SEMESTER LEARNING PLAN (SLP)

LIVESTOCK PRODUCTS PROCESSING TECHNOLOGY
(23I01120803)

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

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-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-7 (KK1) - Able to apply livestock science and technology that is oriented towards increasing production, efficiency, quality, and sustainability (SS-01).

Course Learning Outcomes (CLO)

CLO-1: Students are able to describe the development of livestock product technology appropriately (SLO- 5)

CLO 2: Students are able to demonstrate the techniques of handling, preserving, cooking and processing meat, milk, eggs and the rest of livestock products correctly (SLO-7) (SLO7).

Sub-CLO

Sub-CLO 1: Students are able to describe the devSLOpment of livestock product processing technology properly (CLO 1) (CLO 1)

Sub-CLO 2: Students are able to apply meat handling, preservation and processing techniques correctly (CLO 2) (CLO 2)

Sub CLO-3: Students are able to demonstrate the latest formulation, cooking, and meat processing processes correctly (SLO-2) (SLO-2)

Sub-CLO 4: Students are able to describe the process of handling and preserving eggs correctly (SLO 3) ()

Sub-CLO 5: Students are able to demonstrate the latest egg processing correctly (ILO-3)

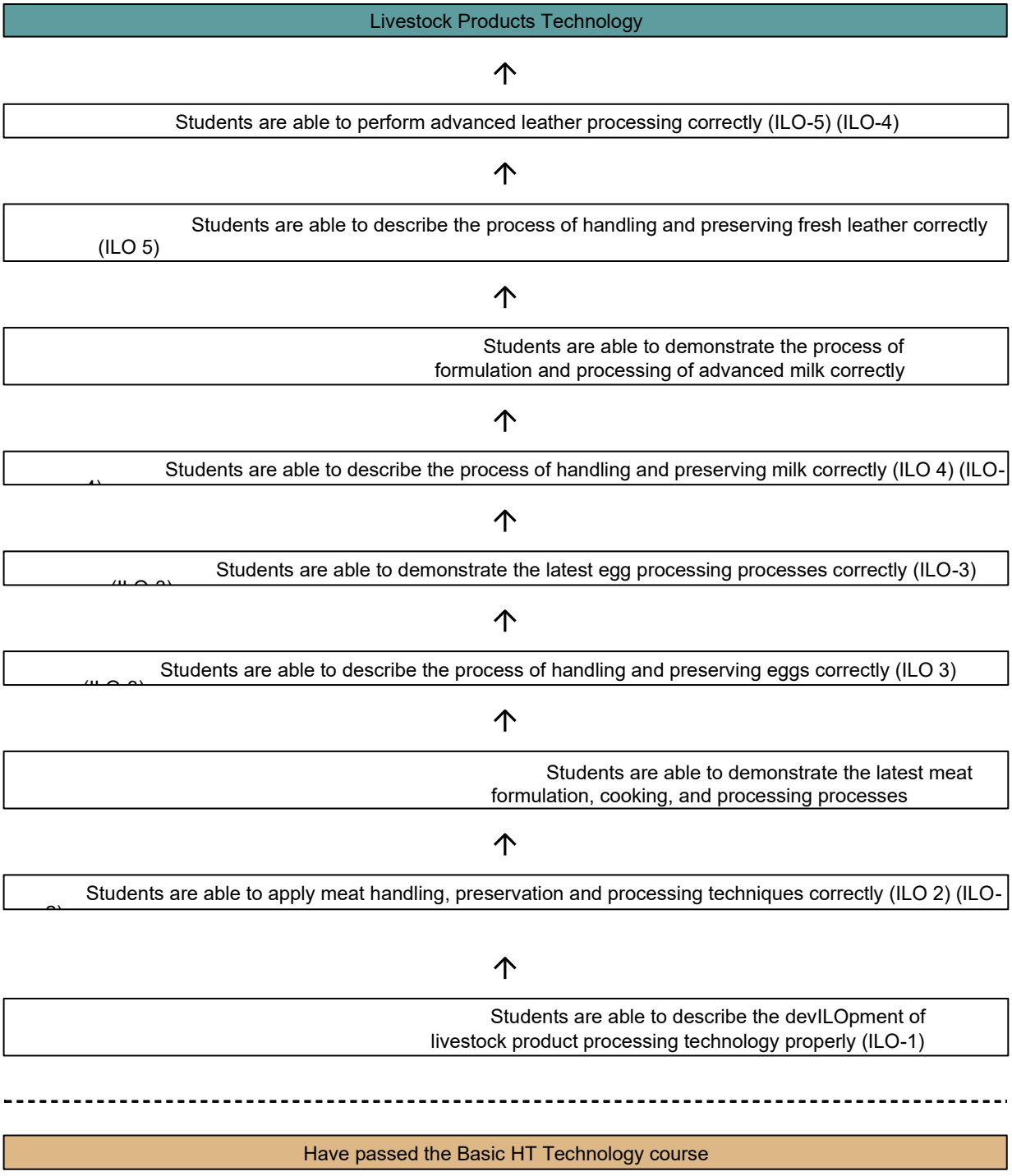
Sub-CLO 6: Students are able to describe the process of handling and preserving milk correctly (CLO 4) ()

