**Syllabus (2nd Semester, 2007)**

|  |  |  |  |
| --- | --- | --- | --- |
| Subject Name | Polymer Chemistry | Department | Department of Chemical and Biological Engineering |
| Subject Number | 458.312 | Total Credit / Design Credit | 3 / 0.5 |
| Professor | Jong-Chan Lee | E-mail | jongchan@snu.ac.kr | Phone | +82 2 880 7070 |
| Lecture Webpage | snu-polychem.com | Target Class | Junior | Prerequisite Subjects | Organic Chemistry 1,Organic Chemistry 2 |
| Class Hour | Tue, Thu 10:30 – 11:45 | Classroom Number | 302-809 |
| Assistant | Sung-Kon Kim,+82 2 880 6989 | Office Hour | Professor : Mon, Wed 16:00~18:00 (302-730)Assistant : Mon, Wed 16:00~18:00 (302-714) |
| Contents ofthe Subject | This class will give a lecture about two major polymerization methods, Step polymerization and Chain polymerization. First, types of step polymerization, types and properties of polymers made from step polymerization and apparatus used for polymerization will be explained. Next, the conventional methods and new hybrid methods of chain polymerization, for example, radical polymerization, ionic polymerization, coordination polymerization and so on, will be covered. Ring opening polymerization and emulsion polymerization will be introduced also. Natural polymers (Cellulose, Proteins Etc.) will be explained briefly by giving types of polymers, synthetic methods and reforming methods. In the latter part of the class, kinetics of step and chain polymerizations will be introduced. |
| Objectives | 1. Understanding chemical properties of polymeric materials
2. Understanding fundamental polymerization reactions
 |
| Lecture Process | 1. Power point hand-outs will be uploaded to class webpage before lectures.
2. Class will be in progress with lectures, exams, quiz and homework.
 |
| Textbook and References | Harry R. Allcock and Fredrich W. Lampe, *Contemporary Polymer Chemistry*, Prentice-Hall, London, Third Edition (2003). |
| 1. George Odian, Principles of Polymerization, *4th ed.*, Wiley-InterScience, 2004.
2. A. Ravve, Principles of Polymer Chemistry, Pleum Press, 1995.
 |
| Evaluation | Mid term (100 points), Final Exam (100 points), Homework + Quiz (40 points)Attendance : Penalty (number of absences X 3 points demark) |

Contents of Design Credit : Problems that make students design methods to synthesize polymers based on elemental knowledge of polymer chemistry will be included in homework, quiz, exams.