MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **BACHELOR OF BIOLOGY PROGRAMME**	**COURSE CODE:** **D10D-5003**
Module designation	Biochemistry and Analytics	
Semester in which the module is taught	5	
Persons responsible for the module	1. Safri Ishmayana,Ph.D. 2. Agus Safari, M.Si. 3. Dr. Muhammad Fadhlillah 4. Muhammad Yusuf, Ph.D.	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory Course	
Teaching methods	Student-Centered Learning, Project-based Learning, Collaborative Learning	
Workload	Total workload : 5440 minute = 90.67 hour Lecture and discussion : 2 x 50 minute x 16 week = 1600 minute = 26.67 hour Exercises : 2 x 60 minute x 16 week = 1920 minute = 32 hour Self-study : 2 x 60 minute x 16 week = 1920 minute = 32 hour	
Credit points	2.00 (3.62 ECTS)	
Required and recommended prerequisites for joining the module	Basic Chemistry	
Module objectives/intended learning outcomes	1. Students can explain the differences in the structure of biomolecules and the function of each of these biomolecules 2. Students can explain the metabolism of biomolecules including carbohydrates, amino acids, and lipids 3. Students can explain the flow of genetic information on the process of protein biosynthesis	
Contents	The Chemical and Analytical Biology course introduces students to the chemical principles underlying biological processes and analytical techniques for studying chemical components in living systems. Students will learn about the structure, properties, and functions of biomolecules such as carbohydrates, proteins, lipids, and nucleic acids, as well as the chemical reactions that occur in cells. In addition, this course covers various chemical and biochemical analysis methods, including spectrophotometry, chromatography, electrophoresis, and other separation techniques used in biological research. Learning is not only theoretical but also involves practical work to develop students' skills in performing chemical analysis of biological samples. This course is highly relevant for students interested in biochemistry, molecular biology, biotechnology, or other related fields, as it provides a strong foundation for understanding and researching the mechanisms of life at the molecular level.	
Examination forms	Quiz, Midterm exam, Assignment, and Final exam	

Study and examination requirements	The minimum attendance in lectures is 80%. Final grades are evaluated based on quiz (10%), midterm exam (15%), assignment (10%), final exam (15%), project and participation (50%)
Reading lists	1. Raven, P.H. & Johnson, G.B. (2002). Biology. 6th ed. McGraw-Hill. Boston 2. Alberts, B., Bray, D., Hopkin, K., Johnson, A., Lewis, J., Raff, M., Roberts, K. & Walter, P. (2010). Essential Cell Biology. 3rd ed. Garland Science. New York. 3. Bolsover, S.R., Hyams, J.S., Shephard, E.A., White, H.A. & Wiedemann, C.G. (2004). Cell Biology: A Short Course. 2nd ed.Wiley-Liss. New Jersey 4. Postlethwait, J.H. & Hopson, J.L. (2006). Modern Biology. Holt, Rinehart and Winston. Texas. 5. Berg, J. M., Tymoczko, J. L., Gatto, G. J., & Stryer, L. (2024). Biochemistry (Edisi ke-10). W. H. Freeman 6. Nelson, D. L., & Cox, M. M. (2021). Lehninger Principles of Biochemistry (Edisi ke-8). W. H. Freeman..