화공유기화학

Organic Chemistry for Chemical Engineering

Department of Chemical Engineering, Sungkyunkwan University

Instructor: Dr. Seokhyun Choung **Semester:** Spring 2028 **Credits:** 3

Course Description. This course provides a systematic introduction to organic chemistry with emphasis on reaction mechanisms and their applications in chemical engineering. Students learn to predict reactivity from molecular structure, understand stereochemistry and selectivity, and connect fundamental organic transformations to industrial chemical processes including polymer synthesis, petrochemistry, and catalytic methods relevant to energy and materials applications.

16-Week Schedule

Week	Topic	Week	Topic
1	Structure, Bonding, and Molecular Properties	9	Alcohols, Ethers, and Epoxides
2	Alkanes, Conformations, and Stereochemistry	10	Carbonyl Chemistry: Aldehydes and Ketones
3	Organic Reaction Mechanisms and Energy Diagrams	11	Carboxylic Acids and Their Derivatives
4	Nucleophilic Substitution and Elimination Reactions	12	Enols, Enolates, and Condensation Reactions
5	Alkenes: Synthesis, Reactions, and Stereoselectivity	13	Amines, Heterocycles, and Nitrogen-Containing Compounds
6	Alkynes and Conjugated Systems	14	Polymer Chemistry and Industrial Organic Processes
7	Aromatic Compounds and Electrophilic Aromatic Substitution	15	Spectroscopic Identification of Organic Compounds
8	**Midterm Examination**	16	**Final Examination**

Assessment

Component	Weight
Final Examination	30%
Midterm Examination	25%
Problem Sets	25%
Quizzes	10%
Class Participation	10%

References

[1] McMurry. *Organic Chemistry*, 9th ed. Cengage, 2016.

[2] Clayden, Greeves, Warren. *Organic Chemistry*, 2nd ed. Oxford, 2012.