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<tr><td rowspan="3"></td><td colspan="4">Universitas Negeri Surabaya
Faculty of Mathematics and Natural Sciences
Undergraduate Chemistry Education Study Program</td><td>Document Code</td></tr>
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	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
Innovative Learning		8420403294	Compulsory Study Program Subjects	T=3	P=0	ECTS=4.77	4	March 28, 2023

AUTHORIZATION		SP Developer		Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**	
	PLO-8	Mastering the basics of scientific methods, designing and carrying out research, compiling scientific reports and communicating them both orally and in writing by utilizing information and communication technology in the field of education (CPL 6)
	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	Able to demonstrate pedagogical knowledge of chemistry and analyze theories that support learning
	PO - 2	Able to design lessons and develop chemistry learning tools by utilizing Information and Communication Technology
	PO - 3	Able to apply learning tools created in the learning process in accordance with the learning model design
	PO - 4	Able to evaluate and reflect on learning that has been implemented
	PO - 5	Have a responsible attitude in presenting chemistry learning tools in accordance with ecocommitment
	PLO-PO Matrix	

P.O	PLO-8	PLO-10	PLO-12
PO-1			
PO-2			
PO-3			
PO-4			
PO-5			

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																
PO-2																
PO-3																
PO-4																
PO-5																

Short Course Description	Study of learning models: cooperative learning, scientific approach-oriented learning such as: problem-based learning, inquiry-discovery learning and contextual learning and project-based learning. The assessment is carried out through the presentation of concepts, presentation of operational examples of each learning model in the form of learning tools, workshops on developing learning tools by students oriented towards each learning model and strategy. The assessment activity ends with an exercise in implementing a particular learning model by each student in a peer teaching forum. followed by discussion and reflection activities.
References	**Main :**

1. Arends, Richard I. 2004. Learning To Teach sixth Edition. New York: McGraw-Hill Book Company.
2. Arends, Richard I. 2004. Guide to Field Experiences and Portofolio Development: to accompany ;learning to teach. New York: McGraw-Hill Book Company.
3. Ibrahim, Muslimin. 2012. Pembelajaran Berdasarkan Masalah Edisi II. Surabaya: University Press
4. Ibrahim, Muslimin, Rachmadiarti, Fida, Ismono. 2005. Pembelajaran Kooperatif. Surabaya: Pusat Sains dan Matematika Sekolah.
5. Nur, Mohamad. 2000. Pembelajaran Kooperatif. Surabaya: Pusat Sains dan Matematika Sekolah.

	Supporters:	

1. Dwiningsih, K. dkk. 2017. Inovasi Pembelajaran 2. Surabaya: University Press
2. Dwiningsih, K. dkk. 2022. Penduan Penyusunan Perangkat Perkuliahan Microteaching Kimia. Surabaya: University Press

Supporting lecturer	Prof. Dr. Utiya Azizah, M.Pd. Dr. Mitarlis, S.Pd., M.Si. Dr.Hj. Rinaningsih, S.Pd., M.Pd. Dr. Kusumawati Dwiningsih, S.Pd., 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	Analyze theories that support cooperative learning	1. Can determine the characteristics of cooperative learning 2. Can analyze theories that support cooperative learning 3. Detailing the steps of cooperative learning model	**Criteria:** Assessment of presentations and discussions as assignment grades with weights (3) **Form of Assessment** : Portfolio Assessment	Presentations and interactive discussions 3 X 50	interactive discussions and group assignments	**Material:** Cooperative Model **Bibliography:** *Arends, Richard I. 2004. Learning To Teach sixth Edition. New York: McGraw-Hill Book Company.*	4%
2	Develop cooperative learning tools for relevant topics	Being able to make decisions is characterized by skillfully developing tools using a cooperative model	**Criteria:** 1. Assessment of teaching material products as an assignment grade with a weight of 3 2. Able to evaluate and reflect on cooperative model learning device products **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	Workshop, Interactive Discussion and Project Assignment (PjBL) 3 X 50	Workshop, Interactive Discussion, Project Assignment (PjBL)	**Material:** Cooperative Model **Literature:**	8%
3	Simulating learning using the Cooperative learning model	Skilled in implementing certain learning models responsibly following the cooperative model syntax	**Criteria:** 1. Teaching skills as a UAS score with a weight of 3 2. Able to simulate learning devices in teaching practice **Form of Assessment** : Project Results Assessment / Product Assessment	Interactive discussions Project assignments (PjBL) Presentations, Peer teaching in parallel groups 3 X 50	Interactive discussions, project assignments (PjBL), presentations, peer teaching in parallel groups	**Material:** Cooperative Model **Literature:** **Material:** Cooperative Model **Literature:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	8%

