



Universitas Negeri Surabaya
Faculty of Mathematics and Natural Sciences
Master of Science Education Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date																																										
School Chemistry	8410102146		T=2 P=0 ECTS=4.48	1	July 18, 2024																																										
AUTHORIZATION	SP Developer		Course Cluster Coordinator		Study Program Coordinator																																										
		Dr. Eko Hariyono, S.Pd., M.Pd.																																										
Learning model	Case Studies																																														
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																														
	Program Objectives (PO)																																														
	PLO-PO Matrix																																														
		P.O																																													
PO Matrix at the end of each learning stage (Sub-PO)	PO Matrix at the end of each learning stage (Sub-PO)																																														
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="width: 5%;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 2%;">1</td> <td style="width: 2%;">2</td> <td style="width: 2%;">3</td> <td style="width: 2%;">4</td> <td style="width: 2%;">5</td> <td style="width: 2%;">6</td> <td style="width: 2%;">7</td> <td style="width: 2%;">8</td> <td style="width: 2%;">9</td> <td style="width: 2%;">10</td> <td style="width: 2%;">11</td> <td style="width: 2%;">12</td> <td style="width: 2%;">13</td> <td style="width: 2%;">14</td> <td style="width: 2%;">15</td> <td style="width: 2%;">16</td> </tr> </table>														P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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Short Course Description	Application of various learning resources and learning media to support mastery of high school-middle school chemistry concepts, including basic laws and gas laws, development of atomic theory to wave mechanics, periodic properties of elements, chemical bonds, reaction rates, chemical equilibrium, electrochemical cells-extrolysis, acids and bases - indicators, and basic organic chemistry.																																														
References	Main :																																														
	1. Garnett PJ., Anderson JD., Liddlelow WR., Lowe RK., Manno IJ. 1996. Foundation Chemistry . South Melbourne: Addison Wesley Longman Australia Pty. Limited. 2. Chang R. 2003 (translate 2005). Kimia Dasar . Jakarta: Penerbit Erlangga 3. Philips J., Stozak V., Wistrom C. 1997. Chemistry Concept and Application . USA: Glencoe/Mc Graw Hill. 4. Buku Kimia SMA, SMP																																														
	Supporters:																																														
Supporting lecturer	Prof. Dr. Tukiran, M.Si. Dr. Sukarmin, M.Pd. Dr. Mitarlis, S.Pd., M.Si.																																														
Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)																																								
		Indicator	Criteria & Form	Offline (offline)	Online (online)																																										
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)																																								

1	Understand the meaning of misconceptions and misconceptions	1. Explain the meaning of misconceptions 2. Explain the meaning of misconceptions 3. Give examples of misconceptions and misconceptions	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Discussion 2 X 50			0%
2	Determine the existence of misconceptions in high school and middle school chemistry books	1. Show the occurrence of misconceptions in chemistry books and the reasons	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Observation, Discussion 2 X 50			0%
3	Determining chemistry misconceptions in middle school-high school chemistry students	1. Shows the occurrence of misconceptions and misconceptions in middle school, high school and undergraduate students studying chemistry semester 1	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Observation, Discussion 2 X 50			0%
4	Mastering basic laws and gas laws correctly	Explain and apply chemical laws correctly to chemical problems and everyday life	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%

5	Understand atomic structure from various developments in atomic theory correctly	Explaining various atomic theories, according to the correct concept. Applying atomic theory in various related sub-chapters	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2. -Evaluation of the written test is based on the weight of each question 3. -The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%
6	Understand the periodic properties of elements correctly	Explain the periodic properties of elements according to the correct concept. Apply the periodic properties of elements in chemistry problems	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2. -Evaluation of the written test is based on the weight of each question 3. -The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%
7	Understand ionic bonds correctly	Explaining ionic bonds, according to the correct concept, through ion polarization, haber born cycle Applying an understanding of ionic bonds in various compounds and the accompanying properties	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2. -Evaluation of the written test is based on the weight of each question 3. -The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%

8	UTS	Meeting indicators 1 to 7	Criteria: Learning outcomes assessment (UTS/UAS) is based on the following criteria: -Evaluation of the written test is based on the weight of each question -The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Written test 2 X 50			0%
9	Understand covalent bonds correctly	Explain covalent bonds, molecular shapes according to the correct concept. Apply the meaning of covalent bonds in various compounds and the accompanying properties	Criteria: 1.Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%
10	Understand hydrogen bonds, metals, V d Waals correctly	Explaining hydrogen, metal, Van der Waals bonds according to the correct concept Applying the meaning of hydrogen, metal, Van der Waals bonds in various compounds and accompanying properties	Criteria: 1.Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%

11	Understand the meaning of reaction rate correctly	Explain the meaning of reaction rate correctly Apply the concept of reaction rate in solving various problems Be creative in giving examples of the use of reaction rate in everyday life	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50		0%
12	Understand the meaning of chemical equilibrium correctly	Explain the meaning of chemical equilibrium correctly Apply the concept of chemical equilibrium in solving various problems Be creative in giving examples of the use of chemical equilibrium in everyday life, industry	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50		0%
13	Understand the concept of oxidation-reduction correctly	Explain the meaning of redox correctly Apply the redox concept Be creative provides examples of the use of redox concepts in everyday life, industry	Criteria: Learning outcomes assessment (UTS/UAS) is based on the following criteria: -Evaluation of the written test is based on the weight of each question -The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentations, questions and answers, group discussions, assignments 2 X 50		0%

14	Understand organic chemistry correctly	Explain various concepts in organic chemistry correctly. Apply organic chemistry concepts in related text book chapter questions/questions.	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%
15	Understand the concept of acids and bases correctly	Explaining the concept of acids and bases correctly. Applying indicators, titration, and various related concepts. Be creative in providing examples of the use of ASBS in chemistry lessons and everyday life.	Criteria: 1. Learning outcomes assessment (UTS/UAS) is based on the following criteria: 2.-Evaluation of the written test is based on the weight of each question 3.-The final NA is (participation value x3) (Assignment value x 2) (UTS value x 2) UAS value (3) divided by 10	Presentation, Question and answer, group discussion, Assignment 2 X 50			0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

Notes

- Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
- The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
- Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
- Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
- Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
- Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
- Forms of assessment:** test and non-test.
- Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
- Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.

