SEMESTER COURSE PLAN (SCP)

INNOVATION OF LIVESTOCK PRODUCTS (23I01121902)

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-2 (P1) - Mastering the concepts, theories, and methods of effective, efficient, and sustainable livestock development.

ILO-7 (KK1) - Able to apply livestock science and technology oriented towards increasing production, efficiency, quality, and sustainability.

ILO-9 (KK3) - Able to run a livestock business.

Course Learning Outcomes (CLO)

CLO-1: Students are able to develop concepts for the development of processed meat, milk, and egg products (ILO 2)

CLO-2: Students are able to evaluate the physical, chemical, organoleptic, and microbiological properties of new products (ILO 7)

CLO-3: Students are able to apply packaging and labeling technologies to livestock products (ILO 9)

Sub-CLO

Sub-CLO 1: Able to respond to the history of dairy cattle development in foreign countries and in Indonesia. ILO 8 (CLO-1)

Sub CLO-1: Students are able to develop new processed meat, milk, and egg products (CLO-1)

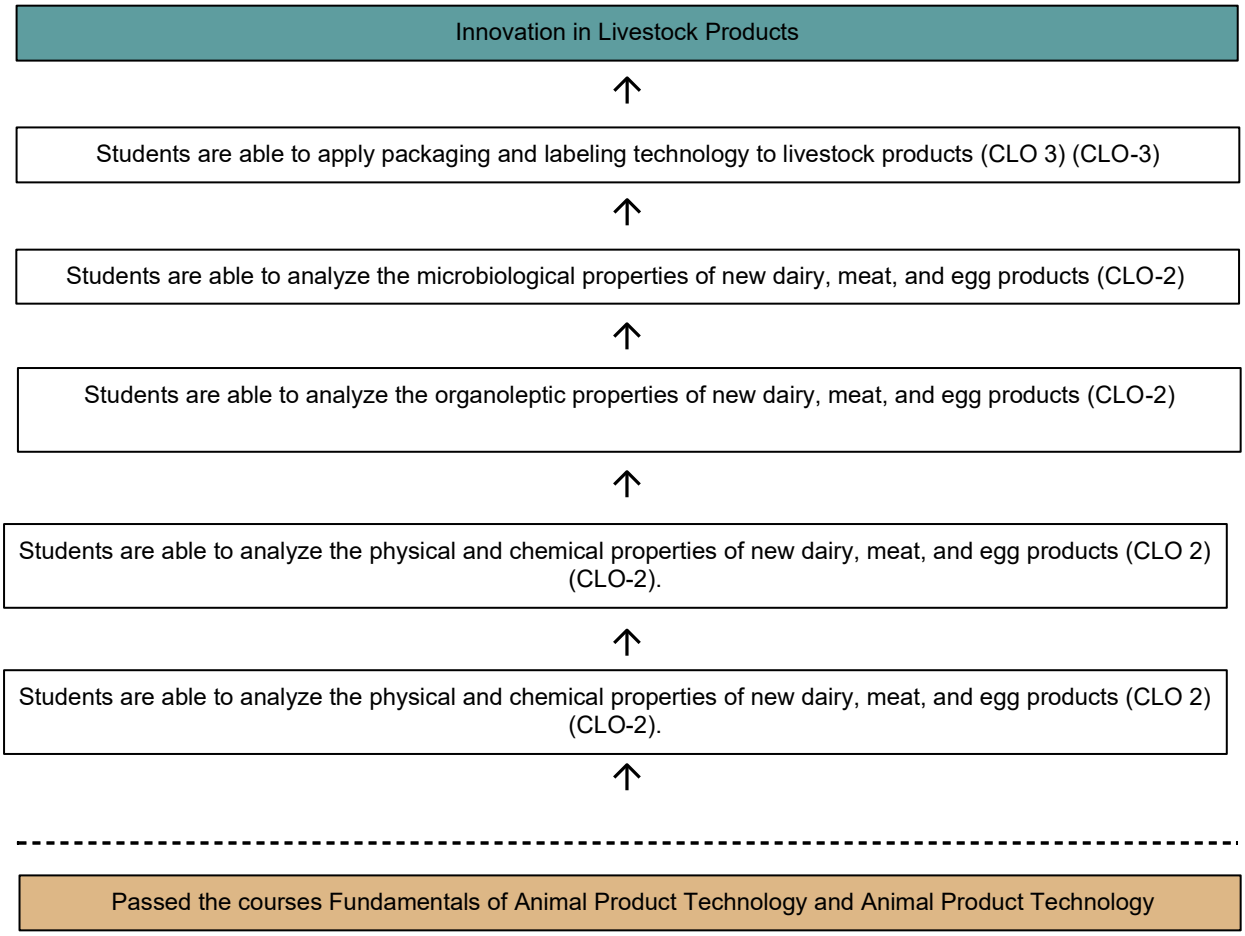
Sub CLO-2: Students are able to analyze the physical and chemical properties of new milk, meat, and egg products (CLO-2) (CLO-2)

