

Undergraduate Programme in Biology

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MODULE HANDBOOK

Module Name	Enzymology
Module level, if applicable	Bachelor
Code, if applicable	<u>BIO425028</u>
Subtitle, if applicable	-
Courses, if applicable	Enzymology
Semester(s) in which the module is taught	5 th (Fifth)
Person responsible for the module	Dr. Isma Kurniatanty, M.Si.
Lecturer(s)	Dr. Isma Kurniatanty, M.Si.; Dian Aruni Kumalawati, M.Sc.
Language	Bahasa Indonesia
Relation to curriculum	Elective course in the third year (5 th semester) Bachelor's Degree
Type of teaching, contact hours	100 minutes lectures, 120 minutes structured activities, 120 minutes individual study, 170 minutes laboratory practical per week.
Workload	The total workload is 136 hours per semester, which consists of 100 minutes of lectures per week for 16 weeks, 120 minutes of structured activities per week, and 120 minutes of individual study per week (in total is 16 weeks per semester, including mid-exam and final exam), 170 minutes laboratory practical (in total is 8 weeks per semester, including individual study and structured activities).
Credit points	3 credits (4,5 ECTS)
Requirements according to the examination regulations	Students must meet a minimum attendance of 75% of the total meetings to be able to take the final exam
Recommended prerequisites	No prerequisites are stated on
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. Students are able to recognize various cellular processes, theories, and applications of enzymes in the fields of health, food, and the environment CO 2. Students are able to analyze several concepts regarding enzymes in life processes, the role of enzymes in cellular metabolism, enzymes as reaction catalysts, enzyme reaction kinetics, classification and nomenclature of enzymes, temperature and pH of enzymes, enzyme inhibitors and their kinetics, concentration of enzymes and substrates CO 3. Students are able to apply their knowledge to provide solutions to problems related to the field of science and develop it in research activities
Content	a. Structure and general character of enzyme b. Enzyme classification c. Basic principles of enzymatic reactions d. Enzyme kinetics and catalytic mechanism of enzyme. e. immobilization and enzyme production.

	f. The role of enzyme in biological field. g. Enzyme as analytical tools.																																																									
Study and examination requirements and forms of examination	The final mark will be weighted as follows: <table><tr><th>NO</th><th>Assessment methods (components, activities)</th><th>Weight (percentage)</th></tr><tr><td>1</td><td>Final Examination</td><td>25%</td></tr><tr><td>2</td><td>Mid-Term Examination</td><td>20%</td></tr><tr><td>3</td><td>Class Activities : Quiz, Homework, etc.</td><td>25%</td></tr><tr><td>4</td><td>Laboratory practical</td><td>30%</td></tr></table> The final assessment is expressed in the form of a letter value converted from a number value with the following categories: <table><tr><th>NO</th><th>Number Value</th><th>Letter Value</th><th>NO</th><th>Number Value</th><th>Letter Value</th></tr><tr><td>1</td><td>≥ 95</td><td>A</td><td>7</td><td>65-69.99</td><td>B/C</td></tr><tr><td>2</td><td>90-94.99</td><td>A-</td><td>8</td><td>60-64.99</td><td>C+</td></tr><tr><td>3</td><td>85-89.99</td><td>A/B</td><td>9</td><td>55-59.99</td><td>C</td></tr><tr><td>4</td><td>80-84.99</td><td>B+</td><td>10</td><td>50-54.99</td><td>C-</td></tr><tr><td>5</td><td>75-79.99</td><td>B</td><td>11</td><td>55-34.99</td><td>D</td></tr><tr><td>6</td><td>70-74.99</td><td>B-</td><td>12</td><td><35</td><td>E</td></tr></table>	NO	Assessment methods (components, activities)	Weight (percentage)	1	Final Examination	25%	2	Mid-Term Examination	20%	3	Class Activities : Quiz, Homework, etc.	25%	4	Laboratory practical	30%	NO	Number Value	Letter Value	NO	Number Value	Letter Value	1	≥ 95	A	7	65-69.99	B/C	2	90-94.99	A-	8	60-64.99	C+	3	85-89.99	A/B	9	55-59.99	C	4	80-84.99	B+	10	50-54.99	C-	5	75-79.99	B	11	55-34.99	D	6	70-74.99	B-	12	<35	E
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Media employed	White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/)																																																									
Reading list	- Albert B, Johnson A, Lewis J, Raff M, Roberts K, and Walter P. 2008. <i>Molecular Biology of the Cell</i>. Garland Science, Taylor & Francis Group. New York. - Campbell, N.A., J.B. Reece, and L.G. Mitchell. 1999. <i>Biologi</i>. Edisi Kelima. Penerbit Erlangga. Jakarta. - Chaplin, M.F., Bucke, C. 1990. <i>Enzyme Technology</i>. Cambridge University Press. - Wampler, J.E. 1999. <i>Advanced Biochemistry and Enzymology Lecture Notes</i>. http://bmbiris.bmb.uga.edu/wampler/8010/lectures/ - Punekar, N. S. 2018. <i>Enzymes: Catalysis, Kinetics, and Mechanisms</i>. Springer.																																																									

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
CO 1			√	√		√					
CO 2			√	√		√					
CO 3			√	√		√					