



**UNIVERSITAS SUMATERA UTARA (USU)**  
**FACULTY OF AGRICULTURE**  
**Animal Science Study Programme**

**Document Code**  
(to follow)

**SEMESTER LEARNING PLAN (RPS)**

COURSE	CODE	Course Group	WEIGHT (credits)	SEMESTER	Date of Preparation	
Meat Technology	PTN3229	Exact	3	VI	22 February 2024	
<b>AUTHORISATION/ ATTESTATION</b>	<b>Developer Lecturer</b>		<b>Approved Head of Study Programme</b>		<b>Chairman of LINKUP USU</b>	
	Dr Nurjama'yah Br. Ketaren S.Pt, M.Si Ir. Peni Patriani S.Pt., M.P, IPM, ASEAN Eng. Vivi Indriani S.Pt., M.S.		Dr Ir Ma'ruf Tafsin, M.Si., IPM.		Prof. Dr Dwi Suryanto M.Sc.	
<b>Learning Outcomes</b>	<b>LO-Study Programe Charged to Course</b>					
	LO3	Able to identify, formulate, and find solutions to problems related to the field of animal husbandry				
	LO6	Supervise and evaluate the completion of assigned work and be able to manage learning independently throughout life.				
	LO7	Able to disseminate knowledge and application of the latest technology based on TALENTA in the field of animal husbandry				
	LO8	Able to manage integrated and sustainable livestock cultivation based on integration with other agroecosystems and the latest applications in processing livestock products and waste				
	LO11	Able to develop, understand, and apply various best techniques and methods that combine theory and practice relevant to animal husbandry expertise.				
	LO13	Know the concept of identification and safety with a cross-multidisciplinary approach in animal science.				
	<b>Course Learning Outcomes (CLO)</b>				<b>CLO Weight</b>	
	CLO0705: Able to apply the latest technology in meat processing				14.29	
	CLO0817: Able to make processed meat products based on agricultural and plantation products				21.43	
	CLO0334: Able to explain solutions to problems in the application of technology in meat processing				21.43	
	CLO0629: Able to evaluate the application of technology in meat processing				14.29	
	CLO1129: Able to apply techniques and best methods that combine theory and practice in meat processing technology.				14.29	

CLO1320: Able to apply meat processing technology within a monodisciplinary and interdisciplinary scope.	14.29
<b>End Capability of Each Learning Stage (Sub-CLO)</b>	
Sub-CLO1	After attending this lecture, students can explain Muscle tissue and structure
Sub-CLO2	After attending this lecture, students can explain Mechanism of muscle contraction
Sub-CLO3	After attending this lecture, students can explain Muscle to meat conversion
Sub-CLO4	After attending this lecture, students can explain Physical, chemical and microbial properties of fresh meat
Sub-CLO5	After attending this lecture, students can explain Physical properties of fresh meat
Sub-CLO6	After attending this lecture, students can explain Physical properties of fresh meat (continued)
Sub-CLO7	After attending this lecture, students can explain Functional properties of meat components in processing
Sub-CLO8	MID SEMESTER EXAMINATION
Sub-CLO9	After attending this lecture, students can explain Handling and storage of meat products
Sub-CLO10	After attending this lecture, students can explain Processing (Smoking)
Sub-CLO11	After attending this lecture, students can explain Curing
Sub-CLO12	After attending this lecture, students can explain Processing (Dry meat)
Sub-CLO13	After attending this lecture, students can explain Food safety
Sub-CLO14	After attending this lecture, students can explain Processing (Fermented sausage)
Sub-CLO15	After attending this lecture, students can explain Future meat
Sub-CLO16	FINAL SEMESTER EXAMINATION (UAS)

<b>Correlation of CLO with Sub-CLO</b>		Sub-CLO1	Sub-CLO2	Sub-CLO3	Sub-CLO4	Sub-CLO5	Sub-CLO6	Sub-CLO7	Sub-CLO8	Sub-CLO9	Sub-CLO10	Sub-CLO11	Sub-CLO12	Sub-CLO13	Sub-CLO14
	CLO0705	√		√				√			√			√	√
	CLO0817	√	√			√	√			√			√		
	CLO0334			√		√	√		√			√		√	

	CLO0629	√						√			√			√	
	CLO1129						√					√		√	√
	CLO1320	√	√		√	√		√			√		√	√	√
<b>Brief Course Description</b>	After completing the meat technology course, students in semester VI, Animal Husbandry Study Programme, Faculty of Agriculture, Universitas Sumatera Utara are expected to be able to explain the structure and properties of muscle, factors affecting carcass composition, carcass and meat quality, storage and preservation of meat, physical properties and parameters, specific meat quality and chemical and physical components of meat muscle.														
<b>Study Material:</b>	<b>BK07</b> Application and Development of Animal Science and Technology														
Learning Materials	<ol style="list-style-type: none"> <li>1. Muscle tissue and structure</li> <li>2. Mechanism of muscle contraction</li> <li>3. Muscle to meat conversion</li> <li>4. Physical, chemical and microbial properties of fresh meat</li> <li>5. Physical properties of fresh meat</li> <li>6. Physical properties of fresh meat (continued)</li> <li>7. Functional properties of meat components in processing</li> <li>8. Handling and storage of meat products</li> <li>9. Processing (Smoking)</li> <li>10. Curing</li> <li>11. Processing (Dry meat)</li> <li>12. Food safety</li> <li>13. Processing (Fermented sausage)</li> <li>14. Future meat</li> </ol>														
<b>References</b>	<b>Main:</b> <ol style="list-style-type: none"> <li>1. Aberle, E. D., Forrest, J. C., Gerrard, D. E., &amp; Mills, E. W. (2017). Principles of meat science (5th ed.). Kendall Hunt Publishing</li> <li>2. Toldrá, F. (2010). Handbook of meat processing. Wiley-Blackwell</li> <li>3. Lawrie, R. A., &amp; Ledward, D. A. (2014). Lawrie's meat science (8th ed.). Woodhead Publishing</li> <li>4. Feiner, G. (2006). Meat products handbook: Practical science and technology. Woodhead Publishing</li> <li>5. Jensen, W. K., Devine, C., &amp; Dikeman, M. (2004). Encyclopedia of meat sciences. Academic Press</li> <li>6. Pearson, A. M., &amp; Gillett, T. A. (1996). Processed meats. Springer</li> <li>7. Hui, Y. H. (2012). Handbook of meat and meat processing (2nd ed.). CRC Press.</li> <li>8. Peni Patriani, Harapin Hafid, Edhy Mirwandhono, Tri Hesti Wahyuni. Meat Processing Technology. CV Anugerah Pangeran Jaya Press. Medan. Indonesia</li> </ol>														

