LEARNING PLAN (RPS)

Course: SCIENCE AND TECHNOLOGY OF DAIRY LIVESTOCK PRODUCTION

ANIMAL HUSBANDRY STUDY PROGRAM
FACULTY OF ANIMAL HUSBANDRY
ANDALAS UNIVERSITY
202 4

SEMESTER LEARNING PLAN (RPS) BASED ON OBE DEPARTMENT OF ANIMAL PRODUCTION TECHNOLOGY FACULTY OF ANIMAL HUSBANDRY, ANDALAS UNIVERSITY					
SUBJECT	**CODE**	**I-Learn Course URL**	**WEIGHT (CREDIT UNITS)**	**SEMESTER**	**DATE OF COMPILATION**
Science and Technology of Dairy Livestock Production	PT144	https://ilearn.unand.ac.id/	3 (2-1)	IV (Four)	March 10, 202 4
AUTHORIZATION	**RPS OBE Developer**		**head of the study program**		
	1. Prof. Dr. Ir. Elly Roza, MS 2. Dr. Ir. Arief, MS 3. Dr. Hilda Susanty, S.Pt., M.Si 4. Eli Ratni, S.Pt., MP 5. Rizqan, S.Pt., M.Pt		Dr. Kusnadidi Subekti, S.Pt., MP NIP. 197907132006041003		

Learning Outcomes (CP)	**CPL – STUDY PROGRAM** 1. ILO 1. Internalize the university's core values, code of ethics, and scientific ethics based on Pancasila values. 2. ILO 2. Master the basics of general knowledge and basic theories in the field of animal husbandry. 3. ILO 6. Able to communicate verbally and in writing using the latest information media on the livestock sector and integrating it with other sciences. 4. ILO 7. Have an attitude as a lifelong learner and further study in developing a professional career.
	CPMK 1. ILO 1. Internalize the university's core values, code of ethics, and scientific ethics based on Pancasila values. 2. ILO 2. Master the basics of general knowledge and basic theories in the field of animal husbandry. 3. ILO 6. Able to communicate verbally and in writing using the latest information media on the livestock sector and integrating it with other sciences. 4. ILO 7. Have an attitude as a lifelong learner and further study in developing a professional career.
	Sub-CPMK 1. Students are able to explain and present History and development of dairy cattle in Indonesia and the world 2. Student able to explain and differentiate the characteristics of dairy cattle with other types of livestock 3. Students are able to explain and carry out dairy cattle maintenance 4. Students are able to explain and describe the anatomy and physiology of the udder and the hormones that influence milk production.

	5. Students are able to explain the provision of feed to dairy cattle based on the condition of the cattle (calves, heifers, lactation and dry pens) 6. Students are able to carry out selection and recording on dairy livestock 7. Students are able to explain the factors that influence milk production and predict and estimate milk production from dairy cattle. 8. Students are able to explain the types of diseases that often attack dairy cattle, how to prevent and treat them. 9. Students are able to explain and carry out post-harvest handling of dairy livestock products .
Brief Description of Course	The Dairy Livestock Production Science and Technology course discusses matters related to the ins and outs of dairy livestock, starting from the history of the development of dairy livestock in Indonesia and the world, its characteristics, procedures for maintaining dairy livestock, anatomy and physiology of the udder to the formation of milk, choosing good and correct dairy livestock (selection), estimating milk production to the use of production technology in dairy livestock.
Study Materials: Learning Materials	1. History and development of dairy cattle in Indonesia and the world 2. Characteristics of Dairy Cattle and Dairy Cattle Breeds 3. Dairy cattle maintenance (calf, heifer, adult/lactating, dry, male) 4. Anatomy and physiology of the udder *5. Feeding Practice* 6. Selection and *recording* 7. Factors affecting milk production and milk production estimation 8. Dairy Livestock Health 9. Post-Harvest Milk Handling
Bibliography	**MAIN** 1. Quinn, T. 1980. Dairy Farm Management, Delmar Publisher. INC, Canada **SUPPORTERS** 1. Fao Animal Production And Health. 2011. Guide To Good Dairy Farming Practice. Food And Agriculture Organization Of The United Nations & International Dairy Federation, Rome. 2. Murti, TW 2014. Management Science & Dairy Livestock Industry. First edition. Pustaka Reka Cipta, Bandung. 3. Hartanto, R, Harjanti DW, Prayitno E, Restitrisnani V, Prima A. 2021. Dairy Livestock Management. UNDIP Press, Semarang. 4. Ako, A. 2013. Tropical Dairy Livestock Science. IPB Press, Bogor 5. The latest research results published in National and International Journals/Proceedings
Instructional Media	**Software**: Ms. Office/ Zoom Meeting/ Google Meet/ Ilearn **Hardware**: PC/ Laptop/ Gadget/ Smart Phone
Team Teaching	1. Prof. Dr. Ir. Elly Roza, MS 2. Dr. Ir. Arief, MS 3. Dr. Hilda Susanty, S.Pt., M.Si 4. Eli Ratni, S.Pt., MP 5. Rizqan, S.Pt., M.Pt

