Horsetooth Reservoir, Colorado

Overview

Starting in the 20th century, environmental impacts of widespread development and industrial activities such as deforestation, habitat destruction, soil erosion and pollution have created a rapidly growing problem, which threatens not only plants and wildlife, but human health and prosperity as well. Perhaps the single most critical resource threatened by this crisis is water, particularly fresh water, upon which all life depends. The built environment is a critical juncture where man’s actions and the natural world’s vulnerability highlight the interplay between natural and constructed water systems. Given that the constructed landscape is responsible both for enormous consumption of fresh water and the conveyance of stormwater, a change in approach to the design of built environments offers unique opportunities to help reverse these troubling trends and profoundly affect the future of this vital resource.

Pedagogic Objectives

This course seeks to educate students on the critical role played by water in the built environment and highlight strategies for improving efficiency in water use and ecological awareness in stormwater management. The subject matter is approached both in terms of the broad interrelationships between natural water bodies and man-made water infrastructure, as well as the technical aspects of specific technologies and strategies for managing water systems. Through lectures, readings, field trips and class assignments, students will be introduced to both broad themes and specific issues of water quality and management within the context of site design, planting, irrigation, stormwater infrastructure, and ecologically sound design decision-making.
Class Policy

Attendance
Given the rapid succession of lectures and assignments and the cumulative knowledge that is to be gained from each class, prompt and consistent attendance is mandatory, with exceptions made only for illness and family emergencies. In the event of a missed class, it is your responsibility to obtain the information that was presented in class from one of your classmates and to complete any assignments due before the next class. More than three unexcused absences will warrant a mandatory meeting with the instructor to discuss the student’s academic status and possible expulsion from the course.

Additional Assistance
Any students having difficulties due to personal or physical constraints should consult with the instructor prior to the beginning of the semester in order to develop alternative strategies for progressing through the course. The instructor should be informed of any unavoidable absences as soon as possible so that alternate arrangements for the missed class and/or assignment can be made.

Assessment
Students will be asked to work in both team and individual formats. This encourages dialogue and interaction amongst students and simulates the types of conditions typically found in professional practice. Class presentations are expected from each student and should be anticipated at the completion of each major assignment in order to develop the students’ public speaking skills and to promote a culture of learning and sharing of ideas within the class.

Timely submission of assigned work is critical to the successful completion of this course. Specific grading details are listed below under the Grading Policy category.

Deliverables
All assignment handouts, readings and lectures will be posted on the course RamCT Blackboard site. Unless instructed otherwise, assignments must be submitted via RamCT Blackboard posting. No application-formatted files (Photoshop, InDesign, AutoCAD, etc.) will be accepted; JPG images or PDF files are expected unless otherwise noted. All files shall be clearly labeled with your name and the title of the assignment or image. Please plan your schedule accordingly to allow for needed production time.

Grading Policy

Grade Breakdown
60% Cumulative average for research and case study projects
30% Final exam
10% Participation and class attendance

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<thead>
<tr>
<th>Score</th>
<th>Grade</th>
<th>Description</th>
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<tr>
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<tr>
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<td>Excellent</td>
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<td>90-93</td>
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<td>Very Good</td>
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<tr>
<td>87-89</td>
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<tr>
<td>80-83</td>
<td>B-</td>
<td>Below Average</td>
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<td>60-69</td>
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<tr>
<td>59 and below</td>
<td>F</td>
<td>Fail, Incomplete and/or Unacceptable Quality of Work</td>
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**Late assignment policy**
Assignments that are completed late will be penalized 1 point for each day past the due date. Assignments that are completed more than two weeks late will not be accepted and will receive a grade of ‘F’.

**Resources**

**Recommended Texts**


**Online Resources**

http://www.ftcollinswholesalenursery.com Regional plant list and descriptive guide

http://sustainablewaterforum.org Advocates for alternative waste water systems

http://rmi.org/sitepages/pid277.php Rocky Mountain Institute, Water Research

http://www.denverwater.org Denver Water Board, Xeriscape Resource

http://werf.org Denver BMPs, Case Studies

http://www.cnps.org Colorado Native Plant Society, Plant Lists

http://www.sustainablesites.org/report/guidelinesw%20and%20Performance%20benchmarks%202009.pdf ASLA site for sustainability

www.usgbc.org/leed US Green Building Council, LEED checklist

Class Schedule (subject to revision):

Week 1  Class Overview

Week 2  Water Infrastructure Systems: Past and Present

Week 3  Land Use and Planning Strategies: Water Resource Management

Week 4  Land Use and Planning Strategies: Sustainable Development

Week 5  Sustainable Stormwater Management: Biofiltration Systems

Week 6  Sustainable Wastewater Management: Rainwater Harvesting and Graywater Reuse

Week 7  Sustainable Stormwater Management: Constructed Wetlands

Week 8  Sustainable Stormwater Management:

Week 9  Spring Break – no class

Week 10 Sustainable Wastewater Management: Intensive & Extensive Green Roof Systems

Week 11 Xeriscape Principles and Techniques: Overview & General Strategies

Week 12 Xeriscape Principles and Techniques: Site Design

Week 13 Irrigation Systems: General Overview and Design Concepts

Week 14 Irrigation Systems: Technical

Week 15 Irrigation Systems: Designing a System

Week 16 LEED and SSI: Overview, Structure, Implementation & Case Studies

Week 17 Final Exam
Honor Pledge

This course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog and the Student Conduct Code. All graded activities of the course will comply. Additional information concerning CSU’s academic policies can be found at:  [http://facultycouncil.colostate.edu/files/manual/sectioni.htm#I.5](http://facultycouncil.colostate.edu/files/manual/sectioni.htm#I.5)

- I pledge on my honor that I will not receive or give any unauthorized assistance in this course and endeavor toward meaningful social and environmental responsibility.

__________________________
Print student name

__________________________
Student signature and date