

# COURSE PORTFOLIO

## Organic 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.	Explain the peculiarities of the carbon atom structure as the main element in organic chemistry
CO 2.	Classify organic compounds based on functional groups
CO 3.	Understand the structure of aliphatic and cyclic compounds
CO 4.	Understand about molecular chiral, dan explain the name the absolute configuration of chiral molecules

CO 5.	Explain the structures and properties of macromolecules
CO 6.	Understand racemization of chiral compounds and how to separate them

**Lecturers:**

1. Dr. Fera Kurniadewi, M.Si.
2. Dr. Zulhipri, M.Si.
3. Dr. Hanhan Dainhar, M.Si.

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

<b>Program Learning Outcome</b> <b>Course Outcome</b>	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. Explain the peculiarities of the structure of the carbon atom as the main element in organic chemistry	• (Assignment)	
CO 2. Classify organic compounds based on functional groups	• (Assignment)	
CO 3. Understand the structure of aliphatic and cyclic compounds		• (Assignment, Midterm Exam)
CO 4. Understand about molecular chiral, dan explain the name the absolute configuration of chiral molecules		• (Assignment, Midterm Exam)
CO 5. Explain the structures and properties of macromolecules		• (Assignment, Final Exam)
CO 6. Understand racemization of chiral compounds and how to separate them		• (Assignment, Final Exam)

**Forms of Assessment**

Assignment	= 20%
Midterm examination	= 40%
Final examination	= 40%
Total	= 100%

	<b>PLO 3 Critical Thinking</b>	<b>PLO 6 Problem Solving</b>
Assignment	30%	70%
Midterm examination	15%	85%
Final examination	15%	85%

**Outcomes Assessment**

No	Name	Assignment	Midterm Exam	Final Exam	Final Grade and Score	
1	A	90	64	80	75.6	B
2	B	90	80	59.5	73.8	B
3	C	90	34	65	57.6	B-
4	D	90	61	55	64.4	B-
5	E	90	65	95	82	A-
6	F	90	62	80.5	75	B
7	G	90	77	94.5	86.6	A
8	H	90	57	68	68	B-
9	I	90	83	85	85.2	A-
10	J	90	56	60	64.4	B-
11	K	90	69	92.5	82.6	A-
12	L	90	12	48	42	B-

13	M	90	68	97.5	84.2	A-
14	N	90	48	78	68.4	B-
15	O	90	44	69.5	63.4	B-
16	P	90	54	34.5	53.4	B-
17	Q	90	54	82.5	72.6	B
18	R	90	34	58	54.8	B-
19	S	90	82	92.5	87.8	A
20	T	90	80	80.5	82.2	A-
21	U	90	49	77	68.4	B-
22	V	90	44	82.5	68.6	B-
23	W	90	75	74.5	77.8	B+
24	X	90	64	84.5	77.4	B+
25	Y	90	63	82.5	76.2	B+
26	Z	90	70	62.5	71	B
27	AA	90	51	70	66.4	B-
28	AB	90	51	75	68.4	B-
29	AC	90	47	65	62.8	B-
30	AD	90	30	48.5	49.4	B-
31	AF	90	70	89	81.6	A-
32	AG	90	82	87.5	85.8	A-
33	AH	90	52	60.5	63	B-
34	AI	90	83	97	90	A
35	AJ	90	60	56.5	64.6	B-

### Calculation of Weight per PLO

Form of Assessment	Weight	Weight per PLO	Total	Total Weight
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		PLO 3	PLO 6		PLO 3	PLO 6
Assignment	0.20	0.30	0.70	1.00	0.06	0.14
Midterm Exam	0.40	0.15	0.85	1.00	0.06	0.34
Final Exam	0.40	0.15	0.85	1.00	0.06	0.34
Total	1.00	0.60	2.40	0.00	1.18	0.82