Prerequisite Courses	-

Week 2	Sub-CPMK	Assessment Indicators	Assessment Form	Learning Activities [Estimated Time]				Media	Learning materials [Reference]	Assessment Weight (%)
(1)	(2)	(3)	(4)	(5)				(6)	(7)	(8)
				Synchronous*		Asynchronous**				
				Offline	Online	Independent	Collaborative			
1	Students are able to explain and present History and development of dairy cattle in Indonesia and the world	1. Accuracy in explaining the history and development of dairy cattle in Indonesia and the world 2. Accuracy/sharpness in responding, Effective communication	1. Material/ Discussion	Studying, Introduction to RPS, Explanation of assignments discussion, [2×50 minute]	-	-	-	*Ilearn*	History and development of dairy cattle in Indonesia and the world	5%
2	Students are able to explain and differentiate the characteristics of dairy cattle with other types of livestock.	1. Accuracy in explaining and understanding the characteristics and breeds of dairy livestock (cows, buffaloes, goats) 2. Accuracy/Sharpness in	1. Progress		Review and discussion , [2×50 Minute]	Students identify dairy cattle/goat/buffalo breeders in West Sumatra (Location; Farmer Profile; and Type of Dairy Livestock Raised)	Students discuss in teams /groups	*Ilearn*	Characteristics of Dairy Cattle and Dairy Cattle Breeds	10%

		responding, Effective communication								
3 - 4	Students are able to explain and carry out dairy cattle maintenance	1. Accuracy in explaining and understanding dairy livestock management/ maintenance systems starting from: - Child - Virgin - Adults/Lactation - Dry Cage - Stud	1. Progress	Review and discussion , [2×50 Minute]	-	Students study and analyze the implementation of dairy cattle maintenance management. (Is it in accordance with the Technical Aspect Standards or not and provides alternative ideas)	Students discuss in teams /groups	*Ilearn*	Dairy cattle maintenance (calf, heifer, adult/lactating, dry, male)	10%
5 - 7	Students are able to explain and describe about anatomy and physiology of the udder and the hormones that influence milk production	1. Accuracy in explaining and describing the anatomy and physiology of the mammary glands 2. Accuracy in explaining and understanding the hormone system that plays a role in	1. Progress	Review and discussion , [2×50 Minute]	-	Students study the anatomy of the udder in designated smallholder farms (whether there are abnormalities or not and provide alternative ideas)	Students discuss in teams /groups	*Ilearn*	Anatomy and physiology of the udder of dairy cattle	15%

		and influences milk production.								
8	**Mid-Semester Evaluation**									
9	Students are able to explain the provision of feed to dairy cattle based on the condition of the cattle (calves, heifers, lactation and dry pens)	1. Accuracy in explaining the feeding system (*Feeding Practice*) for dairy cattle starting from: - Calves - Virgin - Mother/Lactation - Dry Cage	1. Progress	Review and discussion , [2×50 Minute]	-	Students study the feeding practices for each livestock condition on the designated farm (amount given; type of feed; time of giving whether it is in accordance with standards and provide alternative ideas).	Students discuss in teams /groups	*Ilearn*	*Feeding Practice*	20%
10	Students are able to carry out selection and *recording* on dairy livestock.	1. Accuracy in explaining the selection and *recording system* for dairy cattle pastures	1. Progress/ advancement	-	Review and discussion , [2×50 Minute]	Identify recording data on smallholder farmers (milk production; pedigree/offspring) whether it is in accordance with standards/literature and provide alternative ideas.	Students discuss in teams /groups	*Ilearn*	Selection and *recording*	10%

