

SEMESTER COURSE PLAN (SCP)

FEEDSTUFF SCIENCE COURSE (23101120502)



TEACHING TEAM :

Prof. Dr. Ir. Jasmal Ahmari Syamsu, M.Si., IPU., ASEAN Eng
196811051993011001

Dr. Ir. Rohmiyatul Islamiyati, MP.
196508191990032001

Dr. A. Mujnisa, S.Pt., MP.
197303271997022001

Dr. Ir Anie Asriany, M.Si.
196710161994022001

Dr. Abdul Alim Yamin, S.Pt, M.Si
198704242021073001

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

Visi Strategi

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-3 (P2) - Mastering the concept and solving livestock problems based on data, science, and scientific methods (K-02).

ILO-5 (KU2) - Able to make appropriate decisions in the context of problem solving, based on the results of data and information analysis (GS-02).

Course Learning Outcomes (CLO)

CLO-1: Students are able to classify feed ingredients based on origin (CLO3)

CLO-2: Students are able to distinguish feed supplements and feed additives (SLO3)

CLO-3: Students are able to identify the content of anti-nutritional substances in feed ingredients (SLO3)

CLO 4: Students are able to perform feed formulation techniques (SLO5)

Sub-CLO

Sub-CLO 1: Students are able to classify feed ingredients based on nomenclature ()

Sub-CLO 2: Students are able to classify feed ingredients of vegetable origin ()

Sub-CLO 3: Students are able to classify feed ingredients of animal origin ()

Sub-CLO 4: Students are able to classify unconventional feed ingredients ()

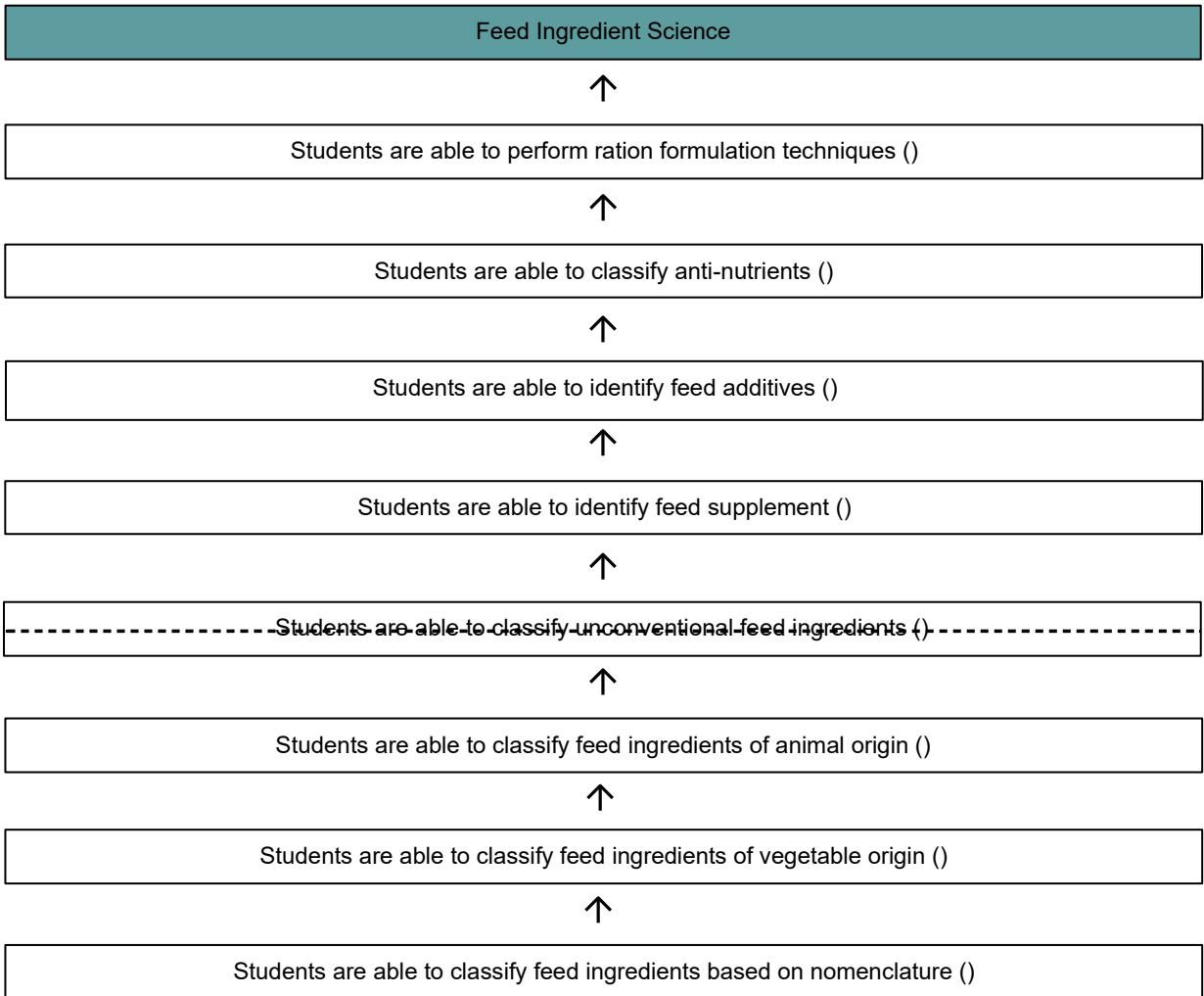
Sub-CLO 5: Students are able to identify feed supplements ()

