MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN FACULTY OF MATHEMATICS AND NATURAL SCIENCES BACHELOR OF BIOLOGY PROGRAMME	**COURSE CODE: D10D-3001**
Module designation	Cell and Molecular Biology	
Semester in which the module is taught	3rd	
Persons responsible for the module	1. Annisa, M.Si., Ph.D 2. Dr. Sri Rejeki Rahayuningsih 3. Dr. Madihah 4. Yolani Syaputri, Ph.D	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory course	
Teaching methods	Lectures and discussions, Student-centered Learning	
Workload	Total workload : 5440 minutes = 90.67 hours Lecture and : 2 x 50 minutes x 16 weeks = 1600 minutes = 26.67 hours discussion : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours Exercises : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours Self-study	
Credit points	2.00 (3.62 ECTS)	
Required and recommended prerequisites for joining the module	-	
Module objectives/intended learning outcomes	**LO 1:** Students are able to master the concepts and fundamentals of Cell and Molecular Biology, as well as distinguish various concepts and the relationships between Cell Biology and Molecular Biology. **LO 2:** Students are able to relate Cell and Molecular Biology to everyday life. **LO 3:** Students are also able to connect Cell and Molecular Biology with recent scientific references.	
Contents	1. General concepts of cell and molecular biology. 2. Cell theory, differences between viruses, prokaryotic cells, and eukaryotic cells, and their examples. 3. The structure and materials that make up the cell membrane, the function of the materials that make up the cell membrane, and transport between plasma membranes. 4. Cell wall, cilia and flagella, structure and function of cell wall, difference between plant cell wall, bacteria, cilia and flagellum. 5. The cytoskeleton, which includes actin filaments, intermediate filaments, and microfilaments. 6. The structure and function of various cell organelles 7. The cell nuclear membrane, cell nucleus, and nucleolus 8. The relationship between cells (junction) and cell death (apoptosis). 9. The central dogma of molecular biology 10. Synthetic Biology	
Examination forms	Quiz, Midterm exam, Assignment, and Final exam	
Study and examination	The minimum attendance in lectures is 80%. Final grades are evaluated based on quiz (20%), midterm exam (25%), assignment (25%), and final exam (30%)	

requirements	
Reading lists	1. Harvey Lodish; Arnold Berk; Chris A. Kaiser; Monty Krieger; Anthony Bretscher; Hidde Ploegh; Kelsey C. Martin; Michael Yaffe; Angelika Amon. 2021. *Molecular Cell Biology, 9th Edition*. W. H. Freeman. NY. 2. Gerald Karp; Janet Iwasa; Wallace Marshall. 2020. *Karp's Cell and Molecular Biology 9th Edition*. Wiley & Sons Ltd. NJ.