



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

Identity of Course		Identity of Lecturer	
Code	: KIM-101	Name	: Drs. Nesbah, MS Dr. Carles Banon, MS
Course Name	: Basic Chemistry I	Field	: Chemistry
Course Weight (credits)	: 4 (3-1) credits		
Semester	: 1 (one)		
Prerequisite Course	: -		
Graduate Learning Outcomes (CPL)			
CPL Code CPL		CPL Elements	
S-9	:	Demonstrates a responsible attitude towards work in the field 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	:	Basic Chemistry	
CP Courses (CPMK)	:	Students can understand general aspects of groups of substances, physical and chemical properties of substances, chemical terminology, nomenclature, basic concepts about atoms, molecules, elements, the periodic system of elements, compounds, basic reactions, mole, stoichiometry,	
Learning Experience	:	Students are given knowledge about general aspects of substance groups, physical and chemical properties of substances, chemical terminology, nomenclature, basic concepts about atoms, molecules, elements, the periodic system of elements, compounds, basic reactions, moles, stoichiometry.	
List of References	:	1) Basic Chemistry Module I, 2010, Department of Chemistry FMIPA Bengkulu University 2) Diklat General Chemistry Lecture, Joint Preparation Level Program, 2002, First and Second Volumes Department of Chemistry FMIPA IPB, Bogor 3) Chemistry for Universities, 1984, Sixth Edition Volume I Erlangg Publisher Jakarta 4) Hill JW, 2003, Chemistry for Changing Times, 6thed, Macmillan, New York.	

Stage	Final Ability	Subject Material	Reference	Learning Method	Time (minutes)	Assessment*	
						Indicator/CPL code	Assessment technique /weight
1	2	3	4	5		6	7
1	Applying lecture rules and assessment components for courses	- Lecture Contract - lecturer regulations - Assessment components - References/ literature/ reference books	Ref No: -	Lecture Discussion	3x50	Knowing the components of assessment and reference	
2	- Explaining the class of substances, elements, compounds, homogeneous and heterogeneous mixtures. Describing inorganic, organic, heterocyclic, homocyclic, aromatic and alicyclic compounds - Explaining chemical properties and chemical changes, physical properties and physical changes of a substance	- Class substances, elements, compounds, homogeneous and heterogeneous mixtures. - Description of organic, inorganic, heterocyclic, homocyclic, aromatic and alicyclic compounds - Chemical properties and chemical changes, physical properties and physical changes of a substance	Ref No: 1,2,3,4	Lectures Class discussion Tasks	3x50	Knowing the class of substances, elements, compounds, homogeneous and heterogeneous mixtures. Describe organic, inorganic, heterocyclic, homocyclic, aromatic and alicyclic compounds Know the chemical properties and chemical changes, physical properties and physical changes of a substance	Test/7%
3	Students can understand and explain chemical terminology and nomenclature of inorganic compounds and organic compounds	Chemical terminology and nomenclature of inorganic compounds and organic compounds	Ref No: 1,2,3,4	Lectures Class Discussion Assignments	3x50	Knowing chemical terminology and nomenclature of inorganic compounds and organic compounds	Test/7%
4	Students can understand and explain the basic concepts of atoms, the development of atomic theory, Assumptions of Dalton's atomic theory, Rutherford's atomic model and Bohr	- Basic concepts of atoms - Development of atomic theory, assumptions of Dalton's atomic theory - Rutherford's atomic model and Bohr	Ref No : 1,2,3,4	Lectures Class Discussion Assignments	3x50	Knowing the basic concepts of atoms development of atomic theory, mass number, mole, and atomic number	Test/7%
5	Evaluation of the first, second, and third lectures d fourth	Exam Module I		Written exam	3x50		Test/4%