Sub-CLO 7: Students are able to demonstrate the process of formulation and processing of advanced milk correctly (CLO-4)

Sub-CLO 8: Students a r e able to describe the process of handling and preserving fresh skin correctly (ILO 5) (ILO-5)

Sub SLO-9: Students are able to perform advanced leather processing correctly (ILO-5) ()

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
Livestock Products Processing Technology	23I01120803	Production	3	3	24 September 2024

Authority	Developer Lecturer	Course Coordinator	Head of study Program
	1. Prof. Dr. drh. Ratmawati Malaka, M.Sc., 2. Dr. Ir. Hikmah, S.Pt., M.Si., IPU, ASEAN Eng., 3. Prof. Dr. Ir. Muhammad Irfan Said, S.Pt., MP., IPM, ASEAN Eng., 4. Dr. Ir. Nahariah, S.Pt.,MP., IPM.Marhamah Nadir, SP, M.Sc, Ph.D	Dr. Ir. Hikmah, S.Pt., 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-5	Able to make appropriate decisions in the context of problem solving, based on the results of data and information analysis.
	ILO-7	Able to apply animal science and technology that is oriented towards increasing production, efficiency, quality and sustainability.
	ILO⇒ Course Learning Outcomes (CLO)	
	Upon completion of this course, it is expected that:	
	ILO-5	**CLO-1:** Students are able to describe the development of livestock product technology appropriately (ILO-5)
	ILO-7	**CLO-2** Students are able to demonstrate the techniques of handling, preserving, cooking and processing meat, milk, eggs and the rest of livestock products correctly (ILO-7)
	ILO-9	CLO-3 Students are able to formulate planning, development, rehabilitation and utilization of pastures.
	CLO⇒ Sub-CLOs	
	CLO 1	Sub-CLO 1: Students are able to describe the development of livestock product processing technology well (CLO-1)

		Sub-CLO 2: Able to apply meat handling, preservation and processing techniques correctly (CLO -2)
		Sub-CLO 3: Able to demonstrate the latest meat formulation, cooking, and processing processes correctly (CLO-2)

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						
				Quiz	Interactive Lecture	Problem Base Learning	Practicum/Field Practice	Case Study			
ILO-5	CLO-1	SUB-CLO-1		5	0	0	0	0	5		
ILO-5	CLO-1	SUB-CLO-2		0	10	0	0	0	10		
ILO-7	CLO-1	SUB-CLO-3		0	0	15	0	0	15		
ILO-7	CLO-1	SUB-CLO-4		0	0	15	0	0	15		
ILO-5	CLO-1	SUB-CLO-5		0	12	0	3	0	15		
ILO-5	CLO-1	SUB-CLO-6		0	0	0	0	0	0		
ILO-7	CLO-1	SUB-CLO-7		0	0	15	0	0	0		
ILO-7	CLO-1	SUB-CLO-8		0	0	10	0	0	10		
ILO-5	CLO-1	SUB-CLO-9		0	0	0	0	15	15		
				5	22	55	3	15	100		

Course Description	The People's Animal Husbandry Pasture Management course is a compulsory course which is an advanced course after the Feed Pla nt Science course for students of the Bachelor of Animal Husbandry Study Program. This course is presented in the third semester, d iscussing the types of pastures, rehabilitation / development and improvement of pasture fertility, pasture development models, defoliation and pasture ecosystems, carrying capacity, weed control, integration of feed crops with agricultural / plantation / forestry crops.

