

SEMESTER LEARNING PLAN (RPS) CHEMISTRY STUDY PROGRAM FACULTY OF MATHEMATICS AND NATURAL SCIENCES UNIVERSITY OF BENGKULU

Identity of Course				Identity of Lecturer					
Code		:	KIM-513	Name	:	Dyah Fitriani S.Si, M.Sc			
Course Name		:	Basics Biochemistry Field : Che		Chemistry				
Course Weight (credit	ts)	:	4 (3-1)						
Semester		:	V (Five)						
Prerequisite Courses		:	Organic Chemistry						
Graduate Learning	Outcor	nes	(CPL)						
CPL Code			Elements of CPL						
S-9	-	:	Demonstrate a responsible attitud	Demonstrate a responsible attitude on work at field of expertise independently					
KU 1		:	Able to apply logical, critical, syste	ematic and in	novative	thinking in the context of			
			the development or implementation of 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.						
NO Z		•	Able to demonstrate independent	i, quality allu	illeasura	ble performance.			
Scientific Study		:	- Biology						
Materials			<i>.</i>						
			- Organic Chemistry						
			,						
CP Course (CPMK)		:	Students are able to understand the basic concepts of biochemistry						
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Learning Experience		:	Students are taught about cells and cell organelles, primary, secondary, tertiary and quaternary						
			protein structures, vitamins, enzymes, isolation and purification proteins, nucleic acids, DNA, RNA,						
			protein synthesis and DNA analysis techn	iques					
References	: 1. Mary K. Campbell and Shawn O. Farrell, <i>Biochemistry</i> , 7th Ed.								
			2. Lehninger, AL, (1982), Funda	mentals of B	iochemis	stry Volumes 1, II and III			
			Thenawidjaja, M (Translator),						
			3. Anna Poedjiadi., (1994), Bioch		-				
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			Publisher (UI-Press) , Jakarta.						

4. Soeharsono Martoharsono, (1975), Biochemistry I, UGM Press, Yogyakarta

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Stage	Final Ability	Subject Material	Reference	Learning Method	Time	indicator/ CPL code	Assessme nt technique /weight
1	2	3	4	5		6	7
1	Applying lecture regulations and lecture contracts	MK syllabus Composition Assessment Lecture rules References / references MK	1,2,3, and 4	Lectures and discussions	2x50	Knowing the composition of the assessment, syllabus, and lecture rules	
2	Knowing the definition of biochemistry and the scope of biochemistry	Understanding biochemistry History of biochemistry development Things learned in biochemistry	2, 3 and 4	Lectures and discussions	3x50	Able to explain the scope of biochemistry	5%
3	Able to explain water molecules and the properties of water molecules and can distinguish acid, base and buffer solutions	The structure of water molecules Properties of water molecules Acids and bases Buffers	2 and 4	Task group discussion	3x50	Accuracy in explaining the nature and structure of water molecules.	5%
4	Able to explain about cells and cell organelles Cell	structure Prokaryotic Eukaryotic Cell organelles and their functions	1,2,3, and 4	Task group discussion	3x50	Able to distinguish animal and plant cells and know the function of cell organelles	5%
5	Able to explain about protein structure and structure 3 Dimensions of Protein Protein	structure, primary, secondary and tertiary structure classification Protein function Fiber protein Globular protein	1,2,3, and 4	Task group discussion	3x50	Can write protein structure correctly, explain protein function with a 3-dimensional structure	5%
6	Distinguish between water and fat	Definition of Vitamins Vitamin grouping Characteristics of vitamins and their functions	3 and 4	Task Group Discussion	3x50	Able to distinguish between water and fat soluble vitamins and their characteristics	5%
7	Able to answer quiz questions given	Material quiz, namely cells and cell organelles, water and the nature of water molecules, proteins and the 3-dimensional structure of proteins s and vitamins	1,2,3,4	Questions are given in the form of google form	30 minutes	All questions given can be answered well and get a score above 80	10%
	•	•	UTS	•	ı		15%