4	1.Simulating learning using the Cooperative learning model 2.Evaluate and reflect on learning device products	1.Skilled in implementing certain learning models responsibly following the model's syntax 2.Able to evaluate and reflect on cooperative model learning device products	**Criteria:** Teaching skills as a UAS score with a weight of 3 **Form of Assessment** : Project Results Assessment / Product Assessment, Practice / Performance, Test	Peer teaching in parallel groups, Interactive discussions, Project assignments (PjBL), 3 X 50 presentations	Peer teaching in parallel groups, interactive discussions, project assignments (PjBL), presentations	**Material:** Cooperative Model **Literature:** *Dwiningsih, K. et al. 2022. Guide to Preparing Chemistry Microteaching Lecture Tools. Surabaya: University Press*	10%
5	Analyze theories that support Inquiry learning	1.Able to explain the steps of Inquiry model learning 2.Able to describe the characteristics of Inquiry Learning 3.Able to analyze theories that support Inquiry learning 4.Able to conclude the characteristics of the inquiry learning model	**Criteria:** Assessment of presentations and discussions as assignment grades with weights (3) **Form of Assessment** : Participatory Activities	Discussion, presentation, modeling, observation and reflection 3 X 50	Interactive discussion Project assignment (PjBL)	**Material:** Inquiry Model **Literature:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	3%
6	Develop Inquiry learning tools for relevant topics	Being able to make decisions is characterized by skillfully developing tools using various relevant learning sources	**Criteria:** Product assessment of teaching materials as assignment grades with weights (3) **Form of Assessment** : Project Results Assessment / Product Assessment	Interactive Workshop & Discussion Project Assignment (PjBL) 3 X 50		**Material:** Inquiry Model **Literature:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	8%
7	Simulating learning using the Inquiry learning model	Skilled in implementing certain learning models responsibly following the model's syntax	**Criteria:** Teaching skills as a UAS score with a weight of 3 **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	Peer teaching in parallel groups 3 X 50		**Material:** Inquiry Model **Literature:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	8%
8	Carrying out UTS learning materials using cooperative and inquiry learning models	Meeting Indicators 1st to. 9	**Criteria:** UTS assessment with a weight of 2 **Form of Assessment** : Project Results Assessment / Product Assessment, Test	Giving the UTS 2 X 50 written test		**Material:** Cooperative Model **Bibliography:** *Arends, Richard I. 2004. Learning To Teach sixth Edition. New York: McGraw-Hill Book Company.* **Material:** Inquiry Model **Literature:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	6%