Learning Materials / Subject Matter	1. Contract information and learning plan 2. Technological developments in livestock product processing 3. Basic principles in meat handling and preservation; 4. Basic cooking and meat processing techniques; 5. Basic principles in handling and preservation of consumer eggs; 6. Basic techniques and various egg processing products; 7. Basic principles in handling and preserving fresh milk; 8. Basic techniques and principles of processing and various milk processing products; 9. Basic principles in handling and preserving fresh leather; 10. Basic techniques and principles of processing and various leather processing products.
Reference	**Key Reference**
	1. Covington, A. D., & Covington, T. (2009). Tanning Chemistry: The Science of Leather. In Royal Society of Chemistry. 2. Fox, P. F., Guinee, T. P., Cogan, T. M., & McSweeney, P. L. H. (2016). Fundamentals of cheese science, second edition. In Fundamentals of Cheese Science, Second Edition. https://doi.org/10.1007/978-1-4899-7681-9. 3. Fron ing, G. (1995). Egg Science and Technology. Poultry Science. https://doi.org/10.3382/ps.0742061. 4. Geeraerts, W., Stavropoulou, D. A., De Vuyst, L., & Leroy, F. (2019). Meat and meat products. In How Fermented Foods Feed a Healthy Gut Microbiota: A Nutrition Continuum. https://doi.org/10.1007/978-3-030-28737-5_3. 5. Mead, G. C. (2004). Poultry meat processing and quality. In Poultry Meat Processing and Quality. https://doi.org/10.1533/9781855739031. 6. Nollet, L. M. L., & Toldrá, F. (2006). Advanced technologies for meat processing. In Advanced Technologies for Meat Processing. https://doi.org/10.1201/9781420017311 7. Toldrá, F. (2010). Handbook of Meat Processing. In Handbook of Meat Processing. https://doi.org/10.1002/9780813820897 8. Toldrá, F., Hui, Y. H., Astiasarán, I., Nip, W. K., Sebranek, J. G., Silveira, E. T. F., Stahnke, L. H., & Talon, R. (2008). Handbook of Fermented Meat and Poultry. In Handbook of Fermented Meat and Poultry. https://doi.org/10.1002/9780470376430 9. Walstra, Pieter, Wouters, J. T. M., & Geurts, T. J. (2005). Dairy science and technology, second edition. In Dairy Science and Technology, Second Edition.
	Additional Reference
	1. Hikmah dkk. 2022. Panduan Praktikum Teknolofi Hasil Ternak. Fakultas Peternakan Unhas, Makassar
Teaching Team	5. Prof. Dr. drh. Ratmawati Malaka, M.Sc., 6. Dr. Ir. Hikmah, S.Pt., M.Si., IPU, ASEAN Eng., 7. Prof. Dr. Ir. Muhammad Irfan Said, S.Pt., MP., IPM, ASEAN Eng., 8. Dr. Ir. Nahariah, S.Pt.,MP., IPM.Marhamah Nadir, SP, M.Sc, Ph.D

Course requirements	Livestock Products Processing 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 describe the development of livestock product processing technology well (ILO-1) (ILO-1)	**Formative:** Giving short questions **Sumative:** Quiz, development of product processing in each era	**Kriteria** **Formative:** **Kriteria** **Sumative:** Quizzes (5) **Assessment Technique:** None	**Studying:** Small group discussion, 1 x 2 x 50 minutes		Information on learning plan and contract Development of technology for processing livestock products	5
2-3	Students are able to apply meat handling, preservation and processing techniques correctly (ILO- 2) (ILO-2)	**Formative:** - **Sumative:** Assignment Completion	**Kriteria** **Formative:** **Kriteria** **Sumative:** Interactive Lecture (10) **Assessment Technique:** None	**Studying:** Collaborative Learning 2 x 2 x 50 minutes		Basic Meat handling/storage techniques: refrigeration, drying, curing, irradiation, vacuum, etc. - Relationship between preservation and changes in meat quality - Popular preserved meat products	10

