

# COURSE PORTFOLIO

## Determination of the structure of natural compounds

### 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.	Understand the outline of the course; and study contracts
CO 2.	Understand the concepts of energy, matter, the universe, and the solar system
CO 3.	Understand the concept of ecology and its branches
CO 4.	Understand the concepts and rules of ecosystems and their types
CO 5.	Understand the basic concepts and developments of environmental education

CO 6.	Understand the concept of population in Indonesia
CO 7.	Understand the concept of Green Chemistry
CO 8.	Understand the concept of the Biogeochemical Cycle
CO 9.	Understand the efforts and strategies for maintaining environmental quality
CO 10.	Able to make field observations and communicate through publications

**Lecturers:**

1. Dr. Agung Purwanto, M.Si.

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

<b>Course Outcome</b> \ <b>Program Learning 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 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 11. Able to obtain, process, interpret, and evaluate scientific data and produce conclusions by considering scientific and technological aspects and scientific ethics
CO 1. Understand the outline of the course; and study contracts	• (Assignment)		
CO 2. Understand the concepts of energy, matter, the universe, and the solar system	• (Assignment)		
CO 3. Understand the concept of ecology and its branches	• (Assignment)		
CO 4. Understand the concepts and rules of ecosystems and their types		• (Assignment)	
CO 5. Understand the basic concepts and developments of environmental education	• (Assignment)		

CO 6. Understand the concept of population in Indonesia			• (Exam)
CO 7. Understand the concept of Green Chemistry		• (Assignment)	
CO 8. Understand the concept of the Biogeochemical Cycle			
CO 9. Understand the efforts and strategies for maintaining environmental quality		• (Assignment)	
CO 10. Able to make field observations and communicate through publications			• (Exam)

### Forms of Assessment

Group/Individuals Assignment	= 60%
Examination	= 40%
Total	= 100%

	PLO 3	PLO 8	PLO 11
Group/Individuals Assignment	10%	80%	10%
Midterm examination	15%	70%	15%
Final examination	15%	70%	15%

### Outcomes Assessment

No	Name	Examination	Assignment	Final Grade and Score	
1	A	88	87	87,40	A

2	B	86	90	88,40	A
3	C	86	95	91,40	A
4	D	88	87	87,40	A
5	E	90	86	87,60	A
6	F	84	85	84,60	A-
7	G	87	87	87,00	A
8	H	86	79	81,80	A-
9	I	83	87	85,40	A-
10	J	87	88	87,60	A
11	K	88	90	89,20	A
12	L	88	87	87,40	A
13	M	89	90	89,60	A
14	N	89	89	89,00	A

### Calculation of Weight per PLO

Form of Assessment	Weight	Weight per PLO			Total	Total Weight		
		PLO 3	PLO 7	PLO 11		PLO 3	PLO 7	PLO 11
Assignment	0,40	0,10	0,80	0,10	1,00	0,04	0,32	0,04
Final Exam	0,60	0,15	0,70	0,15	1,00	0,09	0,42	0,09
Total	1,00	0,25	1,50	0,25	0,00	0,13	0,74	0,13

### Example of PLO Calculation

No	Name	Examination	Assignment	Final Score and Grade
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1	A	88	87	87,40	A
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No	Name	PLO 3	PLO 7	PLO 11
1	A	$((88*0.04) + (87*0.09)) / 0.13 = 87.31$	$((88*0.32) + (87*0.42)) / 0.74 = 87.43$	$((88*0.04) + (87*0.09)) / 0.13 = 87.31$

### 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 a lifelong learner, at with a score of at least 80.	Students are able 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 70 and less than 80..	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 70 and less than 80.	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 less than 60.
7	Understand concepts and applications in the field of biosciences and materials chemistry to solve problems in the field of chemistry and its applications	Students are 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 of at with a score of at least 80.	Students are 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 of at least 70 and less than 80.	Students are 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 of at least 70 and less than 80.	Students are 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 with a score of less than 60.
11	Obtain, process, interpret, and evaluate scientific data and produce conclusions by considering scientific and technological aspects and scientific ethics	Students are able to understand operational obtain, process, interpret, and evaluate scientific data and produce conclusions by considering scientific and technological	Students are able to obtain, process, interpret, and evaluate scientific data and produce conclusions by considering scientific and technological aspects and scientific ethics	Students are able to obtain, process, interpret, and evaluate scientific data and produce conclusions by considering scientific and technological aspects and scientific ethics	Students are able obtain, process, interpret, and evaluate scientific data and produce conclusions by considering scientific and technological

		aspects and scientific ethics at with a score of at least 80.	with a score of at least 70 and less than 80.	with a score of at least 70 and less than 80.	aspects and scientific ethics with a score of less than 60.
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### Example of PLO Predicates for Each Student

No	Name	PLO 3	PLO 7	PLO 11
1	A	87,31 Excellent	87,43 Excellent	87,31 Excellent

### PLO Predicates for All Students

No.	Name	Examination	Assignment	Final Grade and Score		PLO 3	PLO 7	PLO 11	PLO 3	PLO 7	PLO 11
1	A	88	87	87,40	A	87,31	87,43	87,31	E	E	E
2	B	86	90	88,40	A	88,77	88,27	88,77	E	E	E
3	C	86	95	91,40	A	92,23	91,11	92,23	E	E	E
4	D	88	87	87,40	A	87,31	87,43	87,31	E	E	E
5	E	90	86	87,60	A	87,23	87,73	87,23	E	E	E
6	F	84	85	84,60	A-	84,69	84,57	84,69	E	E	E
7	G	87	87	87,00	A	87,00	87,00	87,00	E	E	E
8	H	86	79	81,80	A-	81,15	82,03	81,15	E	E	E
9	I	83	87	85,40	A-	85,77	85,27	85,77	E	E	E
10	J	87	88	87,60	A	87,69	87,57	87,69	E	E	E
11	K	88	90	89,20	A	89,38	89,14	89,38	E	E	E
12	L	88	87	87,40	A	87,31	87,43	87,31	E	E	E
13	M	89	90	89,60	A	89,69	89,57	89,69	E	E	E
14	N	89	89	89,00	A	89,00	89,00	89,00	E	E	E

**Distribution of PLO Achievements**

		<b>PLO 6</b>	<b>PLO 7</b>	<b>PLO 11</b>
%	E	100%	100%	100%
%	G	0%	0%	0%
%	S	0%	0%	0%
%	F	0%	0%	0%
		100%	100%	100%

**Achievement Percentage of PLO**





