SEMESTER COURSE PLAN (SCP)

RUMINANT AND NON-RUMINANT NUTRITION PRACTICES
(23I01121801)

TEACHING TEAM :

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BACHELOR PROGRAMME IN ANIMAL HUSBANDRY
FACULTY OF ANIMAL SCIENCE
HASANUDDIN UNIVERSITY
MAKASSAR
2025

BACHELOR PROGRAMME IN ANIMAL HUSBANDRY
FACULTY OF ANIMAL SCIENCE
HASANUDDIN UNIVERSITY

Vision

Vision of the study program :
Becoming an international standard in livestock education provider based on the Indonesian Maritime Continent

Vision Strategic

In accordance with the vision, mission, and objectives that have been set, the Animal Husbandry Study Program of the Faculty of Animal Science sets the following objectives to be achieved:

a. Improving the quality of learning implementation that is in line with the needs of industry and society based on research and international standards;
b. Creating networks and partnerships in the development of Animal Husbandry science and technology and its utilization in the implementation of learning;
c. Producing graduates who have character, vision, creativity and innovation in the field of animal husbandry science and technology with an entrepreneurial perspective.

Mission

The mission carried out in the implementation of the Bachelor of Animal Husbandry Study Program, Faculty of Animal Husbandry, Hasanuddin University is

1) Organizing quality learning to produce independent and globally competitive Animal Husbandry scholars.
2) Developing animal husbandry science for the benefit of the nation.
3) Providing a conducive academic climate for implementing education with an entrepreneurial perspective.

Graduate Profiles

No	Profile	Description
1	Manager	Graduates who apply concepts and techniques in managing livestock farming and institutions related to livestock businesses such as financial institutions
2	Young Researcher	Graduates who able to apply scientific concepts and methods in solving problems in the development of the field of Animal Husbandry
3	Planners	Graduates who able to prepare potential and problem analysis, as well as formulate plans and strategies for the development of the livestock and related industries
4	Educators	Graduates who have the ability and skills to transfer science and technology to students in the field of animal husbandry
5	Entrepreneur	Graduates who able to apply business in the field of Animal Husbandry as their main business, or business development to support livestock business
6	Bureaucrat	Graduates who are able to organize government duties, especially in the affairs of livestock development

Learning Outcomes imposed on the Course

ILO-8 (KK2) - 8)Able to synthesize production systems by integrating the field of animal husbandry with other fields of science (SS-02).

Course Learning Outcomes (CLO)

CLO-1: Able to characterize the anatomy and histology of the digestive tract, its role in degradation and fermentation of feed in ruminants and non-ruminants (SLO 8) (SLO8)

CLO-2: Able to measure nutrient consumption and digestibility in ruminants and non-ruminants (ILO 8) (SLO8)

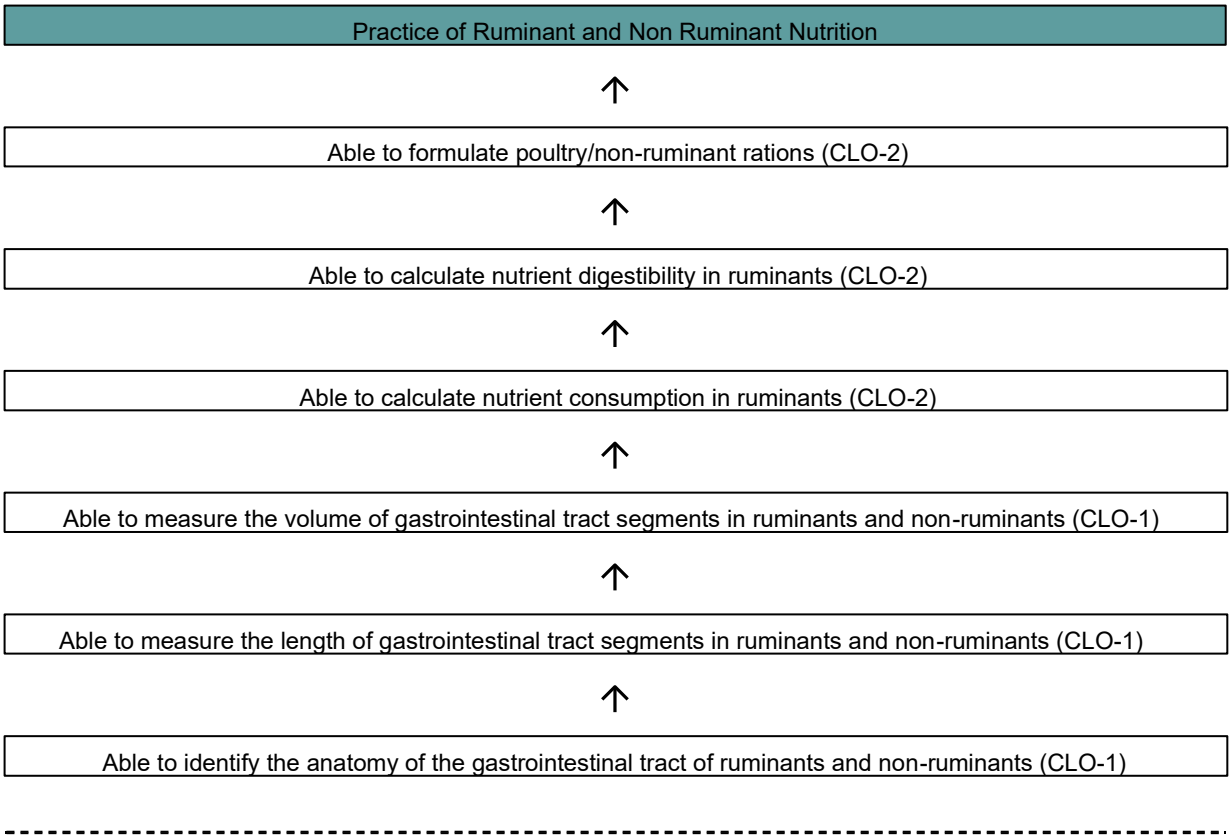
Sub-CLO

Sub-CLO 1: Able to identify the anatomy of the gastrointestinal tract of ruminants and non-ruminants (CLO 1)

Sub-CLO 2: Able to measure the length of gastrointestinal tract segments in ruminants and non-ruminants (CLO-1) Sub CLO-3: Able to measure the volume of gastrointestinal tract segments in ruminants and non-ruminants (CLO-1)

Sub CLO-4: Able to calculate nutrient consumption in ruminants (CLO-2) Sub CLO-5: Able to calculate nutrient digestibility in ruminants (CLO-2) Sub CLO-6: Able to formulate poultry/non- ruminant rations (CLO-2)

Learning Analysis



HASANUDDIN UNIVERSITY
FACULTY OF ANIMAL SCIENCE
BACHELOR PROGRAMME IN ANIMAL HUSBANDRY
SEMESTER COURSE PLAN

Course	Code	Course Group	Credits	Semester	Date of Preparation
Ruminant and Non-Ruminant Nutrition Practices	23I01121801	Nutrition	1	4	Oktober 24,2024

Authority	Developer Lecturer	Course Coordinator	Head of study Program
	Prof. Dr. Ir. Ismartoyo, M.Agr.S. Dr. Ir Rohmiyatul Islamiyati, MP. Dr. Ir Nancy Lahay, MP. Prof. Dr. Ir Asmuddin Natsir, M.Sc. Dr. Ir. Syahriani, M.Si. Dr. A. Mujnisa, S.Pt., MP. Prof.Dr. Ir. Sri Purwanti, S.Pt., M.Si., IPU, ASEAN Eng Dr.Ir. Anie Asriany, M.Si. Dr. Indrawirawan, S.Pt, M.Sc	Prof. Dr. Ir. Asmuddin Natsir, M.Sc.	Dr. Agr. Ir. Renny Fatmyah Utamy, S. Pt., M. Agr., IPM

Course Learning Outcomes	ILOs that are imposed on the course	
	ILO-8	Able to synthesize production systems by integrating the field of Animal Science with other fields of science.
	ILO⇒ Course Learning Outcomes (CLO)	

	Upon completion of this course, it is expected that:	
	ILO-8	CLO-1: Able to characterize the anatomy and histology of the digestive tract, its role in degradation and fermentation of feed in ruminants and non-ruminants (SLO 8)
		CLO-2: Able to measure nutrient consumption and digestibility in ruminants and non-ruminants (SLO 8)
	CLO⇒ Sub-CLOs	
	SUB-CLO-1	SUB-CLO-1: Able to identify the anatomy of the gastrointestinal tract of ruminant and non-ruminant livestock
		SUB-CLO-2: Able to measure the length of gastrointestinal tract segments in ruminants and non-ruminants
		SUB-CLO-3: Able to measure the volume of gastrointestinal tract segments in ruminants and non-ruminants
	SUB-CLO-2	SUB-CLO 4: Able to calculate nutrient consumption in ruminants
		SUB-CLO-5: Able to calculate nutrient digestibility in ruminants
		SUB-CLO-6: Able to formulate poultry/non-ruminant rations

Correlation between ILOs/CLOs to Sub-CLOs

ILOs that are imposed on the course	**CLO**	**SUB- CLO**	**Form Assessment+**				**Weigh t**	**Value**	**Student Score**
			Formative	**Summative**					
				Practicum/Fiel d Practice	**Quiz**	**Group paper Assignment**			
SLO-8	**CLO-1**	**SUB-CLO-1**	**Attendance and Activeness in class**	**15**			15		
SLO-8	**CLO-1**	**SUB-CLO-2**	**Attendance and Activeness in class**	**15**			15		
SLO-8	**CLO-1**	**SUB-CLO-3**	**Attendance and Activeness in class**	**15**			15		

SLO-8	**CLO-2**	**SUB-CLO-4**	**Attendance and Activeness in class**	**10**			10		
SLO-8	**CLO-2**	**SUB-CLO-5**	**Attendance and Activeness in class**	**17,5**			17,5		
SLO-8	**CLO-2**	**SUB-CLO-6**	**Attendance and Activeness in class**	**27,5**			27,5		
			52,5	100			100		
Course Description	The ruminant and non-ruminant nutrition practice course is a compulsory course that has 1 credit in the Animal Husbandry Study Program, Faculty of Animal Science. This course is presented in the fourth semester, discussing the anatomy of the gastrointestinal tract, the length of the gastrointestinal tract segment, the volume of the gastrointestinal tract segment of ruminants, the weight of the gastrointestinal tract segment of non- ruminant livestock consumption, nutrient digestibility in ruminants, and non-ruminant ration formulation.								
Learning Materials / Subject Matter	1. Feed nutrient metabolism in ruminants 2. Feed nutrient metabolism in non-ruminant livestock								
Reference	**Key Reference**								
	1. Soetanto, H. 2019. Introduction to Ruminant Nutrition Science. UB. Press. Malang. 2. Sjofjan, O. M. H. Natsir, Chuzaemi, S., Hartutik. 2020. Animal Nutrition Science. UB. Press. Malang. 3. Tillman, A.D., et al. 2005. Basic Animal Food Science. Gadjah Mada University Press. Yogyakarta. 4. Rasjid, S. 2012. The Great Ruminant. Briliant International. Surabaya 5. Cullison, A.E. 1982. Feeds and feeding. Reston Pub. Inc, Virginia. 6. Hacc, D.W. 1980. Handling and Storage of Food Grains in Tropical and Subtropical Areas. FAO, Rome. 7. Hartadi, S., S. Reksodihadiprodjo, A.D. Tillman. 1997. Feed Composition Table for Indonesia. UGM Press. Yogyakarta. 8. McDonald, P., R.A. Edwards, J.F.D. Greenhalg, C.A. Morgan. 1995. Animal Nutrition, 5th Ed. John Wiley & Sons Inc, New York. 9. Ensminger, M.E. 1960. Animal Science. Fourth Edition. The Interstate Printers and Publishing, Inc. Danville, Illinois. USA. 10. Maynard L.A., J.K. Loosli, H.F Hintz and R.G. Warner, 1984. Animal Nutrition. 7thEd. Tata McGraw-Hill Publishing Comp. Ltd. 11. McDonald, P., RA. Edwards, JFG. Greenhalgh, and CA. Morgan. 2002. Animal Nutriotion. Prentice Hall. 12. Parakkasi, A., 1999. Nutrition and Feeding Science of Domesticated Livestock. University of Indonesia Publisher. 13. Agustina, L., and S. Purwanti. 2012. Poultry Nutrition. House of Knowledge, Yogyakarta. 14. English, P.R., Fowler, V.R., Baxter, S. and Smith, B. 1988. The Growing and Finishing Pig: Improving Efficiency. Farming Press. 15. Evans, M.E. 1985. Nutrient Composition of Feedstuffs for Pigs and Poultry. Queensland Department of Primary Industries, Pub. No Q15001, Brisbane. 16. Lassiter, J.W. and H.M. Edwards, Jr. 1982. Animal Nutrition. Restong Publishing Company, Virginia. 17. Marsudidan Saparinto.2012.Quail. Penebar Swadaya.Jakarta. 18. McDonald, Edwards, Greenhalg, Morgan, 2010. Animal Nutrition. 7th Ed. Longman Scientific & Technical. John Wiley and Sons, Inc, New York. . 19. Revelation. J. 1997. Poultry Nutrition. Gajah Mada University Press. Yogyakarta.								
	Additional Reference								