Sub-CLO 6: Students are able to identify feed additives ()

Sub-CLO 7: Students are able to classify anti-nutrients ()

Sub-CLO 8: Students are able to perform ration formulation techniques ()

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
Feedstuff Science	23101120502	Animal Nutrition and Diet	2	3	August 9, 2023
Authority	Developer Lecturer		Course Coordinator		Head of study Program
	Prof. Dr. Ir Jasmal Ahmari Syamsu, M.Si., IPU, ASEAN Eng, Dr. Ir Rohmiyatul Islamiyati, MP, Dr. A. Mujnisa, S.Pt, MP, Dr. Ir Anie Asriany, M.Si, Abdul Alim Yamin, S.Pt, M.Si		Prof. Dr. Ir. Jasmal Ahmari Syamsu, M.Si., IPU, ASEAN Eng.		Dr. Agr. Ir. Renny Fatmyah Utamy, S. Pt., M. Agr., IPM
Course Learning Outcomes	ILOs that are imposed on the course				
	ILO-3	Mastering the concept and solving livestock problems based on data, science, and scientific methods (K-02).			
	ILO-5	Able to make appropriate decisions in the context of problem solving, based on the results of data and information analysis (GS-02).			
	ILO⇒ Course Learning Outcomes (CLO)				
	Upon completion of this course, it is expected that:				
	ILO-3	CLO-1: Students are able to classify feed ingredients based on origin			
		CLO-2 : Students are able to distinguish feed supplements and feed additives.			
		CLO 3: Students are able to identify the content of anti-nutritional substances in feed ingredients			
	ILO-5	CLO-4: Students are able to perform feed formulation techniques			
	CLO⇒ Sub-CLOs				
CLO-1	Sub-CLO 1: Students are able to classify feed ingredients based on nomenclature ()				

		Sub-CLO 2: Students are able to classify feed ingredients of vegetable origin ()
		Sub-CLO 3: Students are able to classify feed ingredients of animal origin ()
		Sub-CLO 4: Students are able to classify unconventional feed ingredients ()
CLO-2		Sub-CLO 5: Students are able to identify feed supplements ()
		Sub-CLO 6: Students are able to identify feed additives ()
CLO-3		Sub-CLO 7: Students are able to classify anti-nutrients ()
CLO-4		Sub-CLO 8: Students are able to perform ration formulation techniques ()

Correlation between ILOs/CLOs to Sub-CLOs

ILOs that are imposed on the course	ILO	SUB CLO	Form Assessment+							Weight	Value	Student Score
			Formative	Summative								
				Interactive Studying	Practicum/Field Practice	Individual Presentation	Case Study	Problem Base Learning	FINAL TEST			
ILO-	CLO-	SUB-CLO-1		5	5	0	0	0	0	10		
ILO-	CLO-	SUB-CLO-2		7.5	12.5	0	0	0	0	20		
ILO-	CLO-	SUB-CLO-3		2	13	5	0	0	0	20		
ILO-	CLO-	SUB-CLO-4		5	10	0	0	0	0	15		
ILO-	CLO-	SUB-CLO-5		5	0	0	0	0	0	5		
ILO-	CLO-	SUB-CLO-6		2	0	0	3	0	0	5		
ILO-	CLO-	SUB-CLO-7		2	0	0	0	3	0	5		
ILO-	CLO-	SUB-CLO-8		5	10	0	0	0	5	20		
				33.5	50.5	5	3	3	5	100		

Course Description	The course presents the importance of learning the classification of feed ingredients based on nomenclature, feed ingredients of animal vegetable origin and feed ingredients of animal origin. In addition, this course presents knowledge about <i>feed supplements</i> and <i>feed additives</i> , types of antinutrients in feed ingredients and ration formulation techniques						
Learning Materials / Subject Matter	<ol style="list-style-type: none"> 1. Classification of feed ingredients based on nomenclature 2. Feed Ingredients of Vegetable Origin 3. Animal Feed Ingredients 4. Unconventional Feed Ingredients 5. <i>Feed supplement</i> 6. <i>Feed Additives</i> 7. Definition and Classification of Feed Ingredient Antinutrients 8. Ration Formulation Technique 						
Reference	Key Reference						
	<ol style="list-style-type: none"> 1. Widodo, E. (2017). <i>Ilmu Bahan Pakan Ternak dan Formulasi Pakan Unggas</i>. Universitas Brawijaya Press. 2. Nurfitriani, R. A., & Muhamad, N. (2021). <i>Pengetahuan Bahan Makanan Ternak</i>. LIPI Press. 3. Hartadi, H., Tillman, A. D., Reksohadiprodjo, S., Lebdosukojo, S., Kearl, L. C., & Harris, L. E. (1980). Tabel-tabel Dari komposisi bahan makanan ternak untuk Indonesia, data ilmu makanan untuk Indonesia. <i>Fakultas Peternakan, Universitas Gadjah Mada, Yogyakarta</i>. 4. Tim Laboratorium, 2005. Pengetahuan Bahan Makanan Ternak. Ilmu dan Teknologi Pakan Fakultas Peternakan, IPB 5. Jayanegara, A., Ridla, M., Laconi, E. B., 2019. Komponen Anti Nutrisi pada Pakan, IPB Press. 6. Blair, R., 2018. Nutrition and Feeding Organic Poultry. CAB International 						
	Additional Reference						
	Pond WG, DC Church, KR Pond. 1995. Basic Animal Nutrition and Feeding. New York: John Wiley and Sons.						
Teaching Team	Prof. Dr. Ir Jasmal Ahmari Syamsu, M.Si, IPU, ASEAN Eng, Dr. Ir Rohmiyatul Islamiyati, MP, Dr. A. Mujnisa, S.Pt, MP, Dr. Ir Anie Asriany, M.Si, Abdul Alim Yamin, S.Pt, M.Si.						
Course requirements							
Week	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	Students are able to classify feed ingredients based on nomenclature ()	<p>Formative:</p> <p>-</p> <p>Sumative: Completion in classifying feed ingredients</p>	<p>Kriteria Formative:</p> <p>Kriteria Sumative:</p> <p>Interactive Lecture (5) Practicum/Field Practice (5) assessed with rubric I011240002</p> <p>Assessment Technique:</p> <p>None</p>	<p>Studying:</p> <p>Collaborative learning</p> <p>1 x 2 x 50"</p>	<ul style="list-style-type: none"> ● Learning contract ● Objectives, activities, scope of learning ● Materials for one semester classification of feed ingredients based on nomenclature 	10
2-3	Students are able to classify feed ingredients of vegetable origin ()	<p>Formative:</p> <p>-</p> <p>Sumative: Completion in classifying feed ingredients of vegetable origin including Grains and their wastes and Tubers and their wastes.</p>	<p>Kriteria Formative:</p> <p>Kriteria Sumative:</p> <p>Practicum/Field Practice (5) Interactive Lecture (5)</p> <p>Assessment Technique:</p> <p>None</p>	<p>Practicum, Studio Practice, Workshop Practice, Field Practice:</p> <p>Cooperative learning (Cooperative learning), Collaborative learning (Collaborative Learning)</p> <p>1 x 1 x 50"</p>	Grains and their waste Tubers and their waste	10

4	Students are able to classify feed ingredients of vegetable origin ()	<p>Formative:</p> <p>-</p> <p>Sumative: Completion in classifying feed ingredients of vegetable origin including agricultural waste.</p>	<p>Kriteria Formative:</p> <p>Kriteria Sumative:</p> <p>Practicum/Field Practice (5) assessed with rubric I011240002</p> <p>Assessment Technique:</p> <p>None</p>	<p>Practicum, Studio Practice, Workshop Practice, Field Practice:</p> <p>Cooperative learning (Cooperative learning), Collaborative learning (Collaborative Learning)</p> <p>1 x 1 x 50"</p>		Agricultural waste	5
---	--	--	--	---	--	--------------------	---

5	Students are able to classify feed ingredients of vegetable origin ()	<p>Formative:</p> <p>-</p> <p>Summative: Completion in classifying feed ingredients of vegetable origin including feed industry waste.</p>	<p>Kriteria Formative:</p> <p>Kriteria Sumative:</p> <p>Interactive Lecture (2.5) Practicum/Field Practice (2.5)</p> <p>Assessment Technique:</p> <p>None</p>	<p>Practicum, Studio Practice, Workshop Practice, Field Practice:</p> <p>Cooperative learning (Cooperative learning), Collaborative learning (Collaborative Learning)</p> <p>1 x 1 x 50"</p>		Plantation Industry Waste	5
---	--	--	--	---	--	---------------------------	---

6	Students are able to classify feed ingredients of animal origin ()	<p>Formative:</p> <p>-</p> <p>Summative:</p> <p>Completion in classifying feed ingredients of animal origin including livestock origin and waste, milk and milk processing waste, chicken farm waste, fish meal and shrimp meal.</p>	<p>Kriteria Formative:</p> <p>Kriteria Sumative:</p> <p>Individual presentation (5)</p> <p>Practicum / Field Practice (10) assessed with rubric I011240002</p> <p>Assessment Technique:</p> <p>None</p>	<p>Practicum, Studio Practice, Workshop Practice, Field Practice:</p> <p>Cooperative learning (Cooperative learning), Collaborative learning (Collaborative Learning)</p> <p>1 x 1 x 50"</p>		Livestock Origin and Waste Milk and Milk Processing Waste Chicken Farm Waste	15
7	Students are able to classify feed ingredients of animal origin ()	<p>Formative:</p> <p>-</p> <p>Summative:</p> <p>Completion in classifying animal origin feed ingredients including fish meal and shrimp meal.</p>	<p>Kriteria Formative:</p> <p>Kriteria Sumative:</p> <p>Interactive Lecture (2)</p> <p>Practicum/Field Practice (3)</p> <p>Assessment Technique:</p> <p>None</p>	<p>Practicum, Studio Practice, Workshop Practice, Field Practice:</p> <p>Cooperative learning (Cooperative learning), Collaborative learning (Collaborative Learning)</p> <p>1 x 1 x 50"</p>		Fish Flour Flour to Shrimp	5

8	Students are able to classify unconventional feed ingredients ()	<p>Formative:</p> <p>-</p> <p>Summative:</p> <p>Accuracy in explaining and classifying unconventional feed ingredients</p>	<p>Formative Criteria:</p> <p>Summative Criteria:</p> <p>Interactive Lecture (5)</p> <p>Practicum/Field Practice (10) assessed with rubric I011240002</p> <p>Assessment Technique:</p> <p>None</p>	<p>Studying:</p> <p>Cooperative learning (Cooperative learning), Collaborative learning (Collaborative Learning)</p> <p>1 x 1 x 50"</p>	Unconventional Feed Ingredients	15
9-10	Students are able to identify feed supplement ingredients ()	<p>Formative:</p> <p>-</p> <p>Summative:</p> <p>Accuracy in explaining and identifying feed additives</p>	<p>Formative Criteria:</p> <p>Summative Criteria:</p> <p>Interactive Lecture (5)</p> <p>Assessment Technique:</p> <p>None</p>	<p>Studying:</p> <p>Cooperative learning</p> <p>, Collaborative learning.</p> <p>1 x 1 x 50"</p>	<i>Feed supplements</i> include: Amino Acids, Vitamins and Minerals	5
11	Students are able to identify feed additives ()	<p>Formative:</p> <p>-</p> <p>Summative:</p> <p>Accuracy in explaining and identifying feed additives</p>	<p>Formative Criteria:</p> <p>Summative Criteria:</p> <p>Interactive Lecture (2)</p> <p>Case Study (3) assessed with rubric I011240003</p> <p>Assessment Technique:</p> <p>None</p>	<p>Studying:</p> <p>Cooperative learning</p> <p>, Collaborative learning.</p> <p>1 x 1 x 50"</p>	<ul style="list-style-type: none"> ● Feed Additive ● Includes: Antibiotics, Probiotics, Prebiotics, Synbiotics, Phytobiotics/Herbs, Organic Acids, Enzymes, Antioxidants, Mold Inhibitors, Toxin Binder, Flavor Agent, Pigment Agent, Pellet Binder. 	5

