

| | | | | | | | |
|-------------------------|--|--|--------------|---------------|--------------------|----------------------|---|
| 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 | Participation | Total | | |
| | 15% | 40% | 30% | 15% | 100% | | |
| | Remarks: | | | | | | |
| 4. Weekly Plan | Week | Contents | | | | | |
| | 1 | Introduction / Organic chemistry background I-1 | | | | | |
| | 2 | Organic chemistry background I-1, II-1 | | | | | |
| | 3 | Organic chemistry background II-2 / Water constituents-1 | | | | | |
| | 4 | Water constituents-2 / Chemical transformations | | | | | |
| | 5 | Redox reactions | | | | | |
| | 6 | Nucleophilic reactions | | | | | |
| | 7 | Photochemical reactions | | | | | |
| | 8 | Phase equilibrium | | | | | |
| | 9 | Interphase mass transfer | | | | | |
| | 10 | Dispersion / Oxygen dynamics in a river | | | | | |
| | 11 | Review / Final | | | | | |
| | 12 | Student presentation & paper discussion | | | | | |
| | 13 | Student presentation & paper discussion | | | | | |
| | 14 | Student presentation & paper discussion | | | | | |
| 15 | Student presentation & paper discussion | | | | | | |
| 5. Notes | Student presentation & paper discussion: Each student will be in charge of 1/2 class for presentation and paper discussion on their own topic. | | | | | | |
| 6. Policy on plagiarism | Assign 50% of the class low for any event | | | | | | |