Teaching Team	Prof. Dr. Ir Ismartoyo, M.Agr.S., Dr. Ir Rohmiyatul Islamiyati, MP, Dr. Ir Nancy Lahay, MP, Prof. Dr. Ir Asmuddin Natsir, M.Sc., Dr. Ir Syahriani, M.Si., Dr. A. Mujnisa, S.Pt., MP, Prof.Dr. Ir. Sri Purwanti, S.Pt., M.Si., IPU, ASEAN Eng, Dr. Ir. Anie Asriany, M.Si., Indrawirawan, S.Pt, M.Sc.						
Course requirements	Animal Nutrition Science, Feed Ingredient Science						
Meening To	**Sub CLO (End ability of each learning stage)**	**Assesment**		**Forms and Methods of Learning [time estimate]**		**Content**	**Weight of Assesment (%)**
		Indicator	**Technique & Criteria**	**Offline**	**Online**		
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Able to identify the anatomy of the gastrointestinal tract of ruminants and non-ruminants (CLO-1)	Formative: - Summative: • Accuracy in identifying the anatomy of the gastrointestinal tract of ruminants	Formative Criteria: Summative Criteria: Practicum/Field Practice (5) Assessment Techniques: None	Practicum, Studio Practice, Workshop Practice, Field Practice: Other Methods 1 x 1 x 170		Anatomy of the gastrointestinal tract of ruminants	5
2	Able to identify the anatomy of the gastrointestinal tract of ruminants and non-ruminants (CLO-1)	**Formative:** - **Summative:** • Accuracy in identifying the anatomy	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other Methods 1 x 1 x 170		Anatomy of the gastrointestinal tract in poultry	5

		of the gastrointestinal tract of poultry (chicken, duck, quail)					
4	Able to identify the anatomy of the gastrointestinal tract of ruminants and non-ruminants (CLO-1)	**Formative:** - **Summative:** • Accuracy in identifying the anatomy of the gastrointestinal tract of non-ruminant livestock (rabbits)	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other Methods 1 x 1 x 170		Anatomy of the gastrointestinal tract in poultry	5
5	Able to measure the length of gastrointestinal tract segments in ruminants and non-ruminants (CLO-1)	**Formative:** **Summative:** Accuracy of measuring gastrointestinal segment length in ruminants	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Technique:**	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods		Gastrointestinal tract of ruminants	5

			None	1 x 1 x 170			
6	Able to measure the length of gastrointestinal tract segments in ruminants and non-ruminants (CLO-1)	**Formative:** **Summative:** • Accuracy of measuring the length of gastrointestinal tract segments in poultry (chicken, duck, quail)	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other Methods 1 x 1 x 170		Gastrointestinal tract of poultry	5
7	Able to measure the length of gastrointestinal tract segments in ruminants and non-ruminants (CLO-1)	**Formative:** **Summative:** • Accuracy of measuring gastrointestinal segment length in non-ruminant livestock (rabbits)	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other Methods 1 x 1 x 170		Gastrointestinal tract of non- ruminant livestock	5
8	Able to measure the volume of gastrointestinal tract segments	**Formative:**	**Formative Criteria:** **Summative Criteria:**	**Practicum, Studio Practice, Workshop Practice, Field Practice:**		Gastrointestinal tract of ruminants	5

