

## **NRES 429 Aquatic Ecosystem Conservation**

- August 2016
- Hours: 3 ug/g
- Room: 212 David Kinley Hall
- Time: Monday, Wednesday and Friday from 9:00-9:50 am

### **Instructor Information**

- Instructor: Dr. Cory Suski, Associate Professor, NRES
- Office: W401C Turner Hall
- Phone: 217-244-2237
- Email: [suski@illinois.edu](mailto:suski@illinois.edu)
- Office Hours: Wednesday 1:00-1:50 (or by appointment)
- Preferred Method of Contact: Email

### **Course Description & Overview**

This course will provide an overview to the structure and functioning of freshwater and marine aquatic ecosystems. In addition, this course will expose students to a number of challenges facing aquatic ecosystems, and will provide an opportunity to discuss activities, approaches and strategies that can be used to solve these challenges. While many examples and scenarios discussed will be based on local/regional issues, the course will emphasize a global perspective to aquatic conservation issues and how regional differences in problems and solutions exist. Emphasis will be placed on the importance of using sound science to generate successful management strategies. The class will consist of both lectures & discussion groups.

### **Course Information**

- Prerequisites: CHEM 102, PHYS 140 or 101, MATH 220 or 221 or 234, NRES 219 or IB 203
- Required Text: Introduction to water resources and environmental issues.
- Authors: Karrie Lynn Pennington and Thomas V. Cech (ISBN-13: 978-0-521-86988-1).
- This text will form the basis for lectures, particularly during the first half of the course. For the second half of the course, readings will draw more from primary literature (i.e. journal articles) that will be made available as part of class notes, but the textbook will still serve as an excellent reference.
- This book is on 3-hour reserve in the ACES library ([http://vufind.carli.illinois.edu/vf-uiu/Record/uiu\\_6432371](http://vufind.carli.illinois.edu/vf-uiu/Record/uiu_6432371))
- Electronic textbook: Encyclopedia of Inland Waters  
<http://www.library.uiuc.edu/proxy/go.php?url=http://www.sciencedirect.com/science/referenceworks/9780123706263>

### **Learning Objectives**

At the conclusion of the course, students will acquire knowledge on the primary forces responsible for the health and functioning of aquatic ecosystems, and will also comprehend the importance of water in providing essential ecosystem services. Students will have opportunity to apply this basic knowledge in 'real-life' conservation scenarios, recognizing the role that humans have played in both the degradation and preservation of aquatic ecosystems, and how human actions can negatively impact ecosystem services. Students will also improve their ability to

think critically, learn independently, function in a team or group learning setting, and obtain working knowledge of biological and ecological concepts required for aquatic ecosystem conservation. Students will generate a synthesis paper that incorporates these different elements into an applied conservation scenario.

### **Expectations of Students**

During this course, it is expected that students will come to class on time, having completed assigned reading in advance, and be prepared to engage in course content for the full class time. Students are expected to participate in class activities in ways that support course learning objectives, demonstrate respect and civility toward all other students and instructors, and take an active role in obtaining information and resources for completion of tasks and assignments in the course, ultimately promoting their own learning. Wherever possible, students should contribute feedback to support the instructor in achieving course goals and inform the instructor if they are having a problem understanding presented material. Students are also expected to complete assigned tasks by the announced deadlines and adhere to the content of this syllabus. Finally, students should refrain from using cell phone in class.

### **Students' Expectations of Instructor**

During this course, instructors are expected to begin and end class on time, make the best possible use of class time to support student learning, answer questions promptly and sufficiently, and be available to provide additional assistance when needed. The instructor will always provide clear and consistent criteria that can be used fairly in evaluating student learning, will welcome input on ways to improve the course and will support the achievement of course learning objectives. Feedback (in the form of grading of papers and exams) should be provided to students in a prompt, timely fashion and lecture notes will be made available on the class website prior to class.

