SEMESTER COURSE PLAN (SCP)

METHODS AND RESEARCH DESIGN

(23I01130103)

TEACHING TEAM :

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-5 (KU2) - Able to make appropriate decisions in the context of problem solving, based on the results of data and information analysis (GS-02).
ILO-8 (KK2) - 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: Students are able to select and determine the methods and research/experiment design to be used in a Scientific Research and are able to analyze and interpret data from research/experiment results. (ILO5 and ILO8)

Sub-CLO

Sub-CLO 1: Able to describe the contract and form of learning applied in the process and scope of learning in research methods and experimental design courses (CLO 1)

Sub-CLO 2: Able to describe and differentiate the meaning, types and types and methods of scientific research (CLO 1)

Sub CLO-3: Able to describe and differentiate correctly the variables involved in scientific research, (CLO-1)

Sub CLO-4: Able to describe the role of statistics and the stages of the research process and the statistics needed (CLO-1)

Sub CLO-5: Able to identify and formulate research problems and strategic solutions and be able to make research hypotheses (CLO-1)

Sub-CLO 6: Able to correctly describe the important elements of experiment/research design (CLO 1)
Sub CLO-7: Able to perform data transformation appropriately (CLO-1)

Sub CLO-8: Able to design research and analyze data using a complete randomized design with a one-factor pattern (one way) (CLO-1)

Sub CLO-9: Able to conduct comparative tests between research treatments and be able to draw conclusions (CLO-1)

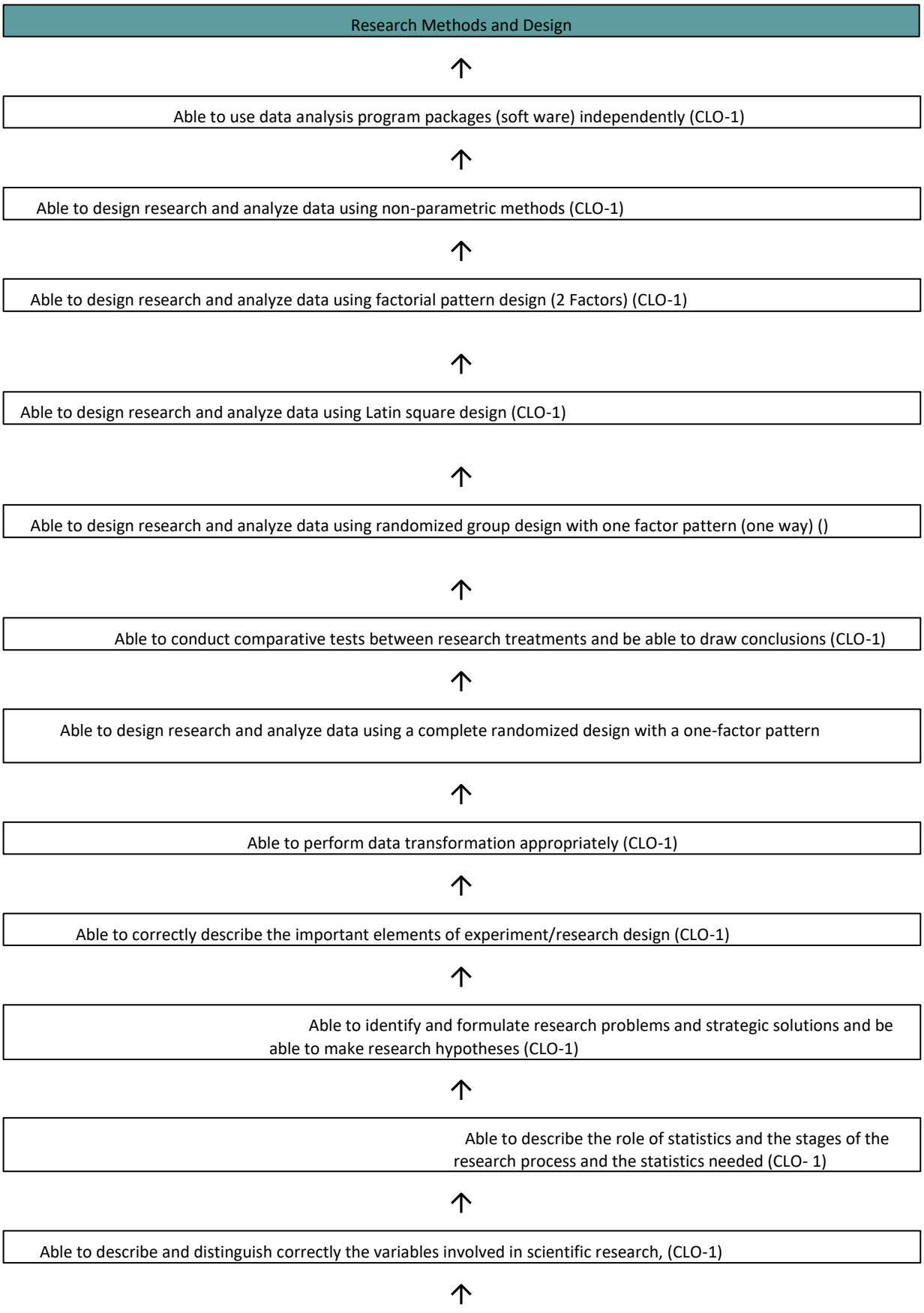
Sub-CLO 10: Able to design research and analyze data using a randomized group design with a one-factor pattern (one way) ()

