SEMESTER LEARNING PLAN

CHEMISTRY STUDY PROGRAM

FACULTY OF MATH AND SCIENCE

BENGKULU UNIVERSITY

Course Identity			**Identity of course tutor**		
Course Code	:	**KIM-562**	Lecturer Name	:	Prof. Dr. Irfan Gustian, S.Si, M.Si/Doni Notriawan, S.Si, M.Si
Course Name	:	**Colloids and Interfaces**	Field Group	:	Physical Chemistry
Course Weight (credits)	:	2 (2-0)			
Semester	:	Required			
Prerequisite Course	:	Thermodynamics and equilibrium, Phase and solution equilibrium			

Program Learning Outcomes (PLO)

PLO Code		**PLO Element**
S-9	:	Demonstrate a responsible attitude towards work in their area of expertise independently;
KU-1		Able to apply logical, critical, systematic and innovative thinking in the context of developing or implementing science and technology that pays attention to and applies humanities values in accordance with their field of expertise.

KU-2	:	Able to demonstrate independent, quality and measurable performance.
Scientific Study Materials		
LO Course	:	The learning achievements of this course are studying particle size, dispersion systems, classifying colloids, making colloids, purification of colloids, some properties of colloids, various kinds of colloids, the use of colloids and colloids in everyday life, thermodynamics of surface tension and interfacial free energy, surface films on liquid substrates, electrical aspects of surface chemistry, interactions at the solid-liquid interface, friction and lubrication-adhesion, detergency, flotation and wetting, emulsions, foams and aerosols, interactions at the solid-gas interface, adsorption of gases and vapors on solids.
Learning Experience	:	This course is a compulsory subject for the Chemistry Study Program, FMIPA, after completing this course students of the Mathematics and Natural Sciences Chemistry Study Program can explain what discusses Particle Size, Dispersion Systems, Colloid Classification, Colloid Making, Colloid Purification, Some Colloidal Properties, Various Colloids, and Uses of Colloids And Colloids In Daily Life, Thermodynamics Of Surface Tension And Interfacial Free Energy, Surface Film On Liquid Substrates, Electrical Aspects Of Surface Chemistry, Interactions At Solid-Liquid Interfaces, Friction And Lubrication-Adhesion, Detergency, Flotation And Wetting, Emulsions , Foams And Aerosols, Interactions At The Solid-Gas Interface, Adsorption Of Water And Vapors On Solids.
Reference list	:	1. "Arthur. W. Adamson" 1990, Physical Chemistry of Surface, 1990. John Wiley and Sons, Singapore. 2. Peter A. Kralchevsky, Krassimir D. Danov, And Nikolai D. Denkov, Chemical Physics of Colloid Systems And Interfaces, 2009. By Taylor & Francis Group. 3. KS Birdi, Surface and Colloid Chemistry Pinciples and Applications, 2010. CRC Press Taylor & Francis Group. 4. Recent Journals of Research Results related to Interfacial Chemistry

SEMESTER LEARNING PLAN

Subject: COLLOID AND INTERFACE
Course code: KIM-562
Credit: 2 (2-0)

WEEK TO	EXPECTED FINAL ABILITY	STUDY MATERIALS (teaching materials)	FORMS OF LEARNING	ASSESSMENT CRITERIA (indicator)	VALUE Achievability
1-2	Students can understand explaining the concept of basic • Particle size, dispersion system, colloid classification	• Lecture contract discussion. • Particle size, dispersion system, colloid classification	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD), Discovery Learning Assignment of materials related to meetings	• Completeness and correctness of explanation • Sharpness and completeness of analysis	7.5%
3-4	Students can describe and explain • Colloid preparation, colloid purification, some colloid properties,	• Colloid preparation, colloid purification, some colloid properties,	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD), Discovery Learning Assignment of materials related to meetings	• Completeness and correctness of explanation • Sharpness and completeness of analysis	7.5%
5-6	Students can describe and explainvarious kinds of colloids, the use of colloids and colloids in daily life,	• Various kinds of colloids, the use of colloids and colloids in daily life,	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD), Discovery Learning Assignment of materials related to meetings	• Completeness and correctness of explanation • Sharpness and completeness of analysis	7.5%
7-8	Can describe and explain Students understand: • Thermodynamics of surface tension and interfacial free	Thermodynamics of surface tension and interfacial free energy,	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD),	• Completeness and correctness of explanation	7.5%

	energy, surface films on liquid substrates, electrical aspects of surface chemistry	surface films on liquid substrates, electrical aspects of surface chemistry	Discovery Learning Assignment of materials related to meetings	• Sharpness and completeness of analysis	
		Mid semester Exam			20%
9-10	Can describe and explain the principle of electrical aspects of surface chemistry	• Electrical aspects of surface chemistry	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD), Discovery Learning Assignment of materials related to meetings	• Completeness and correctness of explanation • Sharpness and completeness of analysis	7.5%
11-12	Can categorize and explain: interactions at the solid-liquid interface, friction and lubrication-adhesion	• Interactions at the solid-liquid interface, friction and lubrication-adhesion	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD), Discovery Learning Assignment of materials related to meetings	• Completeness and correctness of explanation • Sharpness and completeness of analysis	7.5%
13-14	Can describe and explainemulsions, foams and aerosols	Emulsions, foams and aerosols	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD), Discovery Learning Assignment of materials related to meetings	• Completeness and correctness of explanation • Sharpness and completeness of analysis	7.5%
15-16	Can describe and explain • interactions at the solid-gas interface, adsorption of gases and vapors on solids.	• Interaction at the solid-gas interface, gas and vapor adsorption on solids.	• Contextual Learning (CL), Literature search, Small Group Discussion (SGD), Discovery Learning Assignment of	• Completeness and correctness of explanation • Sharpness and completeness of analysis	7.5%

			materials related to meetings		
		Final Semester Exam			20%

Bengkulu, August 4, 2022
lecturer

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