

LEARNING PLAN (RPS)
SCIENCE AND TECHNOLOGY OF BEEF CATTLE PRODUCTION
PTK 235 3 (2-1)



ANIMAL HUSBANDRY STUDY PROGRAM
FACULTY OF ANIMAL HUSBANDRY
ANDALAS UNIVERSITY
202 2

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 Beef Livestock Production		PTK 235	https://ilearn.unand.ac.id/	3 (2-1)	IV (Four)	October 31, 2022
AUTHORIZATION	RPS Developer/Team Teaching Coordinator				head of the study program	
	1. Prof. Dr. Ir. Salam N. Aritonang, MS 2. Prof. Dr. Ir. Khasrad, MSi 3. Rusdimansyah, SPt, M.Si 4. Dr. Ferry Lismanto, S.Pt., MP 5. Dr. Yetmanely, S.Pt., MP 6. Dr. Reswati, S.Pt., MP				<u>Dr. Kusnadidi Subekti, S.Pt., MP</u> NIP. 197907132006041003	
Learning Outcomes (CP) of Graduates/Study Programs	1. Demonstrate a responsible attitude towards work in their field of expertise independently (ILO 1. Internalize the university's core values, code of ethics, and scientific ethics) 2. Able to demonstrate independent, quality and measurable performance (ILO 2. Demonstrate innovative livestock science and technology) 3. Mastering the concept of solving livestock problems based on science using scientific methods (ILO 3. Applying technology to solve problems in the livestock sector and finding appropriate and effective solutions) 4. Able to apply logical, critical, systematic, innovative, quality and measurable thinking in carrying out types of work in the livestock sector in accordance with work competency standards (ILO 4. Using logical thinking, creative thinking, critical thinking and collaborative thinking)					
Course Learning Outcomes (CP-MK)	1. Demonstrate a responsible attitude towards work in the field of Beef Livestock Production Science and Technology independently (ILO. 1) 2. Able to demonstrate independent, quality and measurable performance in the field of Beef Livestock Production Science and Technology (ILO. 2) 3. Mastering the concept of solving livestock problems based on science using scientific methods in the field of Beef Livestock Production Science and Technology (ILO. 3) 4. Able to apply logical, critical, systematic, innovative, high-quality and measurable thinking in carrying out types of work in the livestock sector in accordance with work competency standards in the field of Beef Livestock Production Science and Technology (ILO. 4)					
Sub CP-MK (if any)	1. Students are able to explain the importance of science and technology in beef cattle production. 2. Students are able to explain the origins of beef cattle and beef cattle breeds . 3. Students are able to explain the beef cattle maintenance system 4. Students are able to explain the function, model and equipment of cages. 5. Students are able to explain the forms of growth and factors that influence growth. 6. Students are able to explain muscle structure and meat composition. 7. Students are able to explain and are skilled at identifying livestock. 8. Students are able to explain and are skilled at carrying out external livestock assessments, including measuring livestock body sizes, determining body condition and determining livestock age. 9. Students are able and skilled in handling livestock before, during and after slaughter.					

