COURSE PORTFOLIO

POLYMER CHEMISTRY

Academic Year – 2020/2021

PLO 1	Able to apply religious attitudes, demonstrate an internalizing academic and human values
PLO 2	Able to demonstrate excellence, honesty, competitiveness, leadership, and possessing social sensitivity to society and the environment
PLO 3	Able to demonstrate performance independently or as part of a team professionally and measurably by applying interdisciplinary knowledge and skill, critical, and creative thinking in the context of being a lifelong learner
PLO 4	Able to communicate ideas, scientific research results clearly in oral or written format to scientists and the wider community
PLO 5	Able to Integrating mathematical and basic concepts of science to solve problems in chemistry
PLO 6	Able to master the knowledge of chemistry (organic chemistry, inorganic, analytical, physical, and biochemical
PLO 7	Able to understand concepts and applications in the field of biosciences and materials chemistry to solve problems in the field of chemistry and its applications
PLO 8	Able to understand operational knowledge about functions, how to operate chemical instruments, and analysis of data and information from these instruments
PLO 9	Able to understand work safety, ethics, environmental issues, and policies related to the chemical field
PLO 10	Able to carry out laboratory and research work by paying attention to the safety and security of laboratory work and applying responsible scientific behavior.
PLO 11	Able to obtain, process, interpret, and evaluate scientific data and produce conclusions by considering scientific and technological aspects and scientific ethics.
PLO 12	Able to solve science and technology problems in chemistry independently based on relevant scientific methodologies and present it as a scientific work.

Course Outcome (CO):

CO 1.	Analyzing polymers in everyday life
CO 2.	Classification of polymer compounds, as well as the history of polymer development
CO 3.	Analyzing the addition polymerization reaction
CO 4.	Analyzing condensation polymerization reactions
CO 5.	Explaining Ionic Polymerization
CO 6.	Explain the various types of copolymerization reactions
CO 7.	Explain the Polymerization System
CO 8.	Explaining Additives to Polymers
CO 9.	Analyzing Polymer Properties
CO 10.	Analyzing polymer solutions

Lecturers :

1. Yusmaniar

Mapping Course Learning Outcome (CO) and Program Learning Outcome (PLO)

Program Learning Outcome / Course Outcome	PLO 3. Able to demonstrate performance independently or as part of a team professionally and measurably by applying interdisciplinary knowledge and skill, critical, and creative thinking in the context of being a lifelong learner	PLO 6. Able to master the knowledge of chemistry (organic chemistry, inorganic, analytical, physical, and biochemical.
CO 1. Analyzing polymers in everyday life	● (Assignment)	
CO 2. Classification of polymer compounds, as well as the history of polymer development	● (Assignment)	
CO 3. Analyzing the addition polymerization reaction		● (Assignment, Midterm Exam)
CO 4. Analyzing condensation polymerization reactions		● (Assignment, Midterm Exam)
CO 5. Explaining Ionic Polymerization		● (Assignment, Midterm Exam)
CO 6. Explain the various types of copolymerization reactions		● (Final Exam)
CO 7. Explain the Polymerization System		● (Final Exam)
CO 8. Explaining Additives to Polymers		● (Final Exam)
CO 9. Analyzing Polymer Properties		● (Assigment, Final Exam)
CO 10. Analyzing polymer solutions		● (Final Exam)

Forms of Assessment

Group/Individuals Assignment = 20%
Midterm examination = 40%
Final examination = 40%
Total = 100%

	PLO 3 Critical Thinking	PLO 6 Problem Solving
Group/Individuals Assignment	50%	50%
Midterm examination	30%	70%
Final examination	30%	70%

Outcomes Assessment

No	Name	Group/Individuals Assignment	Midterm Exam	Final Exam	Final Score and Grade	
1	A	76	78	74	76	B+
2	B	75	76	74	75	B
3	C	76,5	78	75	76,5	B+
4	D	80	86	80	82,4	A-
5	E	75	78	72	75	B
6	F	77	80	74	77	B+
7	G	76	80	72	76	B+

