

WATS 5340 – MANAGEMENT & RESTORATION OF AQUATIC ECOSYSTEMS CAPSTONE – I SYLLABUS

COURSE INFORMATION

SEMESTER(S) TRADITIONALLY OFFERED: Fall

CREDITS: 2 credits

CLASS MEETING TIME: TBD (1 afternoon per week 3 hour time slot: 1 hour lecture/discussion; 2 hours lab)

CLASSROOM: TBD

INSTRUCTORS:

[Dr. Peter Wilcock](#)

NR210

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Office hours by appointment

[Dr. Joseph Wheaton](#)

NR360

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Office hours by appointment

COURSE WEB PAGE: Forthcoming... see Canvas for assignments

PREREQUISITES: [WATS 5300](#) Principles of Aquatic Ecosystem Restoration, [WATS 4930](#) – [Advanced GIS and Spatial Analysis](#)

COURSE FEE: \$75 is collected to cover the cost of field trips.

COURSE LEARNING OUTCOMES:

1. Gain direct experience *applying* knowledge as a watershed scientist to working on real-world aquatic ecosystem **restoration and management problems** (e.g. stream restoration, watershed management, wetland restoration) with practitioners.
2. Provide constructively critical *evaluations* of various aspects of restoration projects through a mix of **peer-review** of other student projects and *evaluation* of real-world projects.
3. Build a working *understanding* of the typical **process** through which restoration projects are conceived, proposed, planned, permitted and conceptually designed (see WATS 5701 for the detailed design, construction bidding, construction implementation and adaptive management aspects of projects).
4. *Identify* and *document* specific **watershed or ecosystem impairments** in relationship to pre-defined management objectives.
5. Objectively *evaluate* and *analyze* the scientific, political, economic and feasibility **tradeoffs of various approaches to restoration** in a specific project context and gain an appreciation of working with diverse stakeholders. *Synthesize* this analysis through a **planning process** that **prioritizes specific restoration and management actions** throughout a watershed.

6. *Develop a vision for a restoration project and propose that solution formally.*
7. *Identify and prepare forms and applications to appropriate regulatory agencies for a specific project to gain appreciation of **legal and permitting** aspects of projects.*
8. *Create **conceptual design alternatives** for a specific restoration action.*

COURSE STRUCTURE:

The course will generally consist of 30-60 minutes each week of lecture with discussion of new topics, followed by hands-on workshop/labs doing a mix of group project work, individual assignments and mock meetings. Students will be exposed to and work on actual local restoration project and ecosystem management through guest lectures with professionals and practitioners as well as field trips.

ASSIGNMENTS & COURSE GRADING:

Each of the learning outcomes 4-8 will have an individual or group assignment that will account for 80% of your grade with assignment weightings proportional to workload. There will be no tests. All assignments will require producing those materials that professionals and practitioners would normally prepare. 20% of your grade will be based on peer-reviews you provide of project documents and constructive critiques of each other's projects.

APPROXIMATE SCHEDULE:

Week	Topic (Learning Outcomes met)	Labs/ Field Trips	Assignments
1	Course Overview & Identification of Projects (L.O. 1, 2)	Field Trip Visit Project Site(s)	Review Restoration Proposals
2	Overview of Restoration Project Process (L.O. 3, 1, 2)	Meet practitioners	Reading
3	Assessing Watershed and Ecosystem Impairments (L.O. 4, 1, 3)	Desktop condition assessment or limiting factors analysis	Prepare Impairment Report (individual)
4	Setting Restoration & Management Objectives (L.O. 5, 1, 2, 3)	Stakeholder meetings	Peer Reviews of Impairment Reports
5-7	Planning & Prioritization of Restoration Actions (L.O. 5, 1, 2, 3)	Field and Desktop Planning Analyses	Prepare Group Restoration Plan / Peer Reviews
8-9	Visioning Restoration (L.O. 6, 1, 3)	Helping public and stakeholders visualize; Presenting vision 'on site'	Prepare 'visioning' materials (group)
9-10	Permitting Projects (L.O. 7, 1, 3)	Permit Application/ Guest Lecture from Regulator(s)	Prepare Permit Applications
12-14	Conceptual Design Process (L.O. 8, 1, 2, 3)	Alternative Conceptual Designs / Field Site Visit as needed	Conceptual Design Reports
15	Course Synthesis & Introduction to WATS 5701	Design Presentations	

COURSE POLICIES:

Our own course policies include:

- *Late work.* Any work submitted past the due date will receive an automatic 10% reduction unless due to a pre-approved excused absence. Any work turned in over one week past the due date may not be accepted without prior approval.
- *Working together.* You are welcome and expected to work together on assignments and projects. However, each student must undertake their own analyses, make their own maps, produce their own figures, conduct their own peer reviews and contribute to the production of group reports. Specific guidelines for these expectations will be provided on each assignment. Plagiarism will not be tolerated. Copying figures or text without appropriate citations or permission will not be tolerated.
- *Academic Dishonesty.* Use common sense. Don't cheat.

In addition, we adhere to the University's course policies:

ACADEMIC FREEDOM AND PROFESSIONAL RESPONSIBILITIES (FACULTY CODE)

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. Faculty Code Policy #403 further defines academic freedom and professional responsibilities: USU Policies Section 403

ACADEMIC INTEGRITY - "THE HONOR SYSTEM"

Each student has the right and duty to pursue his or her academic experience free of dishonesty. The Honor System is designed to establish the higher level of conduct expected and required of all Utah State University students.

The Honor Pledge: To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

GRIEVANCE PROCESS (STUDENT CODE)

Students who feel they have been unfairly treated [in matters other than (i) discipline or (ii) admission, residency, employment, traffic, and parking - which are addressed by procedures separate and

independent from the Student Code] may file a grievance through the channels and procedures described in the Student Code: Article VII Grievances

PLAGIARISM

Plagiarism includes knowingly "representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." The penalties for plagiarism are severe. They include warning or reprimand, grade adjustment, probation, suspension, expulsion, withholding of transcripts, denial or revocation of degrees, and referral to psychological counseling.

SEXUAL HARASSMENT

Sexual harassment is defined by the Affirmative Action/Equal Employment Opportunity Commission as any "unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature." If you feel you are a victim of sexual harassment, you may talk to or file a complaint with the Affirmative Action/Equal Employment Opportunity Office located in Old Main, Room 161, or call the AA/EEO Office at 797-1266.

STUDENTS WITH DISABILITIES

The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (797-2444), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

WITHDRAWAL POLICY AND "I" GRADE POLICY

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term 'extenuating' circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4) change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor.