

**ADVANCED WASTEWATER
WSTE 481**

Wednesday 9:00-11:00 AM UWSP TNR Room 359

Instructors:

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Catalog Description: Explore physical, chemical and biological treatment options for the removal of nutrients from wastewater and the processing of wastewater biosolids. Advanced lab techniques and the economics of treatment will be discussed. Prereq: 382/582 or cons instr.

Extended Course Description and Course Purpose: This course examines the biological processes that convert soluble organic matter, nitrogen and phosphorus into solids and gases. Our emphasis will be on developing a stronger fundamental understanding of the concepts behind biological wastewater treatment and then applying that to practical problem solving. The course is designed to explore these aspects of wastewater treatment through readings, in-class discussion, small group inquiry, interaction with wastewater professionals, and presentations. We hope to connect process fundamentals with examples in ways that increases your understanding and ability to use these concepts.

Readings: An important part of this course is the reading list. We will continue to add readings during the semester. Most will be available electronically.

Grades: Grading is based on assignments (50%) and quizzes/exams (50%). Quizzes will be based on the previous class meeting and assigned readings. The exams are cumulative and will be based on class discussions, readings and assignments.

481 Tentative Topic Outline

Weeks (Dates)	Group Meetings	Readings
1 - 5 (9/4 - 10/2)	Activated Sludge BOD, Solids	WDNR Study Guides: Biological Treatment: Suspended Growth, Solids Separation; Biological Solids & Sludges
6 (10/9)	WWOA (Green Bay)	
7-9 (10/16-10/30)	Pumps & Energy	Water & Wastewater Industry Energy Best Practice Guidebook
10-13 (11/6-11/27)	Nutrient Mgt (P & N)	WDNR Study Guides: Nutrient Removal- Total Phosphorus;
14-15 (12/4-12/11)	<i>Emerging Topics</i>	
16	Final Exam	

