BIOL/EVPP 350 Freshwater Ecosystems
Lecture Syllabus

Instructor: **Dr. Kim de Mutsert**
Assistant Professor, Environmental Science and Policy

Course Description and Goals: This course is an overview of the ecology of freshwater ecosystems including lakes, streams, and wetlands. It will examine the physical, chemical, and biological processes and their interrelationships. Students will learn basic concepts in limnology, biological assessment, and trophic ecology, and become familiar with freshwater flora and fauna. After completion of the course, students should have a broad knowledge of the physical, chemical, and biological processes operating in freshwater ecosystems. In addition, students should understand that anthropogenic factors affect these systems, and that water management and ecosystem restoration are practiced to mitigate these problems. Students will be trained in the ability to present and report research results.

Through such capability, each student should be relatively well prepared to contribute to freshwater ecology research and management projects.

Course Content and Instructional Methods: The course consists of a coupled lecture and lab; both must be taken concurrently and your grade will depend on your performance in both venues. Below is a list of lecture topics by week. Lectures will consist of power point presentations that will be posted to our course on the day of the lecture. Attached below is schedule of topics and assignments, including readings from our text. Check the course web site every week for additional readings that are part of the course material.

Reading and interpreting scientific papers, and presenting results in reports and oral presentations is part of the course. Scientific papers will be presented in groups in class (15 minute presentations), after which a class discussion will follow. The groups will decide on a paper within their topic (Lakes, Freshwater Tidal, Streams, or Wetlands) to present. The dates that homework assignments and lab reports should be handed in are listed in the lab syllabus. At the end of the semester, students will present their lab projects as part of the lab.

Weighting of grades (lecture and lab):	2 mid term exams:	75 pts each
	Cumulative Final:	125 pts
	Lab Participation:	50 pts
	Homework Assignments:	50 pts
	Student Presentations (2):	25 pts each
	Lab Paper:	75 pts

Your final grade will be a letter grade, while your grades in class will be scores. Your grade will be translated to a letter grade at the end of the semester as follows:

Score	**Letter grade**
70-72	C -
73-76	C
77-79	C+

80-82	B-
83-86	B
87-89	B+
90-92	A-
93-96	A
97-100	A+

Honor Code:
Adherence to the *GMU Honor Code* is expected of all students, specifically:

> *Members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.*

In all assignments and communications, plagiarism will not be tolerated. This applies equally to oral and written communications in the context of any evaluated (graded) course assignments. In presenting quotes, paraphrasing statements or logical arguments from others in any medium (on-line, oral or written), students should properly cite their source. Results of teamwork should only be attributed to those who directly contribute to the final product (even if more than those people were designated as being part of the team). Any or all members of a student team may be held accountable for any Honor Code violations in their shared work. Any public usage of original material from this course (e.g., presentations, images, etc.) without explicit permission of its creator shall be construed as stealing. As stated in the Honor Code, infractions may result in invalidated credit for dishonorable work and lowered grade, including failure from the class, suspension or dismissal. Inquiries for clarification from the professor are welcome. Thank you in advance for your conscious attention to these issues.

Disability Accommodations:
If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474, http://ods.gmu.edu. All academic accommodations must be arranged through the ODS.

Diversity:
George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.

When you are unable to attend:
Please let your professor know as soon as possible when you are unable to attend a lecture or a lab. This is especially important for field trips, because we want to leave campus on time. Provide a doctor's note when you are unable to attend for health reason.

Note:
A separate syllabus for the lab can be found on Blackboard.

Lecture Topics and Assignments Schedule

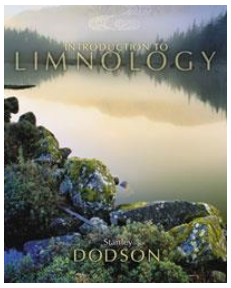
# Week	Topic	Reading
	Physical and Chemical Characteristics	
1 9/1-3	Intro, Hydrologic Cycle, Properties of Water, Field Limnology	Ch. 11 and Bb postings
2 9/8-10	Light in Lakes, Lake Morphometry	Ch. 11 and Ch. 2
3 9/15-17	Vertical Structure, Lake Origins	Ch. 2 and Ch. 10
4 9/22-24	Wetland Plants and Soils, Chemistry in Lakes and Wetlands	Ch. 10 and Bb postings
5 9/29-10/1	Stream and Wetland Characteristics, Material Summary	Ch. 10 and Bb postings
6 10/6	**Exam 1**	Everything offered from 9/1-10/1
	Aquatic Biology	
6 10/8	Phytoplankton, Single-celled organisms	Ch. 3 and Bb postings
7 10/15	(No Class 10/13) Small Invertebrates, Aquatic insects	Ch. 4, 5 and Bb postings
8 10/20-22	**Presentation Lake Group (10/20),** Larger Organisms, Food Webs	Ch. 5, 6 and Bb postings
9 10/27-29	Population Dynamics, Community Ecology	Ch. 6, 7 and Bb postings
10 11/3-5	**Presentation Fresh Tidal Group (11/3)**, Material Summary	Ch. 7, 8 and Bb postings
11 11/10	**Exam 2**	Everything Offered from 10/8 to 11/5
	Ecosystem Science	
11 11/12	Guest Lecture Chris Ruck, Ecologist at Fairfax County	Bb postings
12 11/17-19	Ecosystem Ecology and Energy Flow, **Presentation Stream Group (11/19)**	Ch. 9 and Bb postings
13 11/24	Aquatic Ecosystem Services, (No Class 11/26)	Ch. 12 and Bb postings
14 12/1-3	Management and Restoration, **Presentation Wetland Group (12/3)**	Ch. 12 and Bb postings
15 12/8-10	Management and Restoration, Material Summary	Ch. 12 and Bb postings

Cumulative Final Exam (Study everything offered in this class): 12/15 1:30-4:00 PM

GMU BIOL/EVPP 350: Freshwater Ecosystems Resources

Fall 2015

Primary Text:



Dodson, Stanley. 2005. Introduction to Limnology. McGraw-Hill. ISBN-10: 0072879351 | ISBN-13: 978-0072879353

To obtain the textbook, compare options and costs via directtextbook.com OR

Purchase directly from GMU Bookstore or amazon.com OR

Rent for the term of this course from chegg.com or bookrenter.com OR
Borrow regularly from Johnson Center Library (2 hour reserve, if requested by students).

Note: Access self-test quizzes via student center at http://highered.mcgraw-hill.com/sites/0072879351/student_view0/