



UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND SCIENCE
DEPARTMENT OF BIOLOGY EDUCATION

Colombo 1 Street Yogyakarta 55281

Phone: (0274)565411 Ext. 217, (0274)565411(Administration Office), fax (0274)548203

Website: fmipa.uny.ac.id, E-mail :humas_fmipa@uny.ac.id

Bachelor of Science in Biology

MODULE HANDBOOK

Module name:	Enzimology
Module level, if applicable:	Undergraduate
Code:	BIM6283
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	Even
Module coordinator:	Evy Yulianti, M. Sc.
Lecturer(s):	Evy Yulianti, M. Sc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Elective Course
Teaching format / class hours per week during the semester:	100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per week
Workload:	Total workload is 91 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (3 ECTS)
Prerequisites course(s):	Biochemistry
Programme Learning Outcomes	<ol style="list-style-type: none"> 1. (PLO 4) Mastering the structure of biological sciences in depth (core biology) to solve problems faced in the field of biology (problem solving) and as capital in mastering other related science (related science). 2. (PLO 6) Adaptive, creative, and innovative in applying biology and related sciences. 3. (PLO 9) Able to pursue a career or create employment

	opportunities / entrepreneurship in the field of biology. 4. (PLO 11) Having scientific skills as a supporter of public speaking skills in local, national and international forums.																									
Course Outcomes	After taking this course, the students have ability to: CO1. Elaborate the definition of Enzimology, the function of enzyme in the life system CO2. Explain the structure and function of enzyme along with its applications on a daily basis CO3. Explain the catalytic mechanisms of enzyme and coenzymes CO4. Explain and analyze the Kinetics of enzymatic reactions and the inhibitors CO5. Outline the classification of enzymes and analyze the problems related to metabolism in a daily life CO6. Explain the regulation of enzyme activity																									
Content:	Enzymology study the structure and function of the enzyme. This subject covering topics relevant to enzyme structure and function. Selected topics include: Enzymes and Catalytic Mechanisms, Kinetics of Enzymatic Reactions, Classification of Enzymes, Coenzymes, Enzyme Inhibition, Regulation of Enzyme Activity, Application of Enzyme.																									
Study / exam achievements:	The final mark will be weight as follow: <table border="1" data-bbox="620 1108 1429 1604"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO1 to CO6</td> <td>Observed attitudes , knowledge, and skills</td> <td>Survey, test, rubrics and manuals</td> <td>30%</td> </tr> <tr> <td>2</td> <td>Mid term</td> <td>Observed attitudes , knowledge, and skills</td> <td>Survey, test, rubrics and manuals</td> <td>30%</td> </tr> <tr> <td>3</td> <td>Final term</td> <td>Observed attitudes , knowledge, and skills</td> <td>Survey, test, rubrics and manuals</td> <td>40%</td> </tr> <tr> <td colspan="4" style="text-align: right;">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1 to CO6	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	30%	2	Mid term	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	30%	3	Final term	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	40%	Total				100%
No	CO	Assessment Object	Assessment Technique	Weight																						
1	CO1 to CO6	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	30%																						
2	Mid term	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	30%																						
3	Final term	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	40%																						
Total				100%																						
Forms of media:	Multimedia																									
Reference:	A. Berg, J. M., Tymoczko, J. L., Stryer, L., & Stryer, L. 2002. Biochemistry. New York: W.H. Freeman. B. Devlin, T.M., 1997. Textbook of Biochemistry with Clinical Correlations. 4 th edition. WileyLiss, Inc., New York. C. Lehninger, A. L., Nelson, D. L., & Cox, M. M. 2000.																									

	<p><i>Lehninger principles of biochemistry</i>. New York: Worth Publishers</p> <p>D. Lieberman, M. and Peet A. 2018. Marks' basic medical biochemistry: a clinical approach. 5th edition. Wolters Kluwer. Philadelphia.</p> <p>E. Murray, R.K., Bender D. A., Botham, K.M., Kennelly,P.J., RodwellV. W., Weil, P. A. 2009. Harper's Illustrated Biochemistry. 28th edition. The McGraw-Hill Companies, Inc. New York.</p> <p>F. Nelson, D. L. and Cox,M. M. 2017. Principles of Biochemistry. 7th edition. W. H. Freeman and Company. New York.</p> <p>G. Frey, P. A. and Hegeman, A D. 2007. <i>Enzymatic Reaction Mechanisms</i>. Oxford University Press</p> <p>H. Illanes, A. 2008 . <i>Enzyme Biocatalysis Principles And Applications</i>. Springer Science</p> <p>I. Bisswanger, H. 2008. <i>Enzyme Kinetics Principles And Methods</i>. Wiley-Vch Verlag Gmbh & Co. Kga, Weinheim, Germany</p> <p>J. Taylor, K. B. 2004. <i>Enzyme Kinetics And Mechanisms</i>. Kluwer Academic Publishers</p>
--	---

PLO and CO mapping

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