In-Person Lecture Wed 9:00-10:50 in TNR 361

Instructor: Daniel Keymer
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Office Hours: Tues. 2-3 PM or by appointment.

I. Course description

This course builds on basic concepts of how wastewater is treated and conveyed that were introduced in WATR/WSTE/PSEN 382/582 (Water and Wastewater Treatment). Topics will center around study guides for wastewater operator certification in the state of Wisconsin. Specific emphasis will be given to nutrient removal and management of biosolids. Assignments, projects, and discussions will develop skills in troubleshooting, management decisions, and planning.

II. Learning Objectives

By the end of this course, students will be able to:

1. Discuss the functioning of wastewater treatment facility processes and how these processes interact.

2. Propose ways to troubleshoot problems with wastewater treatment plant operation.

3. Evaluate different equipment or process upgrades for existing treatment facilities.

III. Course Format

This course includes one 110-minute lecture/discussion per week. Students are expected to attend and participate in all lectures. There will be in-class exercises, homework problem sets, guest speakers, and independent projects.

Attendance policy

If you cannot attend a scheduled class session or will be excessively tardy (>5 minutes late), you must have an excused absence. Excused absences will be considered by Dr. Keymer on a case-by-case basis. It is your responsibility to contact Dr. Keymer at least one week prior to an absence if you have a scheduled conflict that cannot be moved.

Expectations

My expectations for you are that you will respect others, take responsibility for your own learning, participate and ask questions, and maintain a safe working environment. All communication with instructors or classmates must be respectful in content and tone. The classroom must be an environment where everyone feels comfortable and able to learn. Accordingly, students are required to treat others with respect and any behavior that impedes the ability of other students to learn will not be tolerated. Students are expected to come prepared to class, ready to discuss assigned readings and questions. Homework assignments will be due prior to class each week, and will submitted electronically in Canvas. Unless specified otherwise, late assignments will receive a point reduction per day.

As your instructor, you can expect Dr. Keymer to do everything in his power to be fair, to be available and willing to help you, to provide feedback on work in a timely manner, to relate tasks to real-world skills, and to ask you think.

In addition to the specific expectations outlined above, all participants in the course are expected to act in accordance with the UWSP Rights and Responsibilities document. For more information, see the following link: https://www.uwsp.edu/dos/Pages/Student-Conduct.aspx.

IV. Course Requirements

Assignments
Questions will be assigned each week to facilitate class discussion and assess completion of the assigned readings. Students must submit their individual answers to these questions in Canvas prior to our class meeting. During the synchronous class meeting, students will be expected to discuss their answers to these questions with other members of their small group.

Exams
Student's ability to comprehend and apply the concepts discussed in class will be assessed by a combination of timed multiple-choice exams and take-home exams. Multiple choice exams, similar in scope and format to DNR certification exams, will be given once halfway through the semester and once at the end of the course. Two take home exams will assess students' ability to apply advanced wastewater topics in a variety of real or hypothetical professional situations.

Individual project
Students will investigate a relatively new or emerging technology associated with the treatment of wastewater with the specific objective of explaining circumstances where this technology may be recommended. Outcomes of the project will be presented orally.

Supplemental materials
Readings and resources will be disseminated via Canvas. Slides used in class will be posted to Canvas. Handouts, homework assignments, practice problems, and announcements will also be made available through Canvas or email.

Participation
Participation constitutes a fraction of your grade. Students are expected to be an ***active*** participant in lecture for this course. This primarily means coming prepared, joining discussions during lecture, and engaging in class activities.

Grading scale
Letter grade assignments will be made according to the following scale:

A	= 93 – 100%	B-	= 80 – 82%	D+	= 67 – 69%
A-	= 90 – 92%	C+	= 77 – 79%	D	= 63 – 66%
B+	= 87 – 89%	C	= 73 – 76%	D-	= 60 – 62%
B	= 83 – 86%	C-	= 70 – 72%	F	= below 60%

Regrade requests
Requests for regrading any assignment or exam must be submitted to Dr. Keymer in writing within one week of the graded item being returned.

Point distribution

Student grades will be determined based on the following breakdown of points:

Assignments	30%
Exams	40%
Group project	20%
Participation	10%
Total	**100%**

Dr. Keymer may also offer extra credit opportunities at his discretion.

V. Academic Integrity

All students have agreed to the UW System Code of Conduct and are expected to know and abide by the rules documented therein. The policy can be found through the Division of Student Affairs (https://www.uwsp.edu/dos/Documents/UWS%2014-1.pdf). This includes knowing the difference between plagiarism and paraphrasing, whether summarizing someone else's work in writing or on presentation slides. Individual student work submitted for credit will be your own and not submitted for credit in another course.

Working in groups is encouraged and allowed for homework assignments and lab reports. This does not include exams and any collaboration among students on an exam is strictly forbidden. Appropriate credit must be given to all authors of assignments submitted for credit. It is assumed that students attaching their name to a group assignment have been responsible for a substantial contribution to its completion. Dr. Keymer should be notified if you are aware of any student taking credit for someone else's work. Violation of this policy could lead to failure on the assignment/exam, failure of the course, or other disciplinary action at the University level.

Lecture materials and recordings for this course are protected intellectual property at UW-Stevens Point. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or share lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

VI. Academic Accommodations

Accommodations for students with disabilities will be made on an individualized basis. Students must register with Disability and Assistive Technology Center to identify and confirm appropriate accommodations. Dr. Keymer will be happy to accommodate, but must be notified of any documented accommodations during the first three weeks of the semester, so that satisfactory arrangements may be provided. Please notify Dr. Keymer immediately if unusual circumstances arise during the semester that change your accommodation needs.

VII. Anticipated Course Schedule (*Subject to change*)

Week (date)	Lecture topic
1 (09/07)	Course introduction
2 (09/14)	Suspended growth
3 (09/21)	Attached growth
4 (09/28)	Solids separation
5 (10/05)	Nutrient Removal
6 (10/12)	Nutrient Removal Configurations
7 (10/19)	**Exam 1**
8 (10/26)	Biosolids Treatment
9 (11/02)	Biosolids Disposal and Management
10 (11/09)	Wastewater Collection Systems
11 (11/16)	Optimization and Cost Analysis
12 (11/23)	
13 (11/30)	Laboratory
14 (12/08)	TBD
15 (12/14)	**Oral presentations**
16 (12/21)	**Exam 2**