		10. Students are able to explain and are skilled at carrying out carcass assessments. 11. Students are able to explain about meat and are skilled at evaluating meat quality.	
Brief Description of Course		This course on Beef Livestock Production Science and Technology studies the origins and breeds of beef cattle, beef cattle maintenance systems, functions and models of pens and cage equipment, growth forms and factors that influence growth, muscle structure and meat composition, livestock identification, livestock body sizes, determining body condition and age of livestock, handling of livestock before, during and after slaughter, carcass assessment, and meat quality evaluation.	
Library	Main:	1. Berg RT, Butterfield RM. 1976. <i>New Concepts of Cattle Growth</i> . Sydney: University Press.	
	Supporters:	2. Quinn, T. 1980. Dairy Farm Management, Delmar Publisher. INC, Canada 3. Soeparno. 2005. <i>Meat Science and Technology</i> . Yogyakarta: Gadjah Mada University Press. 4. Aberle ED, Forrest JC, Gerrard DE, Mills EW. 2001. <i>Principles of Meat Science</i> . 4th Ed . Iowa: Kendall/Hunt Publishing Company. 5. Forrest, GJ, Aberle, HB Hendrick, MD Judge and RA Merkel. 1975. Principles of Meat Science. WH Freeman and Company, San Francisco	
Instructional Media		Software:	Hardware:
		Ms. Office/ Zoom Meeting/ Google Meet/ Ilearn/ youtube	PC/Infocus/Laptop/Gedgat/Smart Phone/measuring stick/measuring tape/livestock scales/meat quality testing tools
Course Teaching Team		1. Prof. Dr. Ir. Salam N. Aritonang, MS 2. Prof. Dr. Ir. Khasrad, MSi 3. Rusdimansyah, SPt, Msi 4. Dr. Ferry Lismanto, S.Pt., MP 5. Dr. Yetmanely, S.Pt., MP 6. Dr. Reswati, S.Pt., MP	
Prerequisite courses		-	

Week e- (1)	CP-MK and/or Sub CP-MK (2)	Assessment Indicators (3)	Assessme nt Forms (4)	Learning Activities/Forms [Estimated Time]					Learning Materials/Study Materials (10)	Referen ces (11)
				Synchronous*		Asynchronous**		Media (9)		
				Offline Face to Face (5)	Online Face to Face (6)	Independent (7)	Collaborati ve (8)			
1	Students are able to explain the importance of science and technology in beef cattle production .	Accuracy in explaining the importance of science and technology in beef cattle production	Progress/ advanceme nt	Studying, introduction to RPS, explanation of assignments, lectures, and discussion [2×50 minute]	-	Students seek information from various sources (textbooks and the Internet) and formulate a resume about the importance of science and technology of beef cattle production and the meaning of several terms about beef cattle production technology.	-	<i>Ilearn</i>	The Importance of Science and Technology in Beef Livestock Production, discusses: a. Definition of Science and Technology of Beef Livestock Production. b. Understanding several terms	
2	Students are able to explain the origins of beef cattle and beef cattle breeds .	1. Accuracy in explaining the origin of livestock. 2. Accuracy in describing breeds of beef cattle	Progress/ advancem ent	Lectures and discussions, [2×50 Minute]		Students search for information from various sources (textbooks and the internet) and formulate a resume about the origins and breeds of beef cattle.	Students discuss in teams/groups	<i>Ilearn</i>	The origin of livestock and livestock breeds, discusses: a. The origin of various beef cattle b. Taurus boss cattle nation c. The cattle nation boss Indikus i d. Characteristics of good beef cattle according to breed	

3	Students are able to explain the beef cattle maintenance system .	Accuracy in explaining the beef cattle maintenance system	Progress/ advancement	Lectures and discussions, [2×50 Minute]		Students search for information from various sources (textbooks and the internet) and formulate a resume about the beef cattle maintenance system.	Students discuss in teams/groups	<i>Ilearn</i>	Beef cattle maintenance system: a. Intensive b. Semi-intensive c. Extensive	
4	Students are able to explain the function and model of cages and cage equipment.	Accuracy in explaining the function and model of the cage	Progress/ advancement	Review and discussion, [2×50 Minutes]	-	Students search for information from various sources (textbooks and the internet) and formulate a resume about the cage.	Students discuss in teams/groups	<i>Ilearn</i>	Cage, discussing: a. Function of the cage b. Cage model c. Cage equipment	
5-6	Students are able to explain forms of growth and factors that influence growth	Accuracy in explaining growth and the factors that influence it	Progress/ advancement	Review and discussion, [2×50 Minutes]		Students search for information from various sources (textbooks and the internet) and formulate a resume about growth and the factors that influence it.	Students discuss in teams/groups	<i>Ilearn</i>	Livestock growth and development, discusses: a. Livestock growth b. Factors that influence growth	
7	Students are able to explain muscle structure and meat composition.	1. Accuracy in explaining muscle structure 2. Accuracy of evaluating meat composition.	Progress	Review and discussion, [2×50 Minute]	-	Students search for information from various sources (textbooks and the internet) and formulate a resume about muscle structure and meat composition.	Students discuss in teams/groups	<i>Ilearn</i>	Muscle and meat structure, discussing: a. Muscle structure b. Meat composition	