<p>9. Harapin Hafid and Peni Patriani. 2021. Animal Husbandry Post-Harvest Technology. Widina. Bandung. Indonesia</p> <p>10. Peni Patriani and Nesza Laras Apsari. 2022. Improving Meat Quality Using Spices. CV Anugerah Pangeran Jaya Press. Medan. Indonesia</p> <p>11. Soeparno. 2015. Meat Science and Technology. 2nd print. Gadjah Mada University Press</p>							
<p><b>Supporters:</b></p> <ol style="list-style-type: none"> <li>Romanelli, P., &amp; Pedonese, F. (2018). Advanced technologies in meat processing. Elsevier.</li> <li>FAO. (2019). Meat and meat products in human nutrition. Food and Agriculture Organization of the United Nations</li> <li>Toldrá, F., Reig, M., &amp; Mora, L. (2021). Advances in meat processing technology. CRC Press</li> <li>Patriani, P., Hafid, H., Mirwandhono, E., Wahyuni, T. H., Hasanah, U., Apsari, N. L., &amp; Ginting, N. (2020). Physical quality characteristics of lamb meat using Pangium edule extract at different storage times. IOP Conference Series: Earth and Environmental Science, 454(1). <a href="https://doi.org/10.1088/1755-1315/454/1/012056">https://doi.org/10.1088/1755-1315/454/1/012056</a></li> <li>Patriani P, Mirwandhono E, Wahyuni T H, Siregar G A W, Hasanah U, Hasnudi, Ginting N, and Yunilas. 2020. Effect of Kepayang (Pangium edule) Seed Extract on Meat Moisture Content, Drip Loss and Decay Test of Lamb Meat at Different Shelf Life. Journal of Physics: Conference Series. 1542. 012029. <a href="https://doi.org/10.1088/1742-6596/1542/1/012029">https://doi.org/10.1088/1742-6596/1542/1/012029</a></li> <li>Patriani P, Wahyuni T H. 2019. Physical and Organoleptic Quality of Culled Layers Chicken Meat Using Marinated Asam Kandis Fruits (Garcinia dioica Blume). Indonesian Journal of Agricultural Research Vol. 02, No. 03, Pp. 188- 195. <a href="https://doi.org/10.32734/injar.v2i3.3234">https://doi.org/10.32734/injar.v2i3.3234</a></li> <li>Patriani P, Hafid H, Wahyuni T H and Sari T V. 2020. Physical quality improvement of culled chicken meat with marinated technology using Gelugur acid (Garciniaatroviridis) biomass. IOP Conf. Series: Earth and Environmental Science 749. 012001. <a href="https://doi.org/10.1088/1755-1315/749/1/012001">https://doi.org/10.1088/1755-1315/749/1/012001</a></li> </ol>							
<p><b>Lecturer</b></p> <p>Dr Nurjama'yah Br. Ketaren S.Pt, M.Si  Ir. Peni Patriani S.Pt., M.P, IPM, ASEAN Eng.  Vivi Indriani S.Pt., M.S.</p>							
<p><b>Conditional Subjects</b></p>							
	End ability of each learning stage (Sub-CLO)	Assessment		Form of Learning; Learning Methods; Student Assignment; [Estimated Time]		Study Material (Learning Material)	Assessment Weight (%)
		Indicator	Criteria and Techniques	Asynchronous (5)	Synchronous (6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Sub-CLO1:  After attending this lecture, students will be able to explain Muscle tissue and structure	Accuracy in explaining the role and scope of meat technology, Muscle tissue and structure	Criteria: Using an assessment rubric. Shape: a Read the passage provided (book)	KM+PT (1 week x 3 credits x 120 minutes)  <b>Learning Methods:</b> <i>Self-Paced Learning</i>  <b>Activities:</b>	TM (1 week x 2 credits x 50 minutes)  <b>Learning Methods:</b> a. Lecture b. Discussion	Subject matter:  a. Course contract b. Definition, Role and Benefits	This sub-CLO will be assessed during Midterm exams

			<p>b Respond to the opening question given.</p> <p>c Answer questions according to the reading.</p>	<p>a. Attendance</p> <p>b. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials.</p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p><b>Activities:</b></p> <p>a. Online/offline learning</p> <p>b. Class discussion</p> <p>c. Take notes on learning materials</p> <p><b>Media:</b></p> <p>a. Slides/ ppt</p> <p>b. Zoom meeting / LCD</p> <p>c. Textbook</p>	<p>b. Muscle tissue and structure</p>	
2	<p>Sub-CLO 2:</p> <p>After attending this lecture, students can explain the Mechanism of muscle contraction</p>	<p>a. Accuracy in disclosing the required information</p> <p>b. Correctness of students' answers (Quiz)</p>	<p><b>Criteria:</b> Essay assessment rubric</p> <p><b>Techniques:</b> <i>Test:</i> Quiz</p>	<p>KM+PT (1 week x 3 credits x 120 minutes)</p> <p><b>Learning Methods:</b> <i>Self-Paced Learning</i></p> <p><b>Activities:</b></p> <p>a. <i>Recording attendance</i></p> <p>b. <i>Completing the quiz</i></p> <p><b>Quiz 1:</b> Quiz to measure student understanding.</p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p>TM (2 weeks x 2 credits x 50 minutes)</p> <p><b>Learning Methods:</b></p> <p>a. Lecture</p> <p>b. Discussion</p> <p>c. Quiss</p> <p><b>Activities:</b></p> <p>a. Online/offline learning</p> <p>b. Class discussion</p> <p>c. Take notes on learning materials</p> <p><b>Media:</b></p> <p>a. Slides/ ppt</p> <p>b. Zoom meeting / LCD</p> <p>a. Textbook</p>	<p><b>Subject matter:</b> Mechanism of muscle contraction</p>	<p>Quiz 2,5%</p>
3	Sub-CLO 3:	a. Accuracy in providing the	<b>Criteria:</b>	KM+PT (1 week x 3 credits x 120 minutes)	TM (1 week x 2 credits x 50 minutes)	<b>Subject matter:</b>	Quiz 2,5

