



Course Module
Departement of Animal Science
Faculty of Animal Science
Universitas Brawijaya

Module Name	Animal Breeding
Module Level	Undergraduate Study Program of Animal Science
Code	PEP60008
Subtitle	-
Courses	Animal Breeding
Semester (s)	5
Person responsible for the module	-
Lecturer	Prof.Dr.Ir. Luqman Hakim, MS. Prof. Dr.Ir. Sucik Maylinda, MS. Prof.Dr.Ir.V.M. Ani Nurgiartiningsih, MSc. Prof.Dr.Ir. Gatot Ciptadi, DESS. IPU, ASEAN Eng. Dr.Ir. Agus Budiarto, MS. Dr Ahmad Furqon, SPt.
Language	Bahasa Indonesia, English
Relation to curriculum	Study Program: Animal Science Specialization: Animal Production Type: Compulsory
Type of Teaching contact hours	<ol style="list-style-type: none"> 1. Lectures are conducted for 2x50 minutes for 14 meetings (Offline) or 1x50 minutes for 14 meetings (Online) 2. Practical works are conducted for 1x50 minutes for 14 meetings (Offline/Online) 3. Exercises are conducted for 2x before Midterm Exam and 2x after Midterm Exam 4. Self-structured assignments are conducted 1x before Midterm Exam and 1x after Midterm Exam 5. Quizzes are conducted 1x before the Midterm Exam and 1x after the Midterm Exam 6. Group presentations are conducted 1x before the Midterm Exam and 1x after the Midterm Exam
Workload	Courses: 90,67 hours/semester Practical: 1,70 hours/semester
Credit Weight	3 credits or 5.1 (ECTS)
Requirements according to the examination regulations	-
Recommended prerequisites	-
Requirements for Passing the Course	-

<p>Requirements for Passing the Course</p>	<ul style="list-style-type: none"> - Attendance >80% - The final score of all the components of the PBM evaluation >44 <p>The final score component:</p> <ul style="list-style-type: none"> - 30% Midterm Exam - 30% Final Exam - 20% Practicum - 10% Structured Assignments and quiz - 10% Group Assignments <p>A : 80 < Final Score ≤ 100 B+ : 75 < Final Score ≤ 80 B : 69 < Final Score ≤ 75 C+ : 60 < Final Score ≤ 69 C : 55 < Final Score ≤ 60 D : 50 < Final Score ≤ 55 D+ : 44 < Final Score ≤ 50</p>
<p>Prerequisite Courses</p>	<p>Reproductive Management and IB</p>
<p>Learning Outcomes</p>	<p>Learning Outcomes :</p> <ol style="list-style-type: none"> 1. Capability to develop knowledge and comprehensive mindset based on Animal science and industry (LO 4) 2. Proficient in biology, physiology, animal nutrition, breeding, farm management, and implementation in Animal Science (LO6) 3. Actively contributing in the learning process and discussion (LO 10) 4. Capability to ethically design and perform experiments, analyze and interpret data as to provide sustainable problem solving in Animal Science (LO 12) <p>Course Learning Outcomes: After completing this course students are able to:</p> <ol style="list-style-type: none"> 1. Implement the basic principles of animal breeding including genetic parameters, selection, genetic progress, and regulation of the mating system 2. Calculate and analyze animal genetic potential, genetic parameters, and genetic progress due to selection 3. Self-Learn and develop insights in evaluating the implementation of animal breeding programs in Indonesia <p>Objectives: This course encompasses understanding the concept of livestock breeding, qualitative and quantitative traits, estimated genetic parameters (heritability = h^2, repeatability = r, genetic correlation = r_G), estimation of Breeding Value (BV), Most Probable Producing Ability (MPPA), Estimated Real Producing Ability</p>

	<p>(ERPA), the estimation of the selection response, the correlated response, the method of selecting one trait and more than one trait, and the mating/breeding system</p> <p>Knowledge: Able to explain the basic principles of livestock breeding including genetic parameters, selection, genetic progress and regulation of the breeding system</p> <p>Skills: cognitive- Able to calculate and analyze livestock genetic potential, genetic parameters, and genetic progress due to selection. Physicomotoric-Students are Able to learn and develop self-learn insights in evaluating the implementation of livestock breeding programs in Indonesia</p> <p>Competences: Understanding the contents Estimation of genetic parameters (heritability, repeatability, genetic correlation), Estimation of BV, MPPA, and ERPA, Estimation of selection response and correlated responses, The method of selecting one trait and more than one trait, Mating system (Inbreeding and Outbreeding)</p>
Learning Content	<p>The topics are:</p> <ol style="list-style-type: none"> 1. INTRODUCTION 2. Estimation of genetic parameters (heritability, repeatability, genetic correlation) 3. Estimation of BV, MPPA, and ERPA 4. Estimation of selection response and correlated responses 5. The method of selecting one trait and more than one trait 6. Mating system (Inbreeding and Outbreeding)
Study and examination requirements and forms of examination	<ul style="list-style-type: none"> - Attendance >80% - The final score of all the components of the PBM evaluation >44 <p>The final score component:</p> <ul style="list-style-type: none"> - 30% Midterm Exam - 30% Final Exam - 20% Practicu - 10% Structured Assignments - 10% Quiz <p>A : 80 < Final Score ≤ 100 B+ : 75 < Final Score ≤ 80 B : 69 < Final Score ≤ 75 C+ : 60 < Final Score ≤ 69 C : 55 < Final Score ≤ 60 D : 50 < Final Score ≤ 55 D+ : 44 < Final Score ≤ 50</p>
Test Terms and Forms	<ul style="list-style-type: none"> • Examination requirements: A minimum of 80% attendance to attend the final exam

	<ul style="list-style-type: none"> • Forms of examination: • Multiple choices and Essay
Learning Media	Projector and screen, Zoom application, Google Classroom, e-book, WA Group
References	<ol style="list-style-type: none"> 1. Falconer, DS. Introduction to Quantitative Genetics. 1989. Longman Scientific & Technical. New York. 2. Ciptadi, G. A. Budiarto, Aulani'am, Y Oktanella. 2019. Genetika dan Pemuliaan : Peternakan-Veteriner. UB Press. Malang. ISBN 978-602-432-950-1. 3. Hakim, L. 2011. Dasar Pemuliaan Ternak. Darkah Media Malang. ISBN: 978-602-96331-5-3. 4. Hardjosubroto, W. 1994. Aplikasi Pemuliabiakan Ternak di Lapangan. PT Gramedia Widiasarana Indonesia. Jakarta. 5. Lasley, J.F. 1978. Genetics of Livestock Improvement. 3 eds. Prentice-Hall of India, Private Ltd, New Delhi. 6. Maylinda, S. 2010. Buku Pengantar Pemuliaan Ternak. UB Press. Malang. 7. Nurgiartiningsih, V. M. A. 2017. Pengantar Parameter Genetik pada Ternak. UB Press, Malang. ISBN:978-602-432-331-8. 8. Udo, H. 1992. Ruminant Breeding Strategies for the Tropics. Wageningen Agricultural University. The Netherlands. 9. Warwick, E. J., M. Astuti, and W. Hardjosubroto. 1990. Pernuliaan Ternak. Gadjah Mada University Press. Yogyakarta.