Sub CLO-11: Able to design research and analyze data using Latin square design (CLO-1) Sub CLO-12: Able to design research and analyze data using factorial pattern design (2 Factors)

(CLO-1)

Sub CLO-13: Able to design research and analyze data using non-parametric methods (CLO-1) Sub CLO-14: Able to use data analysis program packages (soft ware) independently (CLO-1)

Learning Analysis



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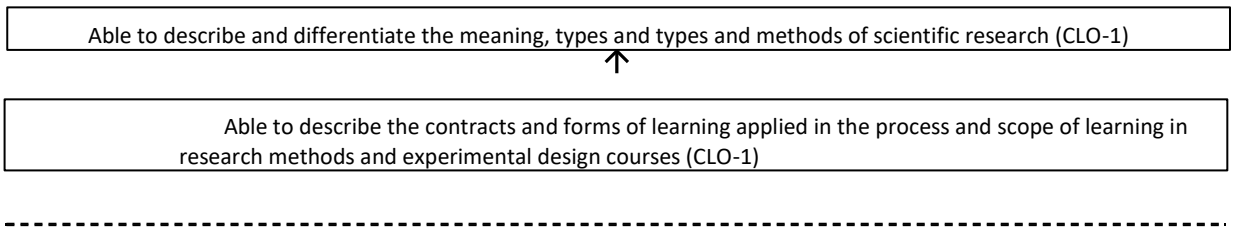
Able to describe and differentiate the meaning, types and types and methods of scientific research (CLO-1)
Able to describe the contracts and forms of learning applied in the process and scope of learning in research methods and experimental design courses (CLO-1)

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

Course	Code	Course Group	Credits	Semester	Date of Preparation
Methods and Research Design	23I01130103	None	3	5	None

Authority	Developer Lecturer	Course Coordinator	Head of study Program
	Prof. Dr. Ir. Sudirman Baco, M.Sc , Prof. Dr.Ir. Asmuddin Natsir, M,Sc, Prof. Dr, Ir. Lellah Rahim, M.Sc., IPU, ASEAN Eng, Prof. Dr. Syahdar Baba, S,Pt,m M,Si, Dr. ir. Sri Purwanti, S.Pt., M.Si., IPM., ASEAN Eng	Prof. Dr. Ir. Sudirman Baco, M.Sc	Dr. Agr. Ir. Renny Fatmyah Utamy, S. Pt., M. Agr., IPM

Course Learning Outcomes		
	ILOs that are imposed on the course	
	ILO-5:	**Able to make appropriate decisions in the context of problem solving, based on the results of data and information analysis.**
	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-5	SLO-1: Students are able to select and determine the methods and design of research/experiments to be used in a Scientific Research and are able to analyze and interpret data from research/experiments.

