Syllabus [2025Year 1 Term]

Course Information

Course Title	Polymer Design 1	Credits	2
Course Code	441230-2	Required/Elective (For Undergraduate Courses)	Mandatory Major
Department or Major	Polymer Science and Engineering	Language	English
Methods of Teaching		Lecture Room	수11,12,13,14(3공109)
Time Allotment	Lecture(0) Experiments(0) Trainging & Practice(0) Performance(0) Designing & Planning(2)	Cyber Lectures	
Credit Allotment	Lecture(0) Experiments(0) Trainging & Practice(0) Performance(0) Designing & Planning(2)		
Pre-requisite	Introductory Polymer Laboratory, Introductory Polymer Laboratory, Introductory Polymer Laboratory, Creative Engineering Design, Creative Engineering Design		
Course Type	offline		

Lecturer

Lecturer	Name	Oh, Jun Kyun	Rank	Associate Professor	Final Academic Degree	공학박사
	Department & college	School of Polymer Science and Engineering		Office	College of Engineering - Building 3 412	
	Office Phone Number	031-8005-3576		e-mail	junkyunoh@dankook.ac.kr	
	Field of Interest					

Course Summary

Course Description	This course covers all experimental design including topic selection, document survey, idea generation, experiment, experiment design, synthesis, measurement, analysis, and evaluation. Each student will join the team project as a group and will conduct indepent team project during the semester. Each group will give a presentation at the end of the semester.
Description Related Courses	Each team will continue their capstone design carried out during the first semester.
Course Goals	The purpose of this course is to give an opportunity to experience all experiments from the goal setting to evaluatin of the whole experiment. Each student will have the ability to desi

	gn experiment and teamwork from this course. This course cover all aspects of polymer related area.
Projected Results	Each student can learn teamwork and experimental design from basics to application.
Percentage of the original language classes(%)	

Syllabus

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
1	Introduction			
2	Introduction			
3	Objective			
4	Objective			
5	Experiments			
6	Experiments			
7	Experiments			
8	Experiments			
9	Planning			
10	Planning			
11	Planning			
12	Fabrication			
13	Fabrication			
14	Presentation			
15	Presentation			

Methods of Grading

sequence	Description	Percentage	Details
1	Mid-tem Exam	0%	
2	Final-exam	0%	
3	Pop Quizzes	0%	
4	Assignments	20%	
5	Reports	30%	
6	Presentations & Discussions	30%	
7	Attendance	20%	
All		100%	

sequence	Description	Percentage	Details
8		0%	
9	Others	0%	
All		100%	

Core of Value

핵심가치	전공역량	역량정의	역량구분	값(%)
혁신 (Discovery)	창의적문제해결 (Creative problem-solving)	주어진 상황과 문제를 창의적으로 해결할 수 있는 능력	주역량	0%
혁신 (Discovery)	도전 (Challenging)	전공 지식을 새로운 분야와 융합하고 아우를 수 있는 능력		0%
혁신 (Discovery)	지식융합 (Knowledge convergence)	새로운 분야를 개척하거나 도전적으로 임할 수 있는 능력		0%
헌신 (Dedication)	세계시민 (Universal value)	세계 공동체 구성원으로 전공자로서 국제적 이슈에 대응할 수 있는 능력		0%
헌신 (Dedication)	상호협력 (Cooperation)	공동의 목적 달성을 위해 타인과 상호협력을 할 수 있는 능력	부역량	0%
헌신 (Dedication)	공동체 (Sense of community)	공동체의 구성원으로서 필요한 태도와 윤리의식을 가질 수 있는 능력		0%
능동 (self- Determination)	자기주도 (Self-Managing)	주어진 상황과 문제를 주도적이고 능동적으로 해결할 수 있는 능력		0%
능동 (self- Determination)	지식활용 (Knowledge application)	주어진 상황과 문제에 대해 논리적으로 파악하고 분석할 수 있는 능력	부역량	0%
능동 (self- Determination)	논리적사고 (Logical thinking)	전공관련 지식을 필요에 따라 다양하게 적용하고 활용할 수 있는 능력		0%
능동 (self- Determination)	의사소통 (Articulation)	대화를 통해 다양한 의견을 조율하고 합의를 이끌어 낼 수 있는 능력		0%

Textbook(s) & References

Description	Title	Author	Publisher
Required Textbook	Soft Condensed Matter	Richard A. L. Jones	Oxford University Press

Memo

English class

Course Goal Input & Methods of Teaching and Grading

sequence	Course Goals	Methods of Teaching	Methods of Grading
1	To design the experiment and carry out the experiment based on understanding of basic principle.	Teaching with discussions	Presentations and reports
2	To play a role of the member of the team in the team project and fulfill own responsibility.	Teaching with discussions	Presentations and reports
3	To solve the technical problems of polymer related topics.	Teaching with discussions	Presentations and reports
4	To design the chemical and physical properties of polymer materials.	Teaching with discussions	Presentations and reports
5	To explain and present experimental results logically.	Teaching with discussions	Presentations and reports

Relationship between the Goal & Learnability of the Program

Goal	Achievement1	Achievement2	Achievement3	Achievement4	Achievement5	Achievement6	Achievement7	Achievement8	Achievement9	Achievement10
Goal1	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐
Goal2	☑	☑	☑	☐	☐	☑	☐	☐	☐	☐
Goal3	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐
Goal4	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐
Goal5	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐

Learning Achievement

검색결과는 [10 건] 입니다.

sequence	Learning Achievement
1	an ability to apply knowledge of mathematics, basic science, engineering, and information technology to the solution of engineering problems
2	an ability to analyze data and experimentally verify given facts or hypotheses
3	an ability to define and formulate engineering problems

sequence	Learning Achievement
4	an ability to apply state-of-the-art information, research-based knowledge, and appropriate tools to the solution of engineering problems
5	an ability to design systems, components and processes within realistic constraints
6	an ability to contribute to project team in the solution of engineering problems
7	an ability to communicate effectively in diverse situations
8	an ability to understand the impact of engineering solutions in the context of health, safety, economics, environment and sustainability
9	an ability to understand professional ethics and social responsibilities as an engineer
10	a recognition of the need for, and an ability to engage in life-long learning in the context of technological change

Check points about Designing & Planning

Examples of Designing & Planning	Topics include polymer-based materials	
Assignments	Presentation and final report	
Factors to Consider for Designing & Planning		
	☑ Setting of the Design objective	
	☐ Synthesis	
	☑ Analysis	
	☑ Designing & Planning	
	☑ Production	
	☐ Test	
	☑ Evaluation of the Output	
	☐ The Others	
Limitations for designing & Planning	Needs to consider economic values	
	☑ Cost	
	☑ Environment	
	☐ Society	

	☐ Ethics	
	☑ Aesthetics	
	☑ Health & Safety	
	☑ Productivity & Durability	
	☐ Industry Standard	
	☐ The Others	