

Course no.	M 1586.000300	Class no.	001	Class title	Water Quality and 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	Understand the concepts and quantification methods of physical, chemical, and biological characteristics of water that determines its quality, and analyze the chemical reactions in water and reactors where the reactions occur. Study the planning, design, and maintenance of the wastewater collection and treatment systems that are used to control the water pollution by human activities. Obtain in-depth knowledge on the principles and analysis of unit processes employed for wastewater treatment. Understand the current issues of sustainable water resource and quality management including wastewater reuse, stormwater management, and resource and energy recovery, and decentralized systems.						
2. Text and references	1. Lecture notes(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	Class participation	합계
	10%	15%	25%	25%	20%	5%	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 system I					
	4	Acid-base system II / Biological characteristics of water I					
	5	Biological characteristics of water II / Reactor analysis I					
	6	Reactor analysis II / Flowrate and loadings					
	7	Physical unit processes I, II					
	8	Midterm / Physical unit processes III / Chemical unit processes I					
	9	Chemical unit processes II / Fundamentals of biological treatment I					
	10	Fundamentals of biological treatment II, III					
	11	Biological nutrient removal / Anaerobic oxidation / Recalcitrant compound removal					
	12	Practical applications of biological treatment / Removal of residual suspended and dissolved constituents					
	13	Current and future issues					
	14	Review / Final					
15	Term project presentation						
5. Guideline for students	The term project is a team project writing and presenting a case study report for wastewater reuse, stormwater management, resource and energy recovery, or decentralized water quality management systems.						
6. Policy for plagiarism	50% of the lowest score of the class for every event						