12-13	12-13	Students are able to classify anti-nutrients ()	<p>Formative: -</p> <p>Summative: Ability and accuracy in explaining and classifying anti-nutrients.</p>	<p>Formative Criteria:</p> <p>Interactive Lecture (2)</p> <p>Problem Base Learning (3) assessed with rubric I011240003</p> <p>Assessment Technique:</p> <p>None</p>	Definition and Classification of Anti Nutris	5
14-16	14-16	Students are able to perform ration formulation techniques ()	<p>Formative: -</p> <p>Summative: Ability and accuracy in performing ration formulation methods</p>	<p>Formative Criteria:</p> <p>Summative Criteria:</p> <p>Practicum/Field Practice (10) assessed with rubric I011240002</p> <p>FINAL TEST (5)</p> <p>Interactive Lecture (5)</p> <p>Assessment Technique:</p> <p>None</p>	Ration Preparation Method	20
						100

Matrix ILO, CLO, and Assessment Method

ILO / CLO
ILO-3 (P2)
ILO-5 (KU2)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Interactive Lecture	33.5
Practicum/Field Practice	50.5
Individual presentation	5
Case Study	3
Problem Base Learning	3
FINAL TEST	5
Total	100

Assessment and Evaluation of Student Achievement of CLO

SLOs imposed on MK	CLO	SUB CLO	Form of Assessment*							Weight	Value	Student Score
			Formative	Summative								
				Interactive Studying	Practicum/Field Practice	Individual Presentation	Case Study	Problem Base Learning	FINAL TEST			
SLO-	CLO-	SUB- CLO-1		5	5	0	0	0	0	10		
SLO-	CLO-	SUB- CLO-2		7.5	12.5	0	0	0	0	20		
SLO-	CLO-	SUB- CLO-3		2	13	5	0	0	0	20		
SLO-	CLO-	SUB- CLO-4		5	10	0	0	0	0	15		
SLO-	CLO-	SUB- CLO-5		5	0	0	0	0	0	5		
SLO-	CLO-	SUB- CLO-6		2	0	0	3	0	0	5		
SLO-	CLO-	SUB- CLO-7		2	0	0	0	3	0	5		
SLO-	CLO-	SUB- CLO-8		5	10	0	0	0	5	20		
				33.5	50.5	5	3	3	5	100		



**HASANUDDIN UNIVERSITY
FACULTY OF ANIMAL SCIENCE
BACHELOR PROGRAMME IN ANIMAL HUSBANDRY**

STUDENT STRUCTURED ASSIGNMENT PLAN

Course	Feedstuff Science				
Code	23101120502	Credits	3	Semester	3 (Three)
Developer Lecturer	Prof. Dr. Ir. Jasmal Ahmari Syamsu, M.Si., IPU, ASEAN Eng.				
Task Form		Task Time			
Documents/Magazines		2 Weeks			
Task Title					
Classifying feed ingredients based on their origin					
Course Learning Outcomes					
SUB-CLO-1: Able to classify feed ingredients based on nomenclature according to planned specification (ILO1)					
Task Description					
<p>The student's assignment is a group task to make a Paper Assignment " Classifying feed ingredients based on nomenclature" The preparation of the paper follows the following procedure:</p> <ol style="list-style-type: none"> 1) Each group chooses 1 of the sub-topics for 1 group. 2) Discuss among the group members to identify the process stages for each of the selected sub-topics. Information related to the selected sub-topic can be obtained from textbooks and journals. 3) Create a paper with the following systematics: <ol style="list-style-type: none"> I. Introduction II. Discussion III. Conclusion IV. Literature 4) Group presentation 					
Assignment Method					
1. Conducted in groups using the Small Group Discussion (SGD) learning method.					
Form and Format of Output					
a. Object of Cultivation: Types of animal feedstuff ingredients b. Form of Output: Paper					
Indicators, Criteria and Assessment Weight					
<p>Indicators:</p> <ol style="list-style-type: none"> 1. Systematics: 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					
2 weeks					
Other					

-
Reference List
<ol style="list-style-type: none"> 1. Nurfitriani, R. A., & Muhamad, N. (2021). Pengetahuan Bahan Makanan Ternak. LIPI Press. 2. Hartadi, H., Tillman, A. D., Reksohadiprodjo, S., Lebdosukojo, S., Kearl, L. C., & Harris, L. E. (1980). Tabel-tabel Dari komposisi bahan makanan ternak untuk Indonesia, data ilmu makanan untuk Indonesia. Fakultas Peternakan, Universitas Gadjah Mada, Yogyakarta. 3. Tim Laboratorium, 2005. Pengetahuan Bahan Makanan Ternak. Ilmu dan Teknologi Pakan Fakultas Peternakan, IPB.

DEFINITION OF 1 CREDIT IN THE FORM OF LEARNING				Time
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	Self-study		
	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	Metode Pembelajaran Mahasiswa	Kode
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 that can effectively facilitate the fulfillment of graduate learning outcomes.	