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| Module designation | Genetics and Evolution |
| Module level, if applicable | Undergraduate |
| Code, if applicable | PIPAUM6103 |
| Subtitle, if applicable | - |
| Courses, if applicable | - |
| Semester(s) in which the module is taught | Even/Autumn Term |
| Person responsible for the module | Dr. Yayuk Mulyati, S.Si., S.Pd., M.Si. |
| Lecturer | Dr. Yayuk Mulyati, S.Si., S.Pd., M.Si, Erti Hamimi, S.Pd, M.Sc, Prof. Dr. Agr. Moh. Amin, M.Si, Dra. Dwi Listyorini, M.Si., D.Sc. |
| Language | Bahasa Indonesia |
| Relation to curriculum | Undergraduate degree program, elective, 4 th semester. |
| Type of teaching, contact hours | Inquiry learning, 100 minutes of lecture and discussion, 120 minutes of structured activities. |
| Workload | 79.325 hours of 100 minutes of lecture and discussion, 120 minutes of structured activities, and 120 minutes of independent study for 14 weeks. |
| Credit points | 2 (3.173 ECTS cr-eg) |
| Requirements according to the examination regulations | A student must have attended at least 80% of the lectures to sit in the exams. |
| Recommended prerequisites | Biochemistry |
| Module objectives/intended learning outcomes | After completing this module, students are expected to: LO 3: master basic chemistry knowledge using the Nature of Science (NOS) along with logical, critical, systematical, and innovative thinking in team collaboration using local potential and information technology development. |
| Content | This course covers the following three main topics: (1) the basic principle of inheritance; nucleic acids, mechanism of replication, mechanism of transcription; mekanisme of translation, cell division; 2) reproduction and offspring; gene inheritance, extra-chromosomal inheritance, Mendelian inheritance, development of Mendel Law's, mutation and crossing over, gene linkage, Hardy-Weinberg Law's, 3) Biology evolution, adaptation, and speciation. The topics on the subject are focused to the following subtopics: 1. Nucleic acid: DNA and RNA 2. DNA replication 3. Nucleic acid expression: transcription, modification post transcription, translation. 4. Cell division: mitotic and meiosis. 5. Gametogenesis. 6. Fertilization |

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| | <ul style="list-style-type: none"> 7. Mendel Law's 8. The development of Mendel Law's 9. Mutation 10. Genetic material in population 11. Evolution in biology. |
| Study and examination requirements and forms of examination | Assessment of student's competency achievement using assignment (laboratory report, answer of e-TEQ sheet, quiz), Middle Semester Exam and Semester Exam. |
| Media employed | Power point, e-TEQ sheet, laboratory tools, Sipejar. |
| Reading list | <ul style="list-style-type: none"> 1. Grotewold, E., Joseph, C., & Elizabeth, A.K. 2015. <i>Plant Genes, Genomes, and Genetics</i>. New York: Wiley Blackwell. 2. Hartwell, L.H., Michael, L.G., Janicem A.F., & Leory,H. 2018. <i>Genetics: From Genes to Genomes: Six Edition</i>. New York: McGraw-Hill Education. 3. Pierce, B.A. 2012. <i>Genetics: A Conceptual Approach</i>. Fourth Edition. New York: Kate Ahr Parker. 4. Stewart, C.N. 2008. <i>Plant Biotechnology and Genetics: Principles, Technique, and Application</i>. Canada: John Wiley & Sons, Inc. 5. Urry, L.A., Michael L.C., Steven, A.W., Peter V.M & Jane B.R. 2016. <i>Campbell Biology</i>. Eleventh Edition. New York: Pearson |
| Date of last amendment made | May, 2020 |