	<p>After attending this lecture, students will be able to explain Muscle to meat conversion</p>	<p>information needed b. Correctness of answer</p>	<p>Paper assessment rubric <b>Techniques:</b> <i>Tasks</i></p>	<p><b>Learning Methods:</b> <i>Self-Paced Learning</i> <b>Activities:</b> a. <i>Recording attendance</i> b. <i>Completing assignment</i> <b>Assignment 1:</b> a Review the previous lesson. Read the added teaching materials. b Recording attendance. c Respond to the opening question. d <i>Moda (Learning Management System):</i> e <i>class.usu.ac.id</i></p>	<p><b>Learning Methods:</b> a. Lecture b. Discussion <b>Activities:</b> a. Online/offline learning b. Class discussion c. Take notes on learning materials d. Tasks <b>Media:</b> a. Slides/ ppt b. Zoom meeting / LCD c. Textbook</p>	<p>Muscle to meat conversion</p>	
<p>4</p>	<p>Sub-CLO 4:  After attending this lecture, students can explain the Physical, chemical and microbial properties of fresh meat</p>	<p>a. Accuracy in explaining post-cutting meat and carcass handling procedures, characteristics of fresh meat and tenderising meat. b. Accuracy in answering procedures for</p>	<p><b>Criteria:</b> a <i>Read the passage provided (book)</i> b <i>Respond to the opening question given.</i> c <i>Answer questions according to the reading.</i> <b>Techniques:</b> Non-test: Assignment</p>	<p>KM+PT (1 week x 3 credits x 120 minutes) <b>Learning Methods:</b> <i>Self-Paced Learning</i> <b>Activities:</b> a. <i>Recording attendance</i> b. <i>Completing assignment</i> c. <i>Practicum</i></p>	<p>TM (1 week x 2 credits x 50 minutes) <b>Learning Methods:</b> a. Lecture b. Discussion <b>Activities:</b> a. Online/offline learning b. Class discussion c. Take notes on learning materials</p>	<p><b>Subject matter:</b> a. Physical, chemical b. Microbial properties of fresh meat</p>	<p>This sub-CLO will be assessed during Midterm exams</p>

		handling post-cutting meat and carcasses, characteristics of fresh meat and ageing of meat.		<p><b>Problem-Based Learning 1:</b></p> <p>a. The lecturer divides students into groups.</p> <p>b. Conducting a practicum</p> <p>c. Make a practicum report.</p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p><b>Media:</b></p> <p>a. Slides/ ppt</p> <p>b. Zoom meeting / LCD</p> <p>c. Textbook</p>	
5	<p>Sub-CLO 5:</p> <p>After attending this lecture, students can explain Physical properties of fresh meat</p>	<p>a. Accuracy in providing the information needed</p> <p>b. Accuracy in doing assignments</p> <p>c. Correctness of students' answers</p>	<p><b>Criteria:</b> Use essay and multiple-choice assessment rubrics</p> <p><b>Techniques:</b> Tasks</p>	<p>KM+PT (1 week x 3 credits x 120 minutes)</p> <p><b>Learning Methods:</b> <i>Self-Paced Learning</i></p> <p><b>Activities:</b></p> <p>a. Recording attendance</p> <p>b. Practicum</p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p>TM (1 week x 2 credits x 50 minutes)</p> <p><b>Learning Methods:</b></p> <p>a. Lecture</p> <p>b. Discussion</p> <p><b>Activities:</b></p> <p>a. Online/offline learning</p> <p>b. Class discussion</p> <p>c. Take notes on learning materials</p> <p>d. Tasks</p> <p><b>Media:</b></p> <p>a. Slides/ ppt</p> <p>b. Zoom meeting / LCD</p> <p>c. Textbook</p>	<p><b>Subject matter:</b> Physical properties of fresh meat</p> <p>Tasks 2,5%</p>

