



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences

HASANUDDIN UNIVERSITY

4. Basic Biology

Module Name	:	Basic Biology
Module Level	:	Bachelor
Code, if applicable	:	23H04110102
Subtitle, if applicable	:	-
Courses, if applicable	:	Geophysics
Semester(s) in which the module is taught	:	I (First Semester)
Module coordinator(s)	:	Dr. Ambeng, M.Si.
Lecturer(s)	:	Dr. Ambeng, M.Si.
Language	:	Indonesian Language
Relation to curriculum	:	Compulsory course in the first year for Bachelor Degree in Geophysics
Type of teaching, contact hours	:	Collaborative Based Learning (e.g. lecture, group works, individual works, lab works, presentation).
Workload	:	Total workload is 90 hours per semester, consisting of 28 hours for lectures, and 31 hours each for structured assignments and independent study
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: Students are able to analyze basic concepts in organisms and interactions with their environment. CLO 2: Students are able to analyze the concepts of metabolism, reproduction, coordination of organisms and the application of biotechnology in the development of science in their respective fields The following is the mapping of the ILO and the CLO of this course:



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					ILO 4	ILO 8												
			CLO 1		✓													
			CLO 2		✓	✓												
Content	:	1. Introduction 2. Basic Concepts of Biology 3. Classification of Living Organisms 4. Ecology 5. Basic Unit of Life 6. Cell Division and Inheritance 7. Cell Metabolism (Anabolism) 8. Cell Metabolism (Catabolism) 9. Reproductive System in Plants 10. Reproductive System in Animals 11. Coordination System in Plants 12. Coordination System in Animals 13. Homeostasis: Circulation and Excretion 14. Fundamentals of Biotechnology																
Study and examination requirements		Participants are marked based on their performance in theory: Collaborative Learning (18%), Case Study (25%) Project Base Learning (7%), Written Examination (16%) and Laboratory (34%). 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
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		<table> <tr> <td>70 - < 75</td><td>B</td><td>3.0</td></tr> <tr> <td>65 - < 70</td><td>B-</td><td>2.75</td></tr> <tr> <td>60 - < 65</td><td>C+</td><td>2.5</td></tr> <tr> <td>50 - < 60</td><td>C</td><td>2.00</td></tr> <tr> <td>40 - < 50</td><td>D</td><td>1.00</td></tr> <tr> <td>< 40</td><td>E</td><td>0.00</td></tr> </table>	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
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< 40	E	0.00																		
Exams and assessment formats	Minimum 80% attendance in this course in order to take the exams.																			
Reading list	Main References - Teaching Material / Basic Biology Learning Material in Schools. - Campbell, N. A., et al. (2003). <i>Biology, Volume 1</i>. Jakarta: Erlangga. - Campbell, N. A., et al. (2003). <i>Biology, Volume 2</i>. Jakarta: Erlangga. - Campbell, N. A., et al. (2003). <i>Biology, Volume 3</i>. Jakarta: Erlangga. Additional References - Barrett, J. M. (1986). <i>Biology</i>. Prentice-Hall, Englewood Cliffs, New Jersey. - Odum, E. P. (1998). <i>Fundamentals of Ecology</i> (3rd ed.). Yogyakarta: UGM Press. - Rompas, Y., Rampe, H. L., & Rumondor, M. J. (2011). <i>Structure of Epidermal Cells and Leaf Stomata of Several Orchidaceae Species</i>. <i>Jurnal Bioslogos</i>, 1(1), 13–19. - Novitasari, R. (2017). <i>Cellular Respiration Processes in Plants</i>. In <i>Proceedings of the National Seminar on Biology Education and Biology</i>, FMIPA Biology, Yogyakarta State University (UNY). - Wolf, J. B., Smith, A. C. F., & Lorenz, A. (2022). <i>Mendel's Laws of Heredity on His 200th Birthday: What Have We Learned by Considering Exceptions?</i> <i>Heredity</i>, 129, 1–3.																			



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	6. Pereira, A. M., & Coimbra, S. (2019). <i>Advances in Plant Reproduction: From Gametes to Seeds</i>. <i>Journal of Experimental Botany</i>, 70(11), 2933–2936. 7. Moore, S. G., & Hasier, J. F. (2017). <i>A 100-Year Review: Reproductive Technologies in Dairy Science</i>. <i>Journal of Dairy Science</i>, 100(12), 10314–10331. 8. Afrilianti, C., Sataral, M., Eljonnahdi, & Fahri, F. (2019). <i>Description and Habitat of Mycalesis Perseus Fabricius, 1775 (Rhopalocera: Nymphalidae), a Cosmopolitan Species on Mount Tompotika, Sulawesi</i>. <i>Journal of Science and Technology</i>, 8(2), 134–137. 9. Kusmana, C., & Hikmat, A. (2015). <i>Floral Biodiversity in Indonesia</i>. <i>Journal of Natural Resources and Environmental Management</i>, 5(2), 187–198. 10. Mauerhofer, L. M., Pappenreiter, P., Paulik, C., Selfert, A. H., Bernacchi, S., & Rittmann, S. K. M. R. (2019). <i>Methods for Quantification of Growth and Productivity in Anaerobic Microbiology and Biotechnology</i>. <i>Folia Microbiologica</i>, 64, 321–360.
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