

**CE 485 Wastewater Treatment Design**  
**2018 Spring – Course Syllabus**

<b>Lecture</b>	Monday	6:30 – 9:10 pm	KAP 158
<b>Professor</b>	Wonho Warner Song, Ph.D., P.E., BCEE		
<b>Office</b>	Sanitation Districts of Los Angeles County 1955 Workman Mill Road Whittier, CA 90601 <a href="http://www.lacsd.org">www.lacsd.org</a>		
<b>Phone</b>	(562) 908 – 4288 x2822		
<b>Email</b>	<a href="mailto:wonhoson@usc.edu">wonhoson@usc.edu</a>		
<b>Office hours</b>	Monday 5:30 – 6:30 pm, KAP 200 (and also by appointment)		
<b>Teaching Assistant</b>	TBD		
<b>Office</b>			
<b>Phone</b>			
<b>Email</b>			
<b>Office hours</b>			
<b>Prerequisites</b>	CE 451 Water Resources Engineering CE 463L Water Chemistry and Analysis CE 473 Engineering Law, Finance and Ethics		
<b>Textbook</b>	Metcalf & Eddy /AECOM. Wastewater Engineering: Treatment and Resource Recovery, 5th Edition, McGraw-Hill, 2013 (ISBN 13: 978-0073401188, ISBN 10: 0073401188)		
<b>References</b>	WEF. Design of Municipal Wastewater Treatment Plants. WEF Manual of Practice No. 8 / ASCE Manual and Report on Engineering Practice No. 76. Fifth Edition, WEF Press / McGraw-Hill. 2010		
<b>Preparation Before Class</b>	Presentation materials, assignments, and supplementary class notes will be posted on Blackboard. Students are required to download and preview class materials prior to class. Reading assignments will be made from the textbook.		
<b>Course Description</b>	Process kinetics, mass balance, reactor design, pretreatment, clarification, chemical treatment, biological treatment (aerobic and anaerobic), disinfection, sludge treatment, nitrogen and phosphorus removal, carbon adsorption.		
<b>Grading Criteria</b>	Midterm Exam	25%	
	Final Exam	30%	
	Design Project	20%	
	Quizzes	15%	
	Homework	10%	
<b>Policies on Late Work</b>	Late assignments will be docked 10% (of the percent correct) for each day late to maximum of 50%. Late design projects will be reduced in grade.		

<b>Schedules for Exams and Quizzes:</b>	Quiz 1	Feb. 5, 2018
	Midterm	Mar. 5, 2018
	50% Design Project Due	Apr. 2, 2018
	Quiz 2	Apr. 9, 2018
	Design Project Due	Apr. 23, 2018
	Final Exam	May 7, 2018

## CLASS CALENDAR

Lecture Nos.	Date	Topic	Chapter Nos.
1	1/8	Introduction Wastewater Characteristics	Chapter 1 Chapter 2.
-	1/15	Dr. Martin Luther King Jr.'s Birthday	-
2	1/22	Wastewater Flowrates and Constituent Loadings	Chapter 3
3	1/29	Process Selection, Design, and Implementation Physical Unit Processes	Chapter 4 Chapter 5
4	2/5	<b>(Quiz 1)</b> Chemical Unit Processes	Chapter 6
5	2/12	Fundamentals of Biological Treatment	Chapter 7
-	2/19	President's Day	-
6	2/26	Suspended Growth Biological Treatment Processes	Chapter 8
7	3/5	<b>Midterm Exam</b> <b>Design Project Overview</b>	-
-	3/12	Spring Recess	-
8	3/19	Suspended Growth Biological Treatment Processes	Chapter 8
9	3/26	Attached Growth and Combined Biological Treatment Anaerobic Biological. Treatment Process	Chapter 9 Chapter 10
10	4/2	Separation Processes for Removal of Residual Constituents Disinfection Processes <b>50% Design Project Due</b>	Chapter 11 Chapter 12
11	4/9	<b>(Quiz 2)</b> Plant Hydraulics	-
12	4/16	Processing and Treatment of Sludges, Biosolids Processing, Resource Recovery and Beneficial Use	Chapter 13 Chapter 14
13	4/23	Plant Recycle Flow Treatment and Nutrient Recovery Air Emissions from Wastewater Treatment Facilities and Their Control <b>Course Evaluation</b> <b>100% Design Project Due</b>	Chapter 15 Chapter 16
-	4/30	Study day (No Class)	
14	5/7	<b>Final Exam</b>	

## **STATEMENT ON ACADEMIC INTEGRITY**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own.

All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

## **STATEMENT FOR STUDENTS WITH DISABILITIES**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible.

### DSP Contact Information

Office location: STU 301

Hours open: 8:30 a.m. until 5:00 p.m. — Monday through Friday.

Phone number: (213) 740-0776