8	Mid-Semester Evaluation									
9	Students are able to explain and are skilled at identifying livestock.	Accuracy in explaining livestock identification.	Progress/ advancement	Review and discussion, [2×50 Minute]		Students search for information from various sources (textbooks and the internet) and formulate a resume about livestock identification.	Students discuss in teams/groups	<i>Ilearn</i>	Livestock Identification, discusses: a. Permanent identification b. Semi-permanent identification c. Temporary identification	
10-11	Students are able to explain and are skilled at carrying out external livestock assessments, including measuring livestock body sizes, determining body condition and determining livestock age.	Accuracy in explaining external livestock assessment.	Progress	Review and discussion, [2×50 Minute]	-	Advanced	Students discuss in teams/groups	<i>Ilearn</i>	External livestock assessment, addresses: a. Livestock body sizes b. Livestock body condition c. Determining the age of livestock	
12	Students are able to explain and are skilled at handling livestock before, during and after slaughter.	Accuracy in explaining livestock handling before, during and after slaughter	Progress	Review and discussion, [2×50 Minute]	-	Students search for information from various sources (textbooks and the internet) and formulate a resume about handling livestock before, during and after slaughter.	Students discuss in teams/groups	<i>Ilearn</i>	Livestock Slaughtering Procedures: a. Handling before cutting b. Handling during cutting. c. Handling after cutting	

13	Students are able to explain and are skilled at carrying out carcass assessments.	Accuracy in explaining and conducting carcass evaluation	Progress	Review and discussion, [2×50 Minute]	-	Students search for information from various sources (textbooks and the internet) and formulate a resume about carcass assessment.	Students discuss in teams/groups	<i>Ilearn</i>	Carcass evaluation addresses: a. Carcass characteristics b. Carcass components c. Carcass composition	
14-15	Students are able to explain about meat and are skilled at evaluating meat quality.	Accuracy in explaining about meat and meat quality	Progress	Review and discussion, [2×50 Minute]	-	Students search for information from various sources (textbooks and the internet) and formulate a resume about meat and meat quality.	Students discuss in teams/groups	<i>Ilearn</i>	External livestock assessment, addresses: a. Definition of meat b. Meat quality c. Meat tenderness and factors that influence it	
16	Final Semester Evaluation (UAS) CBM Final Report									

Notes:

*Synchronous is a learning activity that is carried out at the same time in the same location (*offline*) or different (*online*)

* *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)

* ** Put a ✓ mark in the appropriate column

Learning media can be in the form of:

(1) Virtual face-to-face meetings (*real time*), for example using Zoom, GoogleMeet, Microsoft Team, WebEx, etc.

(2) Direct text-based interaction can be done on LMS (i-learning Unand) or social media such as: Whatsapp, Telegram, Messenger, etc.

(3) Direct communication via voice *via* phone *or* WhatsApp.

(4) Teaching materials in the form of text in PDF format such as: *e-Book* , *E-Journal* or HTML (*hypertext*).

(5) Presentation files, such as PPT.

(6) Videos in the format of a lecture material presentation by a lecturer or presenter about a topic description, in the form of a monologue, can also be in the form of a Vlog but relevant to CPMK.

(7) *Motion Graphics* are a presentation of 2-dimensional teaching materials in animation format, a combination of images, writing and *voice over* .