6	Sub-CLO 6: After attending this lecture, students can explain Physical properties of fresh meat (continued)	<ul style="list-style-type: none"> <li>a Accuracy in providing the information needed</li> <li>b Accuracy in doing the task and correctness of student answers</li> </ul>	<b>Shape:</b> Worksheet (Non-Test) <ul style="list-style-type: none"> <li>a. Reading a book</li> <li>b. Respond to the opening question given</li> <li>c. Practicum</li> </ul>	<ul style="list-style-type: none"> <li>a. Review the previous lesson.</li> <li>b. Read the added teaching materials.</li> <li>c. Recording attendance.</li> <li>d. Practicum</li> </ul>	<ul style="list-style-type: none"> <li>a Take notes on the learning materials explained.</li> <li>b Responding to questions</li> <li>c Complete all exercises provided individually.</li> <li>d Discuss the completed exercise</li> </ul>	<b>Subject matter:</b> Physical properties of fresh meat (continued)	This sub-CLO will be assessed during Midterm exams
7	Sub-CLO 7: Students can explain about Functional properties of meat components in processing	<ul style="list-style-type: none"> <li>a Accuracy in providing the information needed</li> <li>b Accuracy in doing the task correctness of student answers</li> </ul>	<b>Shape:</b> a Worksheet (Non-Test) b Reading a book c Respond to the opening question given by the Practicum	<ul style="list-style-type: none"> <li>a. Review the previous lesson.</li> <li>b. Read the added teaching materials.</li> <li>c. Practicum</li> </ul>	<ul style="list-style-type: none"> <li>a Take notes on the learning materials explained.</li> <li>b Responding to questions</li> <li>c Complete all exercises provided individually.</li> </ul>	<b>Subject matter:</b> Functional properties of meat components in processing	This sub-CLO will be assessed during Midterm exams
<b>MID SEMESTER EXAMINATION (UTS)</b>							20%
8	Sub-CLO 8: After completing this course, students can explain Handling and storage of meat products	<ul style="list-style-type: none"> <li>1. Accuracy in providing the information needed</li> <li>2. Accuracy in doing the quiz</li> <li>3. Correctness of students' answers</li> </ul>	<b>Criteria:</b> Paper assessment rubric  <b>Techniques:</b> <i>Quiz</i>	<b>Learning Methods:</b> <i>Self-Paced Learning</i>  <b>Activities:</b> <ul style="list-style-type: none"> <li>a. Recording attendance</li> <li>b. Completing assignment</li> <li>c. Practicum</li> </ul>	<b>Learning Methods:</b> <ul style="list-style-type: none"> <li>a. Lecture</li> <li>b. Discussion</li> </ul> <b>Activities:</b> <ul style="list-style-type: none"> <li>a. Online/offline learning</li> <li>b. Class discussion</li> </ul>	<b>Subject matter:</b> Handling and storage of meat products	Quiz 2,5%

				<p><b>Quiz 2:</b> Quiz to measure students' understanding of Hardy-Weinberg probability through calculations on several cases</p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p>c. Take notes on learning materials</p> <p><b>Media:</b> a. Slides/ ppt b. Zoom meeting / LCD c. Textbook</p>		
9	<p>Sub-CLO 9: After attending this lecture, students can explain Processing (Smoking)</p>	<ol style="list-style-type: none"> <li>1. Accuracy in providing the information needed</li> <li>2. Accuracy in doing the quiz</li> <li>3. Correctness of students' answers</li> </ol>	<p><b>Criteria:</b> <i>a Worksheet</i> <i>b Reading a book</i> <i>c Respond to the opening question given by the Practicum</i></p> <p><b>Techniques:</b> <i>Non-test: Assignment</i></p>	<p>KM+PT (1 week x 3 credits x 120 minutes)</p> <p><b>Learning Methods:</b> <i>Self-Paced Learning</i></p> <p><b>Activities:</b> <i>a. Recording attendance</i></p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p>TM (1 week x 2 credits x 50 minutes)</p> <p><b>Learning Methods:</b> a. Lecture b. Discussion</p> <p><b>Activities:</b> a. Online/offline learning b. Class discussion c. Take notes on learning materials</p> <p><b>Media:</b> a. Slides/ ppt b. Zoom meeting / LCD c. Textbook</p>	<p><b>Subject matter:</b> Processing (Smoking)</p>	<p>This sub-CLO will be assessed during Final exams</p>
10	<p>Sub-CLO 10:</p>	<p>a. Accuracy in providing the</p>	<p><b>Criteria:</b> a Worksheet)</p>	<p>KM+PT (1 week x 3 credits x 120 minutes)</p>	<p>TM (1 week x 2 credits x 50 minutes)</p>	<p><b>Subject matter:</b></p>	

	After attending this lecture, students can explain Curing	<p>information needed</p> <p>b. Accuracy in doing assignments</p> <p>c. Correctness of students' answers</p>	<p>b Reading a book</p> <p>c Respond to the opening question given by the Practicum</p> <p><b>Techniques:</b> <i>Non-test:</i> Assignment</p>	<p><b>Learning Methods:</b> <i>Self-Paced Learning</i></p> <p><b>Activities:</b></p> <p>a. <i>Recording attendance</i></p> <p>b. <i>Completing assignment</i></p> <p><b>Assignment 2:</b> Resume a journal</p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p><b>Learning Methods:</b></p> <p>a. Lecture</p> <p>b. Discussion</p> <p><b>Activities:</b></p> <p>a. Online/offline learning</p> <p>b. Class discussion</p> <p>c. Take notes on learning materials</p> <p><b>Media:</b></p> <p>a. Slides/ ppt</p> <p>b. Zoom meeting / LCD</p> <p>c. Textbook</p>	Curing	
11	Sub-CLO 11: After attending this lecture, students can explain Processing (Dry meat)	<p>a. Accuracy in providing the information needed</p> <p>b. Accuracy</p> <p>c. Correctness of students' answers</p>	<p><b>Criteria:</b> Use presentation and paper assessment rubrics</p> <p><b>Techniques:</b> <i>Problem-based learning</i></p>	<p>KM+PT (1 week x 3 credits x 120 minutes)</p> <p><b>Learning Methods:</b> <i>Self-Paced Learning</i></p> <p><b>Activities:</b></p> <p>a. <i>Recording attendance</i></p> <p>b. <i>Completing assignment</i></p> <p>c. <i>Practicum</i></p> <p><b>Problem-based learning 2:</b></p> <p>a. Divide the group evenly (lecturer divides)</p>	<p>TM (2 weeks x 2 credits x 50 minutes)</p> <p><b>Learning Methods:</b></p> <p>a. Lecture</p> <p>b. Discussion</p> <p>c. Problem-based learning</p> <p><b>Activities:</b></p> <p>a. Online/offline learning</p> <p>b. Class discussion</p> <p>c. Take notes on learning materials</p> <p><b>Media:</b></p> <p>a. Slides/ ppt</p> <p>b. Zoom meeting / LCD</p>	<b>Subject matter:</b> Processing (Dry meat)	Problem-based learning 30%

