** Environmental Studies Department**

**ENVS 158\_01: Wetlands Ecology**

Mon-Wed 12-1:15

Acad Resource Center 1007

**Instructor** **Dr. Michelle Stevens**

**Office** 555B Amador Hall

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**Cell Phone** 916-765-739

(Important Issues Only)

**Environmental Studies** 278-6620

**Hammerkopf in Botswana wetlands**

**January 2015**

**OFFICE HOURS** Tues 3:30-4:30 pm,

Wed 2:00-4:00 pm, *or by appointment*

**Student Instructional Assistant**. Luis Rosas

Email [luisrosas@csus.edu](mailto:luisrosas@csus.edu)

Office Hours weekly with Bay Point Group and Friday by appointment

Note: *I have a service dog named Luna. If you are uncomfortable around dogs, let me know and I will meet with you for office hours outside of my office. Please let me know!*

**Required Text**s

Wright, W. and J. Gosselink 2007*. Wetlands*, Fourth Edition. 2007. John Wiley & Sons, Inc. 582 pp.

**Course Description**

This course will introduce and discuss the definition of a wetland; characteristics of wetland systems; the principles of wetland ecology; the functions of wetlands; and regulations and permitting process regarding development near and within wetlands. This class is appropriate for students planning careers in natural resource management while working in consulting, industry, government, or a non-profit organization. While students will have the basis for conducting wetland delineations or wetland functional assessments, they will require more training to professionally conduct such assessments. There are no specific prerequisites for this class, but it is expected that students are familiar with basic principles of chemistry, physics, and biology.

## **Secret to Success - Build Rapport and Build Community** If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let me know as early as possible. Please come to office hours or email me at [stevensm@csus.edu](mailto:stevensm@csus.edu),, I am here to help you as best I can. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing me if difficulties arise during the semester so that I can help you find a solution.

**Teaching Philosophy** : *In this class you will experience different personalities; ways of thinking and expressing yourself; different backgrounds, cultures and ideas. All of your ways of being are embraced in my class, and evaluated through critical thinking skill development. Many of you love to play video games and are linear thinkers. This is particularly true if you are an engineer or engage in quantitative analyses as part of your major. Consider the differences between Powerpoint and Prezzi. Linear thinkers are analogous to Powerpoint. I am more similar to Prezzi. I will pull a lot of different ideas together in a circular way of thinking and integrate them all at the end. Some of you will have this same thinking style. Be aware that if you lose the thread of my lecture or argument, you are welcome to ask for clarification. Also be aware that I encourage and enjoy alternative points of view, and different ways of expressing and experiencing the world. We’ll look at this in class, it should be fun!*

**Required field trips: There are two required field trips during the class.** Field trip 1 to Rush Ranch is required for all students on October 24. You will have your choice of the second field trip. One field trip will be to the Cosumnes River on Friday afternoon Nov. 6. There will be alternative field trips to Bushy Lake on the American River to help with my research and restoration project. An alternative assignment will be provided for students who cannot attend field trips WITH PRE-APPROVED PERMISSION AND NOTIFICATION TO PROFESSOR by Sept 9.

**Wetland Class Group Presentations**: You will give three presentations in class as groups. The first one is part of the San Francisco Bay Delta Water Debate. The second is a presentation on one of the class’s key subjects. And the third is a presentation as a group or individual on your final class project. The Bay Point WOW students are giving their presentation on Oct 14.

