Wetland Ecology and Management – WATS 6310
Fall 2015 (3 credits)

Instructor: Rebekah Downard
BNR 269
rdownard8@gmail.com

Class Meetings: Online

Course Description: This course explores the physical, chemical, and biological structure of wetlands. We will discuss the major types of wetlands found in North America, as well as their ecology and management; U.S. wetland policy and mitigation; and regional, national, and global impacts to wetlands. The course will focus on applying principles learned in course materials to the wetlands of the Great Salt Lake, Utah. The first half of the course will cover wetland definitions and classification, the fundamentals of wetland hydrology, soils, and vegetation, and wetland policies. The second half of the course will explore how knowledge of wetland ecology is applied in research and management of wetlands.

Objectives: Gain factual knowledge and learn fundamental principles related to wetland ecology including:

1. The major types of wetlands found in Utah, across North America, and around the world
2. The physical, chemical, and biological aspects of wetlands
3. U.S. wetland policy and mitigation practices
4. Practices and challenges for managing wetlands in a human dominated landscape
5. Impacts on wetlands regionally, nationally, and globally

Learn to apply course material for problem solving in the context of wetland management around the Great Salt Lake.

Assignments:

Participation and preparedness (10%)
All students are expected to participate actively in online discussions. I hope to encourage a learning environment where everyone feels welcomes to share their questions, thoughts or ideas. You will not be penalized for “wrong” answers but thoughtful participation is expected.

Weekly reading and assignments (30%)
There will be 12 written assignments based on the week’s readings and lectures due at the end of the end of most weeks. All assignments will be submitted through the course Canvas page.

Midterm exams (30%)
Two midterm exams will be given over the course of the semester. The first exam (due Thursday, September 15) will be a short-answer exam on materials covered in the first half weeks of the course. The second exam will be a longer, essay exam (due Friday, December 4) covering materials presented during the second half of the course.

Final Paper and Presentation (30%)
The final project for this course has two parts, a recorded oral presentation (due the week of December 7-11) and a paper due Friday, December 18 by 12:00 pm. Projects will be on a subject of interest related to wetland ecology or management chosen by each student. A one-page project proposal is due October 23. An annotated bibliography of papers is due November 27. Guidelines for presentations and final papers can be found in the “Assignments” section of the Canvas page.

Late assignment policy: If you turn in an assignment late, your grade for that assignment will be reduced by 5% for each day it is late. Assignments must be turned in within one week of the due date.

Grading:

100 – 93% = A  
92-90% = A-
89 – 87% = B+  
83 – 86% = B  
82 – 80% = B-
79 – 77% = C+  
73 – 76% = C  
72 – 70% = C-
69 – 60% = D  
Below 60% = F

Additional readings and lecture notes will be available through Canvas

Academic Honesty: To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize.

Plagiarism includes knowingly "representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged used of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." Plagiarism will result in a failing grade for the assignment; repeated offenses will result in a failing grade for the course.

Accommodation for Disabilities: The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (435-797-2444, http://www.usu.edu/drc/students/), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."
Course Schedule:

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<th>Date</th>
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<td><strong>Module 1 – Introduction to Wetlands</strong></td>
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| Week 1        | Introduction to Wetlands:  
I – Wetland definitions  
II – Wetland classification | A1. Student info sheets |
| Aug 31 – Sept 4 | | |
| Week 2        | Wetland functions:  
I – Regional wetland types  
II – Wetland values, functions, and services | A2. Wetland Classification and Ecosystem Services Assignment |
| Sept 8 – 11   | | |
| **Module 2 – The Wetland Environment** | | |
| Week 3        | Wetland Hydrology:  
I – The water cycle and water budgets  
II – Hydroperiods | A3. Wetland Hydrology Assignment |
| Sept 14 – 18  | | |
| Week 4        | Wetland Vegetation:  
I – Wetland plant adaptations  
II – Wetland plant communities | A4. Plant Community Exercise |
| Sept 21 – 25  | | |
| Week 5        | Wetland Soils:  
I – Hydric soils  
II – Wetland biogeochemistry | A5. Wetland Field Trip Write-up |
| Sept 28 – Oct 2 | | |
| Week 6        | Wetland Policy:  
I – Clean Water Act  
II – Western water law | A6. Wetland Policy Assignment |
| Oct 5 – 9     | | |
| Week 7        | Midterm Exam 1  
Review wetland definitions and classification, the wetland environment and wetland policies | Exam 1 - due Thursday, October 15, 6:00 pm |
| Oct 12 – 15   | | |
| **Module 3 – Wetland Research and Management** | | |
| Week 8        | Wetland Mapping:  
I – Wetland delineation  
II – Remote sensing in wetlands | A7. Final Project Proposal |
| October 19 – 23 | | |
| Week 9        | Threats to Wetlands:  
I – Invasive species  
II – Climate change and other threats | A8. Wetland Plant Invasions Assignment |
| October 26 – 30 | | |
| Week 10       | Wetland Management:  
I – Adaptive management  
II – Assessing wetland condition | A9. Wetland Management and Assessment Assignment |
| Nov 2 – 6     | | |
| Week 11       | Restoration and Mitigation:  
I – Wetland restoration  
II – Wetland mitigation | A10. Restoration and Mitigation Planning Assignment |
| Nov 9 – 13    | | |
| Week 12       | Wetland Wildlife:  
I – Waterfowl management  
II – Fish and invertebrates in wetlands | A11. Wetland Wildlife Assignment |
| Nov 16 – 20   | | |
| Week 13  | Conducting Online Research:  
| Nov 23 – 27 | I – Literature searches using online databases  
| | II – Citation use and formatting  
| | A12. Final Project  
| | Annotated Bibliography  
| Week 14  | Case Studies:  
| Nov 30 – Dec 4 | I – Irrigation Dependent Wetlands  
| | II – Bonus Day – Subject TBD  
| | Exam II – due Friday,  
| | December 4, 6:00 pm  
| Week 15  | Final Project Presentations:  
| Dec 7 – 11 | I – Writing and oral presentation tips  
| | II – View student presentations  
| | Final Presentations due  
| Finals Week  | Final Papers due  
| Dec 14 – 18 | Final Paper due Friday,  
| | Dec 18, 6:00 pm |