### **Teaching and Learning Strategies**

- Format of Class – learning will occur through lectures by the instructor, student discussion sessions, independent research/writing activities and in-class case studies
- Required Activities – independent readings of both primary literature and the textbook(s), group discussions, group research activities, writing assignments
- Exams and assignments will be based on a comprehensive understanding and integration of multiple concepts and ideas – not the memorization of facts and figures

**Tentative Lecture Topics and Schedule**

<b>Date</b>	<b>Day</b>	<b>Title</b>	<b>Text Chapters</b>	<b><u><a href="#">Electronic Text</a></u></b>
22-Aug	Mon	Introduction and overview	1	
24-Aug	Wed	Water and aquatic ecosystems	1,4,5	Links <a href="#">1</a> , <a href="#">2</a> and <a href="#">3</a>
26-Aug	Fri	Group Project Assignments		
29-Aug	Mon	Class time to work on group project		
31-Aug	Wed	Properties of water & movement of water	3	Links <a href="#">1</a> and <a href="#">2</a>
2-Sept	Fri	Streams and rivers 1 of 2 (Paper #1 Assignments)	8	Links <a href="#">1</a> , <a href="#">2</a> and <a href="#">3</a>
5-Sept	Mon	Labor Day – no class		
7-Sept	Wed	Streams and rivers 2 of 2	8	Links <a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> and <a href="#">4</a>
9-Sept	Fri	Lakes 1 of 2	5,6,7	Links <a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> and <a href="#">4</a>
12-Sept	Mon	Lakes 2 of 2	5,6,7	Links <a href="#">1</a> , <a href="#">2</a> , and <a href="#">3</a>
14-Sept	Wed	Trophic state and eutrophication		Links <a href="#">1</a> and <a href="#">2</a>
16-Sept	Fri	Aquatic plants & primary productivity		Links <a href="#">1</a> and <a href="#">2</a>
19-Sept	Mon	Meet with partner for paper # 1		
21-Sept	Wed	Benthic communities		Links <a href="#">1</a> and <a href="#">2</a> (maybe <a href="#">3</a> )
23-Sept	Fri	Fish communities		Links <a href="#">1</a> and <a href="#">2</a>
26-Sept	Mon	<b>Midterm # 1</b>		
28-Sept	Wed	Riparian ecosystems 1 of 2		Link <a href="#">1</a>
30-Sept	Fri	Riparian ecosystems 2 of 2		Link <a href="#">1</a>
3-Oct	Mon	Community structure and ecology		Links <a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> and <a href="#">4</a>
5-Oct	Wed	Biodiversity and stability		Links <a href="#">1</a> and <a href="#">2</a>
7-Oct	Fri	Marine ecosystems 1 of 2		Links <a href="#">1</a> and <a href="#">2</a>
10-Oct	Mon	Marine ecosystems 2 of 2 ( <b>Paper # 1 due</b> )		Links <a href="#">1</a> and <a href="#">2</a>
12-Oct	Wed	Trends in stressed ecosystems	<a href="#">Paper #1</a> and <a href="#">Paper #2</a>	
14-Oct	Fri	Ecosystem and watershed management		Links <a href="#">1</a> and <a href="#">2</a>
17-Oct	Mon	Discussion period & Case Study # 1		
19-Oct	Wed	Class time to work on group project		
21-Oct	Fri	Pollution		Link <a href="#">1</a>
24-Oct	Mon	Climate change ( <b>Upload organization plan to Compass</b> )		Links <a href="#">1</a> and <a href="#">2</a>
26-Oct	Wed	<b>Midterm Exam #2</b>		
28-Oct	Fri	Sampling and monitoring		Link <a href="#">1</a>
31-Oct	Mon	Discussion period & concept maps		
2-Nov	Wed	Case Study #2 – Chesapeake Bay (Readings on Compass)		
4-Nov	Fri	Water quality assessment techniques		Link <a href="#">1</a>
7-Nov	Mon	Restoration		Links <a href="#">1</a> and <a href="#">2</a>
9-Nov	Wed	Case Study # 3 – Restoration (Readings on Compass)		
11-Nov	Fri	Exotic Species		Link <a href="#">1</a>
14-Nov	Mon	Marine Conservation		
16-Nov	Wed	Case Study #4 – St. Croix River (on Compass)		
18-Nov	Fri	Class time to work on group project		
21-Nov	Mon	<b>Thanksgiving Break – No Class</b>		
23-Nov	Wed			
25-Nov	Fri			
28-Nov	Mon	(1)Shoreline development; (2) Floodplain connect.		
30-Nov	Wed	(1)Wetlands; (2) Everglade restoration		