9	Understand the theory of enzymes, classification of enzymes and the properties of enzymes	Definition of enzymes Theory about enzymes Classification of enzymes Characteristics of enzymes Allosteric enzymes	1,2,3 and 4	Class lectures and discussions	3x50	Able to explain about enzymes, their classification and characteristics	6%
10-11	Genetics	 Nucleosides, nucleotides Nucleic acids, metabolism of nucleic acids DNA and RNA Mechanism protein synthesis, (transcription, translation, replication), gene mutations 	1,2,3, and 4	Class lectures and discussions	3x50	Accuracy in explaining DNA, RNA and protein synthesis	8%
12-13	Able to explain protein isolation and purification techniques	Purification of proteins based on size, charge, polarity, and specificity	2 and 4	lectures and discussions	3x50	Accuracy in explaining protein purification techniques	8%
14	Able to know DNA analysis techniques	Techniques PCR (Polymerase Chain Reaction)	2	Lectures and class discussions	3x50	Able to explain DNA analysis techniques, namely PCR	5%
15	Quiz	Enzymes, Genetics, isolation and protein purification		Questions are given in google form	30 minutes	All questions given can be answered well and get a score above 80	10%
			UAS				15%

Appendix 1. Learning Outcomes of Graduates

According to Permenristekdikti Attachment No. 44 of 2015 concerning the National Standards for Higher Education.

A. Attitude Formulation

Attitudes that must be possessed by every graduate of academic, vocational and professional education programs is as follows,

CPL Code	The formulation of the Attitude					
of S-1 is	devoted to God Almighty and able to demonstrate a religious					
S-2	upholds values humanity in carrying out tasks based on religion, morals, and ethics					
S-3	contributes to improving the quality of life in society, nation, state, and progress of civilization based on Pancasila					
S-4	acts as citizens who are proud and love the homeland, have nationalism and a sense of responsibility to the country and the nation					
S-5	respects the diversity of cultures, views, religions, and beliefs, as well as the original opinions or findings of others					
S-6	works together and has social sensitivity and concern for society and the environment					
S-7	obeys the law and disciplined in the life of society and the state					
S -8	internalize the values, norms, and academic ethics					
S-9	demonstrate an attitude of responsibility for work in the field of expertise independently;					
S-10	internalizes the spirit of independence, struggle, and entrepreneurship					

B. General Skills Formulation

B1. Undergraduate Program

CPL Code	General Skills Formulation
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.
KU-3	Able to study the implications of the development or implementation of science and technology that pays attention to and applies humanities values according to their expertise based on scientific principles, procedures and ethics in order to produce solutions, ideas, designs or art criticism, compose a scientific description of the results of the study in the form of a thesis or final project report, and upload it on the college website.
KU-4	Compile a scientific description of the results of the study above in the form of a thesis or final project report and upload it on the university's website
KU-5	Able to make appropriate decisions in the context of solving problems in their field of expertise based on the results of information and data analysis.
KU-6	Able to maintain and develop a network with supervisors, colleagues, collaborators both inside and outside the institution.

KU-7	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers under their responsibility.
KU-8	Able to carry out the evaluation process of work groups under their responsibility and able to manage learning independently
KU-9	Able to document, store, secure and rediscover data to ensure validity and prevent plagiarism.

B2. Diploma Three Program

CPL Code	General Skills Formula
KU-1	Able to complete wide-ranging work and analyze data with various appropriate
	methods, both those that have not been or have been standardized
KU-2	Able to demonstrate quality and measurable performance
	Able to solve work problems with the nature and nature of context that is in accordance
KU-3	with the field of applied expertise based on logical thinking, innovative, and responsible
	for the results independently
KU-4	Able to compile reports on results and work processes accurately and accurately and
KO-4	communicate them effectively to other parties who need
KU-5	Able to work together, communicate and be innovative in their work
KU-6	Able to be responsible for the achievement of group work results and supervise and
KU-6	evaluate the completion of work assigned to workers under their responsibility
KU-7	Able to carry out a self-evaluation process for work groups under their responsibility
KU-/	and able to groan ola work competency development independently
VII 0	Able to document, store, secure and retrieve data to ensure validity and prevent
KU-8	plagiarism