(8) Animation (simulation) is the presentation of simulation or demonstration material in two-dimensional or three-dimensional animation format.

(9) *Audio (Podcast)* is teaching material in audio format, either recorded (*stand alone*) or *streaming*.

(10) *Assignments* are independent tasks in the form of exercises to understand concepts or practice which are given a time span for completing the task.

INDICATORS, CRITERIA AND ASSESSMENT WEIGHTING

1. Assessment Weight for Each Form of Assessment

- a) Progress Report : 30%
- b) Mid-term exam : 20%
- c) Final Report : 30%
- d) Final Exam : 20%

2. Assessment Weight for Each Course Learning Achievement

- a) CP-MK-1: 5%
- b) CP-MK 2: 10%
- c) CP-MK 3: 10%
- d) CP-MK 4: 10%
- e) CP-MK 5: 10%
- f) CP-MK 6: 10%
- g) CP-MK 7: 10%
- h) CP-MK 8: 10%
- i) CP-MK 9: 10%
- j) CP-MK 10: 10%
- k) CP-MK 10: 5%

Note : The assessment weighting **of the assessment form and learning outcomes must be synchronous.**

1.1 Assessment Plan Table – Case Based Method

Assessment Form CPMK and/or Sub-CPMK	Progress Report	Mid-term exam	Final report	Final Exam	Total Percentage
1. Students are able to explain the importance of science and technology in beef cattle production.		5.0%			5.0%
2. Students are able to explain the origins of beef cattle and beef cattle breeds.	2.5%	5.0%	2.5%		10.0%
3. Students are able to explain and are skilled at selecting beef cattle.	2.5%	5.0%	2.5%		10.0%
4. Students are able to explain the function and model of cages and cage equipment.	2.5%	5.0%	2.5%		10.0%
5. Students are able to explain the forms of growth and factors that influence growth.	2.5%	5.0%	2.5%		10.0%
6. Students are able to explain muscle structure and meat composition.	2.5%		2.5%	4.0%	9.0%
7. Students are able to explain and are skilled at identifying livestock.	2.5%		2.5%	5.0%	10.0%
8. Students are able to explain and are skilled at carrying out external livestock assessments, including measuring livestock body sizes, determining body condition and determining livestock age.	2.5%		2.5%	4.0%	9.0%
9. Students are skilled at handling livestock before, during and after slaughter.	2.5%		2.5%	4.0%	9.0%
10. Students are able to explain and are skilled at carrying out carcass assessments.	2.5%		2.5%	4.0%	9.0%
11. Students are able to explain about meat and are skilled at evaluating meat quality.	2.5%		2.5%	4.0%	9.0%
Total Percentage	25%	25%	25%	25%	100%

1.2 Assignment Format

	STUDY PROGRAM: ANIMAL HUSBANDRY				
	FACULTY: ANIMAL HUSBANDRY				
	ANDALAS UNIVERSITY				
SUBJECT	SCIENCE AND TECHNOLOGY OF BEEF CATTLE PRODUCTION				
CODE	PTK 235	Credits	3 (2-1)	SEMESTER	IV
LECTURER					
COURSE TEACHING TEAM					
CASE STUDY/PROJECT FORM:	Evaluating/analyzing the beef cattle maintenance system in one of the smallholder livestock businesses in West Sumatra in groups (4-5 people per group)				
ASSIGNMENT THEME: Management of Beef Livestock Maintenance in the Livestock Business of West Sumatran People					
COURSE LEARNING OUTCOMES (CPMK and/or SUB-CPMK) TO BE ACHIEVED FROM THE CASE STUDY/PROJECT (write in brackets which CPL is supported by each CP-MK and Sub CP-MK)					

CPMK:

1. Demonstrate a responsible attitude towards work in the field of Beef Livestock Production Science and Technology independently (ILO. 1).
2. Able to demonstrate independent, quality and measurable performance in the field of Beef Livestock Production Science and Technology (ILO. 2).
3. Mastering the concept of solving livestock problems based on science using scientific methods in the field of Beef Livestock Production Science and Technology (ILO. 3).
4. Able to apply logical, critical, systematic, innovative, high-quality and measurable thinking in carrying out types of work in the livestock sector in accordance with work competency standards in the field of Beef Livestock Production Science and Technology (ILO. 4)

1. Students are able to explain the importance of science and technology in beef cattle production.
2. Students are able to explain the origins of beef cattle and beef cattle breeds .
3. Students are able to explain the beef cattle maintenance system
4. Students are able to explain the function, model and equipment of cages.
5. Students are able to explain the forms of growth and factors that influence growth.
6. Students are able to explain muscle structure and meat composition.
7. Students are able to explain and are skilled at identifying livestock.
8. Students are able to explain and are skilled at carrying out external livestock assessments, including measuring livestock body sizes, determining body condition and determining livestock age.
9. Students are able and skilled in handling livestock before, during and after slaughter.
10. Students are able to explain and are skilled at carrying out carcass assessments.
11. Students are able to explain about meat and are skilled at evaluating meat quality.

ASSIGNMENT DESCRIPTION

Students will visit a smallholder livestock business (cattle/goat/buffalo) and prepare a plan for developing and increasing the productivity of the livestock business and discuss it in class.

STEPS FOR COMPLETING THE STUDY ASSIGNMENT

1. Students are divided into several groups consisting of 4-5 students.
2. Each group will visit a smallholder livestock business (cattle/buffalo/goat for slaughter) in the West Sumatra region.
3. Students observe the condition of the livestock business, the types of livestock kept, the maintenance system, and the growth and development of the livestock.
4. Students measure livestock bodies and estimate livestock body weight using formulas.
5. Students conducted interviews with livestock owners to get an overview of the livestock maintenance system which includes aspects of seeds, feed, pens, maintenance management and handling of livestock diseases/health as well as problems faced in developing their livestock business.
6. Students study and analyze the information obtained.

7. Students develop plans for improving livestock management, including aspects of breeding, feed, housing, maintenance management, and health/disease management, to increase livestock productivity. Management plans adhere to *Good Farming Practices* (GFP) standards and reference the latest research results.
8. Students will create a case study report on a designated beef cattle business and then present and discuss it in class. Students are required to be creative and express their ideas while adhering to established standards and regulations to increase beef cattle productivity and improve the farmer's economy.
9. Next, students submit Case Study reports to farmers as a guideline for improving their livestock management.

FORMAT AND FORMAT OF THE EXTERNAL

1. Final Case Study Report (*Microsoft Word file*)
2. Presentation file (*Power Point file*)

INDICATORS, CRITERIA AND ASSESSMENT WEIGHTING

1. Assessment Weight for Each Form of Assessment

1. Progress Report : 25%
2. Mid-term exam : 20%
3. Final Report : 30%
4. Final Exam : 25%

2. Assessment Weight for Each Course Learning Achievement

1. CP-MK-1: 5%
2. CP-MK 2: 10%
3. CP-MK 3: 10%
4. CP-MK 4: 10%
5. CP-MK 5: 10%
6. CP-MK 6: 10%
7. CP-MK 7: 10%
8. CP-MK 8: 10%
9. CP-MK 9: 10%
10. CP-MK 10: 10%
11. CP-MK 11: 5%

Note: The assessment weighting of the assessment form and learning outcomes must be synchronous.