**Important Dates**

* Class Begins August 31
* No Class September 7 Labor Day ☺
* Field Trip 1 Rush Ranch October 24
* Field Trip 2 Cosumnes River November 7
* No Class November 1 Veterans Day
* Thanksgiving November 25, 26, and 27 (no class Wed 11-25)
* Final **Wed Dec 16 10:15-12:15 am**

**Course Requirements**

1. Ramsar Wetland Type Assignment – Students will investigate one Ramsar Wetland of International Significance and write a short paper (3-4 pages) on its attributes, management and conservation. 5% Grade
2. Homework/Short quizzes/ will be given at the beginning of class periodically. Educational psychologists have evidence that frequent testing is more effective in transferring learning from short to long-term memory. These quizzes will serve to encourage frequent review and synthesis and to assure that students have done the readings for the class. 10% Grade
3. Field Trip 1 – Rush Ranch. The Rush Ranch field trip includes conducting wetland delineation, conducting an estuarine California Rapid Assessment Method (CRAM) and writing an environmental report. 10% Grade
4. Field Trip 2 – This field trip has the option of answering questions and writing up a shorter field trip report for the Cosumnes river or Bushy Lake 5% Grade
5. Sacramento San Joaquin Delta Debate, We will have a debate on the Bay Delta Water Project in which groups of students will debate different sides of wetland policy issues. This assignment will entail a group effort to defend the position and an individual write-up. Participation Mandatory. 10% Grade
6. Presentation on class Wetland Term Project Student Groups will give presentations on course topics. These include Biological Adaptations to wetland environment; waterfowl management; wetland mitigation and restoration; wetlands and climate change, 5% Grade
7. STUDENT GROUP PRESENTATIOS (on assigned reading) – Students in groups of 3 will do a group presentation of 15-20 minutes on biological adaptations to a wetland environment; human impacts and management of wetlands; wetlands, fish and wildlife; and wetland ecosystem development. 5% Grade
8. WETLAND TERM PROJECT- You will write a term project focusing on a wetland ecology/management/ policy topic of your choice. These projects will be a miniature internship or research project, and will serve to your advantage on job applications as an example of your writing and experience. The term projects should be either 1) an independent field project which may be done singly or in teams of 2-4 people or 2) an in depth analysis and statement of recommendations on some applied problem with review of supporting data (e.g. wetland restoration project, wetland delineation project, wetland conservation or management recommendations, wetland research project). The report will have five objectives: 1) to allow the student to pursue his/her interests, 2) to establish contacts which may help in looking for a job or graduate program, 3) to develop analytical and research skills, 4) to introduce the student to the professional environment (what work do people do who work in the environmental area?, sources of information, including government and legal literature );and 5) to provide evidence of writing skills. The project will utilize a peer review process that will enable you to provide and receive feedback from your classmates. Your peers will be asked to evaluate your written and oral communication. 20% Grade
9. MAGIC OF WETLANDS – Last day of class, students will share experience, photography, art, poetry from the class experience in wetlands. 5% Grade
10. CLASS PARTICIPATION & ATTENDANCE – Ten percent of your final grade will be based on evaluation of your participation in class, individually as well as in group assignments. Class attendance, including being on time, is heavily weighted in this grade. 10% Grade
11. MIDTERM AND TAKE-HOME REFLECTIVE ESSAY FINAL: A midterm and final will be used to review and gauge your understanding of the course content. 10% Midterm and 5% Final

**Grading scale:** The grading scale is as follows: A = (92-100%), A- = (90-91%), B+ = (88-89%), B = (82-87%), B-=(80-81%), C+ = (78-79%), C = (72-77%), C-=(70-71%), D+ = (68-69%), D = (62-67%), D- = (60-61%), and F is 59 or below.

