MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **BACHELOR OF BIOLOGY PROGRAMME**	**COURSE CODE :** **D10D-4001**
Module designation	Genetics	
Semester in which the module is taught	4	
Persons responsible for the module	1. Annisa, M.Si., Ph.D 2. Dr. Sri Rejeki Rahayuningsih 3. Nining Ratningsih, Dra., MIL.	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory Course	
Teaching methods	Lectures and discussions	
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	-	
Module objectives/intended learning outcomes	1. Able to know, understand, and explain the general concept of Genetics 2. Able to understand and explain the basics of Mendel's Law inheritance and its deviations, as well as diversity in nature, explore and be able to analyze events in nature, especially in the field of biology from the aspect of genetics. 3. Able to explain the theory of probability and inheritance of traits; Mendel's exceptions: allele interaction, gene interaction, polygenes, double alleles, sex determination, sex-linked; and its regression; 4. Able to understand and explain the structure and function of chromosomes and genes (DNA); Genetic code, transcription, translation, and proteins. 5. Able to understand and explain Mitosis and meiosis, and their relation to the cell cycle 6. Able to explain and understand cell mutation 7. Able to understand and explain Linking, crossing over, and recombination; Chromosome mapping; DNA 8. Understand the relationship between cells (junction) and cell death (apoptosis). 9. Able to know, understand, and explain Population Genetics.	
Contents	This course covers understanding the basics of inheritance of traits, Mendel's Law and its deviations, diversity in nature, and exploring and being able to analyze events in nature, especially in the field of biology from a genetic aspect. The material provided includes Mendelism: monohybrid, dihybrid, segregation, independent assortment; Probability theory, and inheritance of traits; Mendel's exceptions: allele interactions, gene interactions, polygenes, double alleles, sex determination, sex-linked; and inheritance; Structure and function of chromosomes and genes; genetic code; transcription and translation; Mitosis; meiosis; cell cycle; Mutation; Linkage, crossing over, and recombination; Chromosome mapping; Population Genetics.	
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 (20%), midterm exam (25%), assignment (25%), and final exam (30%)	
Reading lists	1. Snustad D.P *and* Simmons M, J 2012. *Principles of Genetics*, 6th Ed. John Wiley & Sons, Inc. NJ. 2. Brooker, R.J. 2012. 6th Ed. Genetics: *Analysis and Principles*, 5th Ed. Mc.Graw-Hill. 3. NY Griffiths, A.J.F., Wessler, S.R., Carool, S.B., *and* Doebley, J. 2015. *Introduction to Genetics Analysis*, 11th Ed. M.H. Freeman and company. NY.	