

		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															
Chemical Science Study 2		8410102202			T=2	P=0	ECTS=4.48	2	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																							
	<table border="1" style="margin: auto;"> <tr> <td style="width: 10%; text-align: center;">P.O</td> <td colspan="15"></td> </tr> </table>									P.O														
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Short Course Description	Examining the application of various learning resources and learning media to support mastery of concepts: atomic structure from various developments in atomic theory, periodic properties of elements, acids and bases, chemical bonds, bonds and coordination compounds, redox systems, solvents, chemical elements and macro molecules of life; as well as instilling a tough attitude, courage to make decisions, and responsibility in Chemical Science Study II knowledge.																							
References	Main :																							
	<ol style="list-style-type: none"> 1. Douglas, B.E., McDaniel, D.H., Alexander, J.J. 1994. Concepts and Models of Inorganic Chemistry . 3rd ed. New York: John Wiley & Sons, Inc. 2. Huheey, J.E., Keiter, E. A., Keiter, R. L. 1993. Inorganic Chemistry . Principles of Structure and Reactivity, 4th ed. New York: Harper International Edition 3. Lee, J. D. 1991. Concise Inorganic Chemistry . London: Chapman & Hall. 4. Madan, R.D. 1997. Modern Inorganic chemistry. New Delhi: S. Chand & Company, Inc. 5. Mathew, C.K., van Holde, K.E., Ahern, K.G., 1999. Biochemistry, San Fransisco: Addison-Wesley Pub. Co 6. Miessler, G. L. & Tarr, D. A. 1999. Inorganic Chemistry . New Jersey: Prentice-Hall, Inc. 7. Styer, L., 1988. Biochemistry. New York: W.H. Freeman and Company 																							
	Supporters:																							
Supporting lecturer	Prof. Dr. Leny Yuanita, M.Kes. Dr. I Gusti Made Sanjaya, M.Si. Prof. Dr. Sari Edi Cahyaningrum, 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	Can apply various learning resources and learning media to support mastery of the concept of Coordination Chemistry	Mastering the concept of Coordination Chemistry	Criteria: Attached	Presentation and discussion 2 X 50			0%
2	Can apply various learning resources and learning media to support mastery of the concept of Main Group Element Chemistry	Mastering the Chemical Concepts of Main Group Elements	Criteria: attached	Presentation and Discussion 2 X 50			0%
3	Can apply various learning resources and learning media to support mastery of the concept of Acids and Bases	Mastering the concept of acids and bases	Criteria: attached	Presentation and discussion 2 X 50			0%
4	Can apply various learning resources and learning media to support mastery of the concept of Covalent Bonds	Mastering the Concept of Covalent Bonds	Criteria: attached	Presentation and discussion 2 X 50			0%
5	Can apply various learning resources and learning media to support mastery of the concept of Transition Group Element Chemistry	Mastering the Chemical Concepts of Transition Group Elements	Criteria: attached	Presentation and discussion 2 X 50			0%
6	Can apply various learning resources and learning media to support mastery of the concept of Ionic Bonds	Mastering the Concept of Ionic Bonds	Criteria: attached	Presentation and discussion 2 X 50			0%
7	Can apply various learning resources and learning media to support mastery of the Periodic System concept	Mastering the Concept of the Periodic System	Criteria: attached	Presentation and discussion 2 X 50			0%
8	Midterm exam	Obtain a minimum grade of B from UTS	Criteria: attached	Test 2 X 50			0%
9	Can apply various learning resources and learning media to support mastery of the Solvent System concept	Mastering the Concept of Solvent Systems	Criteria: attached	Presentation and Discussion 2 X 50			0%
10	Can apply various learning resources and learning media to support mastery of the concept of Atomic Structure	Mastering the Concept of Atomic Structure	Criteria: attached	Presentation and Discussion 2 X 50			0%
11	Can apply various learning resources and learning media to support mastery of the concept of Redox Reactions	Mastering the Concept of Redox Reactions	Criteria: attached	Presentation and Discussion 2 X 50			0%
12	Can apply various learning resources and learning media to support mastery of the concepts of Metallic Bonding, Hydrogen Bonding and Van der Waals Forces	Mastering the Concept of Metallic Bonding, Hydrogen Bonding and Van der Waals Forces	Criteria: attached	Presentation and discussion 2 X 50			0%

13	Can apply various learning resources and learning media to support mastery of Carbohydrate concepts	Mastering Carbohydrate Concepts	Criteria: attached	Presentation and Discussion 2 X 50			0%
14	Can apply various learning resources and learning media to support mastery of Protein concepts	Mastering Protein Concepts	Criteria: attached	Presentation and Discussion 2 X 50			0%
15	Can apply various learning resources and learning media to support mastery of Lipid concepts	Mastering the concept of lipids	Criteria: attached	Presentation and Discussion 2 X 50			0%
16	Final exams	Get a minimum grade of B on the Final Semester Examination	Criteria: attached	2 X 50 test			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.