

Course No.	457.621	Lecture No.	001	Course Title (Subtitle)	Biological processes in environmental engineering	Credit	3
Representative Instructor	Name	Yongju Choi (post : Assist. Prof. )		Homepage	http://wqe.snu.ac.kr		
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	Interview Time/Place : Appointment based						
Attachment	(Korean)						
	(English)						
Prerequisite Course							
*1.Purpose of Course	Understand the background, theories, techniques, and applications of biological approaches for the management of water, soil, and solid waste. Obtain in-depth knowledge on the biological approaches applied for wastewater treatment, study current issues of research, and discuss the future direction of research and applications. Deliberate the issue of environmental justice by performing a team project investigating a residential area in Korea with limited environmental service and suggesting appropriate solutions to improve the living condition of the residents.						
*2.Materials and Reference	1. Lecture notes 2. Rittmann, B. E. and McCarty, P. L. (2001) Environmental Biotechnology: Principles and Applications, McGraw-Hill						
*3.Evaluation Method	Attendance	Final exam	Homework	Attitude	Other	Total	
	10	40	20	0	30	100	
	Remark of Others		May include a term project and quizzes				
*4.Lecture Plan	W1: Introduction to biological processes in environmental engineering / Basics of microbiology W2: Enzyme reactivity and inhibition / Stoichiometry of biochemical reactions I W3: Stoichiometry of biochemical reactions II & III W4: Bacterial energetics / Microbial kinetics W5: Reactor analysis I & II W6: Microbial kinetics in reactors I & II W7: Microbial kinetics in reactors III / Biofilm kinetics W8: Wastewater treatment overview I & II W9: Biological wastewater treatment I & II W10: Practical applications of biological treatment W11: Sludge treatment, anaerobic processes, microbial fuel cells / Toxic and recalcitrant compound removal W12: Discussion & review / Final exam W13-15: Student presentation & discussion						
5.References to Course Registration	This class is run in English. At least moderate ability of English listening and reading is required.						
6. Support Services for Students with Disabilities	For Lectures						
	For Assignments & Evaluations						
	Others						

◇ fields with \* : required fields

◇ If you don't release the syllabus, you may have some disadvantages.