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| **Date** | **Topic** | **Read by today** | **Due by today** |
| Aug 31 | Introduction to Wetlands  Go over Bay Point Wetlands Project Option |  |  |
| Sept 3 | Chapter 1 Wetland History, Use and Science | Recognizing Wetlands (Sac CT) |  |
| Sept 7 | Labor Day No Class |  |  |
| Sept 9 | Chapter 2 Wetland Definitions  Chapter 3 Wetland Types and Wetland Resources of North America   * Wetland Types, Functions and Values of Wetlands. * **Homework for vernal pool papers** | Ch. 2 and 3  Sac CT: How to read a scientific paper | *Quiz Ch. 1and 3* |
| Sept 14 | Vernal Pools of CA – Stevens Lecture  How to read a scientific Paper | Pyke and Marty, Cons Bio 19(5):1619-1625 |  |
| Sept 16 | Vernal Pools of CA and the GREAT cow Poop debate!!!  Guest Lecturers Dr. Jamie Kneitel | Croel and Kneitel, *Cattle Waste reduces plant diversity in vernal pool mesocosms,* Aquatic Botany 95 (2011): 140-145 |  |
| Sept 21 | International Wetlands, from Iraq to the Okovango Delta  ***Ramsar Wetland Homework Handed Out*** |  | **Vernal Pool Homework Due** |
| Sept 23 | ½ class - Visit Dr. Kneitel’s lab – Experiments  ½ class - Visit American River |  |  |
| Sept 26 or 27 | Bay Point Group - Trip to Bay Point with Naturalist |  |  |
| Sept 28 | Wetland Hydrology  *Prepare for Field Trip*  Guest Lecturer: Dr. Niall McCarten  **Wetland Hydrology Homework Handed Out** |  | **Ramsar Wetland Assignment Due** |
| Sept 30 | **Movie** | Ch 4 Wetlands Hydrology |  |
| October 5 | Chapter 8 Tidal Salt Marshes  **\*Estuarine Homework Handed Out**  **\*Go Over Wetland Term Project Assignment** | Chapter 8 Tidal Salt Marshes | **Wetland Hydrology Homework Due** |
| October 7 | Chapter 9 Tidal Freshwater Marshes | Chapter 9 Tidal Freshwater Marshes |  |
| Oct 10 or 11 | Bay Point Group Dress Rehearsal |  |  |
| Oct 12 | Bay Point Group Wetlands Education Event  Study Time for Rest of Class | Study Time for Class |  |
| Oct 14 | Bay Point Group Experiential Presentation for Class |  | **Estuarine Homework Due** |
| Oct 19 | Wetland Delineation  **Wetland Delineation Homework Handed Out** | Sac CT Info Rush Ranch and Wetland Delineation |  |
| Oct 21 | *California Rapid Assessment Method – Estuarine Module*  *Handout: CRAM homework*  *Handout:* Rush Ranch Field Trip Assignment | Sac CT Info CRAM | **Wetland Delineation Homework Due** |
| **Sat Oct 24** | **Rush Ranch Field Trip 8:30-5:00** |  | **CRAM homework due** |
| Oct 26 | **Field Trip Review**  **Midterm Review** |  |  |
| Oct 28 | ***MIDTERM*** |  | ***Midterm*** |
| Nov 2 | Chapter 5: Biogeochemistry of Wetlands  Biogeochemistry HW Handed Out | Ch 5 |  |
| Nov 4 | Chapter 6 – Biological Adaptations to Wetland Environment  Chapter 15 - Wetland Values  Wildlife Enhancement: pp 357-561 | *Ch 6*  *Ch 15* | ***Rush Ranch Field Trip Assignment Due*** |
| **Fri Nov 6** | **Wetlands Class Field Trip Cosumnes River Option 1:00-6:00** |  |  |
| Nov 11 | **Great Delta Debate** Water Supply and Ecosystem Restoration Goals in the Sacramento-San Joaquin Delta | Sac CT Information on Bay Delta | Preparation for Group  **Notes for discussion on Delta Due** |
| Nov 16 | Bay Delta Debate |  | Class Group Presentations |
| Nov 18 | **Finish Bay Delta Debate and Discussion/ Review** |  | **Delta Reflective Essay Due** |
| Nov 23 | Wetland Regulation and Policy  U.S. Army Corp of Engineers | Chapter 14 Wetland Regulation | **Draft Wetland Paper Due for Peer Review** |
| Nov 25 | **No Class – Happy Thanksgiving!** |  | *Make up Day* |
| Nov 30 | Wetlands Mitigation and Restoration  **Mitigation Homework Assignment Handed out** | \*Chapter 12 Wetland Creation/ Restoration  \*Vasey ahd Holl, 2007, Ecological Restoratoin in CA, Madrono 54(3):215-224 |  |
| Dec 2 | **Wetlands and Climate Change**  **Take Home Final Handed Out** | Sac CT Wetlands and Climate Change | **Last Date to return wetlands peer review paper to author** |
| Dec 2 | **Wetlands and Climate Change**  ***Begin Final Presentations*** |  | ***Wetland Paper Due 5:00 pm Friday Dec 11 COB*** |
| Dec 7 | **Final Presentations** |  | **Wetlands and Restoration Homework Due**  **Final Presentations –** |
| Dec 9 | ***Final Presentations*** |  | Final Presentations – |
| **Wed Dec 16 10:15-12:15 am** | ***The Magic of Wetlands***  ***Take Home Final Due*** |  | \***Magic of Wetlands**  **\*TH Final Due** |