		CLO-2: Able to measure nutrient consumption and digestibility in ruminants and non-ruminants (SLO 8)
	ILO-8	CLO-1: Students are able to select and determine the methods and research/experiment design that will be used in a Scientific Research and are able to analyze and interpret data from research/experiment results.
	CLO⇒ Sub-CLOs	
		SUB-CLOCK-1: Able to describe the contract and form of learning applied in the process and scope of learning in the research methods and experimental design course
		SUB-CLO 2: Able to describe and differentiate the meaning, types and types and methods of scientific research
		SUB-CLOCK-3: Able to describe and distinguish correctly the variables involved in scientific research,
		Able to describe the role of statistics and the stages of the research process and the statistics needed
	CLO-1	Able to identify and formulate research problems and strategic solutions and be able to make research hypotheses
		SUB-CLO 6: Able to correctly describe the important elements of experiment / research design
		SUB-CLO-7: Able to carry out data transformation appropriately
		Able to design research and analyze data using a complete randomized design with a one-factor pattern (one way)
		SUB-CLO-9: Able to conduct comparative tests between research treatments and be able to draw conclusions
		SUB-CLO 11: Able to design research and analyze data using Latin square design
		SUB-CLO 12: Able to design research and analyze data using factorial pattern design (2 Factors)
		SUB-CLO 13: Able to design research and analyze data using non-parametric methods
		SUB-CLO 14: Able to use data analysis program packages (soft ware) independently

Correlation between ILOs/CLOs to Sub-CLOs

ILOs that are imposed on the course	**CLO**	**SUB- CLO**	**Form Assessment+**		**Weight**	**Value**	**Student Score**
			Formative	**Summative**			

				Interactive Lecture	Quiz	Group Presentation	Case Study	Group paper Assignment			
ILO-8	CLO-1	SUB-CLO-1	Attendance and Activeness in class	2		0	0	0	2		
ILO-8	CLO-1	SUB-CLO-2	Attendance and Activeness in class	0		5	5	0	10		
ILO-8	CLO-1	SUB-CLO-3	Attendance and Activeness in class	0		0	5	5	10		
ILO-8	CLO-1	SUB-CLO-4	Attendance and Activeness in class	3		0	5	2	10		
ILO-8	CLO-1	SUB-CLO-5	Attendance and Activeness in class	5		0	0	0	5		
ILO-8	CLO-1	SUB-CLO-6	Attendance and Activeness in class	5		0	0	0	5		
ILO-8	CLO-1	SUB-CLO-7	Attendance and Activeness in class	5		0	0	0	18		
ILO-8	CLO-1	SUB-CLO-8	Attendance and Activeness in class	5		0	13	0	5		
ILO-8	CLO-1	SUB-CLO-9	Attendance and Activeness in class	5		0	0	0	5		
ILO-8	CLO-1	SUB-CLO-10	Attendance and Activeness in class	5		0	0	0	5		
ILO-8	CLO-1	SUB-CLO-11	Attendance and Activeness in class	5		0	0	0	10		
ILO-8	CLO-1	SUB-CLO-12	Attendance and Activeness in class	5		0	5	0	10		
ILO-8	CLO-1	SUB-CLO-13	Attendance and Activeness in class	5		0	5	0	5		
ILO-8	CLO-1	SUB-CLO-14	Attendance and Activeness in class	5		0	0	0	5		
				50		5	38	7	100		

Course Description	None
Learning Materials / Subject Matter	None
Reference	**Key Reference**
	1. Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Thousand Oaks, CA: SAGE Publications. 2. Sugiyono. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta. 3. Nazir, M. (2014). *Metode penelitian*. Bogor: Ghalia Indonesia. 4. Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Harlow: Pearson Education Limited. 5. Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth, TX: Harcourt College Publishers.
	Additional Reference
	-
Teaching Team	
Course requirements	

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 describe the contract and form of	**Formative:** **Sumative:**	**Formative Criteria: Sumative** **Criteria:** Interactive Studying	**Studying:** Small Group Discussion,		- Learning contract and scope of learning	2

	learning applied in the process and scope of learning in research methods and experimental design courses (CLO-1)	Understanding of the scope and urgency of the importance of studying Research Methods and Experimental Design.	(2) **Assessment Techniques:** None	Collaborative Learning, Problem-based Learning 1 x 2 x 50'			
2	Able to describe and differentiate the meaning, types and types and methods of scientific research (CLO-1)	**Formative:** - **Sumative:** Understanding of the meaning of research, types and types and methods of scientific research	**Formative Criteria: Sumative** **Criteria:** Group Presentation (5) Case Study (5) **Assessment Techniques:** Test and Non-Test	**Studying:** Small Group Discussion, Case Study, Project-based Learning, Problem- based Learning 1 x 2 x 50'		1.Definition of Research 2.Types and types of research 3.Scientific research methods	10
3	Able to describe and distinguish correctly the variables involved in scientific research, (CLO-1)	**Formative:** **Sumative:** Understanding of research variables and the role of statistics in research as well as the stages of the research process and statistics required.	**Formative Criteria: Sumative** **Criteria:** Case Study (5) Individual Paper Assignment (5) **Assessment Techniques:** Test and Non-Test	**Studying:** Small Group Discussion, Case Study, Project-based Learning, Problem- based Learning 1 x 2 x 50'		1.Research Variables 2.The role of statistics in research 3.Stages of the research process and statistics required	10
4	Able to identify and formulate research problems and	**Formative:** **Sumative:**	**Formative Criteria: Sumative** **Criteria:** Case Study (5)	**Studying:** Small Group Discussion, Case Study, Project-		1.Research problem/issue and its solution strategy	10

