

Bachelor of BiologyEmail: biologi.fmipa@um.ac.idWebsite: <http://biologi.fmipa.um.ac.id/>**MODULE HANDBOOK**

Module designation	General Biology
Module level, if applicable	Undergraduate
Code, if applicable	NBIOUM6101
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	Odd Semester
Person responsible for the module	Andik Wijayanto, S.Si, M.Si
Lecturer	Andik Wijayanto, S.Si, M.Si Siti Imroatul Maslikah, S.Si., M.Si. Dr. Vivi Novianti, S.Si., M.Si. Umi Fitriyati, S.Pd., M.Pd. Mardiana Lelitawati, S.Si., M.Si. Nur'aini Kartikasari, S.Si, M.Sc Kenni Rozana, S.Pd, M.Si Indra Kurniawan Saputra, S.Si., M.Si. Ajeng Daniarsih, S.Si., M.Si. Muhammad Andry Prio Utomo, S.Si., M.Si.
Language	Bahasa Indonesia
Relation to curriculum	Undergraduate program, compulsory, 1st semester
Type of teaching, contact hours	Undergraduate degree program: cooperative learning, presentation, discussion, 2 x 50 = 100 minutes
Workload	1. Lectures: 2 x 50 = 100 minutes (1.67 hours) per week. 2. Exercises and Assignments: 2 x 60 = 120 minutes (2 hours) per week. 3. Private study: 2 x 60 = 120 minutes (2 hours) per week.
Credit points	2 credit points (~3 ECTS-eq)
Requirements according to the examination regulations	Students must have attended at least 80% of the lectures to be eligible for the final examination
Recommended prerequisites	-

Module objectives/intended learning outcomes	Students are able to: (LO2): To master the basic concept of science and scientific procedure in finding and analyzing problems / phenomena in science fields with the approach of science and technology that is done carefully, critically, and systematically.	
Course learning outcomes	1. Mastering the basic concepts of integrated biology including cell biology, structure and function of animals/plants, genetics and evolution, ecology comprehensively, carefully, critically and systematically 2. Mastering scientific procedures to find, analyze problems/phenomena in the field of biology.	
Content	This course covers the following main topics: • A New Biology for the 21st Century • History of life • Cells • Classification of Organism; Form and Function Growth and Development • Microorganism • Genetics • Evolution • Ecology • Applied Biology (Biotechnology, Bioconservation, Bioinspiration/Biomimetics, etc) to solve social problems.	
Learning activity	Week 1	• Explaining the role of biology in solving social problems. • Explaining biology and its relation to other disciplines.
	Week 2	Discussion: the basic concepts of biology, developmental biology.
	Week 3	Explaining the function of cell organelles and their relation to inheritance, as well as new technologies related to cells to solve social problems.
	Week 4	Describing plant anatomy and its relationship to physiological processes (structure and function in plants).
	Week 5	Describing the anatomy of animals and their relationship to physiological processes (structure and function in animals).
	Week 6	Describe the growth and development of living things (animals and plants).
	Week 7	MIDTERM EXAMINATION
	Week 8	Group presentation: describing microorganisms and their role in life.

	Week 9	Group presentation: describing the laws and procedures of inheritance in organisms (genetics and evolution).
	Week 10	Class activity: creating an evolutionary timeline and phylogeny schema.
	Week 11	Group presentation: explaining the relationship of organisms to other components of the environment, energy flow, material cycles, and ecoenergetics.
	Week 12	- Identifying and analyzing the main threats to biological diversity. - Identifying biological diversity hotspots where high concentrations of endemic species are found. - Describing the efforts to be made in biological conservation (species, populations, communities, ecosystems and landscapes).
	Week 13	Class discussion: social problems related to biology, multidisciplinary biology, the role of biology in solving social problems.
	Week 14	- Identifying social problems - Explaining biological concepts to solve social problems - Identifying alternative problem solving
	Week 15	Focus Group Discussion
	Week 16	FINAL EXAMINATION
Study and examination requirements and forms of examination	Midterm test: 25% Final test: 30% Assignment: 15% Student performance: 15% Class activity: 15%	
Media employed	LCD, blackboard, Sipejar/Google Classroom, Whatsapp Group, Youtube, website.	
Reading list	- National Research Council. 2009. A New Biology for The 21st Century. Washington: The National Academies Press - Urry LA, Cain ML, Wasserman SA, Minorsky PV, Orr RB. 2021. Campbell Biology 12th Ed. USA: Pearson Education, Inc - Simon EJ, Dickey JL, Reece JB. 2019. Campbell Essential Biology 7th Ed. USA: Pearson Education, Inc - Colbourne H, Constantin B, Dobell D, Fehres C, MacFadyen D, Mason A, Thomson G, Venter A. 2007. Inquiry into Biology. Canada: McGraw-Hill Ryerson Limited	

	5. Whittaker RH. New Concepts of Kingdoms of Organisms. 1969. Science 163:150-160 6. Bacteria World. Oxford Museum of Natural History. https://oumnh.ox.ac.uk/shorthand-embed-page-test 7. Mosses Bryophyte life cycle. Link https://www.youtube.com/watch?v=2kY7uzeYWFc 8. Bioinspiration/Biomimetics. Link https://ocw.mit.edu/courses/aeronautics-and-astronautics/16-982-bio-inspired-structures-spring-2009/lecture-notes/ and https://research.unimelb.edu.au/research-at-melbourne/multidisciplinary-research/hallmark-research-initiatives/bioinspirati on
Date of last amendment made	January, 2022