Sub CLO-3: Students are able to analyze the organoleptic properties of new dairy, meat, and egg products (CLO 2) (CLO-2)

Sub CLO-4: Students are able to analyze the microbiological properties of new dairy, meat, and egg products (CLO 2) (CLO-2)

Sub CLO-5: Students are able to apply packaging and labeling technology for livestock products (CLO 3) (CLO-3)

Learning Analysis



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

Course	Code	Course Group	Credits Points	Semester	Date of Preparation
Innovation of Livestock Product	23I01121902	Production	2	4	September 17, 2024

Authority	Developer Lecturer	Course Coordinator	Head of study Program
	Dr. Ir. Hikmah, S.Pt., M.Si., IPU, ASEAN Eng., Dr. Wahniyathi, S.Pt.,M.Si., Dr. Hajrawati, S.Pt.,M.Si., Prof. Dr. Ir. Nahariah, S.Pt., MP., IPM., ASEAN.Eng., Prof. Dr. Fatma, S.Pt., MP.	Prof. Dr. Ir. Nahariah, S.Pt., MP., IPM., ASEAN.Eng.	Dr. Agr. Ir. Renny Fatmyah Utamy, S. Pt., M. Agr., IPM

Course Learning Outcomes		
	ILOs that are imposed on the course	
	ILO-2	Mastering the concepts, theories, and methods of effective, efficient, and sustainable livestock development
	ILO-7	Able to apply animal husbandry science and technology oriented towards increasing production, efficiency, quality, and sustainability
	ILO-9	Able to run a livestock business
	ILO⇒ Course Learning Outcomes (CLO)	
	Upon completion of this course, it is expected that:	
	ILO-2	Students are able to develop concepts for processed meat, milk, and egg products.
	ILO-7	Students are able to evaluate the physical, chemical, organoleptic, and microbiological properties of products. Students are able to apply packaging and labeling technologies to livestock products.
	ILO-9	Students are able to develop concepts for processed meat, milk, and egg products.
	CLO⇒ Sub-CLOs	
	CLO-1	**SUB-CLO-1:** Students are able to develop new processed meat, milk, and egg products (CLO -1)

	CLO-2	**SUB-CLO-2:** Students are able to analyze the physical and chemical properties of new dairy, meat, and egg products (CLO-2).
		SUB-CLO-3: Students are able to analyze the organoleptic properties of new dairy, meat, and egg products (CLO-2)
		SUB-CLO-4: Students are able to analyze the microbiological properties of new dairy, meat, and egg products (CLO-2)
	CLO-3	**SUB-CLO-5:** Mahasiswa mampu menerapkan teknologi pengemasan dan labelin produk hasil peternakan (CLO 3)

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 Lecture	Quiz	Individual Paper Assignment	Problem Base Learning	Case Study			
ILO-2	CLO-1	SUB-CLO-1		5	10	**10**	0	0	25		
ILO-7	CLO-2	SUB-CLO-2		0	0	0	15	0	15		
ILO-7	CLO-3	SUB-CLO-3		0	0	0	0	15	15		
ILO-7	CLO-4	SUB-CLO-4		0	0	0	0	15	15		
ILO-9	CLO-5	SUB-CLO-5		0	0	0	0	30	30		
				5	10	10	15	60	100		