6	- Counting the number of protons, neutrons and electrons contained in an atom using the symbol X - Calculating atomic weight, relative atomic weight, relative molecular weight	- The number of protons, neutrons and electrons contained in an atom with the symbol X - Atomic weight, relative atomic weight, relative molecular weight	Ref No: 1,2,3,4	Lecture Class Discussion Assignment	3x50	Counting the number of protons, neutrons and electrons in an atom using the symbol X Calculating atomic weight, relative atomic weight, weight relative molecule	Test/7%
7	Students can understand and explain electron configuration, atomic energy level and quantum number	Electron configuration, atomic energy level and quantum number	Ref No : 1,2,3,4	Lecture Class Discussion Assignment	3x50	Draw electron configuration, level Atomic energy and quantum number	Test/7%
8	Students can understand orbital forms based on value (azimuth quantum number). s, p, d	orbital forms. Orbital forms based on value (azimuth quantum number). s, p, d orbital forms	Ref No: 1,2,3,4	Lectures Class Discussion Assignment	3x50	Draw orbital shapes based on value (quantum azimuth number). s, p, d orbital shapes	Test/7%
9	Evaluation of the sixth, seventh and eighth lectures	Module II		Exam Written exam	3x50		Test/4%
10	Students can understand and explain the development of the periodic system; <i>Dobereiner's Triade, Newlands' Law of Octaves, Mendeleev's Periodic Order, Atomic Numbers and Periodic Laws and the Modern Periodic System</i>	Development of the periodic system; <i>Dobereiner's Triade, Newlands' Law of Octaves, Mendeleev's Periodic Arrangement, Atomic Numbers and Periodic Laws and the Modern Periodic System</i>	Ref No: 1,2,3,4	Lectures Class Discussion Assignments	3x50	Knowing the development of the periodic system; <i>Dobereiner's Triade, Newlands' Law of Octaves, Mendeleev's Periodic Arrangement, Atomic Numbers and Periodic Laws and the Modern Periodic System</i>	Test/7%
11	- Students can understand the relationship between the electron configuration of an element and its position in the periodic system. - the periodic properties of elements based on electron configuration. - Explain, element period, element block and periodicity of elements	- Relationship of an element's electron configuration with its location in the periodic system - Periodic - properties of elements based on electron configuration - Element group, element period, element block and periodicity of elements	Ref No: 1,2,3,4	Lectures Class Discussion Assignments	3x50	Knowing the relationship between the electron configuration of an element and its location in the periodic system Knowing the periodic properties of elements based on electron configuration Knowing the element group, element period, elemental block and periodicity of elements	Test/7%

12	- Students can understand basic concepts about molecules, chemical bonds, intermolecular forces and hydrogen bonds - Explain the basic assumptions of Lewis theory about the formation of chemical bonds	- Basic concepts about molecules, chemical bonds, intermolecular forces and hydrogen bonds - Basic assumptions of Lewis theory about the formation of chemical bonds	Ref No: 1,2,3,4	Lecture Class discussion Tasks	3x50	Knowing basic concepts of molecular chemical bonds, intermolecular forces and hydrogen bonds	Test/7%
13	- Describes the process of forming ionic bonds, covalent bonds and hydrogen bonds - Relates the shape of a molecule to the distribution of valence electrons around the central atom - Estimating bond energies and lengths by type of bond	- Forming process ionic bonds, covalent bonds and hydrogen bonds - Connect the shape of the molecule with the distribution of valence electrons around the central atom - Estimate the energy and bond length based on the type of bond	Ref No : 1,2,3,4	Lecture Class discussion Task	3x50	Know the process of forming ionic bonds, covalent bonds and hydrogen bonding Know how to relate molecular shape to distribution of valence electrons around the central atom Calculating bond energies and lengths by bond type	Test/7%
14	Evaluation of the tenth, eleventh, twelfth and thirteenth lectures	Exams Module III		Written exams	3x50		Test/4%
15	- Explains the amount of a substance by moles and Avogadro's number - Write reaction equations and determine reaction coefficients quickly and correctly	- Amount of substances with moles and Avogadro's number Reaction equations - and determine reaction coefficients quickly and correctly	Ref No: 1,2,3,4	Lecture Class discussion Tasks	3x50	Knowing the correlation of the number of substances with moles and Avogadro's number Able to write reaction equations and determine reaction coefficients quickly and correctly	Test/7%
16	Students can understand and explain the basic concepts of stoichiometric calculations, limiting reagents, empirical and molecular formulas	- Basic concepts of stoichiometric calculations Reaction - equations, limiting reagents - Empirical formulas and molecules	Ref No : 1,2,3,4	Lecture Class Discussion Assignment	3x50	Knowing basic concepts of stoichiometry, stoichiometric calculations, reaction equations, limiting reagents, empirical formulas and molecular formulas	Test/7%

17	• Evaluation of the fifteenth and sixteenth lectures	• Module IV		Exam Written exam	3x50		Tests/4%
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FINAL VALUE = 30% UTS + 30% UAS + 10% TASK/QUIZ + 30% Practicum Value

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 are as follows,

CPL Code	Formulation
S-1	Believe in God and be able to demonstrate a religious attitude
S-2	Upholding the humanity values in carrying out tasks based on religion, morals, and ethics
S-3	Contributes to improve the quality of life in society, nation, state, and civilization based on Pancasila
S-4	Take a part as a citizen who proud and love the nation, has nationalism and responsibility to state and nation.
S-5	Respects cultural diversity, views, religion, and beliefs, as well as other people's original opinions or findings
S-6	works together and has social sensitivity and concern for society and the environment
S-7	obeys the law and disciplined in society and state life.
S-8	internalizes academic values, norms, and academic ethics
S-9	demonstrates a responsible attitude towards work in their field of expertise independently;
S-10	internalizes the spirit of independence, struggle, and entrepreneurship

B. General Skills Formula

B1. Undergraduate Program

CPL Code	General Skills Formula
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 studies mentioned above in the form of a thesis or final project report and upload it on the university
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
KU-3	Able to solve work problems with the nature and characteristics of context that is in accordance 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 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 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 and able to groan ola work competency development independently
KU-8	Able to document, store, secure and retrieve data to ensure validity and prevent plagiarism