	in ruminants and non-ruminants (CLO-1)	**Summative:** • Accuracy of measuring gastrointestinal segment volume in ruminants	Practicum/Field Practice (5) **Assessment Techniques:** None	Other Methods 1 x 1 x 170			
9	Able to measure the volume of gastrointestinal tract segments in ruminants and non-ruminants (CLO-1)	**Formative:** **Summative:** • Accuracy of measuring gastrointestinal segment weights in poultry (chicken, duck, quail)	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other Methods 1 x 1 x 170		Poultry digestive tract	5
10	Able to measure the volume of gastrointestinal tract segments in ruminants and non-ruminants (CLO-1)	**Formative:** **Summative:** • Accuracy in measuring the weight of gastrointestinal segments in non-ruminant	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (5) **Assessment Technique:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods 1 x 1 x 170		Accuracy of measuring gastrointestinal segment weights in non-ruminant livestock (rabbits)	5

		livestock (rabbits)					
11	Able to calculate nutrient consumption in ruminants (CLO- 2)	**Formative:** **Summative:** • Accuracy in calculating nutrient consumption in ruminants	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (10) **Assessment Technique:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods 1 x 1 x 170		Ruminant nutrient consumption	10
12	Able to calculate nutrient digestibility in ruminants (CLO-2)	**Formative:** **Summative:** Accuracy in calculating nutrient digestibility in non-ruminant livestock	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (10) **Assessment Technique:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods 1 x 1 x 170		Digestibility of nutrients in non-ruminant livestock	10
13	Able to calcu ate nutrient digestibility in ruminants (CLO-2)	**Formative:** **Summative:** The accuracy of evaluating feed ingredients according to the needs of each poultry animal	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (7.5) **Assessment Technique:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods 1 x 1 x 170		Nutrient digestibility in poultry	7,5

14	Able to formulate poultry/non-ruminant rations (CLO-2)	**Formative:** **Summative:** Accuracy in evaluating feed ingredients according to the needs of each non-ruminant livestock	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (7.5) **Assessment Technique:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods 1 x 1 x 170		Digestibility of nutrients in non-ruminant livestock	7,5
15	Able to formulate poultry/non-ruminant rations (CLO-2)	**Formative:** **Summative:** Accuracy in formulating rations according to the needs of poultry based on age/phase of livestock	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (10) **Assessment Technique:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods 1 x 1 x 170		Nutrient digestibility in poultry	10
16	Able to formulate poultry/non-ruminant rations (CLO-2)	**Formative:** **Summative:** The accuracy of preparing rations according to the needs of non-ruminant livestock based on the age/phase of the livestock.	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (10) **Assessment Technique:** None	**Practicum, Studio Practice, Workshop Practice, Field Practice:** Other methods 1 x 1 x 170		Digestibility of nutrients in non-ruminant livestock	10

Matrix ILO, CLO, and Assessment Method

ILO / CLO	CLO-1	CLO-2
ILO-8 (KK2)	Practicum / Field Practice (Weight 15%) Practicum / Field Practice (Weight 15%) Practicum / Field Practice (Weight 15%)	Practicum / Field Practice (Weight 10%) Practicum / Field Practice (Weight 17.5%) Practicum / Field Practice (Weight 27.5%)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Practicum / Field Practice	100
Total	100

Assessment and Evaluation of Student Achievement of CLO

ILOs imposed on the Course	CLO	SUB CLO	Form of Assessment*				Weight	Value	Student Score
			Formative	Sumative					
				Practicum/Field Practice	Quiz	Group Paper Assignment			
ILO-8	CLO-1	SUB-CLO-1	Attendance and Activeness in class	15			15		
ILO-8	CLO-1	SUB-CLO-2	Attendance and Activeness in class	15			15		
ILO-8	CLO-1	SUB-CLO-3	Attendance and Activeness in class	15			15		
ILO-8	CLO-2	SUB-CLO-4	Attendance and Activeness in class	10			10		
ILO-8	CLO-2	SUB-CLO-5	Attendance and Activeness in class	17,5			17,5		
ILO-8	CLO-2	SUB-CLO-6	Attendance and Activeness in class	27,5			27,5		
				100			100		

	HASANUDDIN UNIVERSITY **FACULTY OF ANIMAL SCIENCE** **BACHELOR PROGRAMME IN ANIMAL HUSBANDRY**				
STUDENT STRUCTURED ASSIGNMENT PLAN					
Course	Ruminant and Non-Ruminant Nutrition Practices				
Code	23I01121801	**Credits**	1	**Semester**	4 (Four)
Developer Lecturer	Prof. Dr. Ir. Asmuddin Natsir, M.Sc.				

