WATER AND ENVIRONMENTAL SUSTAINABILITY TRAINING IN MEXICO
CEE 494, GLG 494
CEE 598, GLG 598
Summer 2016
Line Number:

Course Meetings: May 15 to May 30, 2016 (3 credits)

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Office Hours: M-F, 7:00-8:00 pm

Course Description:
This study abroad course is focused on the water resources and environmental sustainability of the U.S.-Mexico border. In 2016, the focal area will be the border region between California (San Diego) and Baja California, Mexico. Most activities will be carried out in relation to the water resources issues of Ensenada, a port city on the Pacific Coast, with robust tourism, agricultural, housing and transport sectors, but limited water supplies. With a population of nearly 500,000 residents, Ensenada is struggling from drought and a limited set of supply options, which have led to water rationing problems and the search for new solutions. The course will introduce students to this problematic from multiple dimensions, including local climate and natural hazards, terrestrial and marine ecosystems, agricultural and socioeconomic activities, water resources demands and supplies and sustainability science. Activities will include trips to water resources infrastructure, natural environments from the coastal zone to the interior valleys, and to water planning, management and operations agencies. Invited speakers will be arranged from the local scientific and water management community.

Course Goals:
The study abroad course will be carried out using concepts of environmental problem solving and sustainability science. Students will be introduced to the water resources problems of Ensenada, Baja California, through lectures, field trips, interviews and discussion sessions. Students will be organized into small teams to develop a project to design, evaluate and present an alternative future scenario to resolve a local water resources problem using sustainability principles. These options will consider the potential implications to the U.S. through water transfers, desalination and the Colorado River compact. Field trips will include visits to agricultural producers, coastal and marine...
zones, interior mountain valleys, scientific and water management institutions, environmental monitoring stations, and water and wastewater infrastructure. Cultural exchanges will be promoted through interactions with Mexican students, researchers, and water managers. Through a team-based project, students will improve their oral and written presentation skills, critical thinking and analysis, and ability to design alternative futures scenarios that take into account sustainability. Graduate students will be expected to prepare a poster presentation for a local conference.

**Learning Outcomes:** By the end of this study abroad course, each student will have demonstrated that they are able to:

- Students will have been exposed to the water resources issues of the California-Baja California region through multiple perspectives and disciplines.
- Students will be able to apply sustainability principles to complex water resources problems.
- Students will visit a number of interesting field sites related to water supply and demands as well as the natural and built environments in the region.
- Students will design a team-based plan to resolve a water resources issue presented in the study abroad program through evidence and arguments.
- Students will cultivate and improve upon critical-thinking, writing, and presentation skills in general.
- Students will have an international experience through interactions with a different cultural, economic and language context in Mexico.

**Pre-requisites/Co-requisites/Anti-requisites:**
B.S. or B.S.E. student in Ira A. Fulton Schools of Engineering, B.S. or B.A. in School of Earth and Space Exploration, B.A. in School of Sustainability (Junior or Senior standing) or M.S.E. M.S. or Ph.D. student in the following majors (Civil, Environmental and Sustainable Engineering, Earth and Space Exploration, Geological Sciences Concentration, Sustainability, Earth and Environmental Studies).

**Required Course Texts/ Readings:**
There will be no required textbook for the class. Readings from journal articles and other scientific sources will be provided to students via Blackboard prior to the study abroad program.

**Course Format:**
The study abroad course will have a mixed format that includes: faculty lectures, seminars by invited speakers, facilitated discussions, stakeholder engagement activities, field trips and team-based project work. Student will be engaging in active discussions with water managers, scientists, planners and other stakeholders. Informal discussion among students and faculty will help clarify concepts. Environmental problem solving will be exercised through a team-based project. Team oral presentations and graduate poster presentations will be given in public venue.
Coursework
Final grades for the course will be assigned on basis of the following:

- Participation  60% for undergraduate students, 50% for graduate students, based on attendance (10%), timeliness (10%), conduct (20% UG, 10% G), and participation in discussions and field visits (20%).
- Project Presentation  20%
- Project Report  20%
- Poster Preparation  10% (graduate students only)

For your own protection, you should keep a copy of everything you hand in, and you should keep your graded assignments at least until grades are finalized at the end of the semester, and in the event you wish to contest any grades.

