FACULTY OF AGRICULTURE
DEPARTMENT OF ANIMAL SCIENCE

UNDERGRADUATE PROGRAM   **MODULE HANDBOOK**

Module designation	Animal Biotecnology
Semester(s) in which the module is taught	6th semester
Person responsible for the module	Prof. Dr. Ir. Eka Meutia Sari, M.Sc
Language	Indonesia, English
Relation to curriculum	Elective Modules
Teaching methods	Lecture, interactive discussion, practitioner lectures , small group discussion, Project results
Workload (incl. contact hours, self-study hours)	● 100 minutes of lecture and discussion per week ● 120 minutes of structured tasks per week ● 120 minutes learn to be independent per week
Credit points	2 SKS = 3,2 ects
Required and recommended prerequisites for joining the module	
Module objectives/intended learning outcomes	Students are able to explain the principles and applications of biotechnology in animal science, including genetic engineering, reproductive biotechnologies, and molecular diagnostics. They can apply laboratory techniques to analyze genetic material, improve livestock productivity, and develop innovations in animal health and breeding programs.
Content	Animal biotechnology is the application of biotechnology principles and techniques, including the use of molecular tools such as PCR, electrophoresis, and sequencing, to manipulate and optimize the genetic traits, reproduction, nutrition, and health of animals. Its scope includes genetic engineering, cloning, reproductive technologies (artificial insemination, embryo transfer, in vitro fertilization), and the development of transgenic animals, while considering ethical and regulatory aspects as well as practical applications through case studies in improving the quality and productivity of livestock."
Examination and Assessement Formats	Practical, Project-based learning, Discussion
Study and examination requirements	Participative active 20% Assigment 10% Project-based learning 50% Quiz 20%
Reading list	1. Himmatul Khasanah dan rekan. 2022. *Aplikasi Myostatin di Bidang Bioteknologi Hewan*. Jakarta: Inara Publisher. 2. Rasad, S. D., & Solihat, N. 2023. *Bioteknologi Reproduksi Ternak*. Bandung: Unpad Press. 3. Umami, N., Suhartanto, B., Suwignyo, B., Prasojo, Y. S., Nasution, M. D., & Runingtyas, L. 2024. *Bioteknologi dalam Pengembangan Hijauan Pakan Ternak di Indonesia*. Yogyakarta: Deepublish. 4. Cahyadi, M., Pramono, A., & Abdurrahman, Z. H. 2025.

	Aplikasi Bioteknologi Peternakan. Yogyakarta: Deepublish. 5. Nugroho, E. P. 2025. *Teknologi Reproduksi Ternak*. [Blog Series]. Pandu Books.

k