the Mexico - Arizona border issues of over-extraction of the Colorado River water for irrigation and drinking water are investigated as well as their impacts on the river delta in Mexico.
• Through classroom discussions, site visits, and individual research projects, students will explore the implications of the issues raised by the course material for the international community, the United States, and/or for their own lives.

Course textbooks

Course Objectives: By the end of this course, learners will be able to:
1. Understand diverse philosophies and cultures within and across societies by looking at differences in perceptions, approaches and attitudes towards water resources management in the U.S. and Mexico.
2. Master a body of knowledge and a mode of inquiry
   Students will understand watershed science and management issues which includes a mixture of physical science, ecology, engineering, economics and social or political sciences.
3. Acquired skills for effective citizenship and life-long learning by learning about issues of importance with our neighboring countries. These are issues that will be prevalent throughout their lifetimes so they may apply lessons learned from the class into their lives after school. Students will learn about different land and watershed management strategies and how to collect information in order to assess these plans. For students who won’t be engaged in watershed management directly in their careers, the knowledge of how our actions on the land impact rivers and lakes as well as downstream neighbors is an important life-long lesson.

Graded Assignments and Class Points: All participants will have the same graded assignments. However, students will be assigned a lead instructor according to their interest area who will grade their assignments. Please follow your leader’s instructions regarding specific details of each assignment.

1. Attendance and Participation: On time arrival of all classes or lectures, on time arrival for departure points (airport, bus, etc.) and active participation (asking questions, interacting with others, leading discussions, and attending to tasks at hand). 100 possible points.
2. Student reports and discussion on assigned readings in class held at St. Paul campus
3. Research or environmental design projects due at end of class
4. Test over background hydrology and watershed boundary issues in March

Semester Project: Students will complete a research or assessment paper related to watershed management issues along International boundaries. Students will develop a research paper for a topic related to water resources management of the students choosing. The paper should
include materials from sites visits, readings, classroom lectures, and discussions. It should be approximately ten pages (excluding title page and references), single spaced.

Assessment of Student Performance and Grading:
Grading is based on a percent of all available assigned work. It should be noted that given the nature of this course, some assignments may be added or deleted or points may be adjusted, thus changing the total points available. Below is a grid with percentages and corresponding letter grade:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Letter Grade</th>
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<tbody>
<tr>
<td>96-100%</td>
<td>A</td>
</tr>
<tr>
<td>92-95%</td>
<td>A-</td>
</tr>
<tr>
<td>88-91%</td>
<td>B+</td>
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<tr>
<td>84-87%</td>
<td>B</td>
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<tr>
<td>80-83%</td>
<td>B-</td>
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<tr>
<td>76-79%</td>
<td>C+</td>
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<tr>
<td>72-75%</td>
<td>C</td>
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<td>68-71%</td>
<td>C-</td>
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<td>64-67%</td>
<td>D+</td>
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<td>60-63%</td>
<td>D</td>
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<tr>
<td>59% or less</td>
<td>F</td>
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The University utilizes plus and minus grading on a 4.000 cumulative grade point scale in accordance with the following:

- A 4.000 Represents achievement that is outstanding relative to the level necessary to meet course requirements
- A- 3.667
- B+ 3.333
- B 3.000 Represents achievement that is significantly above the level necessary to meet course requirements
- B- 2.677
- C+ 2.333
- C 2.000 Represents achievement that meets the course requirements in every respect
- C- 1.667
- D+ 1.333
- D 1.000 Represents achievement that is worthy of credit even though it fails to meet fully the course requirements
- S Represents achievement that is satisfactory, which is equivalent to a C- or better (not used in calculation of GPA)

For additional information, please refer to:
http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html.

Preliminary Schedule: We will meet bi-weekly at 106 BAE Hall on Tuesday evening. There will also be a two-hour pre-departure orientation. At the orientation, learners will meet staff from the Office of International Programs, seminar leaders, review the tentative schedule, and have the opportunity to ask questions.

| Tentative schedule: International Watershed Boundary Issues: Mexico |
|-----------------------------|-----------------------------|-----------------------------|
| **Spring Semester 2016**    | **Course Topics**           | **Location**                |
| January - Week 1            | Course introduction & International watershed issues along the U.S. border | St. Paul Campus, 106 BAE Hall, Tuesday evening |
| February – Week 3           | International watershed management issues | St. Paul Campus, 106 BAE Hall |
| February – Week 5           | Watershed hydrology and water management | St. Paul Campus, 106 BAE Hall |
| March – Week 7              | River ecology, restoration and management | St. Paul Campus, 106 BAE Hall |
| March – Week 9              | Watershed Institutions and international boundaries | St. Paul Campus, 106 BAE Hall |
| April – 11  | Intro to semester papers/ projects related to | St. Paul Campus, 106 BAE Hall |
| April – week 13 | Agricultural watershed management issues | St. Paul Campus, 106 BAE Hall |
| May – week 15  | Students work on semester papers / presentations | St. Paul Campus, 106 BAE Hall |
| May 16-21, 2016  | Field to Arizona/Mexico border area and Colorado River | Arizona & Mexico |

**Student Conduct Code:**
The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see: [http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf).

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

**Use of Personal Electronic Devices in the Classroom:**
Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: [http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html](http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html).

**Scholastic Dishonesty:**
You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: [http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf)) If it is determined that a student has cheated, he or she may be given an “F” or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: [http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html](http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html). The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: [http://www1.umn.edu/oscai/integrity/student/index.html](http://www1.umn.edu/oscai/integrity/student/index.html). If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class—e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

**Makeup Work for Legitimate Absences:**
Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html.

**Appropriate Student Use of Class Notes and Course Materials:**
Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html. For additional information, please refer to: http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html.

**Sexual Harassment:**
"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf

**Equity, Diversity, Equal Opportunity, and Affirmative Action:**
The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf.

**Disability Accommodations:**
The University is committed to providing quality education to all students regardless of ability. Determining appropriate disability accommodations is a collaborative process. You as a student must register with Disability Services and provide documentation of your disability. The course instructor must provide information regarding a course's content, methods, and essential components. The combination of this information will be used by Disability Services to determine appropriate accommodations for a particular student in a particular course. For more information, please reference Disability Services: http://ds.umn.edu/student-services.html.

**Mental Health and Stress Management:**
As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: http://www.mentalhealth.umn.edu.

**Academic Freedom and Responsibility:**
Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study.
and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost. [Customize with names and contact information as appropriate for the course/college/campus.]

* Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".