



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

Document
Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Development of Assessment Instruments	8420402011	Study Program Elective Courses	T=2	P=0	ECTS=3.18	6	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Prof. Dr. Utiya Azizah, M.Pd.

Learning model	Project Based Learning
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Program Learning Outcomes (PLO)	PLO study program which is charged to the course	
	PLO-10	Able to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology (CPL 4)
	PLO-12	Able to demonstrate chemical pedagogical knowledge about designing, implementing and evaluating chemistry learning (CPL 2)

Program Objectives (PO)	
PO - 1	1) Utilize learning resources and ICT to develop assessment instruments; 2). Make decisions about the relationship between basic assessment concepts and various assessment instruments used in schools; 3). Have knowledge about: types of learning assessment, preparation of written tests, performance tests, portfolio assessment instruments, project, product assessment instruments, self/peer assessments, and qualitative and quantitative review of instruments/tests as well as interpreting study results; and 4). Be thorough and responsible in compiling, reviewing and interpreting the results of learning instrument studies

PLO-PO Matrix			
	P.O	PLO-10	PLO-12
	PO-1		

PO Matrix at the end of each learning stage (Sub-PO)																
P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																

Short Course Description	Study of the types, arrangement, qualitative and quantitative study as well as interpretation of the results of the study of learning instruments with a thorough attitude.
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References	Main :
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1. Arends, Richard I. (2004). Guide to Field Experiences ad Portofolio Development: to accompany ;learning to teach. New York: McGraw-Hill Book Company.
2. Arikunto, Suharsimi / I. Jabar, CepiSafruddin Abdul. 2008. Evaluasi program pendidikan: pedoman teoritis bagi mahasiswa dan praktisi pendidikan . Jakarta: BumiAksara.
3. Brookhart, Susan M. 2010. How to assess higher-order thinking skills in your classroom. Alexandria: ASCD.
4. George, David. 2005. Examination and evaluation in education . New Delhi: Commonwealth.
5. Glencoe Series. Tanpa Tahun. Performance Assessment in The Science Classroom. New York: McGraw- Hill Company.
6. I. Naik, S.P. 2004. Role of evaluation in education . New Delhi: Anmol Publications PVT.
7. Johnson, David W. and Johnson, Robert T. 2002. Meaningful Assessment Manageable and Cooperative process. Boston: Allyn and Bacon.
8. Kubiszyn, Tom / I. Borich, Gary.2007. Educational testing and measurement: classroom application and practice. New Jersey: John Wiley & Sons.
9. Kumari, Sarita / I. Srivastava, D.S. 2005. Education: assessment, evaluation and remedial . New Delhi: Isha Books.
10. Rani, T. Swarupa. 2004. Educational measurement and evaluation . New Delhi: DPH.
11. Ross, Kenneth N. (ed). 2005. Quantitative research Methods in Educationl Planning, Module 6: Overview of Test Construction. Paris: International Institute for Educational Planning, UNESCO.
12. Walton, John A. 2005. Educational objectives and achievement testing . New Delhi: Commonwealth.

Supporters:

Supporting lecturer Prof. Dr. Harun Nasrudin, M.S.
Prof. Dr. Utiya Azizah, M.Pd.

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	Explain the types of learning assessment	<ul style="list-style-type: none"> · Students can define the meaning of types of learning assessment. · Students can explain the characteristics of types of learning assessment 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Participatory Activities</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Types of learning assessment</p> <p>References: <i>Arends, Richard I. (2004). Guide to Field Experiences ad Portofolio Development: to accompany ;learning to teach. New York: McGraw-Hill Book Company.</i></p>	10%

2	Compose a written test	<ul style="list-style-type: none"> · Students can compose optional tests · Students can compose short-form tests 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Participatory Activities, Practice/Performance</p>	Lectures, information discussions, assignments, presentations 2 X 50		<p>Materials: Choice tests: multiple choice, matching, and true and false and composing fill-in-the-blank tests: short answers and descriptions.</p> <p>Bibliography: <i>George, David. 2005. Examination and evaluation in education. New Delhi: Commonwealth.</i></p>	10%
3	Compose a written test	<ul style="list-style-type: none"> · Students can compose optional tests · Students can compose short-form tests 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Practice / Performance</p>	Lectures, information discussions, assignments, presentations 2 X 50		<p>Material: Choice tests: multiple choice, matching, and true or false; Composing a fill-in test: short answers and descriptions.</p> <p>References: <i>Johnson, David W. and Johnson, Robert T. 2002. Meaningful Assessment Manageable and Cooperative process. Boston: Allyn and Bacon.</i></p>	5%

4	Compose a written test	<ul style="list-style-type: none"> · Students can compose optional tests · Students can compose short-form tests 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Participatory Activities, Practice/Performance</p>	Lectures, information discussions, assignments, presentations 2 X 50		<p>Material: Choice tests: multiple choice, matching, and true and false as well as composing fill-in-the-blank tests: short answers and descriptions.</p> <p>References: <i>Johnson, David W. and Johnson, Robert T. 2002. Meaningful Assessment Manageable and Cooperative process. Boston: Allyn and Bacon.</i></p> <hr/> <p>Material: Laboratory equipment manual and main aspects in the presentation</p> <p>Library: <i>Glencoe Series. No Year. Performance Assessment in The Science Classroom. New York: McGraw-Hill Company.</i></p>	5%
5	Drawing up practical (performance) tests	<ul style="list-style-type: none"> · Students can compose ability tests using laboratory equipment · Students can compose tests of ability to make presentations · Students can compose tests of ability to do learning 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Practice / Performance</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Laboratory equipment manual and main aspects in the presentation</p> <p>Library: <i>Glencoe Series. No Year. Performance Assessment in The Science Classroom. New York: McGraw-Hill Company.</i></p>	5%