4-6	Students are able to demonstrate the latest meat formulation, cooking, and processing processes correctly (ILO-2)	**Formative:** - **Sumative:** -	Formative Criteria: Summative Criteria: Problem Base Learning (15) assessed with rubric I011240002 **Assessment Techniques:** Test and Non Test	**Response and Tutorial:** Small Group Discussion 2x2x50 minutes		• Meat Cooking Techniques Meat processing and restructuring techniques - Popular products	15
7-8	Students are able to describe the process of handling and preserving eggs correctly (ILO- 3) (ILO-3)	**Formative:** - **Sumative:** -	**Formative Criteria:** **Sumative Criteria:** Problem Base Learning (15) assessed with rubric I011240003 **Assessment Techiniques:** Test and Non-test	**Lecture:** Case Study 2x2x50 minutes		1. Basic egg handling/storage techniques: refrigeration, etc 2. Relationship between preservation and changes in egg quality 3. Popular preserved egg products	15

9-10	Students are able to describe the process of handling and preserving milk correctly (ILO-4)	**Formative:** - **Sumative:** -	**Formative Criteria:** **Sumative Criteria:** Interactive Lecture	**Studying:** Collaborative learning, other methods 1 x 2 x 50 **Practicum, Studio Practice, Workshop Practice, Field Practice:** Project-based Learning 2x2x50 cm		Basic principles of egg processing Popular products and processing techniques	10
11	Students are able to describe the process of handling and preserving milk correctly (ILO 4) (ILO-4)	**Formative:** - **Sumative:** -	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (3) assessed with rubric I011240002 Interactive Lecture (2)				5
12-13	Students are able to demonstrate the latest milk formulation and processing processes correctly (ILO-4) (ILO-4)	**Formative:** - **Sumative:** -	**Formative criteria:** **Summative criteria:** Problem Base Learning (15) **Assessment Techinique:** None			-	15

14	Students are able to describe the process of handling and preserving fresh skin correctly (ILO 5) (ILO-5)	**Formative:** - **Sumative:** -	**Formative criteria:** **Summative criteria:** Practicum/Field Practice (3) assessed with rubric I011240002 **Assessment Techinique:** None			-	10
15-16	Students are able to perform advanced leather processing correctly (ILO-5) (ILO-4)	**Formative:** - **Sumative:** -	**Formative** **Criteria:** Case Study (15) **Assessment Technique:** None				15

Matrix of SLO, SLO, and Assessment Method

SLO / SLO	SLO-1	SLO-2	SLO-3	SLO-4	SLO-5
SLO-5 (KU2)	Quiz (5% weight)				
SLO-7 (KK1)		Interactive Lecture (Weight 22%)	Case Study (15%)	Problem Based Learning (55%)	Practicum / Field Practice (3%)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Quiz	7.5
Interactive Lecture	12.5
Case Study	60
Group Paper Assignment	10
Group Presentation	10
Total	100

Assessment and Evaluation of Student Achievement of CLO

SLOs assigned to the course	CLO	SUB CLO	Form of Assessment*						Weight	Value	Student Score
			Formative	Summative							
				Quiz	Interactive Lecture	Problem Base Learning	Practicum/Field Practice	Case Study			
CPL-5	SLO-1	SUB-SLO-1		5	0	0	0	0	5		
CPL-7	SLO-2	SUB-SLO-2		0	10	0	0	0	10		
CPL-7	SLO-2	SUB-SLO-3		0	0	15	0	0	15		
CPL-	SLO-	SUB-SLO-4		0	0	15	0	0	15		
CPL-	SLO-	SUB-SLO-6		0	12	0	3	0	15		
CPL-	SLO-	SUB-SLO-7		0	0	15	0	0	15		
CPL-7	SLO-	SUB-SLO-8		0	0	10	0	0	10		
CPL-	SLO-	SUB-SLO-9		0	0	0	0	15	15		
				5	22	55	3	15	100		

HASANUDDIN UNIVERSITY
Faculty of Animal Science
Animal Science Study Program

STUDENT STRUCTURED ASSIGNMENT PLAN

COURSE	Livestock Products Processing Technology				
CODE	23I01120803	**SKS**	3	**SEMESTER**	3 (three)
INSTRUCTOR	Dr. Ir. Hikmah, S.Pt., M.Si., IPU, ASEAN Eng.				

