

Course no.	M 1586.001500	Class no.	001	Class title	Water Pollution Control		학점	3
Instructor	Name	Yongju Choi (Assistant Professor)			Homepage	http://wqe.snu.ac.kr		
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	Office hours:		TBD					
1. Goals	This class will deal with the collection, transport, treatment, and discharge of wastewater and stormwater in order to protect the human and ecosystem health from the threat of water pollution caused by human activities. Students will also study the approaches to enhance the sustainability of human water use by recovering energy and resources from wastewater and stormwater. Based on engineering principles, the planning, design, operation, and maintenance of unit processes involved in the treatment of and energy/resource recovery from wastewater, stormwater, and residual solids will be studied. Novel technologies for sustainable water use through energy and resource recovery will be reviewed, and challenges and future tasks involved in the enhancement of water use sustainability will be discussed.							
2. Text and references	1. Lecture note(ppt) 2. Metcalf & Eddy, AECOM. Wastewater Engineering: Treatment and Reuse, 5 <sup>th</sup> ed., McGraw-Hill, 2015. 3. Tchobanoglous, G., Schroeder, E. D., Water Quality: Characteristics, Modeling, Modification, Addison-Wesley, 1985.							
3. Evaluation	Attendance	Assignment	Midterm	Final	Term project	합계		
	15%	15%	25%	25%	20%	100%		
4. Lecture plan	Week	Lecture contents						
	1	Introduction / Basics of water quality						
	2	Physical characteristics of water / Chemical characteristics of water I						
	3	Chemical characteristics of water II / Acid-base systems I						
	4	Acid-base systems II / Biological characteristics of water I						
	5	Biological characteristics of water II / Reactor analysis I						
	6	Reactor analysis I / Flowrate and loadings						
	7	Midterm exam / Physical unit processes I						
	8	Physical unit processes II / Chemical unit processes						
	9	Fundamentals of biological treatment & microbial growth kinetics I & II						
	10	Biological nutrient removal I & II						
	11	Practical applications of biological treatment / Anaerobic process, recalcitrant compound removal						
	12	Removal of residual particulate and dissolved constituents / Current and future issues						
	13	Review / Final exam						
	14	Term project discussion & feedback						
15	Term project presentation							
5. Guideline for students	The term project is a team-based work for the process design of an innovative wastewater or non-point source pollution treatment process							
6. Policy for plagiarism	50% of the lowest score of the class for every event							