

Special Topics in Organic Chemistry

Course Name	Course type (credit/hours)	Elective course(3/3)	Course code	G076
	Target students Division/major/grade	Chemistry/Senior	Opening semester	2020 1ST SEMESTER
	Class time and classroom	Wed D(WH507)Fri D(WH507)	English Grade	A(100%English)
Reference to this course	Prerequisite courses	유기화학1, 유기화학2, 중급유기화학		
	Related basic courses			
	Recommended concurrent courses			
	Related advanced courses	유기금속화학		

Instructor	Name (title/division)		In-Hwan Lee(Assistant Professor, Chemistry)		
	Office Room Number	원천관215-1	Office phone Number	2690	e-mail
	Office hours	email 예약		Homepage address	https://in-hwan.wixsite.com/in-hwan
Teaching Assistant	Name (title/division)				
	Office Room Number		Office phone Number		e-mail

1. Introduction

Organic polymers are marvelous materials. They are normally found in our daily lives as commodities, but their specialty can also make them as highly valuable materials in optoelectronics and biomedical fields. To become a wonderful polymer chemist, in this class, we will learn about basic principles of polymers, and their properties with proper analytic techniques. The concepts for polymer synthesis will be heavily discussed in the class as well.

2. Course Objectives

1. 고분자의 종류와 용도에 대해 이해한다.
2. 고분자 화학에 대한 기본 개념들을 이해한다.
3. 고분자의 구조와 성질의 관계를 이해한다.
4. 고분자의 합성 방법에 대해 이해한다.

3. Class types and activities

Following textbook contents + Homeworks + Quizzes

4. Teaching Method

- | | |
|--|---|
| <input checked="" type="checkbox"/> lecture | <input type="checkbox"/> discussion and debate |
| <input type="checkbox"/> team project(presentation and case studies) | <input type="checkbox"/> experiments(role-playing,etc) |
| <input type="checkbox"/> designing and production | <input type="checkbox"/> on-site learning(on-site training) |
| <input type="checkbox"/> others | |

5. Support Systems in Use

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> AjouBb | <input type="checkbox"/> automatic recording system | <input type="checkbox"/> web-based assignment |
| <input type="checkbox"/> cyber lecture | <input type="checkbox"/> online content | |
| <input type="checkbox"/> class behavior analyzing system | <input type="checkbox"/> others | |

6. Teaching Tools

- | | | |
|--|---|---|
| <input type="checkbox"/> PBL(Problem Based Learning) | <input type="checkbox"/> CBL(Case Based Learning) | <input type="checkbox"/> TBL(Team Based Learning) |
| <input type="checkbox"/> UR(Undergraduate Research) | <input type="checkbox"/> FL(Flipped Learning) | <input type="checkbox"/> DSAL(Data Science Active Learning) |
| <input type="checkbox"/> others | | |

7. Knowledge and ability required for taking this course

고분자의 구조 및 이의 디자인, 구조의 합성, 구조와 성질의 관계에 대해 분자 수준에서 다루기 때문에, 유기화학에 대한 이해가 반드시 필요하다. 유기화학1, 유기화학2, 중급유기화학의 내용을 이해하고 숙지할 필요성이 있으며, 유기금속화학을 수강하는 것이 도움이 된다.

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance			
midterm exam	1	30%	
final exam	1	40%	
quiz		15%	
presentation			
discussion			
homework		15%	
etc			
study hours			

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	Polymer Chemistry (An Introduction, International Third Edition)	Malcolm P. Stevens	Oxford University	

10. Class system and Class shedule

다음 순서에 따라 배우게 된다.	
1. 고분자 화학에 대한 기본 개념	
2. 고분자의 구조와 성질의 관계	
3. 고분자의 합성 방법	

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Introduction		In-Hwan Lee	강의		
2	Basic principles		In-Hwan Lee	강의		
3	Molecular weight		In-Hwan Lee	강의		
4	Properties		In-Hwan Lee	강의		
5	Step-growth polymerization		In-Hwan Lee	강의		

< Class Schedule >

* language : K-korean, E-English

Week s	Topics	lang uage	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
6	Chain-growth polymerization		In-Hwan Lee	강의		
7	Ionic polymerization		In-Hwan Lee	강의		
8	Midterm exam		In-Hwan Lee	시험		
9	Radical polymerization		In-Hwan Lee	강의		
10	Coordination polymerization		In-Hwan Lee	강의		
11	Ring-opening metathesis polymerization		In-Hwan Lee	강의		
12	Ring-opening polymerization		In-Hwan Lee	강의		
13	Block copolymers		In-Hwan Lee	강의		
14	3D architectures		In-Hwan Lee	강의		
15	Conjugated polymers		In-Hwan Lee	강의		
16	Final exam		In-Hwan Lee	시험		

11. Other items of notification