2-Dec	Fri	(1)Biodiversity; (2) Chesapeake restoration		
5-Dec	Mon	(1)Gulf Hypoxia; (2) Water consumption		
7-Dec	Wed	Exam Review – Final Paper Due, Peer/Self Eval Due		
16-Dec	Fri	<a href="#"><u>FINAL EXAM 8:00 am, 212 David Kinley Hall</u></a>		

As of August 21<sup>st</sup>, 2016, the final exam for this class has been scheduled for Friday December 16 at 8:00 am as per <http://registrar.illinois.edu/fall2016schedulingguidelinespublic>. The course-specific exam schedule will be posted in mid-October, and will include exam locations; please make sure you double-check this site to confirm the date/time of the exam.

**Evaluation Methods & Weighting**

Component	Proportion of Final Grade
Midterm # 1	10 %
Midterm # 2	15 %
Cumulative Final Exam	30 %
Paper # 1	10 %
Final Paper	20 %
Group Exercise	10 %
Case Study Discussions	5 %
Total	100 %

Grading rubrics for all components will be made available at the start of the year. The content of the exams will be cumulative – the final exam will cover all material for the entire year.

**Course Policies**

- Student grades will be based on the above components ONLY. Extra-curricular activities (work, sports, applying for jobs), special requirements (you have to get an A to graduate, need a certain grade to maintain a scholarship, etc.) or requirements of future career plans (graduate or professional schools) will not influence ANY grade in this course.
- Your grade will be based, without exception, on the following scale:

A +	97 to 100%
A	93 to 96.9%
A -	90 to 92.9%
B +	87 to 89.9%
B	83 to 86.9%
B -	80 to 82.9%
C +	77 to 79.9%
C	73 to 76.9%
C -	70 to 72.9%
D +	67 to 69.9%
D	63 to 66.9%

D - 60 to 62.9%

F < 59.9%

- Attending class is expected, but will not be monitored. Should students need to miss a class, they are encouraged to (1) complete readings of supplementary materials provided in the syllabus or within the lecture notes, and/or (2) borrow class notes from a classmate to become familiar with material discussed in class. Following the completion of these two steps, students are encouraged to discuss materials with the instructor (particularly during office hours) if uncertainty exists regarding content. Note that notes provided by the instructor are meant to *supplement* classroom activities, and not replace learning and discussion during lectures.
- Lecture notes and copies of lecture slides will be provided on Compass as PDF handouts. Copies of individual PowerPoint slides, or handouts consisting of individual PowerPoint slides of lecture material, will not be made available to students.
- Should you notice early in the semester that you have a conflict with an exam day (i.e., field trip, other), please inform the instructor as early as possible. In situations of known (anticipated) exam conflicts, options related to grades will be handled on a case-by-case basis. Options may include changing the timing of the exam (i.e., write the exam early), or altering the weighting of other assignments in the class. It is expected that known conflicts be supported with a note from another professor (or similar) in support of the conflict.
- Plan to arrive early for all exams in this course. It is the student's responsibility to be sure that the day of an exam will not conflict with other activities. If you arrive to an exam more than 30 minutes late, or after the first person completes the exam (whichever comes first), you will not be allowed to take the exam and will receive a score of 0 (zero). Excuses that are within a student's control (e.g., not enough time to study, headache, car wouldn't start, job interview, did not wake up early enough, traffic was terrible, bus was late, etc.) will not be accepted. It is your responsibility to avoid these potential issues.
- The policy for missed exams will follow guidelines provided by the Dean of Students and the Student Assistance Center at [http://www.odos.illinois.edu/studentAssistance/absence/revised\\_code.asp](http://www.odos.illinois.edu/studentAssistance/absence/revised_code.asp). Briefly, excused absences from exams will be granted **only** for reasons outlined on the Dean of Students website (illness of 3 days or longer, illness of family member etc.), **and** only upon timely receipt of an absence letter from the [Student Assistance Center \(Dean of Students\)](#) (received less than 10 days following the exam). Following receipt of an absence letter from the Student Assistance Center in support of the absence, discussions can begin related to grades and grading for the excused exam. Decisions on how to accommodate excused exams will be addressed on a case-by-case basis and may include writing the exam at a different time, providing of an alternate assignment, or adjusting the weighting of other components of the class.
- Exams that are missed for reasons other than those listed on the Dean of Students website (i.e., personal business, travel, employment, weddings, sporting event, forgot about exam, car wouldn't start, bus was late, semester has been busy, lack of preparation, not feeling well, concert, etc.) will be handled on a case-by-case basis with the instructor. Missing an exam without an absence letter from the Dean of Students will most likely result in a grade of zero (0) for that exam.
- It is the responsibility of the student to ensure that assignments are handed in at or before the due dates listed above. Assignments received after the due date will be considered late unless they are accompanied by a letter from the [Dean of Students \(Student Assistance](#)

