



**Universitas Negeri Surabaya**  
**Faculty of Mathematics and Natural Sciences**  
**Undergraduate Chemistry Education Study Program**

Document  
Code

### SEMESTER LEARNING PLAN

<b>Courses</b>	<b>CODE</b>	<b>Course Family</b>	<b>Credit Weight</b>	<b>SEMESTER</b>	<b>Compilation Date</b>																																											
School Chemistry	8420402171		T=2   P=0   ECTS=3.18	6	July 18, 2024																																											
<b>AUTHORIZATION</b>	<b>SP Developer</b>		<b>Course Cluster Coordinator</b>		<b>Study Program Coordinator</b>																																											
	.....		.....		Prof. Dr. Utiya Azizah, M.Pd.																																											
<b>Learning model</b>	Project Based Learning																																															
<b>Program Learning Outcomes (PLO)</b>	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)																																															
		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td rowspan="2" style="padding: 5px;">P.O</td> <td colspan="16" style="text-align: center; padding: 5px;">Week</td> </tr> <tr> <td style="padding: 5px;">1</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">6</td> <td style="padding: 5px;">7</td> <td style="padding: 5px;">8</td> <td style="padding: 5px;">9</td> <td style="padding: 5px;">10</td> <td style="padding: 5px;">11</td> <td style="padding: 5px;">12</td> <td style="padding: 5px;">13</td> <td style="padding: 5px;">14</td> <td style="padding: 5px;">15</td> <td style="padding: 5px;">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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<b>Short Course Description</b>	The study of chemical material at the junior high school, high school and vocational school education unit levels in accordance with the applicable curriculum includes the depth and breadth of the material through active learning, discussions, questions and answers and the provision of appropriate assignments and laboratory activities.																																															
<b>References</b>	<b>Main :</b>																																															
	1. James E Brady, Neil D Jespersen, Alison Hyslop.2014. Chemistry .USA: John Wiley & Sons Limited. 2. James E Brady.1990.General Chemistry: Principles and Structure.USA: John Wiley & Sons Limited. 3. Laurel Dingrando, Kathleen V. Gregg, Nicolas Hainen, Cheryl Wistrom.1990.Chemistry: Matter & Change, Student Edition (GLENCOE CHEMISTRY) 2nd Edition.USA: John Wiley & Sons Limited.																																															
	<b>Supporters:</b>																																															
<b>Supporting lecturer</b>	Prof. Dr. Hj. Sri Poedjiastoeti, M.Si. Dr. Muchlis, S.Pd., M.Pd. Dian Novita, S.T., M.Pd. Rusmini, S.Pd., M.Si. Dr. Rosalina Eka Permatasari, M.Pd. Antina Delhita, M.Pd.																																															
<b>Week-</b>	<b>Final abilities of each learning stage (Sub-PO)</b>	<b>Evaluation</b>		<b>Help Learning, Learning methods, Student Assignments, [ Estimated time]</b>		<b>Learning materials [ References ]</b>	<b>Assessment Weight (%)</b>																																									
		<b>Indicator</b>	<b>Criteria &amp; Form</b>	<b>Offline ( offline )</b>	<b>Online ( online )</b>																																											
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>																																									
1	Studying introductory chemistry material and chemical data analysis	Analyze research/experimental data on Introduction to Chemistry and Chemical Data Analysis	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%																																									

2	Study material on Substances, Moles, and Stoichiometry	Analyze research/experimental data on Substances, Moles, and Stoichiometry	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
3	Study material on Substances, Moles, and Stoichiometry	Analyze research/experimental data on Substances, Moles, and Stoichiometry	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
4	Studying the structure of atoms and electrons	Analyze research/experimental data on the structure of atoms and electrons	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
5	Study material on the Periodic Table and Periodicity of Elements	Analyze research/experimental data regarding the Periodic Table and Periodicity of Elements	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
6	Study the material on Ionic Bonds and Metallic Bonds	Analyze research/experimental data on Ionic Bonds and Metallic Bonds	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
7	Examining material on Covalent Bonds and Chemical Reactions	Analyze research/experimental data on Covalent Bonds and Chemical Reactions	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
8	Meetings 1-7	Meetings 1-7	<b>Criteria:</b> UTS	Written Exam 2 X 50			0%
9	Study the material on the Properties of Substances and Gas Laws	Analyze research/experimental data on the properties of substances and gas laws	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
10	Studying Energy and Chemical Reactions material	Analyze research/experimental data on Energy and Chemical Reactions	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
11	Examining material on Chemical Reactions and Equilibrium	Analyze research/experimental data on Chemical Reactions and Equilibrium	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
12	Study Redox and Electrochemical Reactions material	Analyze research/experimental data on Redox and Electrochemical Reactions	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
13	Studying Mixtures and Solutions material	Analyze research/experimental data on Mixtures and Solutions	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
14	Studying Mixtures and Solutions material	Analyze research/experimental data on Mixtures and Solutions	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
15	Study the material Hydrocarbons, Substituted Hydrocarbons and Their Reactions	Analyze research/experimental data on Hydrocarbons, Substituted Hydrocarbons and their reactions	<b>Criteria:</b> UTS UAS Assignment Participation	Presentation and discussion 2 X 50			0%
16	Meeting 9-15	Meeting 9-15	<b>Criteria:</b> UAS	UAS 2 X 50			0%

#### Evaluation Percentage Recap: Project Based Learning

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.

3. **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.
4. **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.
5. **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.
6. **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.
7. **Forms of assessment:** test and non-test.
8. **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.
9. **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.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **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%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.