	strategic solutions and be able to make research hypotheses (CLO-1)	Understanding of the accuracy of identifying and formulating research problems and strategic solutions and being able to make research hypotheses	Interactive Studying (3) Individual Paper Assignment (2) **Assessment Techniques:** Test and Non-Test	based Learning, Problem- based Learning 1 x 2 x 50'		2.Make a research hypothesis	
5	Able to correctly describe the important elements of experiment/research design (CLO-1)	**Formative:** **Summative:** Understanding of the accuracy of identifying and formulating research problems and strategic solutions and being able to make research hypotheses	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Studying:** Small Group Discussion, Case Study, Project-based Learning, Problem- based Learning 1 x 2 x 50'		Important elements in experiment/research design	5
6	Able to do data transformation appropriately (CLO-1)	**Formative:** **Summative:** Ability to do data transformation appropriately	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Studying:** Small Group Discussion, Case Study, Project-based Learning, Problem- based Learning 1 x 2 x 50'		Data transformation	5
7-8	Able to design research and analyze data using a complete randomized design with a one- factor pattern (one way) (CLO-1)	**Formative:** **Summative:** Able to design experiments and analyze data using a complete randomized design with a one-factor pattern (one way).	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Studying:** Small Group Discussion, Case Study, Problem-based Learning 2 x 2 x 50'		Completely Randomized Design (CRD)	18

9	Able to conduct comparative tests between research treatments and able to draw conclusions (CLO-1)	**Formative:** **Summative:** Able to test between treatments with the least significant difference test (BNT) and Duncan's multiple test.	**Formative Criteria:** **Summative Criteria:** Practicum/Field Practice (5) **Assessment Techniques:** None	**Studying:** Small Group Discussion, Case Study, Problem-based Learning 1 x 2 x 50'		Multiple comparisons /Test of real difference	5
10	Able to design research and analyze data using randomized group design with one factor (one way) pattern ()	**Formative:** **Summative:** Able to design experiments and analyze data using Randomized Group Design (RAK) with one factor pattern (one way).	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (5) **Assessment Technique:** None	**Studying:** Small Group Discussion, Case Study, Problem-based Learning 1 x 2 x 50'		Randomized Group Design (RAK)	5
11	Able to design research and analyze data using Latin square design (CLO-1)	**Formative:** **Summative:** Able to design experiments and analyze data using Randomized Group Design (RAK) with one factor (one way) pattern.	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (10) **Assessment Technique:** None	**Studying:** Small Group Discussion, Case Study, Problem-based Learning 1 x 2 x 50'		Latin Square Design (RBL)	5
12-13	Able to design research and analyze data using factorial	**Formative:** **Summative:**	**Formative criteria:** **Summative criteria:**	**Studying:** Small Group Discussion, Case		Factorial Design	10

	pattern design (2 Factors) (CLO-1)	Able to design experiments and analyze data using factorial design.	Practicum/Field Practice (10) **Assessment Technique:** None	Study, Problem-based Learning 2 x 2 x 50'			
14-15	Able to design research and analyze data using non-parametric methods (CLO- 1)	**Formative:** - **Summative:** Able to design research and analyze data using non-parametric methods.	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (7.5) **Assessment Technique:** None	**Studying:** Small Group Discussion, Case Study, Problem-based Learning 2 x 2 x 50'		Non-parametric Methods	10
16	Able to use data analysis program packages (soft ware) independently (CLO-1)	**Formative:** - **Sumative:** Able to perform data analysis using a data analysis program package (soft ware) independently	**Formative Criteria:** **Summative Criteria:** Interactive Studying (5) **Assessment Techniques:** Test and Non-Test	**Studying:** Small Group Discussion, Case Study, Problem-based Learning 1 x 2 x 50'		Utilization of Program Package	5
							100