Task Form	**Task Time**
Documents/Magazines	2 weeks

Task Title

Functions, uses, and applications of marketing in animal husbandry

Course Learning Outcomes

Sub-CLO 2: Analyse the functions, uses, and applications of marketing (CLO 1)

Task Description

The students will be assigned a group paper 'Explaining the functions, uses, and applications of marketing in animal husbandry' by choosing 1 of the sub-topics: Identification, Formulation, Strategy, and Hypothesis. The preparation of the paper follows the following procedure:

1)Each group chooses 1 of the sub-topics: function, utility or application of livestock marketing.

2)Discuss among the group members to identify the process stages for each of the selected sub-topics. Information related to the chosen sub-topic can be obtained from textbooks and journals.

3)Create a paper with the following systematic:

I. Introduction

II. Discussion

III. Conclusion

IV. Literature

4)Group presentation

4**Assignment Method**

1. Conducted in groups using the Small Group Discussion (SGD) learning method.

Form and Format of Output

a. Objective: Marketing functions and applications

b. Output Form: Paper

Indicators, Criteria and Assessment Weight
Indicators: 1. Systematicity: 10% 2. Accuracy of analysis: 25% 3. Depth of material: 30% 4. Novelty and reputation of library materials: 10% 5. Team cohesiveness: 10% **6.** Mastery of the material: 15%
Implementation Schedule
1. 2 weeks
Other
-
Reference List
1. Maynard L.A., J.K. Loosli, H.F Hintz and R.G. Warner, 1984. Animal Nutrition. 7thEd. Tata McGraw-Hill Publishing Comp. Ltd. 2. McDonald, P., RA. Edwards, JFG. Greenhalgh, and CA. Morgan. 2002. Animal Nutriotion. Prentice Hall. 3. Parakkasi, A., 1999. Nutrition and Feeding Science of Domesticated Livestock. University of Indonesia Publisher. 4. Agustina, L., and S. Purwanti. 2012. Poultry Nutrition. House of Knowledge, Yogyakarta. 5. English, P.R., Fowler, V.R., Baxter, S. and Smith, B. 1988. The Growing and Finishing Pig: Improving Efficiency. Farming Press. 6. Evans, M.E. 1985. Nutrient Composition of Feedstuffs for Pigs and Poultry. Queensland Department of Primary Industries, Pub. No Q15001, Brisbane. 7. Lassiter, J.W. and H.M. Edwards, Jr. 1982. Animal Nutrition. Restong Publishing Company, Virginia. 8. Marsudidan Saparinto.2012.Quail. Penebar Swadaya.Jakarta. 9. McDonald, Edwards, Greenhalg, Morgan, 2010. Animal Nutrition. 7th Ed. Longman Scientific & Technical. John Wiley and Sons, Inc, New York. . 10. Revelation. J. 1997. Poultry Nutrition. Gajah Mada University Press. Yogyakarta

DEFINITION OF 1 CREDIT IN LEARNING FORM				hours
A	Lecture, Reception, Tutorial			
	Face to Face	Structured Assignment	Independent Learning	
	50 minutes/week/semester	60 minutes/week/semester	60 minutes/week/semester	2,83
B	Seminars or other similar forms of learning			

	Face to Face	Independent Learning	
	100 minutes/week/semester	70 minutes/week/semester	2,83
C	Practicum, studio practice, workshop practice, field practice, research, community service, and/or other equivalent forms of learning		
	170 minutes/week/semester		2,83

No	Student Learning Methods	code
1	Small Group Discussion	SGD
2	Role-Play & Simulation	RPS
3	Discovery Learning	DL
4	Self-Directed Learning	SDL
5	Cooperative Learning	CoL
6	Collaborative Learning	CbL
7	Contextual Learning	CtL
8	Project Based Learning	PjBL
9	Problem Based Learning & Inquiry	PBL
10	Or other learning methods, which can effectively facilitate the fulfilment of graduate learning outcomes.	