

## Wetland Ecology and Management

**INSTRUCTOR:** Dr. Changwoo Ahn  
 Professor of Environmental Science and Policy  
 3034 David King Hall (office hr: by appointment)  
**OFFICE:** (703) 993-3978  
**PHONE:** cahn@gmu.edu  
**E-MAIL:** <http://www.changwooahn.com>  
**WEBSITE:** **LECTURE/discussion:** Tuesday 4:30 - 7:10 PM  
**CLASS TIME:** **LECTURE:** Innovation Hall 139  
**CLASS LOCATION:** Stephanie Schmidt ([sschmi11@masonlive.gmu.edu](mailto:sschmi11@masonlive.gmu.edu))  
**TA**  
**CREDIT HOURS:** 3

**PREREQUISITE:** This course is designed for graduate students who have knowledge and familiarity with ecological concepts and principles. Introductory courses in chemistry, biology, **ecology**, and physics are required.

**COURSE DESCRIPTION:** The course emphasizes structure, functions, and ecological processes of natural and constructed wetlands from an ecosystem perspective. Students will be expected to develop an understanding of hydrologic, physicochemical, ecological, and policy aspects of wetlands and the management of these systems through in-class and field/lab works (i.e., EVPP 647). The course requires each student to carry out an individual research project and to write a research paper. Instructions on paper writing will be provided in class.

**TEXT:** Mitsch, W. J. and J. G. Gosselink. 2015. Wetlands 5<sup>th</sup> Edition. John Wiley & Sons, Inc., New York, NY.

Ahn, C. 2015. Wetlands, 5<sup>th</sup> Edition (Book review), William J. Mitsch, James G. Gosselink, Wiley, New York, 736 pp., *Ecological Engineering* 82: 649-650.

**HANDOUTS:** Copies of papers and other documents will be often emailed or handed out in conjunction with class lectures. Unless otherwise noted, students are responsible for material contained in these handouts for course examinations.

### CLASS PARTICIPATION

I hope to foster a classroom of active exchange among students and between students and the instructor. I will facilitate these through critical reading, class discussions, active learning in groups, and fieldtrips/fieldwork outside the classroom. However, I cannot do this alone – you must all participate. Successful class participation requires preparation. Successful class discussions also require the right atmosphere, we must all remember to be courteous in our comments and criticisms and open to contrasting ideas from others.

**COURSE POLICY AND EXPECTATIONS:** I expect each of you to be present and prepared for each class, which will strictly involve reading the materials provided to you either prior to or during the class. *Academic dishonesty* will not be tolerated (honor code responsibilities). *Minor*

*changes in course organization and content* may be required throughout the semester. Students will be made aware and asked for input if such actions are needed.

**LET ME KNOW** if you have any documented learning or other disability and wish to discuss academic accommodations. The Disability Resource Center can also help you or direct you toward help with a wide range of learning, studying, mental health, career, and physical disability issues (located in Student Union Building I, Room 222; Tel: 703- 993-2474; <http://www.gmu.edu/student/drc/services.html>).

<b>GRADING:</b>	<b>% of Grade</b>
Midterm examination (I)	<b>40</b>
Paper review presentation and in-class discussion (G)	<b>30</b>
Final project paper & pp	<b>30</b>
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<b>TOTAL POINTS</b>	<b>100</b>

Your course will be determined using the following straight scale: A (94-100), A- (90-93), B+(86-89), B (80-85), C (70-79), F (< 70)

\*\* Includes literature review and/or data analysis, style and format, and references (25% for each)

**No late submission will be accepted**

**CLASS E-MAIL:**

I don't use Blackboard for this class, but will communicate via emails. I will frequently e-mail to remind you of deadlines or to clarify points from a lecture. Please use GMU e-mail (\*\*@gmu.edu) to facilitate any communication or discussion. Please check your e-mail **daily!**

**STUDENT JOURNAL ARTICLE PRESENTATION AND DISCUSSION:**

I believe all graduate students should know how to read critically and understand science journal papers of their fields and to engage in intellectual discussion on the topics of the class. It takes exercise to be able to interpret the data and present the message to the public. You will learn about state-of-art knowledge of wetland science and management through peer-reviewed articles. For reading assignments, I expect you to complete the assigned readings prior to each class and create PowerPoint (PPT) presentation for your presentation. The person(s) who presents a paper summary will lead a discussion session after the presentation on the content of the paper. E-mail your PPT files to the instructor after presentation. This will be a 20-minute presentation with 5-10 minute for Q & A.

**PROPOSAL FOR CLASS FINAL PROJECT:**

Each individual submits a one-page word document by email for final project after discussing the topics with me. It is **due October 9.**

**FINAL RESEARCH PAPER AND PRESENTATION:**

Each student is required to submit a paper of his or her class project along with ppt presentation. An electronic submission of final paper is **due on December 7 (to be emailed by noon)**. You are writing a paper that is theoretically being sent off to an academic journal (e.g., *Ecological Engineering or Wetlands*). The style guide for appropriate journals will be provided during the

writing workshop. Your manuscript will be graded on use of the literature, writing, adherence to style and format, analysis and discussion, and references that count in the real publishing world as an academic exercise. You will also present your research paper at the end of the semester to the rest of the class). Your presentations will be on **November 30** in class. Grade for presentation will be based on quality of presentation, how you embody good design principles for visual and audio display of quantitative information, and your understanding of the material being presented. Each student will be given 20 minutes to complete the presentation with Q/A, depending on the number of students. The length of the final paper/proposal will be discussed.