Schedule of Study Abroad Topics
Week 1: Climate, Landscapes and Water Supplies and Demands
   Day 1: Climate, Hydrology and Ecology of Baja California
   Day 2: Regional and Local Water Supply Infrastructure
   Day 3: Water Demands by Tourism, Housing and Agricultural Sectors
   Day 4: Socio-Economic and Climate Projections
Weekend 1: Exploring Baja California from Ocean to Mountain to Gulf
   Day 5-7: Coastal Zone, Estuaries and Wetlands
Week 2: Environmental Problem Solving and Sustainability
   Day 8: Water Planning, Economic Development and Management Agencies
   Day 9: Applying Sustainability Principles
   Day 10: Conceptualizing Alternative Futures
   Day 11: Evaluating Alternative Futures
   Day 12: Final Team-based Presentations and Reports
Weekend 2: Exploring Baja California from Ocean to Mountain to Gulf
   Day 13-15: Interior Mountains and Gulf of California

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<thead>
<tr>
<th>Day</th>
<th>Classroom Activities</th>
<th>Field Outings</th>
<th>Assignments</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Course (2 hr) Lecture 1 (1.5 hr): Climate Lecture 2 (1.5 hr): Ecohdrology Evening Discussion (1 hr)</td>
<td>CICESE scientific center tour (1 hr)</td>
<td>Readings on climate, ecosystems and water in BC with examples</td>
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<td>2</td>
<td>Lecture 3: Water Supply and Infrastructure (3 hr) Evening Discussion (1 hr)</td>
<td>CESPE water agency tour (3 hr)</td>
<td>Case studies on water supply/demands</td>
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<td>3</td>
<td>Lecture 4: Water Demands from Economic Activities (3 hr) Evening Discussion (1 hr)</td>
<td>Valle de Guadalupe agriculture tour (3 hr)</td>
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<td>4</td>
<td>Invited Lecturer 1: Climate Change in Baja California (2 hr) Invited Lecturer 2: Socioeconomic Projection in Baja California (2 hr) Evening Discussion (1 hr)</td>
<td>Cultural and historic center tour (3 hr)</td>
<td>Readings on climate change in BC</td>
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<tr>
<td>5</td>
<td>Evening Discussion (1 hr)</td>
<td>Trip Maneadero water reuse and to La Bufadora coasts and wetlands (6 hr)</td>
<td>Team formation and project selection. Poster topic selection (graduate students).</td>
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<tr>
<td>6</td>
<td>Evening Discussion (1 hr)</td>
<td>Trip to San Quintin tourism development and agriculture (6 hr)</td>
<td>Readings on water resources sustainability and applications in BC</td>
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<td>7</td>
<td>Evening Discussion (1 hr)</td>
<td>Trip to Coastal Fishing, Aquaculture and Estuaries (6 hr)</td>
<td>Water Stakeholder Engagement Activity (2 hr)</td>
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<td>8</td>
<td>Lecture 5: Environmental Problem Solving (1.5 hr)</td>
<td>Water Stakeholder Engagement Activity (2 hr)</td>
<td>Readings on environmental problem solving and applications in BC</td>
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<td>9</td>
<td>Lecture 6: Water Resources Planning (1.5 hr)</td>
<td>Team Project Visits to Local Sites (2 hr)</td>
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<td>10</td>
<td>Team-based work (2 hr)</td>
<td>Water Stakeholder Engagement Activity (2 hr)</td>
<td>Readings on alternative futures and applications in BC</td>
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<tr>
<td>11</td>
<td>Team-based work (2 hr)</td>
<td>Team Project Visits to Local Sites (2 hr)</td>
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<tr>
<td>12</td>
<td>Lecture 8: Envisioning Alternative Futures (3 hr)</td>
<td>Team Presentations and Poster Presentations in Public Venue</td>
<td>Team project presentations and reports. Poster preparation (graduate students)</td>
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<td>13</td>
<td>Team-based work (4 hr)</td>
<td>Team Presentations and Poster Presentations in Public Venue</td>
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<tr>
<td>14</td>
<td>Evening Discussion (1 hr)</td>
<td>Team Project Presentations (4 hr)</td>
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<td>15</td>
<td>Trip to Sierra San Pedro Martir (6 hr)</td>
<td>Graduate Poster Presentation (2 hr)</td>
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<td>16</td>
<td>Evening Discussion (1 hr)</td>
<td>Evening Discussion (1 hr)</td>
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<tr>
<td>17</td>
<td>Trip to San Felipe and Gulf of California (6 hr)</td>
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<td>18</td>
<td>Course Summary and Synthesis (2 hr)</td>
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<td>Course evaluation</td>
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Note: The above syllabus is subject to change.