### Example of PLO Calculation

No	Name	Assignment	Midterm Exam	Final Exam	Final Score and Grade	
1	A	90	64	80	75.6	B

No	Name	PLO 3	PLO 6
1	A	$(90 \times 0.30) + (64 \times 0.15) + (80 \times 0.15) / 0.60 = 78.00$	$(90 \times 0.70) + (64 \times 0.85) + (80 \times 0.65) / 2.40 = 75.70$

### PLO Assessment Rubric

PLO	Performance Criteria	Excellent (E)	Good (G)	Satisfy (S)	Fail (F)
3	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	Students are 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	Students are 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	Students are 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	Students are 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 with a score of at least 80.	a lifelong learner with a score of at least 70 and less than 80.	a lifelong learner with a score of at least 60 and less than 70.	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	Name	PLO 3	PLO 6
1	A	78.00 Good	75.70 Good

### PLO Predicates for All Students

No	Name	Assignment	Midterm Exam	Final Exam	Final Grade and Score		PLO 3	PLO 6	PLO 3	PLO 6
1	A	90	64	80	75.6	B	78.00	75.07	G	G
2	B	90	80	59.5	73.8	B	76.50	73.21	G	G
3	C	90	34	65	57.6	B-	63.00	56.41	S	F
4	D	90	61	55	64.4	B-	68.67	63.46	S	S
5	E	90	65	95	82	A-	83.33	81.71	E	E
6	F	90	62	80.5	75	B	77.50	74.45	G	G
7	G	90	77	94.5	86.6	A	87.17	86.48	E	E
8	H	90	57	68	68	B-	71.67	67.20	G	S

9	I	90	83	85	85.2	A-	86.00	85.02	E	E
10	J	90	56	60	64.4	B-	68.67	63.46	S	S
11	K	90	69	92.5	82.6	A-	83.83	82.33	E	E
12	L	90	12	48	42	B-	50.00	40.24	F	F
13	M	90	68	97.5	84.2	A-	85.17	83.99	E	E
14	N	90	48	78	68.4	B-	72.00	67.61	G	S
15	O	90	44	69.5	63.4	B-	67.83	62.43	S	S
16	P	90	54	34.5	53.4	B-	59.50	52.06	F	F
17	Q	90	54	82.5	72.6	B	75.50	71.96	G	G
18	R	90	34	58	54.8	B-	60.67	53.51	S	F
19	S	90	82	92.5	87.8	A	88.17	87.72	E	E
20	T	90	80	80.5	82.2	A-	83.50	81.91	E	E
21	U	90	49	77	68.4	B-	72.00	67.61	G	S
22	V	90	44	82.5	68.6	B-	72.17	67.82	G	S
23	W	90	75	74.5	77.8	B+	79.83	77.35	G	G
24	X	90	64	84.5	77.4	B+	79.50	76.94	G	G
25	Y	90	63	82.5	76.2	B+	78.50	75.70	G	G
26	Z	90	70	62.5	71	B	74.17	70.30	G	G
27	AA	90	51	70	66.4	B-	70.33	65.54	G	S
28	AB	90	51	75	68.4	B-	72.00	67.61	G	S
29	AC	90	47	65	62.8	B-	67.33	61.80	S	S
30	AD	90	30	48.5	49.4	B-	56.17	47.91	F	F
31	AF	90	70	89	81.6	A-	83.00	81.29	E	E
32	AG	90	82	87.5	85.8	A-	86.50	85.65	E	E
33	AH	90	52	60.5	63	B-	67.50	62.01	S	S
34	AI	90	83	97	90	A	90.00	90.00	E	E
35	AJ	90	60	56.5	64.6	B-	68.83	63.67	S	S

### Distribution of PLO Achievements

Grade	PLO 3	PLO 6
E	28.5714286	28.57142857
G	40	22.85714286
S	22.8571429	34.28571429
F	8.57142857	14.28571429

### Achievement Percentage of PLO





