	Universitas Negeri Surabaya Faculty of Engineering, Undergraduate Study Program, Fashion Design Education	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Applied Chemistry	8321202050		T=2	P=0	ECTS=3.18	3	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Imami Arum Tri Rahayu, S.Pd., M.Pd.

Learning model	**Case Studies**
Program Learning Outcomes (PLO)	**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)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Short Course Description	Study and understanding of applied chemical compounds in the field of Fashion Design which includes the concepts of matter and energy, laws and properties of matter and energy, and the properties of solutions, followed by measurements in chemical reactions, deeper discussion of solution examples, calculating the concentration of solutions, the properties of acids, bases and salts, as well as carbohydrates and proteins. Learning is carried out using discussion methods, presentations and practice solving example problems.
References	**Main :**
	1. Hadyana Pudjaatmadja,A. 1999. Ilmu Kimia Untuk Universitas Jilid I. Jakarta: Erlangga. 2. Hariyadi, W. 1993. Stoikhiometri. Jakarta: Gramedia.
	Supporters:
Supporting lecturer	Dra. Hj. Siti Sulandjari, M.Si. Imami Arum Tri Rahayu, 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	Understand the description of chemistry, learning methods, and the importance of chemistry in fashion management	1. Explain the description of Chemistry 2. Explain learning methods in Chemistry3. Explain the importance of chemistry in fashion management	**Criteria:** Rubric attached	2 X 50 Discussion Method			0%

2	Mastering the concepts of matter and energy	1. Explain the concept of matter 2. Explain the concept of energy 3. Classifying materials 4. Classifying energy 5. Describe the mixture 6. Give examples of compounds and mixtures in the field of fashion design	**Criteria:** Rubric	Cooperative / Method: Discussion, Question and Answer, Assignment 2 X 50			0%
3	Mastering the properties and changes of matter	1. Explain the nature of matter 2. Explain the difference between chemical changes and physical changes 3. Give examples of physical and chemical changes in the field of Fashion	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer 2 X 50			0%
4	Understanding Chemical Formulas and Nomenclature	1. Explain the molecular formula 2. Identifying molecular formulas in the field of Fashion Design 3. Explaining empirical formulas 4. Identifying empirical formulas in the field of Fashion Design 5. Explaining Nomenclature	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer, Assignment 2 X 50			0%
5	Understand chemical bonds and their types	1. Explain the meaning of chemical bonding 2. Explain the meaning of ionic bonds 3. Explain covalent bonds 4. Identifying Relative Atomic Mass and Molecular Relative Mass	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer, Assignment 2 X 50			0%
6	Understand basic calculations in Chemistry	1. Explaining Avogadro's Law 2. Apply the mole concept to a reaction 3. Counting the number of particles in a known unit weight of matter 4. Determine the molar mass	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer, Assignment 2 X 50			0%

7	Understanding Chemical Reactions	1. Explain the meaning of chemical reactions 2. Explain the reaction equation 3. Perform chemical reaction balancing procedures	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer, Assignment 2 X 50			0%
8							0%
9	Understanding Limiting Reagents	1. Explain the units in reactions 2. Explain the concept of limiting reagent 3. Explain the steps to determine the limiting reagent 4. Determining the applied limiting reagent in the field of Fashion Design	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer, Assignment 4 X 50			0%
10							0%
11	Understand the statement of solution concentration	1. Explain the meaning of solution 2. Explain the properties of solutions 3. Explain the statement Percent of solution 4. Determine the percent solution for examples in the field of Fashion 5. Explain the statement of molarity of a solution 6. Explain the statement of molarity of a solution. Determine the molarity of a solution, for example in the field of clothing	**Criteria:** Rubric	Cooperative/Discussion, question and answer, Assignment 4 X 50			0%
12							0%
13	Understand colloids and emulsions	1. Explain the meaning of colloids 2. Explain the properties of colloids 3. Explain the types of colloids 4. Explain the meaning of emulsion 5. Identify examples of emulsions	**Criteria:** Rubric	Cooperative/ Discussion, question and answer, assignment 2 X 50			0%

14	Understand acid and base compounds	1. Explain the meaning of acids and bases 2. Explain the properties of acids and bases 3. Explain how to identify acids and bases 4. Identify the function of acids and bases in the clothing sector 5. Identify the effect of acids and bases on	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer, Assignment 2 X 50			0%
15	Understanding carbohydrates and proteins	1. Describe the properties of carbohydrates 2. Describe changes in carbohydrates 3. Describe the properties of proteins 4. Describe protein changes.	**Criteria:** Rubric	Cooperative/Discussion, Question and Answer, Assignment 2 X 50			0%
16							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.