Readings will cover relevant topics of the course with the following serving as examples:


**Final Grades**

Final grades will follow these guidelines on the basis of the assignments listed above:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
<td>Excellent</td>
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<tr>
<td>B</td>
<td>80-89.9</td>
<td>Good</td>
</tr>
<tr>
<td>C</td>
<td>70-79.9</td>
<td>Average</td>
</tr>
<tr>
<td>D</td>
<td>60-69.9</td>
<td>Passing</td>
</tr>
<tr>
<td>E</td>
<td>&lt;60</td>
<td>Failure</td>
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<tr>
<td>XE</td>
<td>&lt;60</td>
<td>Failure due to Academic Dishonesty</td>
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**Extra Credit**

There will be no extra credit opportunities assigned for this course.

**Late Assignments**

Unexcused late assignments will not be accepted. Excuses for an assignment must be made and approved in advance of the due date of the assignment. Requests for excuses must be made directly with the instructor in person during the study abroad activity.

**Course Policies**

Cell phone and internet use will be limited to periods outside of the organized study abroad activities to encourage interactions with fellow students. Students should note that cell phone and internet charges are different in Mexico and will need to plan accordingly to handle data and cell phone roaming charges, if any, with their provider. Internet access is not a course requirement for the study abroad program.
Grade Appeals
ASU has formal and informal channels to appeal a grade. If you wish to appeal any grading decisions, please see http://catalog.asu.edu/appeal.

Incompletes
A mark of "I" (incomplete) is given by the instructor when you have completed most of the course and are otherwise doing acceptable work but are unable to complete the course because of illness or other conditions beyond your control. You are required to arrange with the instructor for the completion of the course requirements. The arrangement must be recorded on the Request for Grade of Incomplete form (http://students.asu.edu/forms/incomplete-grade-request).

Student Standards
Students are required to read and act in accordance with the provisions of this syllabus as well as university and Arizona Board of Regents policies, including:

The ABOR Code of Conduct: Arizona Board of Regents Policies 5-301 through 5-308: https://students.asu.edu/srr

Academic Integrity
Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see http://provost.asu.edu/academicintegrity.

If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, school, and/or dean. Academic dishonesty includes borrowing ideas without proper citation, copying others’ work (including information posted on the internet), and failing to turn in your own work for group projects. Please be aware that if you follow an argument closely, even if it is not directly quoted, you must provide a citation to the publication, including the author, date and page number. If you directly quote a source, you must use quotation marks and provide the same sort of citation for each quoted sentence or phrase. You may work with other students on assignments, however, all writing that you turn in must be done independently. If you have any doubt about whether the form of cooperation you contemplate is acceptable, ask the TA or the instructor in advance of turning in an assignment. Please be aware that the work of all students submitted electronically can be scanned using SafeAssignment, which compares them against everything posted on the internet, online article/paper databases, newspapers and magazines, and papers submitted by other students (including yourself if submitted for a previous class).

Note: Turning in an assignment (all or in part) that you completed for a previous class is considered self-plagiarism and falls under these guidelines. Any infractions of self-
plagiarism are subject to the same penalties as copying someone else’s work without proper citations. Students who have taken this class previously and would like to use the work from previous assignments should contact the instructor for permission to do so.

**Prohibition of Commercial Note Taking Services**
In accordance with [ACD 304-06 Commercial Note Taking Services](http://example.com), written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the notetaker's name as well as the instructor's name, the course number, and the date.

**Student Support and Disability Accommodations**
The provisions of the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, do not apply outside of the United States, so students with disabilities may find accessibility and accommodation in a given ASU study abroad program location to be very different from what is found in the United States. Upon request, the ASU Study Abroad Office can provide information about the availability of accommodations and accessible facilities on the specific program and can help the student determine whether the student’s preferred program can meet the student’s accommodation needs. Students with disabilities should understand that the ASU Study Abroad Office cannot guarantee access to public transportation, buildings, or public sites on this program.

Qualified students with disabilities may be eligible to receive academic support services and accommodations during the study abroad program. Eligibility is based on qualifying disability documentation and assessment of individual need. Every effort is made to provide reasonable accommodations for qualified students with disabilities, although the nature of the accommodations that can be provided by ASU during your study abroad program will depend on a number of variables, including but not limited to availability of resources on-site, accessibility of program facilities, and any study abroad requirement of the student’s degree program.

Students who believe they have a current and essential need for disability accommodations are responsible for requesting accommodations and providing qualifying documentation to the DRC at: [http://www.asu.edu/studentaffairs/ed/drc/](http://www.asu.edu/studentaffairs/ed/drc/). If you are a student in need of special arrangements, we will do all we can to help, based on the recommendations of these services. For the sake of equity for all students, we cannot make any accommodations without formal guidance from these services. Typically, once a student discloses the need for an accommodation through their study abroad application, the ASU Study Abroad Office, the academic unit, the student and DRC will develop a plan on how to best accommodate the student within the parameters available within the onsite locations.

