Module designation	Comparative Nutrition
Semester(s) in which the module is taught	Odd semester
Person responsible for the module	Prof. Dr. Ir. Zuprizal, DEA., IPU., ASEAN Eng. Prof. Dr. Ir. Kustantinah, DEA., IPU. Prof. Dr. Ir. Lies Mira Yusiati, SU., IPU., ASEAN Eng. Dr. Ir. Chusnul Hanim, M.Si., IPM., ASEAN Eng. Ir. Nanung Danar Dono, S.Pt., M.P., Ph.D., IPM., ASEAN Eng.
Language	Bahasa and English
Relation to curriculum	Specialization's Compulsory
Teaching methods	Classical lecture, discussion and lab works.
Workload (incl. contact hours, self-study hours)	Total workload: 84 hours Contact hours: - Lecture: 12 hours - Academic activity: 14 hours - Practicum: 42 Private study: 14 hours
Credit points	1/1
Required and recommended prerequisites for joining the module	None
Module objectives/intended learning outcomes	Course Outcomes (CO): 1. Understand the definition of nutrients and the relationship between nutrients form one another. 2. Understand and able to compare determination of nutritional value of feed between ruminants, poultry and non-ruminant by using feed chemical analysis. 3. Understand and able to evaluate comparatively feed and nutrients between ruminant, poultry, and non-ruminant. 4. Understand and able to evaluate comparatively for digestive physiology and digestive enzyme profiles between ruminant, poultry, and non-ruminant. 5. Understand and able to evaluate comparatively the metabolism of carbohydrates, lipids, and N-compounds between ruminant, poultry, and nonruminant. Expected Learning Outcomes: - Attitudes and Behaviors: 1. Piety to God and be able to show religious attitude and maintain the humanity values in carrying the task, which is based on religion, moral, and ethics. (CO1) 2. Showing the social sensitivity and attention to the community and environment by respecting the culture diversity, view, religious, beliefs, and other people's opinion, and also obey the rules. (CO4) 3. Be accountable in carrying the professional practice that includes ability to accept accountability towards decision and professional action. It shall be according to the scope of the practice under their responsibility and laws. (CO5) - Mastery in Sciences: 1. Able to master the current animal science and its

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<tr><td></td><td colspan="3">application theory. (CO1, CO2)
2. Able to master the livestock production science, animal nutrition and fed science, animal products technology, and the livestock social economics in relation to food security and environment. (CO3)
3. Able to master the design, management, and development of livestock research. (CO4, CO4)
- Special skills:
1. Able to design interdisciplinary and multidisciplinary research in the animal husbandry. (CO2)
2. Able to formulate and solve problems in the national development especially in terms of animal husbandry. (CO4)
3. Able to solve problems and anticipate issues in the development of animal science and industry. (CO3, CO5)
- General skills:
1. Able to identify the science that becomes their research object and position it to a research map by using information technology in the context of science development and expertise implementation developed through interdisciplinary or multidisciplinary approaches. (CO3)
2. Able to make a decision in the context of solving problems in the development of science and technology, which pays attention and applies humanity values based on analysis study or experiment towards information and data. (CO2)
3. Able to maintain the academic integrity generally and avoid the plagiarism practice. (CO4)
4. Able to communicate spoken and written English effectively by using the information technology for the development of animal science and its implementation. (CO5)</td></tr>
<tr><td>Content</td><td colspan="3">This course provides the students to know more about the comparative aspects of digestive physiology and comparative nutrient metabolism from various types of livestock so that students will be better able to apply knowledge to conduct their research in nutrition and animal feed fields. This course contains many different aspects of digestive physiology, which include: food digestion, absorption, and nutrient metabolism, as well as its use in ruminants, poultry, and non-ruminants, practicum on the anatomy of the digestive organs of the aforementioned livestock.</td></tr>
<tr><td rowspan="3">Exams and assessment formats</td><td>Assessment Components</td><td>Course Outcomes (CO)</td><td>Percentage (%)</td></tr>
<tr><td>1. Midterm exam (written test, take home exam, paper assignment)</td><td>CO1, CO2, CO3 & CO4</td><td>35</td></tr>
<tr><td>2. Final exam (written test, take home exam, paper assignment)</td><td>CO4 & CO5</td><td>35</td></tr>
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<tr><td rowspan="10"></td><td colspan="2">3. Practicum</td><td>CO1, CO2, CO3, CO4 & CO5</td><td>30</td></tr>
<tr><td colspan="4">Grade and Score</td></tr>
<tr><td>Grade</td><td>Score</td><td>Grade</td><td>Score</td></tr>
<tr><td>A</td><td>≥80</td><td>C+</td><td>45-49,9</td></tr>
<tr><td>A-</td><td>75-79,9</td><td>C</td><td>40-44,9</td></tr>
<tr><td>A/B</td><td>70-74,9</td><td>C-</td><td>35-39,9</td></tr>
<tr><td>B+</td><td>65-69,9</td><td>C/D</td><td>30-34,9</td></tr>
<tr><td>B</td><td>60-64,9</td><td>D+</td><td>25-29,9</td></tr>
<tr><td>B-</td><td>55-59,9</td><td>D</td><td>20-24,9</td></tr>
<tr><td>B/C</td><td>50-54,9</td><td>E</td><td>0-19,9</td></tr>
<tr><td>Study and examination requirements</td><td colspan="4">The final grade in the module is composed of 35% performance on Midterm exam, 35% final exam, and 30% practicum. Students must have a final grade of 70% or higher to pass.</td></tr>
<tr><td>Reading list</td><td colspan="4">- Larbier, M. and Leclercq, B. 1994. Nutrition and Feeding of Poultry. INRA. Nottingham University Press. UK.
- Mc Donald, P., Edwards, R.A., Greenhalgh, J.F.D., and Morgan, C.A. 2002. Animal nutrition. Sixth Ed. Prentice Hall, Pearson Education, Edinburgh Gate, Harlow, Essex CM20 2JE, UK.
- Richard, O. K. and Church, D.C. 1998. Livestock feeds and feeding. 4th Ed. Prentice Hall, New Jersey, USA.</td></tr>
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