**DO NOT HESITATE TO E-MAIL ME WITH ANY CONCERNS OR QUESTIONS THROUGHOUT THE SEMESTER. I AM HERE TO HELP YOU LEARN.**

**LECTURE COURSE SCHEDULE:** subject to minor changes.

<b>Date</b>	<b>Topic</b>
Aug 24	Course overview, research tools (library sources) Definitions of Wetlands-Student backgrounds, syllabus orientation, group assignment, research topics & site
Aug 31	Wetland structure and function overview- wetland types, hydrologic definition of wetlands
Sep 7	Wetland hydrology, Wetland Soils
Sep 14	Wetland Soils, Wetland Biogeochemistry
Sep 21	Soil Color (Dr. Ahn's group on-going research)- <u>guest Stephanie Schmidt</u>
Sep 28	Wetland Plants/Succession, <u>guest speaker (Fairfax County, TBD)</u>
<b>Oct 5</b>	<b>Mid-term (4:30 pm- 6: 30 pm)</b>
Oct 12	<u>No class (Fall break).</u>
Oct 19	Mid-term review/ Wetland Ecological Processes – Paper review 1 and 2
Oct 26	Wetland and Cities- Paper review 3
Nov 2	Wetland Mitigation, <u>Guest lecture (Mr. Sean Gagnon)</u> - Paper review 4
Nov 9	Research paper writing and method workshop– Paper review 5 and 6
Nov 16	Nature and Culture in Global Wetlands -art, food, and culture with wetlands - Paper review 7 and 8
Nov 23	Simple wetland soil indicators - <u>Stephanie Schmidt (Zoom class)</u>
<u>Nov 30</u>	<b>Final Presentation ppt</b>

**FINAL PAPER/PRESENTATION MATERIAL DUE BY NOON, DEC 7 (TO BE EMAILED BY NOON, NO LATE SUBMISSION WILL BE ACCEPTED.)**

**DR. AHN'S RESEARCH TOPICS FOR THE COURSE- FALL 2021**

Each group/person will work with Dr. Ahn throughout the semester in his on-going teaching and research projects on wetlands. A key focus of research may include but not limited to the following topics:

Hydric soil assessment and soil color biogeochemistry, accidental wetland hydrology through soil color examination, soil color-soil carbon relationship, application of hydric soil technical standard.

## UNIVERSITY POLICY

### Safe Return to Campus

All students taking courses with a face-to-face component are required to follow the university's public health and safety precautions and procedures outlined on the university Safe Return to Campus webpage (<https://www2.gmu.edu/safe-return-campus>). Similarly, all students in face-to-face and hybrid courses must also complete the Mason COVID Health Check daily, seven days a week. The COVID Health Check system uses a color code system and students will receive either a Green, Yellow, or Red email response. Only students who receive a "green" notification are permitted to attend courses with a face-to-face component. If you suspect that you are sick or have been directed to self-isolate, please quarantine or get testing. Faculty are allowed to ask you to show them that you have received a Green email and are thereby permitted to be in class.

Students are required to follow Mason's current policy about facemask-wearing. As of August 11, 2021, all community members are required to wear a facemask in all indoor settings, including classrooms. An **appropriate facemask** must cover your nose and mouth at all times in our classroom. If this policy changes, you will be informed; however, students who prefer to wear masks either temporarily or consistently will always be welcome in the classroom.

**DISABILITY SERVICES** is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. If you are seeking accommodations for this class, please first visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: [ods@gmu.edu](mailto:ods@gmu.edu) | Phone: (703) 993-2474.

**ESP DEPARTMENT** an intentionally inclusive community, promotes and maintains an equitable and just work and learning environment. We welcome and value individuals and their differences including race, economic status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion, age, and disability.

**ACADEMIC INTEGRITY** Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

### COUNSELING AND PSYCHOLOGICAL SERVICES

If you experience feelings of anxiety, panic, depression, sadness during the semester, Student Health Services and Counseling and Psychological Services Offices (703-993-2380) provides a range of resources to assist and support you. Students can call (703-993-2831) or walk-in during open hours to schedule an appointment to talk with a healthcare provider. If you or someone you know

experiences a mental health crisis or emergency, seek help immediately. Call 911 for local emergency services, the National Suicide Prevention Lifeline (1-800-273-8255), or text the Crisis Text Line (741-741) anytime. Visit <http://caps.gmu.edu> for more information.

### **Sexual Harassment, Sexual Misconduct, and Interpersonal Violence**

George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. *Faculty members are required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's [Title IX Coordinator](#) per [university policy 1412](#). If you wish to speak with someone confidentially, please contact the [Student Support and Advocacy Center](#) (703-380-1434), [Counseling and Psychological Services](#) (703-993-2380), [Student Health Services](#), or [Mason's Title IX Coordinator](#) (703-993-8730; [cde@gmu.edu](mailto:cde@gmu.edu)).*