Center), generated no later than 10 days after due date of assignment. Excuses that are within the student's control (ran out of toner in printer, hard drive crashed and lost file(s), computer was stolen, couldn't find parking, semester has been busy, several other things due at the same time, memory stick/thumb drive/flash drive broke, bus was late, not feeling well, it was windy outside) will not be accepted and it is the student's responsibility to avoid these potential issues. Students are **strongly** encouraged to take advantage of storage space provided by the University through Box (<https://uofi.app.box.com/login>). **Late assignments will be charged a penalty of 15 % per day.**

- Please confirm that any assignments uploaded to Compass are complete, and that the intended version/file has been uploaded. Grades will be provided based exclusively on the file(s) that are uploaded, and it is the student's responsibility to make sure that the proper file is uploaded and that the file contains the proper information. If there is an error made with uploading, changes can only be made prior to the deadline for the assignment, ideally by email with the instructor.
- Individual questions on exams and/or sections of student papers will not be re-graded if the student feels they have been graded unfairly; rather the entire essay, exam or assignment with a disputed grade will be re-evaluated by the instructor, and the second grade will be deemed final, regardless of its value. Class time will be devoted to discussing exams, and so students are asked from disputing grades until after the exam has been reviewed in class.
- For assignments that require handouts to be provided to the class, students are responsible for generating and distributing these documents (not the instructor)
- Students are encouraged to ask questions at any time during class, and feel free to contact me by email outside of class with your questions
- Please show up on time for class. Late arrivals can be disruptive to ongoing lectures.
- Please refrain from using cell phones in class.
- Participation in discussion periods is required and content covered in discussion periods may be included on exams
- You are encouraged to ask questions at any time during class, and feel free to contact me by email outside of class with your questions

### **Academic Integrity**

The University of Illinois at Urbana-Champaign *Student Code* should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>.

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: <http://studentcode.illinois.edu/>. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

### **Students with Disabilities**

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor as soon as possible. To insure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class should contact Disability Resources and Educational Services (DRES) and see the instructor as soon as possible. If you need accommodations for any sort of disability, please speak to me after class, or make an appointment to see me, or see me during my office hours. DRES provides students with academic accommodations, access, and support services. To

contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail a message to [disability@uiuc.edu](mailto:disability@uiuc.edu). <http://www.disability.illinois.edu/>.

**Emergency Response Recommendations**

Emergency response recommendations can be found at the following website: <http://police.illinois.edu/emergency/>. I encourage you to review this website and the campus building floor plans website within the first 10 days of class.

**Family Educational Rights and Privacy Act (FERPA)**

Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See <http://registrar.illinois.edu/ferpa> for more information on FERPA.