				<ul style="list-style-type: none"> <li>b. Make a paper of maximum of 15 pages from the table of contents to bibliography TNR font size 12 spacing 1.5 sent in pdf form</li> <li>c. Presentation</li> </ul> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<ul style="list-style-type: none"> <li>c. Textbook</li> </ul>		
12	<p>Sub-CLO 12:</p> <p>After attending this lecture, students will be able to explain Food safety</p>	<ul style="list-style-type: none"> <li>a. Accuracy in providing the information needed</li> <li>b. Accuracy in doing the quiz</li> <li>c. Correctness of students' answers</li> </ul>	<p><b>Criteria:</b> Using an assessment rubric</p> <p><b>Techniques:</b> <i>Non-test:</i> <i>Case Method</i></p>	<p>KM+PT (1 week x 3 credits x 120 minutes)</p> <p><b>Learning Methods:</b> <i>Self-Paced Learning</i></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>a. <i>Recording attendance</i></li> <li>b. <i>Completing assignment</i></li> <li>c. <i>Practicum</i></li> </ul> <p><b>Problem-Based Learning 3:</b></p> <ul style="list-style-type: none"> <li>a. Divide the group evenly (lecturer divides)</li> <li>b. Make a paper of a maximum of 15 pages from the</li> </ul>	<p>TM (1 week x 2 credits x 50 minutes)</p> <p><b>Learning Methods:</b></p> <ul style="list-style-type: none"> <li>a. Lecture</li> <li>b. Discussion</li> <li>c. Case Method</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>a. Online/offline learning</li> <li>b. Class discussion</li> <li>c. Take notes on learning materials</li> </ul> <p><b>Media:</b></p> <ul style="list-style-type: none"> <li>a. Slides/ ppt</li> <li>b. Zoom meeting / LCD</li> <li>c. Textbook</li> </ul>	<b>Subject matter:</b> Food safety	Case method 20%

				<p>table of contents to bibliography TNR font size 12 spacing 1.5 sent in pdf form.</p> <p>c. Presentation</p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>			
13	<p>Sub-CLO13:</p> <p>After attending this lecture, students can explain Processing (Fermented sausage)</p>	<p>a. Accuracy in providing the information needed</p> <p>b. Accuracy in doing the quiz</p> <p>c. Correctness of students' answers</p>	<p><b>Criteria:</b></p> <p><i>a Worksheet/ non test</i></p> <p><i>b Reading a book</i></p> <p><i>c Respond to the opening question given by the Practicum</i></p> <p><b>Techniques:</b></p> <p>Non-test:</p> <p>Assignment</p>	<p>KM+PT (1 week x 3 credits x 120 minutes)</p> <p><b>Learning Methods:</b> <i>Self-Paced Learning</i></p> <p><b>Activities:</b></p> <p><i>a. Recording attendance</i></p> <p><i>b. Completing assignment</i></p> <p><i>c. Practicum</i></p> <p><b>Moda (Learning Management System):</b> Class.usu.ac.id</p>	<p>TM (1 week x 2 credits x 50 minutes)</p> <p><b>Learning Methods:</b></p> <p>a. Lecture</p> <p>b. Discussion</p> <p><b>Activities:</b></p> <p>a. Online/offline learning</p> <p>b. Class discussion</p> <p>c. Take notes on learning materials</p> <p><b>Media:</b></p> <p>a. Slides/ ppt</p> <p>b. Zoom meeting / LCD</p> <p>c. Textbook</p>	<p>Subject matter:</p> <p>Processing (Fermented sausage)</p>	<p>This sub-CLO will be assessed during Final exams</p>
14	<p>Sub-CLO14:</p> <p>After attending this lecture, students explain Future meat</p>	<p>a Accuracy in providing the information needed</p>	<p>Criteria:</p> <p>a. Worksheet)</p> <p>b Reading a book</p> <p>c Respond to the opening question</p>	<p>Time 30 minutes</p> <p><b>Activities:</b></p> <p>a. Review the previous lesson.</p>	<p>Lecture 70 minutes</p> <p>Practicum 50 minutes</p> <p><b>Activities:</b></p>	<p>Future meat</p>	<p>This sub-CLO will be assessed during Final exams</p>