Matrix ILO, CLO, and Assessment Method

ILO / CLO	CLO-1	CLO-2
ILO-5 (KU2)	Interactive Studying (Weight 2%) Group Presentation (Weight 5%) Case Study (Weight 5%) Case Study (Weight 5%) Individual Paper Assignment (Weight 5%) Case Study (Weight 5%) Interactive Studying (3% Weight) Individual Paper Assignment (2% Weight) Interactive Studying (5% Weight) Interactive Studying (5% Weight) Interactive Studying (5% Weight) Case Study (13% Weight) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%) Case Study (Weight 5%) Interactive Studying (Weight 5%) Case Study (Weight 5%) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%)	
ILO-8 (KK2)	Interactive Studying (Weight 2%) Group Presentation (Weight 5%) Case Study (Weight 5%) Case Study (Weight 5%) Individual Paper Assignment (Weight 5%) Case Study (Weight 5%) Interactive Studying (Weight 3%) Individual Paper Assignment (Weight 2%) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%) Case Study (Weight 13%) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%) Case Study (Weight 5%) Interactive Studying (Weight 5%) Case Study (Weight 5%) Interactive Studying (Weight 5%) Interactive Studying (Weight 5%)	

Evaluation Type and Assessment Weight

Type	Assessment Weight
Individual Paper Assignment	50
Group Presentation	5
Case Study	38
Task Paper Individual	7
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					
				Individual Paper Assignment	Interactive Lecture	Case Study			
ILO-8	CLO-1	SUB-CLO-1	Attendance and Activeness in class	0	2	0	2		
ILO-8	CLO-1	SUB-CLO-2	Attendance and Activeness in class	0	0	5	10		
ILO-8	CLO-1	SUB-CLO-3	Attendance and Activeness in class	5	0	5	10		
ILO-8	CLO-1	SUB-CLO-4	Attendance and Activeness in class	2	3	5	10		
ILO-8	CLO-1	SUB-CLO-5	Attendance and Activeness in class	0	5	0	5		
ILO-8	CLO-1	SUB-CLO-6	Attendance and Activeness in class	0	5	0	5		
ILO-8	CLO-1	SUB-CLO-7	Attendance and Activeness in class	0	5	13	18		
ILO-8	CLO-1	SUB-CLO-8	Attendance and Activeness in class	0	5	0	5		
ILO-8	CLO-1	SUB-CLO-9	Attendance and Activeness in class	0	5	0	5		
ILO-8	CLO-1	SUB-CLO-10	Attendance and Activeness in class	0	5	0	5		
ILO-8	CLO-1	SUB-CLO-11	Attendance and Activeness in class	0	5	5	10		
ILO-8	CLO-1	SUB-CLO-12	Attendance and Activeness in class	0	5	5	10		
ILO-8	CLO-1	SUB-CLO-13	Attendance and Activeness in class	0	5	0	5		
total					50	38	100		

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

STUDENT STRUCTURED ASSIGNMENT PLAN

Course	Methods and Research Design				
Code	23I01130103	**Credits**	3	**Semester**	5 (Five)
Developer Lecturer	Prof. Dr. Ir. Herry Sonjaya, DEA., DES				

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

Task Title

Cultivation process, growth, development of feed crop types

Course Learning Outcomes

Sub CLO-5: Able to identify and formulate research problems and strategic solutions and be able to make research hypotheses (CLO-1)

Task Description

Students will be assigned a group paper on 'Research Problem Formulation and Scientific Hypothesis Development as a Problem Solving Strategy' 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: Identification, Formulation, Strategy, and Hypothesis 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:
   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: Problem and Hypothesis
b. Form of Output: 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

2 weeks	

Other

-

Reference List
1. Creswell, J. W. (2018). Desain penelitian: Pendekatan kualitatif, kuantitatif, dan metode campuran (5th ed.). Thousand Oaks, CA: SAGE Publications. 2. Sugiyono. (2019). Metode penelitian kuantitatif, kualitatif, dan R&D. Bandung: Alfabeta. 3. Nazir, M. (2014). Metode penelitian. Bogor: Ghalia Indonesia. 4. Neuman, W. L. (2014). Metode penelitian sosial: Pendekatan kualitatif dan kuantitatif (7th ed.). Harlow: Pearson Education Limited. 5. Kerlinger, F. N., & Lee, H. B. (2000). Dasar-dasar penelitian perilaku (4th ed.). Fort Worth, TX: Harcourt College Publishers.

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.	