11 - 12	Students are able to explain the factors that influence milk production and predict and estimate milk production from dairy cattle.	1. Accuracy in explaining the factors that influence milk production 2. Accuracy in estimating milk production in dairy cattle	1. Progress	Review and discussion , [2×50 Minute]	-	Analyze the milk production data obtained (whether it is in the good/poor category according to the literature and provide creative ideas)	Students discuss in teams /groups	*Ilearn*	Factors affecting milk production and milk production estimation	15%
13 - 14	Students are able to explain the types of diseases that often attack dairy cattle, how to prevent and treat them.	1. Accuracy in explaining the types of diseases in dairy cattle (prevention and treatment)	1. Progress	Review and discussion , [2×50 Minute]	-	Identify mastitis disease (symptoms, prevention and treatment) in dairy cattle on designated farms and relate it to previously obtained milk production and creative ideas.	Students discuss in teams /groups	*Ilearn*	Dairy Livestock Health	10%
15	Students are able to explain and carry out post-harvest handling of dairy livestock products.	1. Accuracy in explaining the handling of milk and its diversified products	1. Progress	Review and discussion , [2×50 Minute]	-	Identify post-milking milk handling at designated farmers, whether or not it complies with SOP-GDFP and provide creative ideas.	Students discuss in teams /groups	*Ilearn*	Post-Harvest Milk Handling	5%

16	**Final Semester Evaluation (UAS)** **- CBM Final Report**

Notes:

1. Study Program Graduate Learning Outcomes (CPL-Prodi) are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the study program level obtained through the learning process.
2. The CPL charged to a course is a number of learning outcomes of study program graduates (CPL-Prodi) which are used to form/develop a course consisting of aspects of attitude, knowledge, general skills, and specific skills.
3. Course CP (CPMK) is a capability that is specifically described from the CPL that is assigned to the course, and is specific to the study material or learning material of the course.
4. Sub-CP Course (Sub-CPMK) is a capability that is specifically described from CPMK that can be measured or observed and is the final capability planned at each stage of learning, and is specific to the learning material of the course.
5. Indicators for assessing abilities in the process and results of student learning are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence.
6. Assessment criteria are benchmarks used as a measure or yardstick for learning achievement in assessments based on established indicators. Assessment criteria serve as guidelines for assessors to ensure consistent and unbiased assessments.
7. Synchronous is a learning activity that is carried out at the same time in the same location (*offline*) or different (*online*).
8. Asynchronous is a learning activity that is carried out at different times and places: Independently (without other people) or Collaboratively (with other people/in a group) .

INDICATORS, CRITERIA AND ASSESSMENT WEIGHTING

1. **Assessment Weight for Each Assessment**
   a) Progress Report : 25%
   b) Final Report : 30%
   c) Mid-term exam : 20%
   d) Final Exam : 25%

2. **Assessment Weight for Each Course Learning Achievement**
   a) CPMK 1 : 5%
   b) CPMK 2 : 10%
   c) CPMK 3 : 10%
   d) CPMK 4 : 15%
   e) CPMK 5 : 20%
   f) CPMK 6 : 10%
   g) CPMK 7 : 15%
   h) CPMK 8 : 10%
   i) CPMK 9 : 5%

3. *Case-based Method* Assessment Form

Assessment Form / CPMK and/or Sub-CPMK	Progress Report	Mid-term exam	Final report	Final Exam	Total Percentage
1. Students are able to explain and present the history and development of dairy cattle in Indonesia and the world.		5%			5%
2. Students are able to explain and differentiate the characteristics of dairy cattle with other types of livestock.	2.5%	2.5%	5%		10%
3. Students are able to explain and carry out dairy livestock maintenance.	2.5%	2.5%	5%		10%
4. Students are able to explain and describe the anatomy and physiology of the udder and the hormones that influence milk production.	2.5%	10%	2.5%		15%
5. Students are able to explain the provision of feed to dairy cattle based on the condition of the cattle (calves, heifers, lactation and dry pens)	5%		5%	10%	20%
6. Students are able to carry out selection and recording on dairy livestock.	2.5%		2.5%	5%	10%
7. Students are able to explain the factors that influence milk production and predict and estimate milk production from dairy cattle.	5%		5%	5%	15%
8. Students are able to explain the types of diseases that often attack dairy cattle, how to prevent and treat them.	2.5%		5%	2.5%	10%
9. Students are able to explain and carry out post-harvest handling of dairy livestock products.	2.5%			2.5%	5%
Total Percentage	25%	20%	30%	25%	**100%**

