	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 ICT Learning Media	8420402223	Compulsory Study Program Subjects	T=2	P=0	ECTS=3.18	5	July 18, 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-10	Able to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology (CPL 4)
	PLO-11	Able to demonstrate knowledge related to theoretical concepts about structure, dynamics and energy, as well as basic principles of separation, analysis, synthesis and characterization of chemicals (CPL 1)
	Program Objectives (PO)	
	PO - 1	CPMK-S: Able to be responsible for developing ICT-based chemistry learning media
	PO - 2	CPMK-P: Able to evaluate the development of ICT-based chemistry learning media in accordance with the characteristics of chemical concepts Able to develop the development of ICT-based chemistry learning media in accordance with the characteristics of chemical concepts
	PO - 3	CPMK-KK: Able to analyze evaluation results and develop chemistry ICT-based chemistry learning media based on analysis results by utilizing various multimedia software contextually
	PO - 4	CPMK-KU: Able to make decisions in applying multimedia software to develop ICT-based chemistry learning media according to the characteristics of chemical concepts
	PLO-PO Matrix	

P.O	PLO-10	PLO-11
PO-1		
PO-2		
PO-3		
PO-4		

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																

Short Course Description	Examining computer programs which include sound processing, image processing, video processing and animation processing to develop ICT-based learning media according to the characteristics of chemical material through discussion and practice	
References	**Main :**	

1. . . . 2006. User 19s Guide Chem &Bio Office Desktop 2008 for Windows. CambridgeSoft Corporations
2. . . . 2009. Sound Forge Pro 10 UserGuide. Sony Creative Software Inc.
3. Ellen Finkelstein, Ellen. , GurdyLeete. 2002.50 Fast Flash MX Techniques.Wiley Publishing, Inc. ,Indianapolis, Indiana
4. Fenrich, P. 1997. PracticalGuidelines For Creating Instructional Multimedia Application. USA:HarcourtBrace College Publisher
5. Heinich, R. , Molenda. 1999. InstructionalMedia and Technologies forLearning.USA: Prentice Hall. 6. Sadiman. 2009.Media Pendidikan. Jakarta

Supporters:	
Supporting lecturer	Dr. Sukarmin, 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	Students are able to understand software for processing PDF format documents into interactive formats	Students are able to convert PDF format ebooks into interactive flipbooks	**Criteria:** 1. Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Participatory Activities, Practice/Performance	Interactive discussion of project assignments (PjBL) and 2 X 50 practice	Interactive discussion of project assignments (PjBL) and practice	**Materials:** Flipbook Builder **Libraries:**	5%
2	Students are able to apply PDF format document processing software into an interactive format	Students are able to add multimedia (audio, video, text, images, animation) to interactive flipbooks	**Criteria:** 1. Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Portfolio Assessment	Interactive discussion of project assignments (PjBL) and 2 X 50 practice	Interactive discussion of project assignments (PjBL) and practice	**Materials:** Flipbook Builder **Libraries:**	6%
3	Students are able to develop ICT-based multimedia	Students are able to analyze important concepts in certain material	**Criteria:** 1. Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment	Interactive discussion of project assignments (PjBL) and 2 X 50 practice	Interactive discussion of project assignments (PjBL) and practice	**Material:** Library Concept Analysis **:**	5%
4	Analyze the types of media that are suitable for learning chemistry	Students are able to design storyboards for ICT multimedia development	**Criteria:** 1. Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	Interactive discussion of project assignments (PjBL) and 2 X 50 practice	Interactive discussion of project assignments (PjBL) and practice	**Material:** Library Concept Analysis **:**	6%
5	Students are able to develop ICT-based multimedia	Students are able to develop media using appropriate software	**Criteria:** Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	Interactive discussion of project assignments (PjBL) and 2 X 50 practice	Interactive discussion of project assignments (PjBL) and practice	**Material:** Adobe Flash Articulate storyline Lectora **Library:**	6%
6	Understand how to design ICT-based chemistry learning media	Students are able to develop media using appropriate software	**Criteria:** Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment	Interactive discussion of project assignments (PjBL) and 2 X 50 practice		**Material:** Adobe Flash Articulate storyline Lectora **Library:**	6%

7	Understand how to design ICT-based chemistry learning media	Producing ICT-based chemistry learning media	**Criteria:** Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment	Interactive Discussion and practice 2 X 50		**Material:** Adobe Flash Articulate storyline Lectora **Library:**	8%
8	MIDTERM EXAM	Able to evaluate and reflect on the learning device products developed	**Criteria:** 1. The Mid-Semester Examination (UTS) is carried out assessing all relevant indicators through a written exam, with a weight of (2) **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	2 X 50		**Material:** Meeting material 1-7 **References:**	9%
9	Students are able to make videos using Microsoft Power Point	1. Students are able to record timed narratives 2. Students are able to record and insert faces with sound	**Criteria:** 1. Product assessment Practical report, as an assignment, with weight (3) **Form of Assessment** : Participatory Activities	Discussion, consultation and practice 2 X 50		**Material:** Microsoft Power Point **Library:**	5%
10	Developing ICT-based chemistry learning media	1. Students are able to save as video format 2. Students are able to save to Microsoft's video sharing site	**Criteria:** Assessment of the media development process, as a task, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment	Discussion, consultation and practice 2 X 50		**Material:** Microsoft Power Point **Library:**	5%
11	Developing ICT-based chemistry learning media	1. Students are able to hold a video camera 2. Students are able to record images 3. Students are able to regulate focus	**Criteria:** Assessment of the media development process, as a task, with weight (3) **Form of Assessment** : Participatory Activities, Portfolio Assessment	Discussion, consultation and practice 2 X 50		**Material:** Image Recorder (Camcorder) **Library:**	8%
12	Students are able to understand the menu functions in video processing software	1. Students are able to take videos 2. Students are able to convert video formats	**Criteria:** 1. Assessment of the media development process, as a task, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment	Interactive discussion of project assignments (PjBL) and 2 X 50 practice	Interactive discussion of project assignments (PjBL) and practice	**Materials:** Pinnacle Studio **Libraries:**	5%
13	Students are able to understand the menu functions in video processing software	Students are able to do video editing	**Criteria:** Assessment of the media development process, as a task, with weight (3) **Form of Assessment** : Project Results Assessment / Product Assessment	Discussion, consultation and practice 2 X 50		**Materials:** Pinnacle Studio **Libraries:**	6%

14	Displays the developed media.	Displays the developed media	**Criteria:** Presentation assessment sheet **Form of Assessment** : Project Results Assessment / Product Assessment	Presentation performance, Interactive discussion Project assignment (PjBL) 2 X 50	Interactive discussion Project assignment (PjBL)	**Material:** Related Software **Library:**	5%
15	Displays the developed media.	Students are able to display the media they have developed	**Criteria:** Presentation assessment sheet **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	Interactive discussion Project assignment (PjBL) 2 X 50	Interactive discussion Project assignment (PjBL)	**Material:** Interactive Multimedia **Library:**	6%
16		Students are able to display the media they have developed	**Criteria:** Final Semester Examination (UAS) of the product produced with portfolio assessment, with a weight of (3)) **Form of Assessment** : Project Results Assessment / Product Assessment	Presentation Performance 2 X 50		**Material:** Web-based media **Library:**	9%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	11.5%
2.	Project Results Assessment / Product Assessment	62.5%
3.	Portfolio Assessment	23.5%
4.	Practice / Performance	2.5%
		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.