<table>
<tr><td rowspan="2"></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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SEMESTER LEARNING PLAN				

Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Computer application		8420402008		T=2	P=0	ECTS=3.18	3	July 18, 2024

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

Learning model	Case Studies

Program Learning Outcomes (PLO)	PLO study program which is charged to the course
	Program Objectives (PO)
	PLO-PO Matrix

	P.O

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

Short Course Description	Understand computer application programs including Microsoft Office, ChemOffice, ChemLab to support the smooth creation of scientific reports, process experimental data, and process educational administration data

References	Main :

1. ... 2006. User 19s Guide Chem & Bio Office Desktop 2008 for Windows. CambridgeSoft Corporations
2. Ellen Finkelstein, Ellen., Gurdy Leete. 2002.50 Fast Flash MX Techniques.Wiley Publishing, Inc., Indianapolis, Indiana
3. Guy Hart-Davis. 2007. How to do everything with Microsoft Office Word 2007. The McGraw-Hill Companies
4. Nories, A.C. 1981. Computational Chemistry: An Introduction to Numerical Method. John Wiley & Son.
5. Paul McFedries. 2007. Microsoft Office PowerPoint 2007: Top 100 Simplified Tips & Tricks. Wiley Publishing, Inc.
6. Robert de Levie. 2004. How To Use Excel In Analytical Chemistry And In General Scientific Data Analysis. Cambridge University Press.
7. Sukarmin. 2016. Handout Aplikom. tidak diterbitkan

	Supporters:

Supporting lecturer	Dr. Sukarmin, 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	Formatting page settings for scientific reports	Can adjust margins and page setup. Can write headers, footers, page numbers. Can set tab stops and hyperlinks	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
2	Write a script with appropriate functions	§ Can do table formatting § Can write reaction equations Can use Auto Correct to speed up writing	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
3	Layout scientific documents	Can layout manuscripts according to scientific journal templates	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Practice 2 X 50			0%
4	Using Excel functions to process educational data	Can set up tables Can use the sum, if, vlookoop, countif functions to process student data	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and Practice 2 X 50			0%
5	Using Excel functions to process data	Using Excel functions to create titration charts	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
6	Using Excel functions to process experimental data	Using Excell functions to calculate reaction orders	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
7	Use powerpoint functions to create interactive presentations	Can create interactive presentation scripts	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
8	UTS		**Criteria:** 1. Subsummative test, carried out once accessing relevant indicators (meetings 1-7) through a written exam, averaged and weighted (2))	2 X 50			0%
9	Use powerpoint functions to create interactive presentations	Can create interactive presentation scripts	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
10	Using chemoffice functions to draw 2D structures	Writing 2D organic structures Exporting to MS Word	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
11	Using chemoffice functions to draw 3D structures	Writing 3D organic structures Exporting to MS Word	**Criteria:** 1.Participation during lectures (weight 2) 2.Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%

No							
12	Uses chemoffice functions to calculate and predict bond angles and bond lengths	Can determine the bond angle of a compound	**Criteria:** 1. Participation during lectures (weight 2) 2. Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
13	Using Adobe Flash functions to design chemical reaction animations	Can develop chemical reaction animations	**Criteria:** 1. Participation during lectures (weight 2) 2. Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
14	Using Adobe Flash functions to design atomic structure animations	Can develop atomic structure animations	**Criteria:** 1. Participation during lectures (weight 2) 2. Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
15	Using adobe flash functions to design chemical bond animations	Can develop chemical bond animations	**Criteria:** 1. Participation during lectures (weight 2) 2. Assignment assessment(weight (3)	Discussion and practice 2 X 50			0%
16	UAS		**Criteria:** 1. The results of making chemical animation media as a UAS score with a weight of 3	2 X 50			0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

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.