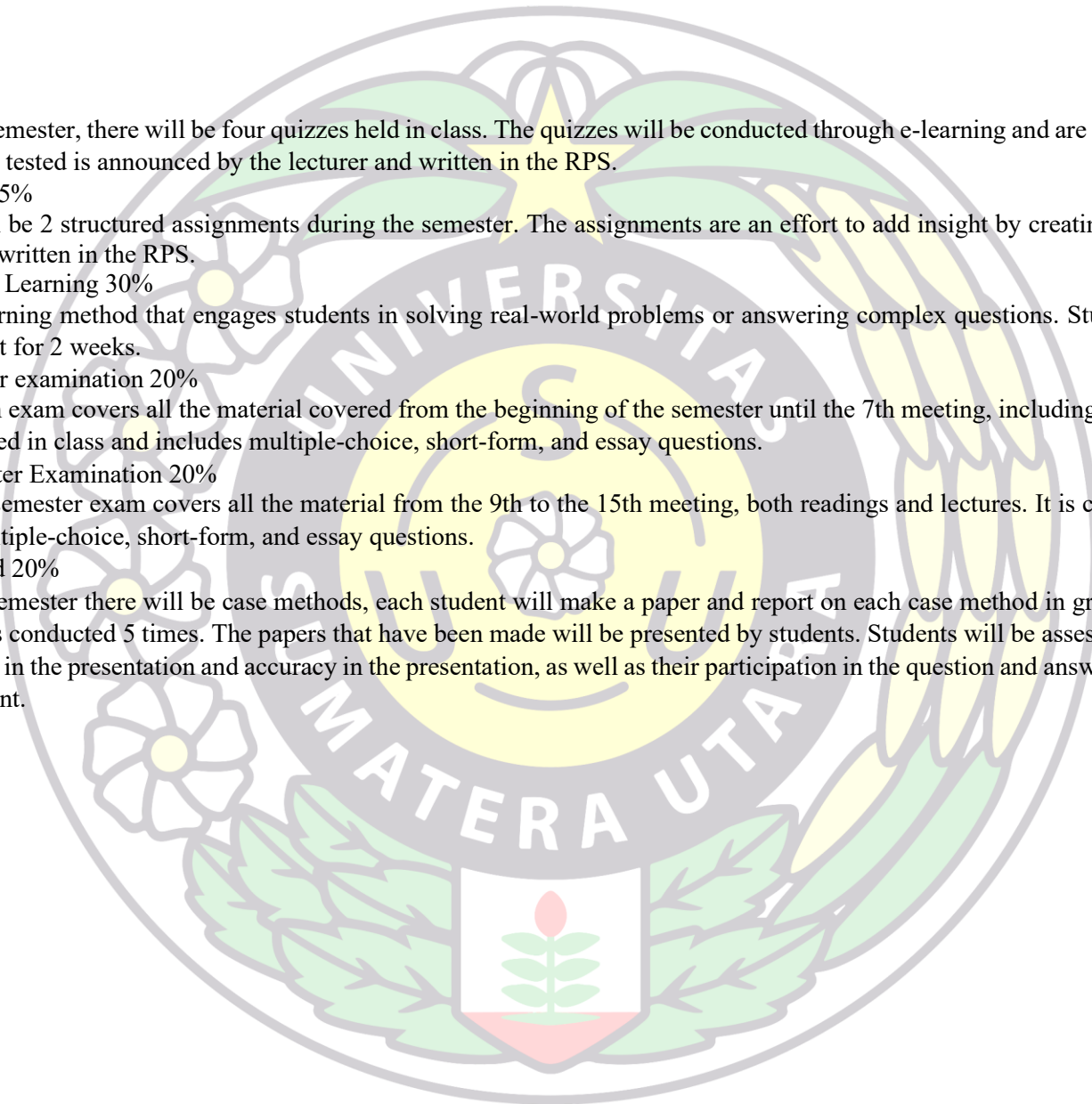
		<p>b Accuracy in doing the quiz c Correctness of students' answers</p>	<p>given by the Practicum  Shape: Non-test: Assignment</p>	<p>b. Read the added teaching materials. c. Recording attendance. d. Submit the quiz given in Lumi</p> <p><b>Task 8:</b> Working on a quiz on LUMI in learning 5 questions about packaging in fresh meat</p> <p><b>Moda (Learning Management System):</b> <a href="mailto:lelearning@usu.ac.id">lelearning@usu.ac.id</a></p>	<p>1. Take notes on the learning materials explained. 2. Respond to questions or instructions given. 3. Take a quiz on the Lumi app.</p> <p>1. Making notes of the learning materials explained. 2. Responding to the questions or instructions given. 3. Answer quiz questions</p> <p><b>Media:</b> <i>Zoom Meeting/ offline</i> <i>Video in Lumi</i> <i>Textbook</i></p> <p><b>Learning Methods:</b> 1. <i>Online Lecture/ offline</i> 2. <i>Quiz on Lumi</i> 3. <i>Self-Paced Learning</i></p>		<p>20%</p>
<p>FINAL SEMESTER EXAMINATION (UAS)</p>							

**Assessment Plan:**

Form of Evaluation	Sub-CLO	Assessment Instrument [Frequency]		Bill (proof)	Assessment Weight (%)
		Formative	Summative		
Quiz/question and answer	Sub-CLO2 Sub CLO8	Assessment rubric [2 times]	-	Quiz answers uploaded to class.usu.ac.id	5
Tasks	Sub-CLO3 Sub-CLO5	Assessment rubric [2 times]	-	Assignments uploaded to class.usu.ac.id	5
Problem-based Learning	Sub-CLO11	-	Assessment rubric [1 times]	Logbook/worksheets / slides uploaded to class.usu.ac.id	30
Case Method	Sub-CLO12	-	Assessment rubric [1 times]	Logbook/worksheets / slides uploaded to class.usu.ac.id	20
Written exam 1 (UTS)	Sub-CLO1 and Sub-CLO4 Sub-CLO6	-	Assessment rubric [1 time]	Written exam result sheet	20
Written exam 2 (final exam)	Sub-CLO9 Sub-CLO10 Sub-CLO13 Sub-CLO14	-	Assessment rubric [1 time]	Written exam result sheet	20
<b>Total</b>					100%

**Explanation:**

- a) Quiz 5%  
During the semester, there will be four quizzes held in class. The quizzes will be conducted through e-learning and are scheduled in advance. The material tested is announced by the lecturer and written in the RPS.
- b) Assignment 5%  
D There will be 2 structured assignments during the semester. The assignments are an effort to add insight by creating a resume related to the material written in the RPS.
- c) Project Base Learning 30%  
PBL is a learning method that engages students in solving real-world problems or answering complex questions. Students will work on a group project for 2 weeks.
- d) Mid semester examination 20%  
The midterm exam covers all the material covered from the beginning of the semester until the 7th meeting, including reading and lectures. It is conducted in class and includes multiple-choice, short-form, and essay questions.
- e) Final Semester Examination 20%  
The end-of-semester exam covers all the material from the 9th to the 15th meeting, both readings and lectures. It is conducted in class and includes multiple-choice, short-form, and essay questions.
- f) Case Method 20%  
During the semester there will be case methods, each student will make a paper and report on each case method in groups. Case method in this course is conducted 5 times. The papers that have been made will be presented by students. Students will be assessed according to their participation in the presentation and accuracy in the presentation, as well as their participation in the question and answer session when other groups present.



