Courses : Research Techniques in Animal Nutrition and Feed Science

Description :

Planning/designing, developing/improving, and conduction research n the field of animal nutrition and feed science.

Prerequisite : -

Credit : 2/0

Semester : II

Course Outcome (CO)* :

1. ***Knowledge and understanding***
   1.1. Be able to comprehend research technique theory according to the research purpose.
   1.2. Be able to provide logistic required in a research.
   1.3. Be able to analyze data from a reseach and be able to draw the conclusion of it..
2. ***Ability/ Intelectual Skill***
   2.1. Be able to design a research according to the research purpose.
   2.2. Be able to coordinate and organize research techniques to achieve efficiency.
3. ***Managerial skills abilities***
   3.1. Be able to master research techniques in the field of animal nutrition and feed science.
   3.2. Be able to collaborate interdisciplinary associated with animal nutrition and feed science field.
   3.3. Be able to communicate ideas and opinion in the field of animal nutrition and feed science research technique.

Course Mapping:

Course Outcome (CO)*	Learning Outcome (LO)**													
	A					B			C					
	1	2	3	4	5	1	2	3	1	2	3	4	5	6
1.1	√													
1.2				√										
1.3				√										
2.1				√										
2.2				√										
3.1				√										
3.2						√								
3.3		√												

**** Learning Outcome**

A. Major Competencies

1. Able to explain basic science principles and implement the animal science in the livestock industry.

2. Able to explain the principles of animal production, animal nutrition and feed, animal products technology and livestock socio-economics in relation to food security.
3. Able to explain the principles and constructing business design in the livestock industry.
4. Able to design and carry out research on livestock development including analysis and interpretation.
5. Able to identify, formulate, and solve problems in the business and livestock industry and national development in the field of animal husbandry.

B. Supporting Competencies

1. Able to analyze and synthesize information on the development of science and livestock industry.
2. Able to evaluate the implementation of science and technology in animal husbandry.
3. Able to develop and implement technology in the livestock industry system.

C. Other Competencies

1. Uphold the norms, values, morals, religions, ethics, and professional responsibilities in animal husbandry.
2. Able to carry out scientific communication.
3. Able to solve problems and impacts in science and livestock industry.
4. Able to anticipate issues in the development of farms.
5. Able to carry out self-development and to think logically and analytically to solve problems in the animal science and industry.
6. Able to cooperate in team and adaptive to the environment.

Course Plan

Week	Course Outcome (CO)	Topic	Learning Activity	Assessment Tool	Number of Hours
1	1,2,3	Introduction	Lecture and Discussion	Exam/Quiz/ Assignment	2
2	1,2,3	Feed Analysis and Evaluation Techniques	Lecture and Discussion	Exam/Quiz/ Assignment	2
3	1,2,3	Urine and Faeces Separation Techniques	Lecture and Discussion	Exam/Quiz/ Assignment	2
4	1,2,3	Metabolizable Energy Evalution	Lecture and Discussion	Exam/Quiz/ Assignment	2
5	1,2,3	Degradation Measurement	Lecture and Discussion	Exam/Quiz/ Assignment	2
6	1,2,3	*Conti*nous Fermentation	Lecture and Discussion	Exam/Quiz/ Assignment	2
7	1,2,3	Animal Body Composition Evaluation	Lecture and Discussion	Exam/Quiz/ Assignment	2
Midterm					
8	1,2,3	Degradation Measurment	Lecture and Discussion	Exam/Quiz/ Assignment	2
9	1,2,3	Purine Derivative	Lecture and	Exam/Quiz/	2

		Measurement	Discussion	Assignment	
10	1,2,3	Digestibility Measurement by Using Indicator	Lecture and Discussion	Exam/Quiz/ Assignment	2
11	1,2,3	Sampling	Lecture and Discussion	Exam/Quiz/ Assignment	2
12	1,2,3	The Use of Isotop	Lecture and Discussion	Exam/Quiz/ Assignment	2
13	1,2,3	Rumen Fistulisation Technique	Lecture and Discussion	Exam/Quiz/ Assignment	2
14	1,2,3	Discussion	Lecture and Discussion	Exam/Quiz/ Assignment	2
Total					**28**

Assessment:

Assessment Component	Percentage (%)
Midterm	30
Final Examination	30
Quiz	5
Assignment	10
Prakticum	25

References:

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4. Long, E.C. 1976. Liquid Scintillation Counting Theory and Techniques. BeckmanInstrumens, Inc. Fulleton California, USA.
5. Ørskov, E.R. and I. McDonald, 1979. The Estimation of Protein Degradability in the Rumenfrom Incubation Measurements Weighted According to Rate of Passage. J. Agric. Sci. Camb. 92 : 499 – 503.
6. Pirt, J. 1985. Principles of Microbe and Cell Cultivation.
7. Stanbury, P.F. and A. Whitetaker. 1987. Principle of Fermentation Technology.
8. Verite, R. 1980. Appreciation of nitrogen value of feeds for ruminants. In:Standardization of Analytical Methodology for Feeds. Proceeding of
9. Workshop held Ottawa, Canada. March 1979. Ed. W.J. Pigden, C.C. Balch and M. Graham. Pp. 87- 96.
10. Widyobroto, B.P., M. Soejono, R. Utomo, Kustantinah, dan A. Agus. 1998.Pengukuran Degradasi In Sacco. Review Metodologi. LokakaryaStandarisasi Pengukuran Degradasi In Sacco di Indonesia, Yogyakarta.

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