9	Carrying out learning using the Inquiry learning model	Skilled in implementing certain inquiry learning models responsibly following the model's syntax	**Criteria:** Teaching skills as a UAS score with a weight of 3 **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	Peer teaching in parallel groups 3 X 50	Interactive discussion Project assignment (PjBL)	**Material:** Inquiry Model **Literature:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	8%
10	1.Describe the characteristics of the Project Base Learning (PjBL) model 2.Analyzing theories that support Project Base Learning (PjBL) model learning 3.Detailing the learning steps using PjBL learning 4.Summarizing the characteristics of the PjBL learning model	1.Able to explain the purpose of implementing the Project Base Learning (PjBL) model in learning 2.Able to mention examples of learning objectives that can be achieved with the Project Base Learning (PjBL) Model 3.Able to analyze theories that support PjBL model learning 4.Summarizing the characteristics of the PjBL learning model	**Criteria:** Skilled in implementing certain learning models responsibly following the model's syntax **Form of Assessment** : Participatory Activities	Questions and Answers, Presentations and interactive discussions Project assignment (PjBL) 3 X 50	Interactive discussion Project assignment (PjBL)	**Material:** PBL Learning Model **Reference:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	3%
11	Develop PjBL learning tools for relevant topics	Being able to make decisions is characterized by skillfully developing tools using various relevant learning sources	**Criteria:** Able to evaluate and reflect on PjBL model learning device products **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	Presentations, interactive discussions Project assignments (PjBL), Modeling, observation and reflection Workshop 3 X 50	Interactive discussion Project assignment (PjBL)	**Material:** PjBL Model **Reference:** *Arends, Richard I. 2004. Guide to Field Experiences and Portfolio Development: to accompany; learning to teach. New York: McGraw-Hill Book Company.*	4%
12	Simulating learning using the PjBL learning model	Skilled in implementing certain learning models responsibly following the model's syntax	**Criteria:** Teaching skills as a UAS score with a weight of 3 **Form of Assessment** : Project Results Assessment / Product Assessment	Peer teaching in parallel groups 3 X 50	Interactive discussion of project assignments (PjBL)	**Material:** PjBL learning model **Literature:** **Material:** PjBL learning model **References:** *Dwiningsih, K. et al. 2022. Guide to Preparing Chemistry Microteaching Lecture Tools. Surabaya: University Press*	6%

13	Simulate and reflect on learning using the PjBL learning model	Skilled in implementing certain learning models responsibly following the PjBL model syntax	**Criteria:** Teaching skills as a UAS score with a weight of 3 **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	Peer teaching in parallel groups 3 X 50	Interactive discussion of project assignments (PjBL)	**Material:** PjBL Learning Model Simulation **Literature:** **Material:** PjBL Learning Model Simulation **References:** *Arends, Richard I. 2004. Guide to Field Experiences and Portfolio Development: to accompany; learning to teach. New York: McGraw-Hill Book Company.*	8%
14	1.Describe the characteristics of PBL model learning 2.Analyzing theories that support Problem Base Learning (PBL) model learning 3.Summarizing the characteristics of the PBL learning model	1.Able to describe the characteristics of PBL learning 2.Analyzing theories that support PBL model learning 3.Able to detail learning steps using the PBL learning model	**Criteria:** Able to evaluate and reflect on PBL model learning device products **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Interactive discussion of project assignments (PjBL), Questions and Answers and 3 X 50 Presentations	Interactive discussion of project assignments (PjBL)	**Material:** PBL Reader: *Nur, Mohamad. 2000. Cooperative Learning. Surabaya: School Science and Mathematics Center.*	3%
15	Develop PBL learning tools for relevant topics	Skilled in developing PBL learning model tools responsibly	**Criteria:** Skilled in implementing certain learning models responsibly following the model's syntax **Forms of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment, Practice / Performance	Workshop and interactive discussion on project assignments (PjBL) 3 X 50	Interactive discussion of project assignments (PjBL)	**Material:** PBL learning model **References:**	5%
16	Simulating learning using the PBL learning model	Skilled in implementing certain learning models responsibly following the model's syntax	**Criteria:** Teaching skills as a UAS score with a weight of 3 **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	Peer teaching in parallel groups 3 X 50	Interactive discussion of project assignments (PjBL)	**Material:** PBL Model **References:** *Dwiningsih, K. et al. 2017. Learning Innovation 2. Surabaya: University Press*	8%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	7.5%
2.	Project Results Assessment / Product Assessment	53.5%
3.	Portfolio Assessment	15.67%
4.	Practice / Performance	17%
5.	Test	6.33%
		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** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities 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.