# MODULE HANDBOOK

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| | **UNIVERSITAS PADJADJARAN**<br>**FACULTY OF MATHEMATICS AND NATURAL SCIENCES**<br>**BACHELOR OF BIOLOGY PROGRAMME** | **COURSE CODE :**<br>**D10D-4001** |
| **Module designation** | Genetics | |
| **Semester in which the module is taught** | 4 | |
| **Persons responsible for the module** | 1. Annisa, M.Si., Ph.D<br>2. Dr. Sri Rejeki Rahayuningsih<br>3. Nining Ratningsih, Dra., MIL. | |
| **Medium of instruction** | Indonesian | |
| **Relation to curriculum** | Compulsory Course | |
| **Teaching methods** | Lectures and discussions, Student-Centered Learning, Project-based Learning, Collaborative Learning | |
| **Workload** | Total workload : 5440 minute = 90.67 hour<br><br>Lecture and discussion : 2 x 50 minute x 16 week = 1600 minute = 26.67 hour<br>Exercises : 2 x 60 minute x 16 week = 1920 minute = 32 hour<br>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. Students are able to understand and explain general concepts of genetics.<br>2. Students are able to understand and explain the basics of Mendelian inheritance and its deviations, as well as diversity in nature. They are able to analyze events in nature, especially in the field of biology, from a genetic perspective.<br>3. Students are able to classify and explain the structure and function of chromosomes, genes, and expression.<br>4. Students are able to conceptualize and explain cell division in living things.<br>5. Students are able to analyze and understand cell mutations.<br>6. Students are able to analyze and explain crossing over and recombination in DNA chromosome mapping.<br>7. Students are able to analyze and explain population genetics. | |
| **Contents** | 1. Introduction and Course Contract<br>2. Cell Mechanisms<br>3. Mendel's Genetics<br>4. Sex Determination<br>5. Genetic Material<br>6. Linkage and Crossing Over<br>7. Gene Expression<br>8. Multiple Alleles and Double Alleles<br>9. Mutations<br>10. Population Genetics | |

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| **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. Snustad D.P *and* Simmons M, J 2012. *Principles of Genetics*, 6th Ed. John Wiley & Sons, Inc. NJ.<br>2. Brooker, R.J. 2012. 6th Ed. Genetics: *Analysis and Principles*, 5th Ed. Mc.Graw-Hill.<br>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.<br>4. Snustad, D. P., & Simmons, M. J. (2019). Principles of Genetics (Edisi ke-8). John Wiley & Sons.<br>5. Strachan, T., & Read, A. (2019). Human Molecular Genetics (Edisi ke-5). CRC Press. |