Calculation of Weight per PLO

Form of Assessment	Weight	Weight per PLO		Total	Total Weight	
		PLO 3	PLO 6		PLO 3	PLO 6
Group/Individuals Assignment	0,20	0,50	0,50	1,00	0,10	0,10
Midterm examination	0,40	0,30	0,70	1,00	0,12	0,28
Final examination	0,40	0,30	0,70	1,00	0,12	0,28
Total	1,00	1,10	1,90	0,00	0,34	0,66

Example of PLO Calculation

No	Name	Group/Individuals Assignment	Midterm Exam	Final Exam	Final Score and Grade	
1	A	76	78	74	76	B+

No	Name	PLO 3	PLO 6
1	A	=((76*0,1)+(78*0,12)+(74*0,12)/0,34 =76	(76*0,1)+(78*0,28)+(74*0,28)/0,66 =76

PLO Assessment Rubric

PLO	Performance Criteria	Excellent (E)	Good (G)	Satisfy (S)	Fail (F)
3	Able to demonstrate performance independently or as part of a team professionally and measurably by applying interdisciplinary knowledge and skill, critical, and creative	Students are able to demonstrate performance independently or as part of a team professionally and measurably by applying interdisciplinary	Students are able to demonstrate performance independently or as part of a team professionally and measurably by	Students are able to demonstrate performance independently or as part of a team professionally and measurably by	Students are able to demonstrate performance independently or as part of a team professionally and

	thinking in the context of being a lifelong learner	knowledge and skill, critical, and creative thinking in the context of being a lifelong learner with a score of at least 80.	applying interdisciplinary knowledge and skill, critical, and creative thinking in the context of being a lifelong learner with a score of at least 70 and less than 80.	applying interdisciplinary knowledge and skill, critical, and creative thinking in the context of being a lifelong learner with a score of at least 60 and less than 70.	measurably by applying interdisciplinary knowledge and skill, critical, and creative thinking in the context of being a lifelong learner with a score of less than 60.
6	Able to master the knowledge of chemistry (organic chemistry, inorganic, analytical, physical, and biochemical	Students are able to master the knowledge of chemistry (organic chemistry, inorganic, analytical, physical, and biochemical with a score of at least 80.	Students are able to master the knowledge of chemistry (organic chemistry, inorganic, analytical, physical, and biochemical with a score of at least 70 and less than 80.	Students are able to master the knowledge of chemistry (organic chemistry, inorganic, analytical, physical, and biochemical with a score of at least 60 and less than 70.	Students are able to master the knowledge of chemistry (organic chemistry, inorganic, analytical, physical, and biochemical with a score of less than 60.

Example of PLO Predicates for Each Student

No	Nama	PLO 3	PLO 6
1	A	76.00 Good	76.00 Good

PLO Predicates for All Students

No	Name	Assign-ment	Midterm Exam	Final Exam	Final Score	Grade		PLO 3	PLO 6	PLO 3	PLO 6
1	A	76	78	74	76	B+		76,00	76,00	G	G
2	B	75	76	74	75	B		75,00	75,00	G	G
3	C	76,5	78	75	76,5	B+		76,50	76,50	G	G
4	D	80	86	80	82,4	A-		82,12	82,55	E	E
5	E	75	78	72	75	B		75,00	75,00	G	G
6	F	77	80	74	77	B+		77,00	77,00	G	G
7	G	76	80	72	76	B+		76,00	76,00	G	G
8	H	76,5	78	75	76,5	B+		76,50	76,50	G	G
9	I	75	70	80	75	B		75,00	75,00	G	G
10	J	75,5	77	74	75,5	B+		75,50	75,50	G	G
11	K	77	80	74	77	B+		77,00	77,00	G	G
12	L	74	76	72	74	B		74,00	74,00	G	G
13	M	74,5	75	74	74,5	B		74,50	74,50	G	G
14	N	77	80	74	77	B+		77,00	77,00	G	G
15	O	76,5	78	75	76,5	B+		76,50	76,50	G	G
16	P	80,5	86	75	80,5	A-		80,50	80,50	E	E
17	Q	75,5	79	72	75,5	B+		75,50	75,50	G	G

Distribution of PLO Achievements

		PLO 3	PLO 6
%	E	11,76%	11,76%

%	G	88,2%	88,24%
%	S	0%	0%
%	F	0%	0%
		100%	100%

Achievement Percentage of PLO