



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences
HASANUDDIN UNIVERSITY

3. Basic Chemistry

Module Name	:	Basic Chemistry
Module Level	:	Bachelor
2Code, if applicable	:	23H03112702
Subtitle, if applicable	:	-
Courses, if applicable	:	Geophysic
Semester(s) in which the module is taught	:	I (First Semester)
Module coordinator(s)	:	Dr. Djabal Nur Basir, S.Si.,M.Si.
Lecturer(s)	:	Dr. Djabal Nur Basir, S.Si.,M.Si.
Language	:	Indonesian Language
Relation to curriculum	:	Compulsory course in the first year for Bachelor Degree in Geophysics
Type of teaching, contact hours	:	Lecture (i.e., Lecture, Discussion, Colaborative learning, Case study, Project-based Learning) Structured assignments (i.e., Module task)
Workload	:	40 hours per semester for Learning and Teaching, 48 hours per semester for Self Study, and 48 hours per semester for Structured Works.
Credit points	:	2 SKS (3.2 ECTS)
Requirements according to the examination regulations	:	Students are eligible to attend the examination if their absences are less than 20% of the lectures
Recommended prerequisites	:	-
Module objectives/intended learning outcomes	:	After completion of this module, students will be able to: CLO 1. The ability to decipher comprehensively atomic structure material, elemental periodic system, chemical bonds, chemical equilibrium, hydrocarbon compounds, functional groups of organic compounds, and biomoleculer bases. CLO 2 The ability to analyze problems or cases critically related to stoichiometric material, solution, acid-base equilibrium, chemical thermodynamics, chemical kinetics, and electrochemistry. CLO 3. Students are able to analyze information in English passage



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		CLO 4. Students are able to Englishcommunicate effectively in the form of academic and daily context The following is the mapping of the ILO and the CLO of this course: <table><tr><td></td><td>ILO 4</td><td>ILO 8</td></tr><tr><td>CLO 1</td><td>✓</td><td></td></tr><tr><td>CLO 2</td><td></td><td>✓</td></tr></table>		ILO 4	ILO 8	CLO 1	✓		CLO 2		✓			
	ILO 4	ILO 8												
CLO 1	✓													
CLO 2		✓												
Content	:	1. Atomic Structure 2. Periodic System of Elements 3. Chemical Bonding 4. Stoichiometry 5. Solutions 6. Chemical Equilibrium 7. Acid-Base Equilibrium 8. Chemical Kinetics 9. Chemical Thermodynamics 10. Electrochemistry 11. Hydrocarbon Compounds 12. Functional Groups of Organic Compounds 13. Fundamentals of Biomolecules												
Study and examination requirements		Participants are marked based on their performance in theory: Collaborative Learning (20%), Case Study (20%) and Written Examination (60%) Students are marked based on their percentage of points obtained and based on the following grade scale: <table><tr><th>Percentage of Achievement</th><th>Grade</th><th>Conversion Value</th></tr><tr><td>85 – 100</td><td>A</td><td>4.00</td></tr><tr><td>80 - <85</td><td>A-</td><td>3.75</td></tr><tr><td>75 - < 80</td><td>B+</td><td>3.5</td></tr></table>	Percentage of Achievement	Grade	Conversion Value	85 – 100	A	4.00	80 - <85	A-	3.75	75 - < 80	B+	3.5
Percentage of Achievement	Grade	Conversion Value												
85 – 100	A	4.00												
80 - <85	A-	3.75												
75 - < 80	B+	3.5												



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			70 - < 75	B	3.0	
			65 - < 70	B-	2.75	
			60 - < 65	C+	2.5	
			50 - < 60	C	2.00	
			40 - < 50	D	1.00	
			< 40	E	0.00	
Exams and assessment formats		Class activity (interaction and presentation) (40%), Homework/Quis (10%) and Laboratory Activity (20%)				
Reading list		Main References 1. Chemistry Teaching Team, Hasanuddin University. (2011). <i>Basic Chemistry</i>. Technical Implementation Unit–MKU, Hasanuddin University, Makassar. 2. Chemistry Teaching Team. (2013). <i>Organic Chemistry</i>. Technical Implementation Unit–MKU, Hasanuddin University, Makassar. Additional References 1. Brady, J., Jespersen, N., & Hyslop, J. (2015). <i>Chemistry</i> (7th ed.). Wiley, Singapore. 2. Nelson, D. L., & Cox, M. M. (2005). <i>Lehninger: Principles of Biochemistry</i>. W. H. Freeman Company.				
Last Revision Date		July 1 st , 2025				