6	Drawing up practical (performance) tests	<ul style="list-style-type: none"> · Students can compose ability tests using laboratory equipment · Students can compose tests of ability to make presentations · Students can compose tests of ability to do learning 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Practice / Performance</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Laboratory equipment manual and main aspects in the presentation</p> <p>Library: <i>Glencoe Series. No Year. Performance Assessment in The Science Classroom. New York: McGraw-Hill Company.</i></p>	10%
7	Develop portfolio assessment instruments	Students can prepare portfolio assessment instruments	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Practice / Performance</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Definition and objectives of portfolio</p> <p>References: <i>Arends, Richard I. (2004). Guide to Field Experiences ad Portfolio Development: to accompany ;learning to teach. New York: McGraw-Hill Book Company.</i></p>	5%

8	U.S.S	Meeting indicators 1 - 7	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Test</p>	Test 2 X 50		<p>Material: Mid-semester exam Reader: Rani, T. Swarupa. 2004. <i>Educational measurement and evaluation.</i> New Delhi: DPH.</p>	10%
9	Develop project assessment instruments	<ul style="list-style-type: none"> · Students can prepare assessment instruments for project preparation · Students can prepare assessment instruments for project implementation · Students can prepare assessment instruments for project results 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Practice / Performance</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Important aspects in project preparation, implementation and results Library: Glencoe Series. No Year. <i>Performance Assessment in The Science Classroom.</i> New York: McGraw-Hill Company.</p> <p>Material: Important aspects in the preparation, manufacturing process and product results. Library: Glencoe Series. No Year. <i>Performance Assessment in The Science Classroom.</i> New York: McGraw-Hill Company.</p>	5%

10	Develop product assessment instruments	<ul style="list-style-type: none"> · Students can prepare assessment instruments for product preparation. · Students can prepare assessment instruments for the product manufacturing process. · Students can prepare assessment instruments for product results 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Practice / Performance</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Important aspects in the preparation, manufacturing process and product results.</p> <p>Library: <i>Glencoe Series. No Year. Performance Assessment in The Science Classroom. New York: McGraw-Hill Company.</i></p>	5%
11	Develop self- and peer-assessment instruments	<ul style="list-style-type: none"> · Students can prepare self-assessment instruments · Students can prepare assessment instruments between friends 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Practice / Performance</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Important aspects of oneself related to habits at home and at school and important aspects in interactions between friends.</p> <p>Reference: <i>Johnson, David W. and Johnson, Robert T. 2002. Meaningful Assessment Manageable and Cooperative process. Boston: Allyn and Bacon.</i></p>	5%

12	Qualitatively examine learning assessment instruments	<ul style="list-style-type: none"> · Students can study the construction of learning assessment instruments · Students can study the content of learning assessment instruments · Students can study the language of learning assessment instruments 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Scope of construction, content and language</p> <p>References: <i>Rani, T. Swarupa. 2004. Educational measurement and evaluation. New Delhi: DPH.</i></p>	5%
13	Quantitatively examine learning assessment instruments	<ul style="list-style-type: none"> · Students can calculate the difference power · Students can calculate the level of difficulty · Students can calculate the effectiveness of options · Students can calculate the validity of question items · Students can calculate sensitivity · Students can calculate reliability 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Project Results Assessment / Product Assessment, Portfolio Assessment</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: How to calculate differential power, level of difficulty, effectiveness of options, validity of question items, sensitivity and reliability</p> <p>References: <i>Ross, Kenneth N. (ed). 2005. Quantitative research Methods in Educational Planning, Module 6: Overview of Test Construction. Paris: International Institute for Educational Planning, UNESCO.</i></p>	5%

14	Quantitatively examine learning assessment instruments	<ul style="list-style-type: none"> · Students can calculate the difference power · Students can calculate the level of difficulty · Students can calculate the effectiveness of options · Students can calculate the validity of question items · Students can calculate sensitivity · Students can calculate reliability 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: How to calculate differential power, level of difficulty, effectiveness of options, validity of question items, sensitivity and reliability</p> <p>References: <i>Ross, Kenneth N. (ed). 2005. Quantitative research Methods in Educational Planning, Module 6: Overview of Test Construction. Paris: International Institute for Educational Planning, UNESCO.</i></p>	5%
15	Interpret the results of the study	<ul style="list-style-type: none"> · Students can interpret the results of qualitative studies. · Students can interpret the results of quantitative studies 	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Participatory Activities</p>	Lectures, discussion-information, assignments 2 X 50		<p>Material: Interpretation of qualitative and quantitative study results</p> <p>References: <i>Rani, T. Swarupa. 2004. Educational measurement and evaluation. New Delhi: DPH.</i></p>	5%

16	UAS	Meeting indicators 9-15	<p>Criteria:</p> <ol style="list-style-type: none"> 1. The assessment is carried out on the following aspects: 2.1. Participation is assessed from the level of attendance at lectures and activeness during lectures (weight 3) 3.2. UTS to assess all indicators at meetings 1-7 (given weights) 4.3. There are two tasks, namely Task 1 and Task 2, then averaged (given a weight of 3) 5.4. UAS, assesses all indicators (given a weight of 3) 6.5. The final NA is (participation score%2 2) (Assignment score%2 3) (UTS score%2 2) UAS score (3) divided by 10 <p>Form of Assessment : Test</p>	Test 2 X 50			5%
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Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	25%
2.	Project Results Assessment / Product Assessment	10%
3.	Portfolio Assessment	2.5%
4.	Practice / Performance	47.5%
5.	Test	15%
		100%

Notes

1. **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.
2. **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.