**Drop and Add Dates/Withdrawals**
Please refer to the academic calendar on the deadlines to drop/withdraw from this course. Consult with your advisor and notify your instructor if you are going to drop/withdraw this course. If you are considering a withdrawal, review the following ASU policies: [Withdrawal from Classes](http://example.com), Medical/Compassionate Withdrawal.
Please note that the ASU Academic Calendar only refers to withdrawal for the academic portion of your study abroad program. Please refer to the Study Abroad Withdrawal Policies for important dates regarding withdrawing from your Faculty Directed program.

Email Communications
All email communication for this class will be done through your ASU email account. You should be in the habit of checking your ASU email regularly as you will not only receive important information about your class, but other important university updates and information. You are solely responsible for reading and responding if necessary to any information communicated via email. For help with your email go to: http://help.asu.edu/sims/selfhelp/SelfHelpHome.seam?dept_pk=822 and file a help desk ticket by clicking on “My Help Center.”

Campus Resources
As an ASU student you have access to many resources on campus. This includes tutoring, academic success coaching, counseling services, financial aid, disability resources, career and internship help and many opportunities to get involved in student clubs and organizations.

- Tutoring: http://studentsuccess.asu.edu/frontpage
- Counseling Services: http://students.asu.edu/counseling
- Financial Aid: http://students.asu.edu/financialaid
- Disability Resource Center: http://www.asu.edu/studentaffairs/ed/drc/
- Major/Career Exploration: http://uc.asu.edu/majorexploration/assessment
- Career Services: http://students.asu.edu/career
- Student Organizations: http://www.asu.edu/studentaffairs/mu/clubs/

Harassment Prohibited:
ASU policy prohibits discrimination, harassment or retaliation on the basis of race, sex, gender identity, age, religion, national origin, disability, sexual orientation, and veteran status. Violations of this policy may result in disciplinary action, including termination of employees or expulsion of students. Contact the Office of Student Rights and Responsibilities (480-965-6547) if you feel another student is harassing you based on any of the factors above; contact the Office of Equity and Inclusion (480-965-5057) if you feel an ASU employee is harassing you based on any of the factors above.

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at http://sexualviolenceprevention.asu.edu/faqs/students.
Establishing a Safe Environment:
Learning takes place best when a safe environment is established in the classroom. Students enrolled in this course have a responsibility to support an environment that nurtures individual and group differences and encourages engaged, honest discussions. The success of the course rests on your ability to create a safe environment where everyone feels comfortable to share and explore ideas. We must also be willing to take risks and ask critical questions. Doing so will effectively contribute to our own and others’ intellectual and personal growth and development. We welcome disagreements in the spirit of critical academic exchange, but please remember to be respectful of others’ viewpoints, whether you agree with them or not. This safe learning environment extends to our interactions with students, faculty, professionals and other citizens in Mexico.

Syllabus Disclaimer:
The course syllabus is an educational contract between the instructor and students. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. The instructor reserves the right to make changes to the syllabus as deemed necessary. Students will be notified in a timely manner of any syllabus changes via email, or in the Announcements section on Blackboard.

Student Conduct Statement:
Students are required to adhere to the behavior standards listed below:
- Arizona Board of Regents Policy Manual Chapter V – Campus and Student Affairs: Code of Conduct http://www.azregents.edu/policymanual/default.aspx,
- ACD 125: Computer, Internet, and Electronic Communications http://www.asu.edu/aad/manuals/acd/acd125.htm, and

Students are entitled to receive instruction free from interference by other members of the class. If a student is disruptive, an instructor may ask the student to stop the disruptive behavior and warn the student that such disruptive behavior can result in withdrawal from the course. An instructor may withdraw a student from a course when the student's behavior disrupts the educational process under USI 201-10 (http://www.asu.edu/aad/manuals/usi/usi201-10.html).

Course discussion messages should remain focused on the assigned discussion topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion.

Inappropriate discussion board messages may be deleted if an instructor feels it is necessary. Students will be notified privately that their posting was inappropriate. Student access to the course Send Email feature may be limited or removed if an instructor feels that students are sending inappropriate electronic messages to other students in the course.
Religious Accommodations for Students:
Students who need to be absent from class due to the observance of a religious holiday or participate in required religious functions must notify the faculty member in writing as far in advance of the holiday/obligation as possible. Students will need to identify the specific holiday or obligatory function to the faculty member. Students will not be penalized for missing class due to religious obligations/holiday observance. The student should contact the class instructor to make arrangements for making up tests/assignments within a reasonable time. Making arrangements to attend religious services in Mexico are the responsibility of the student.