4. Case study

	Department of Animal Production Technology	
	STUDY PROGRAM FACULTY INSTITUTION	: Farm : Farm : Andalas University
SUBJECT	:	Science and Technology of Dairy Livestock Production
CASE STUDY FORM	:	TEAM (Group) with 4-5 Student Members
CASE STUDY THEME	:	Management of Dairy Cattle Maintenance and Milk Production in Smallholder Farms in West Sumatra
COURSE LEARNING OUTCOMES (CPMK and/or SUB-CPMK) TO BE ACHIEVED FROM THIS CASE STUDY/PROJECT ASSIGNMENT:	:	1. Students are able to explain and present the history and development of dairy cattle in Indonesia and the world. 2. Students are able to explain and differentiate the characteristics of dairy cattle with other types of livestock. 3. Students are able to explain and carry out dairy livestock maintenance. 4. Students are able to explain and describe the anatomy and physiology of the udder and the hormones that influence milk production. 5. Students are able to explain the provision of feed to dairy cattle based on the condition of the cattle (calves, heifers, lactation and dry pens) 6. Students are able to carry out selection and recording on dairy livestock. 7. Students are able to explain the factors that influence milk production and predict and estimate milk production from dairy cattle. 8. Students are able to explain the types of diseases that often attack dairy cattle, how to prevent and treat them. 9. Students are able to explain and carry out post-harvest handling of dairy livestock products.
CASE DESCRIPTION	:	In this assignment, each group consisting of 4-5 students is asked to make a plan to improve maintenance management (seeds, feed, recording, disease management, post-harvest handling) and milk production of a dairy cattle/goat/buffalo farm located in the West Sumatra region and refers to existing literature and standards on each aspect such as SNI, GDFP, Technical Aspects and the latest research results. This plan to improve management and milk production of dairy livestock is presented in the form of a Case Study Report that has been given creative ideas according to the literature and can be used to achieve increased milk production in West Sumatra and support the National Milk Self-Sufficiency program .
CASE RESOLUTION STEPS	:	1. Identifying dairy cattle/goat/buffalo farmers in West Sumatra (Location; Farmer Profile; and Types of Dairy Livestock Raised) 2. Studying and analyzing the implementation of dairy cattle maintenance management (whether or not it complies with Technical Aspect Standards and providing alternative ideas) 3. Studying the anatomy of the udder in designated smallholder farms (whether there are abnormalities or not and providing alternative ideas) 4. Study the feeding practices of each livestock condition on the designated farm (amount given; type of feed; time of giving whether it is in accordance with standards and provide alternative ideas)

		5. Identify recording data on smallholder farmers (milk production; pedigree/offspring) whether it is in accordance with standards/literature and provide alternative ideas. 6. Analyze the milk production data obtained (whether it is in the good/poor category according to the literature and provide creative ideas) 7. Identify mastitis disease (symptoms, prevention and treatment) in dairy cattle on designated farms and relate it to previously obtained milk production and creative ideas. 8. Identify post-milking milk handling at designated farmers, whether or not it complies with SOP-GDFP and provide creative ideas. 9. Preparation of the final report in accordance with the case studies that have been carried out along with creative ideas 10. Presenting the Report
FORMAT AND FORMAT OF THE EXTERNAL	:	Final Case Study Report (PDF and PPT)
IMPLEMENTATION SCHEDULE	:	16 Weeks

5. Assessment Rubric

Presentation Assessment Rubric	
Group Number:	
Member Name/No.BP:	
1	
2	
3	
4	
5	
Learning Outcomes of Assessed Courses (Sub-CPMK):	
1. Students are able to explain and present the history and development of dairy cattle in Indonesia and the world. 2. Students are able to explain and differentiate the characteristics of dairy cattle with other types of livestock. 3. Students are able to explain and carry out dairy livestock maintenance. 4. Students are able to explain and describe the anatomy and physiology of the udder and the hormones that influence milk production. 5. Students are able to explain the provision of feed to dairy cattle based on the condition of the cattle (calves, heifers, lactation and dry pens) 6. Students are able to carry out selection and recording on dairy livestock. 7. Students are able to explain the factors that influence milk production and predict and estimate milk production from dairy cattle. 8. Students are able to explain the types of diseases that often attack dairy cattle, how to prevent and treat them. 9. Students are able to explain and carry out post-harvest handling of dairy livestock products.	
Course: PT144 Science and Technology of Dairy Livestock Production	

Sub-CPMK	**Criteria**	**(45-49)**	**(50-59)**	**(60-74)**	**(75-100)**
		Inferior	***Average***	***Good***	***Excellent***
2-9	*Systematics of the paper*	The report was prepared with incorrect writing system.	The report is prepared with a correct writing system but is incomplete.	The report is prepared with a correct and complete writing system.	The report is prepared with a correct and complete systematic approach, supplemented with appropriate supporting information.