ASSIGNMENT TYPE	**ASSIGNMENT COMPLETION TIME**
Document/Paper	2 Weeks

ASSIGNMENT TITLE

Innovations in Meat Handling, Preservation, and Processing in the Livestock Industry

SUB-LEARNING OUTCOMES OF THE COURSE

Sub-CPMK-3: Able to demonstrate the process of formulation, cooking, and processing of modern meat with accuracy: (CPMK-2)

ASSIGNMENT DESCRIPTION

The student assignment is a group assignment to create a paper titled **"**Techniques for Handling, Preserving, and Processing Meat" by selecting 1 of the following sub-topics: Cooling, Curing, Drying, Irradiation, Vacuum, or Advanced Meat Products. The paper must be prepared according to the following procedure:

1) Each group selects 1 of the sub-topics: Cooling, Curing, Drying, Irradiation, Vacuum, or Advanced Meat Products for 1 group.
2) Discuss among group members to identify the process stages for each selected subtopic. Information related to the selected subtopic can be obtained from textbooks and journals.
3) Prepare the paper with the following structure:
   I. Introduction
   II. Discussion
   III. Conclusion
   IV. References
4) Group presentation

TASK COMPLETION METHOD

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

OUTPUT FORM AND FORMAT

a. Subject: Preservation, Processing
b. Output Format: Paper

INDICATORS, CRITERIA, AND WEIGHTING FOR EVALUATION

Indicators:

1. Systematicity: 10%
2. Accuracy of analysis: 25%
3. Depth of material: 30%
4. Novelty and reputation of reference materials: 10%
5. Team cohesion: 10%
6. Mastery of material: 15%

IMPLEMENTATION SCHEDULE

2 weeks

OTHER

-

REFERENCE LIST

1. Covington, A. D., & Covington, T. (2009). Tanning Chemistry: The Science of Leather. In Royal Society of Chemistry.
2. Fox, P. F., Guinee, T. P., Cogan, T. M., & McSweeney, P. L. H. (2016). Fundamentals of cheese science, second edition. In Fundamentals of Cheese Science, Second Edition. https://doi.org/10.1007/978-1-4899-7681-9.

3. Fron ing, G. (1995). Egg Science and Technology. Poultry Science. https://doi.org/10.3382/ps.0742061.
4. Geeraerts, W., Stavropoulou, D. A., De Vuyst, L., & Leroy, F. (2019). Meat and meat products. In How Fermented Foods Feed a Healthy Gut Microbiota: A Nutrition Continuum. https://doi.org/10.1007/978-3-030-28737-5_3.
5. Hikmah dkk. 2022. Panduan Praktikum Teknolofi Hasil Ternak. Fakultas Peternakan Unhas, Makassar
6. Mead, G. C. (2004). Poultry meat processing and quality. In Poultry Meat Processing and Quality. https://doi.org/10.1533/9781855739031.
7. Nollet, L. M. L., & Toldrá, F. (2006). Advanced technologies for meat processing. In Advanced Technologies for Meat Processing. https://doi.org/10.1201/9781420017311
8. Toldrá, F. (2010). Handbook of Meat Processing. In Handbook of Meat Processing. https://doi.org/10.1002/9780813820897
9. Toldrá, F., Hui, Y. H., Astiasarán, I., Nip, W. K., Sebranek, J. G., Silveira, E. T. F., Stahnke, L. H., & Talon, R. (2008). Handbook of Fermented Meat and Poultry. In Handbook of Fermented Meat and Poultry. https://doi.org/10.1002/9780470376430
10. Walstra, Pieter, Wouters, J. T. M., & Geurts, T. J. (2005). Dairy science and technology, second edition. In Dairy Science and Technology, Second Edition.

Definition of 1 credit hour in LEARNING FORMAT				Hours
A	Lecture, Response, Tutorial			
	Face-to-face	Structured Assignments	Independent Study	
	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 study	
	100 minutes/week/semester		70 minutes/week/semester	2.83
C	Practical work, 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 that can effectively facilitate the fulfillment of graduate learning outcomes.	