FACULTY OF AGRICULTURE

Department of Animal Science

UNDERGRADUATE PROGRAM **MODULE HANDBOOK**

Module designation	MICROBIOLOGY OF NUTRITION
Semester(s) in which the module is taught	*7th semester*
Person responsible for the module	Dr. Ir. Sitti Wajizah, M.Si
Language	Indonesian
Relation to curriculum	Compulsory module for Animal Science Program
Teaching methods	Lecture, lesson, case
Workload (incl. contact hours, self-study hours)	▪ 100 minutes of lecture and discussion per week ▪ 120 minutes of structured tasks per week ▪ 120 minutes of independent activity per week
Credit points	2SCH x (1.6) = 3.2 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	1. Able to understand the concept and role of microorganisms in relation to improving and controlling the nutritional quality of animal feed. 2. Able to explain the working mechanism of rumen microorganisms in optimizing nutrient utilization for livestock. 3. Able to identify mycotoxins in feed and perform in vitro isolation and growth techniques for microorganisms. 4. Able to describe the role and working mechanism of probiotics in improving nutrient utilization by livestock and their application in livestock rations.
Content	This course provide learning about understanding of the concept and role of microorganisms in relation to improving and controlling the nutritional quality of animal feed, explaination of the working mechanism of rumen microorganisms in optimizing nutrient utilization for livestock, identify mycotoxins in feed and perform in vitro isolation and growth techniques for microorganisms, and mechanism of probiotics in improving nutrient utilization by livestock and their application in livestock rations..
Exams and assessment formats	Essay, case study
Study and examination requirements	51,7 % case method 6,7 % quiz 16,7 % assignment 8,3 % midterm examination 16,7 % final examination

Reading list	Main References 1. Wang, S. (2024). *Application of fermentation technology in animal nutrition*. *Fermentation, 10*(12), Article 596. https://doi.org/10.3390/fermentation10120596 2. Ortega-Cerrilla, M. E. (Ed.). (2025). *Probiotics, prebiotics, and synbiotics in animal nutrition and health and food safety* [Special issue]. Microorganisms. https://www.mdpi.com/journal/microorganisms/special_issues/S2ZCHG6Q46 MDPI 3. Bajagai, Y. S. (Ed.). (2025). *Microbiota in the poultry gastrointestinal tract: Implications for health, nutrition, and productivity* [Special issue]. Animals. 4. Chaturvedi, R., Kumari, A., & Others. (2024). *Advancements in food microbiology: Exploring prebiotics, probiotics and synbiotics*. IJPPR. Human, 30(4), 145–155. 5. Gut Pathogens Editorial Board. (2018). The role of probiotics, prebiotics and synbiotics in animal nutrition. *Gut Pathogens, 10*, 21. https://doi.org/10.1186/s13099-018-0250-0