THE MODULE HANDBOOK
Magister Biology Study Program
FACULTY OF BIOLOGY

PLANT AND ANIMAL BREEDING

Course code	BIMB202229
Course level	Magister
Semester/ term	Odd and Even
Course coordinator(s)	Prof. Dr. Budi Setiadi Daryono, M.Agr.Sc
Lecture(s)	1. Prof. Dr. Budi Setiadi Daryono, M.Agr.Sc 2. Prof. Tety Hartatik, S.Pt., Ph.D. 3. Dr. Aprilia Sufi Subiastuti, S.Si
Language	Indonesian
Classification within the Curriculum	Optional
Teaching format/ class hours per week during the semester	This course is organised into 1 and planned to have 14 teaching weeks and 2 weeks of examination.
Workload	Estimated working hour: 2 credits of theory
Credits	2-0 credits
Requirements	Genetics
Program Learning Outcome	ATTITUDE (S1): Students can internalize academic values, norms, and ethics and show an independent and responsible attitude in their field of expertise Knowledge (P1): Graduates can demonstrate / demonstrate knowledge and understanding of biological theories and cover all aspects of biological studies at various levels of the organization of life General Skills (KU1): Graduates can develop logical, critical, systematic, and creative thinking through scientific concepts and research General Skills (KU2): Graduates can manage research data and make decisions in solving biological problems based on analytical or experimental studies and analysis of critical information Special Skills (KK2): Graduates can solve problems related to biological resources through a cross and / or multidisciplinary approach that is beneficial to society and the scientific community.
Course Learning Outcome	CLO1: Students are able to explain and summarize the principles of plant and animal breeding including breeder ethics

	CLO2: Students are able to explain and conclude the application and development of genetics in agricultural plants and animal production CLO3: Students are able to evaluate selection strategies of superior traits and breeding technique CLO4: Students are able to design strategies and potential development of molecular marker technology to develop plant and animal breeding
Course Description	This course explains the principles of plant and animal breeding which will be delivered sequentially from the principles of mendelian, population, and molecular genetics including qualitative and quantitative inheritance, as well as plant and animal transformation. Furthermore, genetic development in agricultural plants and production animals will also be presented including inheritance, the role of the environment, pedigree selection, superior trait selection, repeated selection, backcross method, genetic techniques, marker-assisted selection. The efficiency of learning methods in the Plant and Animal Breeding Subject is carried out through the implementation of Student Teacher Aesthetic Role-sharing (STAR) to realize active communicative learning and increase student motivation to actively express opinions, argue, cooperate, learn to accept and respect other people's opinions. Group discussion is a form of implementing Cooperative Learning, Collaborative Learning, Problem Based Learning or Case Based Learning.
Assesments	Project = 20% Task 1 = 10% Task 2 = 10% Midterm exam = 30% Final exams = 30%
Study Media	Video, research article, Personal Computer, and module
Literature	1. Comstock, R. E. 2014. Quantitative Genetics with Special Reference to Plant and Animal Breeding, Wiley India Pvt Ltd. 2. Isik, F., J. Holland and C. Maltecca. 2017. Genetic Data Analysis for Plant and Animal Breeding. Springer, Cham. 3. Brown, J. and . P.D.S. Caligari. 2008. An Introduction to Plant Breeding. Blackwell Publishing. Singapore.