Syllabus

NREM 5483 Ecohydrology

Instructor: Dr. Chris Zou
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Office Hours: Open door policy or by appointment.

Times & Place
Monday only; 4:30-7:10 pm, 119 Ag Hall

Description of Course

Ecohydrology seeks to understand interactions and associated feedbacks in both space and time between ecological systems and the hydrological cycle. The course introduces the principles and concepts in ecohydrology, prevailing research methodology in ecohydrology including the Thornthwaite monthly water balance model, calculation of reference ET, remote sensing resource for ecohydrology, application of ecohydrology in water resource and ecosystem management. This course specifically examines the control of climate, vegetation change, and human activities on hydrological processes and water budget. The concepts and principles discussed in the class will have broad applications ranging from site-specific land management to global change responses.

Course Objectives

After taking this course, students are expected to be able to:
• Clearly describe the interaction and feedbacks between ecological and hydrological systems;
• Evaluate issues in terrestrial water flux, environmental flow, and ecosystem sustainability under increasing variability of climatic conditions;
• Be familiar with experimental approaches in ecohydrological research;
• Be familiar with basic modelling approach and remote sensing approach in ecohydrology;
• Improved skills in writing research report, grant proposal or synthesis paper.

Evaluation

• 10% Class participation;
• 20% Class assignment;
• 20% Midterm exam
• 20% Class facilitation – see description under Class Format;
• 30% Final report.

Assignment of final grades is not based on any preconceived thresholds for letter grades, but roughly follows: ≥90% = A; 80-89% = B; 70-79% = C; 60-69% = D; <60% = F.

Class Format
This class will focus on a learner-centered rather than teacher-centered approach. We will explore the topics together by studying and discussing the most relevant literatures in
ecohydrology. The Instructor will provide direction and some supplemental lectures. Some classes will be facilitated by students.

Facilitation of class by student- Each student is expected to lead (facilitate) one class for a topic of his/her choice from the course outline with the input and approval from the instructor. Facilitation involves a focused review of the topic, suggests key references (extend or replace the paper listed but no more than 3-5 paper in total). The facilitator will email the paper list and questions to instructor prior to the class and the instructor will distribute them to class through D2L. The facilitator will start the class with an overview of the topic, key findings using Powerpoint, audio, visual tools as needed. The facilitator will present 2-3 discussion questions to discuss either for the entire class or as groups. The facilitator will conclude the class with a brief summary of the topic.

Final report - The final report or term paper is intended to be a significant undertaking and as such carries 30% of the grade for the course. Many students choose to develop the new insights learned from facilitating the class into final report. Other may choose to develop insights learnt from thesis/dissertation research into the final report. Special guidance and criteria for final report evaluation will be available in class.

Textbooks & Readings
We will be focusing on research results that have been recently published. There is no textbook. Readings will be posted on the course website.

Attendance and Late Work Policy
Attendance is required for class sections and reflected in the participation component of the grade. Late work will only be considered in rare cases where the Instructor has been contacted ahead of time and granted permission for late submission, a revised submission date, and impact on the grade of late submission.

Conduct Policy
Students are expected to conduct themselves in a manner that is conducive to learning so that the learning experience of fellow students is not disrupted, and that class discussion is enhanced.

Drop Policy
We will adhere to the standard University policy and schedule for dropping or withdrawing from class as printed in the University catalogue, the official OSU Syllabus, and posted on the OSU SIS website.

Required/Recommended Knowledge
Students should enter the class with completion of a course in ecology, soil, environmental science, or discuss with the instructor their previous exposure to environmental science.