Course Description	In general, livestock-derived food products such as milk, eggs, and meat are widely available and distributed in the market. The processing of milk, meat, and eggs contributes to changes in the properties of the ingredients. Changes in nutritional composition, physical properties, organic chemistry, and microbiology due to processing are largely determined by the severity of the process and the raw materials and additives used. The development of dairy, egg, and meat products through innovation is essential to support products that are of higher quality in terms of physical, chemical, organoleptic, and microbiological properties. Innovation in livestock products is carried out to produce products that are high-quality and highly competitive. Processing is a product of livestock product development. High-quality products can be obtained by conducting physical, chemical, organoleptic, and microbiological assessments. In addition, product development can be carried out by improving packaging and product labeling so that it is more attractive and has good acceptance. The Livestock Product Innovation course covers (1) The scope and overview of processed meat, milk, and egg product development; (2) Developing new processed meat, milk, and egg products; (3) Evaluating the physical and chemical properties of new processed meat, milk, and egg products; (4) Evaluating the organoleptic properties of new processed meat, milk, and egg products; (5) Evaluating the microbiological properties of new meat products.

Learning Materials / Subject Matter	1. Konsep dan spesifikasi pengembangan produk baru olahan daging, susu dan telur 2. Mengembangkan produk Inovasi olahan daging, susu dan telur berbasis proses termal dalam menghasilkan produk baru dan tinjauan sifat fisik, kimia dan mikrobiologisnya 3. Mengembangkan produk Inovasi olahan daging, susu dan telur berbasis proses non termal (bahan kimia, organik dan mikrobiologi) dalam menghasilkan produk baru dan tinjauan sifat fisik, kimia dan mikrobiologinya 4. Analisis sifat organoleptik produk baru susu , daging, telur 5. Analisis keamanan dan kelayakan pangan produk baru olahan susu , daging, telur 6) Penerapan teknologi pengemasan dan pelabelan produk hasil ternak
Reference	**Key Reference**
	List the main references used, including teaching materials compiled by the lecturer teaching this course
	Additional Reference
	Write down supporting references, if any, as enrichment of literacy.
Teaching Team	drh. Farida Nur Yuliati, M.Si., Dr. Ir. Hikmah, S.Pt., M.Si., IPU, ASEAN Eng., Dr. Wahniyathi, S.Pt.,M.Si., Dr. Hajrawati, S.Pt.,M.Si., Prof. Dr. Ir. Nahariah, S.Pt., MP., IPM., ASEAN.Eng., Prof. Dr. Fatma, S.Pt., MP
Course requirements	Basic Livestock Product Technology, Livestock Product Technology

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 Develop processed meat, milk, and egg products (CLO-1)	**Formative:** - **Sumative:** 1. Students gain an overview of the scope of processed meat, milk, and egg product development. 2. Students enter into a lecture contract.	**Kriteria** **Formative:** **Kriteria** **Sumative:** Interactive lecture (5) **Assessment Technique:** None	**Studying:** Small group discussion, cooperative learning, 1 x 2 x 50		1.Overview of the scope of processed meat, milk, and egg product development 2. Definition of new, high-quality, and innovative livestock products	5
2-4	Students are able to develop new processed meat, milk, and egg products (CLO-1)	**Formative:** - **Sumative:** Students are able to develop new processed meat, milk, and egg products.	**Kriteria Formative:** **Kriteria Sumative:** Quiz (10) Paper Assignment Individual (10) **Assessment Technique:** None	**Studying:** Small group discussion, cooperative learning, 3 x 2 x 50		Development of processed meat, milk, and egg products	20