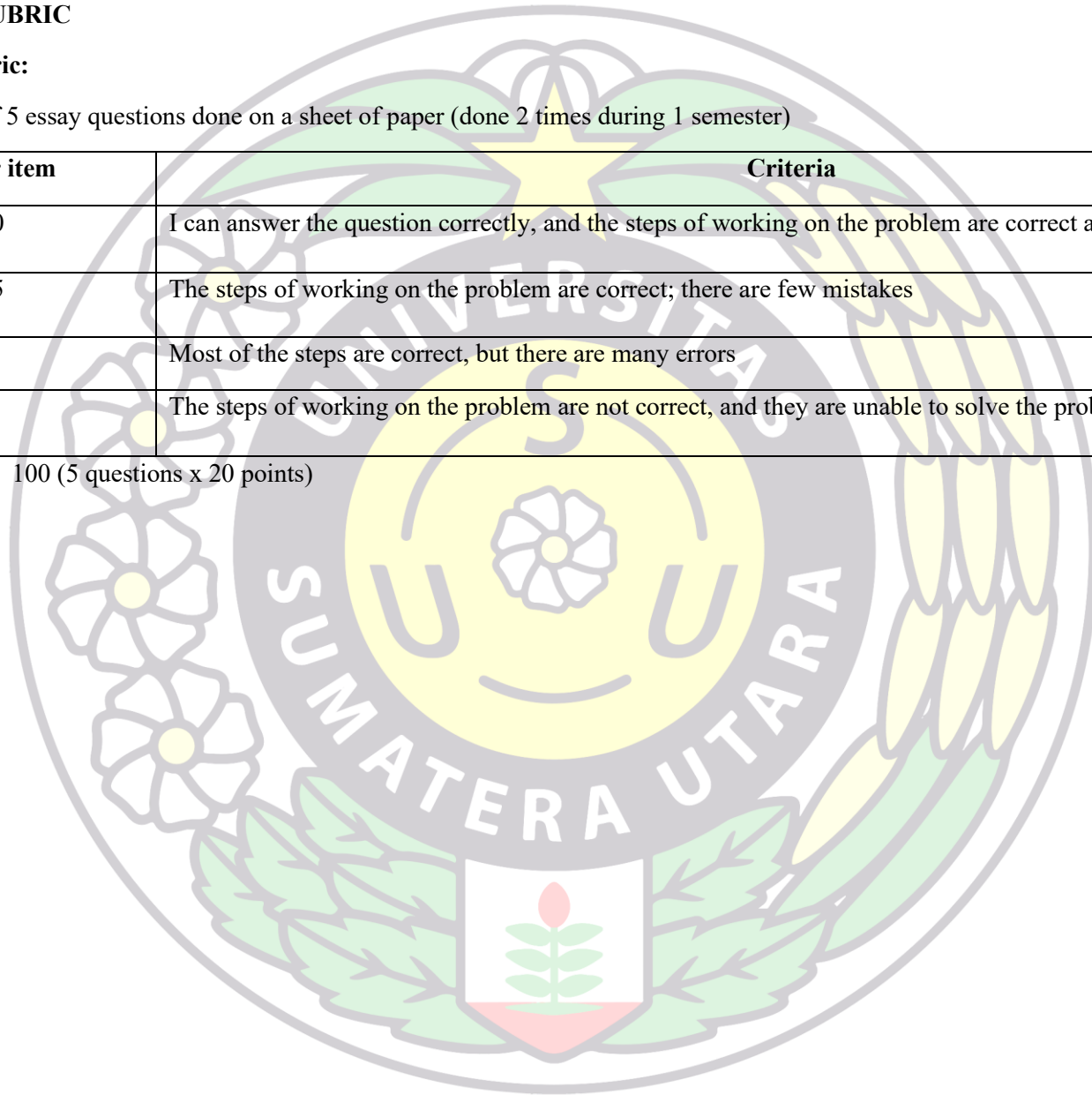
## ASSESSMENT RUBRIC

### Quiz Scoring Rubric:

The quiz consists of 5 essay questions done on a sheet of paper (done 2 times during 1 semester)

Value per item	Criteria
16-20	I can answer the question correctly, and the steps of working on the problem are correct and completely correct.
11-15	The steps of working on the problem are correct; there are few mistakes
6-10	Most of the steps are correct, but there are many errors
0-5	The steps of working on the problem are not correct, and they are unable to solve the problem

\*Maximum score = 100 (5 questions x 20 points)



**Teaching Journal/Proposal/Report/Paper Assessment Rubric:**

<b>Assessment Criteria</b>	<b>4 Very good</b>	<b>3 Good</b>	<b>2 Simply</b>	<b>1 Less</b>
<b>Understanding of Learning Topics with Resumed Journals</b>	Understand the topic exactly once (25)	Understand the topic (20)	Does not fully and appropriately understand the topic (15)	Not understanding the topic (10)
<b>Contents</b>	Drafts show understanding Participants integrate information learnt and are assigned to read correctly and appropriately during lectures. (25)	Drafts demonstrate an understanding of the material covered and integrate some of the information learnt and/or assigned to read during lectures. (20)	Drafts show an understanding of the material covered and only integrate a small portion of the information learnt and/or assigned to read during the lecture. (15)	Drafts show a lack of understanding of the material discussed, so they are not clear and do not integrate the material. Information that has been learnt and/or assigned to read during lectures. (10)
<b>Clarity of Writing</b>	All writing ideas are well and conveyed. (25)	Most of the ideas are well-written and clear. (20)	Some of the ideas are well-written and clear. (15)	The idea of the writing is not conveyed well and clearly. (10)
<b>Language Clarity</b>	Uses foreign/Indonesian language well and correctly, with few grammatical and word choice errors that do not interfere with understanding. (25)	Uses foreign/Indonesian language well and correctly with few grammatical and word choice errors that interfere with understanding. (20)	Uses foreign/Indonesian language fairly well and correctly with some grammatical and word choice errors. (15)	Do not use the foreign/Indonesian language properly and correctly as the writing contains many grammatical and word choice errors. (10)
<b>Total</b>	<b>81-100 (Excellent)</b>	<b>61-80 (Good enough)</b>	<b>41-60 (Enough)</b>	<b>0-40 (Less)</b>

