

## **Wetland Ecology and Biogeochemistry**

**Spring 2024**

**PCB 4301C – 4 credit hours**

**Monday 9:00-10:20, BIO 212; Wednesday 9:00-12:50, BSFS 102**

**Instructor: Dr. Lisa Chambers**

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Office Hours: Monday 10:30-12:00 or by appointment

**Graduate Teaching Assistant: Anthony Mirabito**

Rm 440, Biological Sciences Bldg. (BIO)

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Office Hours: Wednesday 1:00-3:30 or by appointment

**Prerequisite:** B or better in PCB 3044, or permission of instructor

**Course Website:** There may be multiple Webcourse pages created for this course. I will be posting all material on **PCB4301C-24Spring 0001** only.

**Course description:** This course will offer an in-depth examination of wetland habitats, ranging from freshwater to marine, with a focus on the intersection of the biotic and abiotic attributes that make these ecosystems unique. The role of wetlands in the broader context of global biogeochemical cycles, current research in wetland ecology and biogeochemistry, and hands-on field and laboratory research techniques will be introduced.

PCB 4301C is designated as a **Research-Intensive (RI) course**. This designation will be noted on your transcripts. Research-Intensive is one of the four High Impact Practice course designations at UCF, along with Service Learning, Integrative Learning, and Global Learning. High Impact Practice courses are some of the most challenging and rewarding at UCF. You will actively engage in research processes and a significant portion of your grade will be derived from course-related project(s) based on original research and/or creative scholarship.

If you have any questions about this designation or HIP designations at UCF, please contact [hip@ucf.edu](mailto:hip@ucf.edu)

### **Course goals:**

- Understand the physical, biological, and chemical processes that define a wetland ecosystem.
- Understand the ecological function of wetlands within the landscape and in relation to global biogeochemical cycles.
- Discuss human valuation of wetlands, ecosystem services, and current laws and policies affecting wetland protection.
- Evaluate the application of wetland ecology and biogeochemical principles for water quality improvement and global climate change mitigation.

**Required Text:** None. All required reading materials will be provided for you on Webcourses.

**Recommended Text:** Mitsch, W.J. and J.G. Gosselink. 2007. Wetlands, 5th ed. John Wiley & Son, Inc., NY. Reddy, K.R. and R.D. DeLaune. 2008. Biogeochemistry of Wetlands: Science and Applications. CRC Press, Boca Raton.

**Performance Evaluation:**

|  |     |
|--|-----|
| Midterm Exam   | 20% |
| Final Exam   | 10% |
| Campus Wetland Research Project  | 50% |
| <i>(5% meeting group milestones, 20% group final product, 25% personal contribution)</i> |     |
| Lab Assignments  | 20% |
| Total = 100%   |     |

**Exams:** One mid-term exam and a final exam will be given. Both exams will be take-home and done outside of class. The final exam will include both new material and a comprehensive assessment of your knowledge from the course. Exams may include multiple choice, true/false, fill-in, short answer, and essay questions.

**Lab Activities & Assignments:** The scheduled laboratory meeting time will be used for a combination of class discussions, presentations, in-lab activities, field activities, and field trips. Each activity and field trip will include a written assignment **due the following Tuesday by 11:59pm**. **Attendance at labs is mandatory and there are no make-up labs.** If you must miss a lab, review the missed exam/assignment policy outlined below and discuss the circumstance with the instructor to evaluate if the absence will be excused. Excused lab absences will be dealt with on a case-by-case basis using replacement assignments or adjusting point distributions. Unexcused lab absences will result in a zero for the missed assignment. **Late lab assignments will automatically be deducted 20%, plus an additional 20% every 24 h past due.**

**Campus Wetland Research Project:** The class will be divided into small groups (4-5 students) based on individual research interests. Each group will formulate a research question that can be investigated over the course of the semester utilizing wetlands located on UCF's main campus. General group topics will focus on: **water, soil, plants, animals, or ecosystem interactions**, but groups will have freedom to formulate their own ideas and hypotheses. Groups will be given limited time in-class to work on their research projects; the research project will also require considerable out-of-class time to complete. Each group will prepare an **abstract** for their project, and **20-min oral presentation to present to the class** at the end of the semester and present a **poster at the Amy Zen HIP Showcase the last week of class in the Student Union**. Although all group members will participate in the creation of the poster, only at least 1 member of each group is required to be present at the Showcase to present the poster publicly. Groups can also choose to submit a virtual version of their poster to STARS and be eligible to awards.

Research groups are encouraged to meet and communicate regularly outside of class, as well as meet with the instructor and/or GTA regularly about their questions and progress. Group

**research projects will be facilitated by a series of 6 on-line videos detailing the various phases of the research process.** Students are encouraged to watch (and re-watch) these videos to help them progress and seek guidance as needed.

**The grade for the group research projects will be unique to each student**, as it will comprise a 50/50 combination of the quality of the products produced by the group as a whole (5% the group meeting of 5 milestones; 20% the quality of the final research poster, presentation, and report) and the contribution of each individual (25%, assessed with final self- and peer-evaluations of each individual's effort and quality of contribution).