5-7	Students are able to analyze the physical and chemical properties of new dairy, meat, and egg products (CLO-2)	**Formative:** - **Sumative:** Students are able to develop new processed meat, milk, and egg products.	**Kriteria** **Formative:** **Kriteria** **Sumative:** Problem base learning (15) assessed with rubric I011240003 **Assessment Technique:** None	**Studying:** Small group discussion, 3 x 2 x 50		Development of processed meat, milk, and egg products	15
8-10	Able to apply maintenance management to dairy cows (calves, heifers, lactating cows, dry cows, and studs, as well as cull cows (baby beef) and cull studs; dairy buffaloes, dairy goats, and dairy sheep. ILO 7 (CLO-1)	**Formative:** - **Sumative:** Students are able to analyze the organoleptic properties of new dairy , meat, and egg products (CLO-2).	**Kriteria** **Formative:** **Kriteria** **Sumative:** Case Study (15) assessed with rubric I011240003 **Assessment Technique:** None	**Studying:** Small group discussion, project-based learning 3 x 2 x 50		1.Definition of organoleptic properties of new products 2. Measurement of organoleptic properties of new products 3. Evaluation of changes in organoleptic properties of new products	15

11-13	Students are able to analyze the microbiological properties of new dairy, meat, and egg products (CLO-2)	**Formative:** - **Sumative:** Students are able to evaluate the microbiological properties of new meat products.	**Kriteria** **Formative:** **Kriteria** **Sumative:** Case Study (15) assessed with rubric I011240003 **Assessment Technique:** None	**Studying:** Small group discussion, Project-based Learning 3 x 2 x 50		1. Definition of microbiological properties of new products 2. Measurement of microbiological properties of new products 3. Evaluation of changes in microbiological properties of new products	15
14-16	Students are able to apply packaging technology and label livestock products (CLO-3)	**Formative:** - **Sumative:** Students are able to apply packaging technology and label livestock products.	**Kriteria** **Formative:** **Kriteria** **Sumative:** Case Study (30) **Assessment Technique:** None	**Studying:** Small group discussion, (Role Play & Simulation), Case study, collaborative learning, (Project based Learning), Problem basic learning 3 x 2 x 50		-	30

Matrix ILO, CLO, and Assessment Method

ILO / CLO	CLO-1	**CLO-2**
ILO-2 (P1)	Interactive Lecture (5% weight) Quiz (10% Weight) Individual Paper Assignment (10)	
ILO-7 (KK1)		Problem Base Learning (4% weight) Case Study (Weight 15%) Case Study (Weight 15)
ILO-9 (KK3)		

Evaluation Type and Assessment Weight

Type	Assessment Weight
Interactive Lecture	**3**
Quiz	10
Individual Paper Assignment	10
Problem Base Learning	15
Case Study	60
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							
				Interactive Lecture	Quiz	Individual Paper Assignment	Problem Base Learning	Case Study			
ILO-2	CLO- 1	SUB- CLO-1		5	10	10	0	0	25		
ILO-7	CLO- 2	SUB- CLO-2		0	0	0	15	0	15		
ILO-7	CLO- 3	SUB- CLO-3		0	0	0	0	15	15		
ILO-7	CLO- 4	SUB- CLO-4		0	0	0	0	15	15		
ILO-9	CLO- 5	SUB- CLO-5		0	0	0	0	30	30		
				5	10	10	15	60	100		

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

STUDENT STRUCTURED ASSIGNMENT PLAN

Course	Innovation of Livestock Product				
Code	23I01121902	**Credits Points**	2	**Semester**	4 (four)
Developer Lecturer	Prof. Dr. Ir. Nahariah, S.Pt., MP., IPM., ASEAN.Eng				

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

Task Title

Students are able to develop new processed meat, milk, and egg products

Course Learning Outcomes

SUB-CLO-1: Students are able to develop new processed meat, milk, and egg products

Task Description

The student's assignment is a group task to make a Paper Assignment "Students are able to develop new processed meat, milk, and egg products"The preparation of the paper follows the following procedure:

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:
   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: Livestock Product Innovation
b. Form of Output: Paper

Indicators, Criteria and Assessment Weight

Indicators:

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
List the main references used, including teaching materials compiled by the lecturer teaching this course

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	Atau metode pembelajaran lain, yang dapat secara efektif memfasilitasi pemenuhan capaian pembelajaran lulusan.	