2-9	*Clarity and coherence of the paper*	The report is unclear, does not comply with the writing sequence	The report is unclear, does not conform to the writing sequence	the report is clear, but the writing is not coherent	clear, understandable, coherently written report
2- 9	*Completeness of the contents of the paper related to the analysis and solutions to the case discussion*	Incomplete report conveys analysis and solutions to case discussion	The report fully conveys the analysis and solutions to the case discussion but is presented in an unsystematic manner.	The report completely conveys the analysis and solutions to the case discussion and is presented systematically.	The report completely conveys the analysis and solutions to the case discussion, presented in a complete manner and supplemented with supporting information.
2- 9	*Arrangement and completeness of presentation materials*	The presentation material is incomplete and not arranged sequentially or logically.	Most of the presentation material is complete and arranged sequentially, but it is not very logical.	Most of the presentation material is complete and arranged in a logical and sequential manner.	The presentation material is complete and arranged in a logical and sequential manner.
	Presentation of the material delivered	The material is incomplete and presented irrelevantly.	The material presented is complete and relevant but is presented in an uninteresting manner.	The material presented is complete and relevant and presented in an interesting way.	The material presented is complete and relevant and presented in an interesting and systematic manner.
	Mastery of presentation material	The presenter does not/most of them do not master the presentation material being delivered	The presenter masters some of the presentation material being delivered.	The presenter masters the presentation material being delivered	The presenter masters the presentation material being delivered and is able to link it to relevant information.
	Ability to answer questions	The presenter was unable to answer the audience's questions.	The presenter answered the audience's questions poorly.	The presenter was able to answer audience questions well.	The presenter was able to answer the audience's questions very well.
	Presentation skills	The presentation was delivered in a way that was not/less interesting	The presentation was delivered in a quite interesting manner.	The presentation was delivered in an interesting manner	The presentation was delivered in a very interesting manner.
	Speed and clarity of material delivery	The material was delivered at a fast pace and the pronunciation was unclear.	The material is delivered at a fast pace with clear pronunciation.	The material is delivered at the right tempo and the pronunciation is not clear.	The material is delivered at the right tempo with clear pronunciation.

Individual Performance Assessment Rubric within a Team					
Group Number:					
Member Name/No.BP:					
1					
2					
3					
4					
5					
Learning Outcomes of Assessed Courses (Sub-CPMK)					
1. Students are able to explain and present the history and development of dairy cattle in Indonesia and the world. 2. Students are able to explain and differentiate the characteristics of dairy cattle with other types of livestock. 3. Students are able to explain and carry out dairy livestock maintenance. 4. Students are able to explain and describe the anatomy and physiology of the udder and the hormones that influence milk production. 5. Students are able to explain the provision of feed to dairy cattle based on the condition of the cattle (calves, heifers, lactation and dry pens) 6. Students are able to carry out selection and recording on dairy livestock. 7. Students are able to explain the factors that influence milk production and predict and estimate milk production from dairy cattle. 8. Students are able to explain the types of diseases that often attack dairy cattle, how to prevent and treat them. 9. Students are able to explain and carry out post-harvest handling of dairy livestock products.					
Course: PT144 Science and Technology of Dairy Livestock Production					
Sub CP-MK	**Criteria**	**(45-49)**	**(50-59)**	**(60-74)**	**(75-100)**
		Inferior	***average***	***Good***	***Excellent***
2-9	*Receive input, share information, and listen to other team members (peers)*	Team members are less willing to accept input, share information and listen to other team members.	Team members are willing to accept input, share information and listen to other team members.	Team members accept input well, share information and listen to other team members.	Team members are very receptive to input, share information and listen to other team members.

	Completion of work according to the established schedule	Team members are always late in completing assigned tasks	Team members are often late in completing assigned tasks.	Team members are rarely late in completing assigned tasks.	Team members are always punctual in completing assigned tasks.
	Participate in work with full responsibility	Team members do not participate in the work	Team members participate in the work but not with full responsibility	Team members participate in the work with full responsibility.	Team members participate in the work with full responsibility and dedication.
	Respond to each other team member	Team members are less responsive to other team members in their work	Team members simply respond to other team members in their work.	Team members respond well to other team members in their work.	Team members respond very well to other team members in their work.
2-9	*Individual Presence*	12 meetings	13 meetings	14 meetings	15-16 meetings