**COURSE POLICIES**

Sac State's Academic Honesty Policy & Procedures (http://www.csus.edu/umanual/student/STU-0100.htm)

“The principles of truth and honesty are recognized as fundamental to a community of scholars and teachers. California State University, Sacramento expects that both faculty and students will honor these principles, and in so doing, will protect the integrity of academic work and student grades.”

Definitions At Sac State, “cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means.”

“Plagiarism is a form of cheating. At Sac State, “plagiarism is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person’s contribution.” Source: Sacramento State University Library

Important Note on Academic Honesty: Students are expected to be familiar with and abide by the CSUS Policy of Academic Honesty. Failure to abide by the policy – i.e. cheating, plagiarism, or other forms of academic dishonesty – may result in a failing grade on the assignment or even in the course at the discretion of the professor. Any form of academic dishonesty, including cheating and plagiarism, may also be reported to the office of student affairs.

**Late Work**

Late assignments will be penalized by 10% the same week it is due, and 20% thereafter. After two weeks from the assigned due date, I will not accept the assignment and it will receive a grade of zero. If a serious and compelling reason occurs to create a hardship for you to complete an assignment or attend a field trip, it is your responsibility to notify me before the assignment or field trip is scheduled. I do not accept emailed assignments. All assignments will be collected at the beginning of class on the day they are due. Assignments can be turned in early to my office in Amador 555B or mailbox in Amador 554B.

**E-mail I** welcome questions and comments via email. I do not accept assignments via email.

**Class Participation** Students are encouraged to participate in class discussions and to ask questions. However, private conversations are disruptive to other students in the class and will not be tolerated.

**Cell Phones and Electronic Devises** must be turned off during class unless specific permission is given.

**No smelly or noisy food in class**. It is lunch time and fragrant food is distracting.

**Disability Information** I am very sensitive to students with diagnosed learning disabilities; please discuss with me privately. If you have a documented disability and verification from the Office of Services to Students with Disabilities (SSWD), and wish to discuss academic accommodations, please contact me as soon as possible. It is the student’s responsibility to provide documentation of disability to SSWD and meet with a SSWD counselor to request special accommodation before classes start. SSWD is located in Lassen Hall 1008 and can be contacted by phone at (916) 278-6955 (Voice) (916) 278-7239 (TDD only) or via email at sswd@csus.edu.GE Area B-2 Life Forms Student

**Course Objectives:**

This upper-division lecture course will be an overview of issues related to wetland ecosystems. The course will review and reinforce basic concepts of ecology as they apply to wetland ecosystems. Major course topics will include:

1. To equip students with an understanding of the biological components of wetlands and their adaptations, including plants, animals and biodiversity;
2. To provide students with information on the diversity of different wetland types in California, the U.S. and internationally;
3. To provide students a conceptual understanding of wetland ecosystem functions & processes such as hydrology, productivity, soils and biogeochemical cycling;
4. To equip students with the ability to critically analyze wetland policies, regulations, and challenges;
5. To equip students with the scientific background to evaluate wetland delineation, rapid assessment ‘mitigation, and regulation ; and
6. To give students an opportunity for in-depth analysis about a current wetland problem or topic.