

Course no.	M 1586.000200	Class no.	001	Title	Water contaminants	Credits	3
Instructor	Name	Choi, Yongju			Homepage	http://weq.snu.ac.kr	
	E-mail	ychoi81@snu.ac.kr			Tel.	02) 880-7376	
	Office hour/location:		TBD				
1. Class objectives	<p>Various contaminants exist in sewage, wastewater, and natural waters. Understanding the characteristics and fate of those contaminants is crucial for researches and applications of environmental engineering approaches. In this course, students will study the types and the characteristics of substances that degrade water quality, and mechanisms that determine the fate of the substances including phase partitioning, mass transfer, reactions, mixing, and dispersion. Students will get an in-depth understanding of mechanisms related to the fate of organic contaminants through organic chemistry approaches and analyze the fate of the contaminants at various settings of water environments. In addition to the lecture given by the instructor, the students will study, present, and discuss about sub-topics relevant to the course as well as their own research in order to fulfill the needs on background knowledge for those who have different research interests.</p>						
2. Textbook	<p>1. Lecture notes (ppt) 2. Environmental Organic Chemistry, 2nd ed., R. P. Schwarzenbach, P. M. Gschwend, D. M. Imboden, John Wiley & Sons, Inc., 2003</p>						
3. Evaluation	Attendance	Final	Presentation	Homework	Total		
	15%	40%	30%	15%	100%		
	Remarks:						
4. Weekly Plan	Week	Contents					
	1	Water chemistry / Organic chemistry background I					
	2	Organic chemistry background II & III					
	3	Water constituents					
	4	Chemical transformations / Problem session I					
	5	Redox reactions I & II					
	6	Problem session II / Nucleophilic reactions I					
	7	Nucleophilic reactions II / Photochemical reactions I					
	8	Problem session III / Photochemical reactions II					
	9	Phase equilibrium I / Problem session IV					
	10	Phase equilibrium II / Interphase mass transfer I					
	11	Problem session V / Interphase mass transfer II					
	12	Dispersion / Problem session VI					
	13	Final / Student presentation & paper discussion					
	14	Student presentation & paper discussion					
15	Student presentation & paper discussion						
5. Notes	<p>Student presentation & paper discussion: Each student will be in charge of 1/2 class for presentation and paper discussion on their own topic. Example questions are given as homeworks and then will be discussed in the problem session.</p>						
6. Policy on plagiarism	Assign 50% of the class low for any event						