**Group Presentation Task Assessment Rubric:**

<b>CATEGORIES</b>	<b>4 Very good</b>	<b>3 Good</b>	<b>2 Simply</b>	<b>1 Less</b>
<b>Group Preparation</b>	<p>The group is fully prepared and has optimised presentation exercises.</p> <p>Mutual complementarity between group members with clear tasks for each group member. (25)</p>	<p>The group seemed reasonably prepared but may need more practice presenting.</p> <p>The responsibilities of each group member need to be identified. (20)</p>	<p>The group tried to prepare but did not do any presentation preparation exercises.</p> <p>Tasks and responsibilities are assigned and accepted without careful consideration. (15)</p>	<p>The group seemed to have not prepared at all for the presentation.</p> <p>Tasks and responsibilities are assigned and accepted randomly. (10)</p>
<b>Presentation Organisation</b>	<p>The group presented the content logically and systematically through a cohesive introduction, main points, and conclusion.</p> <p>The group used visual aids that effectively supported and reinforced the presentation. (25)</p>	<p>The group presented the content logically and systematically, with an introduction, main idea and conclusion.</p> <p>The group used visual aids that linked to the presentation's content. (20)</p>	<p>The group presented the content fairly logically and systematically but needed an introduction, main idea, or conclusion.</p> <p>The group occasionally used visual aids that did not support the presentation's content. (15)</p>	<p>The group presented the content randomly without any introduction, main idea, or conclusion.</p> <p>Groups using unsupportive visual aids or no visual aids at all. (10)</p>
<b>Task Achievement</b>	<p>Each group member can demonstrate solid knowledge through their exposure and elaboration and deliver the part of the presentation assigned to them within the allotted time. (25)</p>	<p>Each group member demonstrates good knowledge through their exposure and elaboration but in less time than the time allocated. (20)</p>	<p>Each group member demonstrated sufficient knowledge but failed to elaborate and presented his or her part in only half the time allotted to him or her. (15)</p>	<p>Each group member knows nothing about the content and presents his/her section in less than half the time allocated to him/her. (10)</p>

<b>Mastery of Presentation Content</b>	<p>Each group member demonstrates a full understanding of the presentation topic.</p> <p>The main points presented are supported by evidence and critically evaluated. (25)</p>	<p>Each group member demonstrated a good understanding of the presentation topic.</p> <p>Most of the main points are illustrated with relevant evidence. (20)</p>	<p>Each group member demonstrated a good understanding of some aspect of the topic.</p> <p>Some illustrations are given but not critically evaluated. (15)</p>	<p>Each group member did not seem to understand the presentation topic very well.</p> <p>Some evidence was mentioned but not integrated in the presentation or evaluated. (10)</p>
<b>Answers to Questions</b>	<p>The group could correctly answer almost all the questions asked by the audience about their presentation topic. (25)</p>	<p>The group correctly answered most of the audience's questions about the tropes of their presentation. (20)</p>	<p>The group could correctly answer some of the audience's questions about their presentation topic. (15)</p>	<p>The group could not answer the questions the audience posed on the topic of their presentation appropriately. (10)</p>
<b>Communication Quality</b>	<p>Group interaction with the audience shows interest and respect for the opinions of others. Responses support effective communication. (25)</p>	<p>Group interaction with an audience shows interest and respect for the opinions of others. Responses generally support effective communication. (20)</p>	<p>Some parts of the interaction in the discussion show interest and respect for others' opinions. (15)</p>	<p>Interaction in the discussion shows disrespect for other people's opinions. Responses do not support effective communication. (10)</p>
<b>Total</b>	<p><b>81-100 (Excellent)</b></p>	<p><b>61-80 (Good enough)</b></p>	<p><b>41-60 (Enough)</b></p>	<p><b>0-40 (Less)</b></p>

Source: Halimi, Sicily. "Assessment Rubric: Learning Plan Book MK Introduction to Teaching Methods", 2021.

Maximum score: 25 x 6 components = 150 points: 1.5 = 100

**Essay Writing Exam Scoring Rubric:**

<b>Assessment Criteria</b>	<b>4 Very good</b>	<b>3 Good</b>	<b>2 Simply</b>	<b>1 Less</b>
<b>Understanding of the Question</b>	Understand the question exactly once (25)	Understand the question (20)	Does not understand the question fully and correctly (15)	did not understand the question (10)
<b>Contents</b>	Answers show understanding participants integrate information learnt and/or assigned to read during lectures adequately and appropriately. (25)	Answers demonstrate an understanding of the material in question and integrate some of the information learnt and/or assigned to read during the lecture. (20)	Answers show a need for more understanding of the material in question and only integrate a small portion of the information studied and/or assigned to read during the lecture. (15)	The answer shows a lack of understanding of the material, so it is unclear and does not integrate it. Information that has been learnt and/or assigned to read during lectures. (10)
<b>Clarity of Writing</b>	All writing ideas are well conveyed. (25)	Most of the ideas are well-written and clear. (20)	Some of the ideas are well-written and clear. (15)	The idea of the writing is not conveyed well and clearly. (10)
<b>Language Clarity</b>	Uses foreign/Indonesian language well and correctly few grammatical and word choice errors that do not interfere with understanding. (25)	Uses foreign/Indonesian language well and correctly with few grammatical and word choice errors that interfere with understanding. (20)	Uses foreign/Indonesian language fairly well and correctly with some grammatical and word choice errors. (15)	Do not use the foreign/Indonesian language properly and correctly as the writing contains many grammatical and word choice errors. (10)
<b>Total</b>	<b>81-100 (Excellent)</b>	<b>61-80 (Good enough)</b>	<b>41-60 (Enough)</b>	<b>0-40 (Less)</b>

**Multiple Choice Exam Scoring Rubric:**

<b>Value per item</b>	<b>Criteria</b>
100/many questions	Can answer the question correctly
0	Answers are less precise / not by the answer key that has been provided