**Missed Exam/Assignment Policy:** A make-up exam will be made available to students who are unable to complete the mid-term exam on-time due to an **excused absence** (see below for examples of excused absences). Due to logistical constraints, there are no make-up labs. If you must miss a lab and have a valid excuse, communicate directly with the instructor to determine the appropriate course of action (which may include, but not limited to, completing a modified lab assignment, or dropping that assignment from your final score calculation). The approach to missed labs will be determined on a case-by-case basis at the discretion of the instructor.

Valid reasons for excused absences include:

**Pre-planned absences:** Students who must miss an exam or assignment due to **official University business** at which your presence was required (e.g., a university-sponsored team event) or are absent in relation to a recognized **religious holiday or active duty military and/or National Guard deployment** will be considered excused. Additionally, students participating in pre-planned career development opportunities may also receive an excused absence, at the discretion of the instructor. The student is expected to inform the instructor of the scheduling conflict at the beginning of the semester, and absolutely no later than 1 week prior to the missed exam or assignment. Additionally, the student is required to provide documentation of the reason for the excused absence prior to it taking place. Appropriate forms of documentation can be determined through conversations with the instructor.

**Unplanned absences:** Students who must miss an exam or assignment due to **an emergency or major illness** are also eligible for an excused absence. A valid emergency, as defined by UCF and/or the instructor, may include, but are not limited to: major illness, serious family emergency, positive COVID test, mandatory quarantine, etc. The student is asked to contact the instructor promptly (within 24 hours or less, to the extent possible) after missing the scheduled exam or assignment and provide documentation (e.g., a signed document from a doctor, police officer, judge, positive COVID test, etc.) within one week of the scheduled exam for the student to be eligible for an excused absence.

**No make-up exams will be given for the final exam.** Missing an exam or assignment for any reason that the instructor deems as **unexcused will result in a grade of zero** for that exam/assignment. Failure to meet the deadlines outline above for informing the instructor of your absence or providing appropriate documentation will result in a grade of zero.

**Late Assignments:** All deadlines are final. Late assignments will be deducted 20% immediately, and an additional 20% for every 24h day past due. Assignments will not be accepted on weekends or holidays. Once graded assignments have been returned or an answer key provided, any outstanding assignments will result in a grade of zero.

**Grading Scale:**

|    |         |    |        |    |        |
|----|---------|----|--------|----|--------|
| A  | 94-100% | B- | 80-83% | D+ | 67-69% |
| A- | 90-93%  | C+ | 77-79% | D  | 64-66% |
| B+ | 87-89%  | C  | 74-76% | D- | 60-63% |
| B  | 84-86%  | C- | 70-73% | F  | <60%   |

**Grading and Evaluation:** Students will be graded and evaluated based on the performance evaluation criteria outlined above. Students can access their current scores at any time using the **Grade Book function of Webcourses**. Final grades will be rounded to the nearest whole number. No adjustments will be made to final grades.

**Classroom Conduct and Expectations:**

- Class attendance and participation is expected. Lecture and lab will rely heavily on in-class discussion.
- During field outings, students are responsible for dressing appropriately and bringing along water, food, and any protective gear (hats, sunscreen, bug spray, etc.) they require.
- Students should keep up with assigned readings by completing them prior to the class in which they will be discussed. All students should be prepared to discuss and ask questions during class.
- You will be responsible for both materials presented in class and those materials assigned as readings (including textbook chapters, journal articles, etc.).
- **Cheating or plagiarism of ANY kind will not be tolerated.** The instructor will pursue disciplinary actions to the fullest extent possible, including (but not limited to) an automatic zero on any assignment in which cheating occurred.
- Students must be respectful and courteous to each other and the instructor at all times. Demeaning, abusive or otherwise foul language is prohibited.
- Talking on the cell phone (and cell phone ringing) is disruptive. All cell phones must be silenced before class begins. Do not make or receive calls during class under any circumstances. If you must use your phone, leave the classroom.
- Laptops are allowed in class for taking notes. Surfing the net, checking social media websites, or doing non-related work on a laptop during class is viewed as disrespectful and you will be asked to turn-off your computer or leave the class.

**More on Academic Conduct:**

Students are expected to follow UCF's standards for personal and academic conduct as defined and outlined in the Golden Rule (see: <http://goldenrule.sdes.ucf.edu>). Academic dishonesty in any form will not be tolerated. If you are uncertain as to what constitutes academic dishonesty, please consult The Golden Rule, the University of Central Florida's Student Handbook (<http://www.goldenrule.sdes.ucf.edu/>) for further details. As in all University courses, The Golden Rule Rules of Conduct will be applied. Violations of these rules will result in a record of

the infraction being placed in your file and receiving a zero on the work in question AT A MINIMUM. At the instructor's discretion, you may also receive a failing grade for the course. Confirmation of such incidents can also result in expulsion from the University.

The current UCF policy concerning **incomplete grades** will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. Your instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

**Disability Access:**

The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students who need accommodations must be registered with Student Disability Services, Ferrell Commons Room 185, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.