UNIVERSITAS NEGERI JAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
CHEMISTRY STUDY PROGRAM

Jl. Rawamangun Muka, RT 11/RW 14, Rawamangun, Pulo Gadung,
East Jakarta City, Special Capital Region of Jakarta 13220
Phone/Fax: (021) 4894909, E-mail: kimia@unj.ac.id, http://fmipa.unj.ac.id/kimia/

Bachelor in Chemistry **MODULE HANDBOOK**

Module name:	Structure and function of biomolecules
Module level, if applicable:	Undergraduate
Code:	1307600021
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	3rd
Module coordinator:	Prof. Dr. Muktiningsih Nurjayadi, M.Si.
Lecturer(s):	1. Prof. Dr. Muktiningsih Nurjayadi, M.Si. 2. Irma Ratna Kartika, M.Sc. Tech. 3. Dr. Irwan Saputra, M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Courses in the second year (3rd semester) Bachelor Degree
Class Size	40
Type of Teaching	In class activity : Team Based Project and Project based Learning Structured activity : Group Discussion using WorkSheet Independent activity : Individual task
Teaching format / class hours per week	Learning activity can be carried out in the form of : 1. Lecture or students response a. Face to face : 50 minutes/SKS b. Structured activity : 60 minutes/SKS c. Independent activity : 60 minutes/SKS
Workload	1 CU (SKS) for bachelor degree equal to 4 work hours per week or 170 minutes. 3x50 minutes face to face, 3x60 minutes structured tasks, 3x60 minutes independent learning, for 16 weeks (including midterm and final examination), a total of 135,99 hours/semester.
Credit points:	3 SKS (4.5 ECTS)
Prerequisite course(s):	Organic Chemistry
Course Outcomes:	After taking this course the students have ability to: 1. CLO-1. Analyzing the philosophy of biochemistry in the formation of living things 2. CLO-2. Analyze the structure and function of organelles in prokaryotic, eukaryotic, animal and plant cells 3. CLO-3. Evaluating the structure and function of

<table>
<tr><td></td><td>biomolecules (carbohydrates, lipids, proteins) associated with energetics in living cells
4. CLO-4. Analyze the structure and function of DNA and RNA
5. CLO-5. Evaluate the function of enzymes in living cells
6. CLO-6. Evaluate the role of hormones in living cells
7. CLO-7. Evaluate the function of vitamins and minerals in living cells</td></tr>
<tr><td>Content:</td><td>1. Biochemistry philosophy
2. Types and functions of cell organelles and chemical processes that occur in living cells
3. Structure and function of biomolecules (carbohydrates, lipids, proteins) associated with energetics in living cells
4. Structure and function of DNA and RNA
5. Function of enzymes in living cells
6. The role of hormones in living cells
7. Functions of vitamins and minerals in living cells</td></tr>
<tr><td>Study/exam achievements:</td><td>Examinations are conducted as Unit Tests. There are two-unit tests, each covers 4-5 chapters. The final marks are derived from unit tests
(70%) and structured tasks (30%).
<table><tr><th>No</th><th>CO</th><th>Assesment Object</th><th>Assessment Techniques</th><th>Weight</th></tr><tr><td>1</td><td>CLO 1-7</td><td>a. Presence
b. Presentation
c. Mid test
d. Final test</td><td>Written test</td><td>5%
25%
35%
35%</td></tr><tr><td colspan="4">Total</td><td>100%</td></tr></table></td></tr>
<tr><td>Media</td><td>Power point presentation, Zoom meeting, Microsoft Teams, lapop, proyektor.</td></tr>
<tr><td>Literatures</td><td>1. Berg, J. M., tymoczko, J. L. And Stryer, L., 2002. Biochemistry 5th Editions. W. H. Freeman, USA.
2. Murray, R. K., Bender, D. A., Botham, K. M., Kennelly, P. J., Rodwell, P. W. And Weil, P. A. 2009. Harper's Illustrated Biochemitry 28th Editon. McGraw-Hill, Lange, USA.</td></tr>
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PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CO1						v						
CO2						v						
CO3						v						
CO4						v						
CO5						v						
CO6						v						
CO7						v						

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CO1	A											
CO2	A											
CO3	A											
CO4	A											
CO5	A											
CO6	A											
CO7	A											
CO8	A											
CO9	A											