

Primary and Secondary Treatment

WW6.192 CRN 25676 Fall 2019

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Class Time: MW 9:00 - 10:50 IA 213

Course Description:

The objective of this course is to focus on all the common wastewater treatment processes involved in primary treatment sections and the biological secondary treatment steps of a wastewater treatment facility. Each treatment alternative is covered with the basic physical/biological concepts of the process and the direct operator skills and activities required for successful operation. Observation, laboratory testing, safety and calculation interpretation are used as monitoring tools in this course.

Student Course Outcomes:

Understanding and operational skills for the operation of primary treatment sections and the biological secondary treatment steps of a wastewater treatment facility.

Textbook: Wastewater Treatment Fundamentals 1 by W.E.F./ABC

Professional Organizations:

Water Environment Federation: www.wef.org

Pacific Northwest Clean Water Association: www.pncwa.org

Date	Subject/Activity	
Week 1	Course Introduction/Overview <ul style="list-style-type: none">- What is wastewater treatment?- Wastewater: what's in it?- Wastewater treatment regulations	Chapter 1& 2
Week 2	Wastewater Pretreatment Processes <ul style="list-style-type: none">- Treatment plant loading- Plant flow & velocity	Chapter 3

Week 3	Primary Treatment Processes <ul style="list-style-type: none"> - Clarification and Floatation - Removal Efficiency - Detention time, surface settling rate, weir overflow rate 	Chapter 4
Week 4	Sludge Collection and Pumping <ul style="list-style-type: none"> - Collection volume and rates - Controlling sludge pumping rates 	
Week 5	Secondary Treatment Processes <ul style="list-style-type: none"> - Basics of Biological Treatment - Attached growth systems <ul style="list-style-type: none"> o Trickling Filters o RBCs 	Chapter 5 & 7
Week 6	Secondary Treatment Processes <ul style="list-style-type: none"> - Attached growth systems (con) 	Chapter 7
Week 7	Activated Sludge Process control <ul style="list-style-type: none"> - Activated Sludge systems 	Chapter 8
Week 8	Activated Sludge Process control <ul style="list-style-type: none"> - F/M, MCRT, SVI - RSF, WSF control 	Chapter 8
Week 9	Wastewater Stabilization Ponds	Chapter 6
Week 10	Course Summary and review	
Week 11	Finals Week	

Note: class schedule may change as needed.

Grading Policy and Procedures

Your grade will be based on a combination of exams, worksheets, and quizzes.

Midterm exam and Final Exam:

There will be one midterm exam and one final exam given in this course. It is the general policy of our department to not provide for make-up work and/or exams without previous authorization. Excused absence and/or prior contact with the instructor are required for exams that are missed.

Overall Grading Summary

		Total Points	
Midterm Exam	35%	90 – 100%	A
Final Exam	35%	80 – 89%	B
Worksheets/Quizzes	30%	70 – 79%	C
Total	100%	60 – 69%	D

Cell Phone and Computer Laptop Use

Please turn your cell phones and laptop computers to silent mode during class time. Cell phones are not to be used as calculators as a part of classroom activities. For classroom activities obtain a calculator for use in class and for exams.

Disabilities Services and Emergency Planning

Students who may need accommodations due to documented disabilities, who have medical information which the instructor should know, or who need special arrangements in an emergency, should speak with the instructor during the first week of class. If you have not accessed services and think you may need them, please contact Disability Services, 917-4789.

LBCC Comprehensive Statement of Nondiscrimination

LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws.

(for further information <http://po.linnbenton.edu/BP1015 - Nondiscrimination and Nonharassment Policy.pdf>)

Student Rights and Responsibilities

LBCC students are expected to learn college rights and responsibilities. Please go to <http://www.linnbenton.edu/go/student-rights> to learn what you must and may do in college. All students need to follow the LBCC code of conduct. Students at LBCC will: take responsibility to learn material, participate in class, advocate for their needs, and know the rules. Students must follow all lawful directions of staff. Students must provide identification when requested by staff. Students must respect the learning space. Student must interact with everyone in a civil way. Students will follow safety rules. Students will be honest in work and interactions. Students will use equipment properly and return equipment on time. Students will follow all college rules and all state and federal laws.