IMPLEMENTATION SCHEDULE

(synchronized with the week on RPS)

Duration: 16 weeks
Gantt chart (attached)
LIST OF REFERENCES
Related references 1. Berg RT, Butterfield RM. 1976. <i>New Concepts of Cattle Growth</i> . Sydney: University Press. 2. Quinn, T. 1980. Dairy Farm Management, Delmar Publisher. INC, Canada 3. Soeparno. 2005. <i>Meat Science and Technology</i> . Yogyakarta: Gadjah Mada University Press. 4. Aberle ED, Forrest JC, Gerrard DE, Mills EW. 2001. <i>Principles of Meat Science</i>. 4th Ed . Iowa: Kendall/Hunt Publishing Company. 5. Forrest, GJ, Aberle, HB Hendrick, MD Judge and RA Merkel. 1975. Principles of Meat Science. WH Freeman and Company, San Francisco

1.3 Assessment Rubric

Assessment Rubric					
Group Number:					
Member Name/NIM:					
1					
2					
3					
4					
1. Students are able to explain the importance of science and technology in beef cattle production. 2. Students are able to explain the origins of beef cattle and beef cattle breeds . 3. Students are able to explain the beef cattle maintenance system 4. Students are able to explain the function, model and equipment of cages. 5. Students are able to explain the forms of growth and factors that influence growth. 6. Students are able to explain muscle structure and meat composition. 7. Students are able to explain and are skilled at identifying livestock. 8. Students are able to explain and are skilled at carrying out external livestock assessments, including measuring livestock body sizes, determining body condition and determining livestock age. 9. Students are able and skilled in handling livestock before, during and after slaughter. 10. Students are able to explain and are skilled at carrying out carcass assessment. 11. Students are able to explain about meat and are skilled at evaluating meat quality.					
Course: Science and Technology of Beef Livestock Production					
CP-MK	Criteria	(45-49)	(50-59)	(60-74)	(75-100)
		Inferior	average	Good	Excellent
2-10	Report systematics	The report is unsystematic and incomplete.	The report is systematic but incomplete.	Complete but not systematic arrangement.	Systematic and complete report arrangement
	Contents of the report	The discussion is not detailed, the language used is not communicative, and the contents of the report are not coherent.	The discussion is detailed, but the language used is not communicative, and the contents of the report are not coherent.	Detailed discussion, communicative language used, but the contents of the report are not coherent.	Detailed discussion, communicative language used, and coherent report content.
	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.

2-10	<i>Presentation systematics</i>	The presentation material is presented in an uncoordinated and unsystematic manner.	The presentation material is presented in a less coherent and less systematic manner.	The presentation material is presented in a coherent but less systematic manner.	The presentation material is presented in a coherent and systematic manner.
	<i>Contents of the material</i>	The material presented is incomplete, irrelevant and not interesting.	The material presented is complete but irrelevant and not interesting.	The material presented is complete and relevant but not very interesting.	The material presented is complete, relevant, and presented in an interesting manner.
	<i>Mastery of presentation material</i>	Very poor ability to maintain and respond to questions	Less able to defend and respond to questions or objections well	Able to defend and respond to questions/objections fairly well	Able to defend and respond to questions/objections very well
	<i>Presentation skills</i>	Delivering information that is not interesting, not enthusiastic, not clear, and with inappropriate intonation.	Delivering information that is less interesting, less enthusiastic, less clear, and with less than appropriate intonation.	Delivering information in an interesting way, with enough enthusiasm, enough enthusiasm, enough clarity, and with the right intonation.	Delivering information in a very interesting, enthusiastic, clear, and appropriate intonation manner.

Individual Performance Assessment Rubric within a Team

Group Number:

Member Name/No.BP:

1

2

3

4

5

1. Students are able to explain the importance of science and technology in beef cattle production.
2. Students are able to explain the origins of beef cattle and beef cattle breeds .
3. Students are able to explain the beef cattle maintenance system
4. Students are able to explain the function, model and equipment of cages.
5. Students are able to explain the forms of growth and factors that influence growth.
6. Students are able to explain muscle structure and meat composition.
7. Students are able to explain and are skilled at identifying livestock.
8. Students are able to explain and are skilled at carrying out external livestock assessments, including measuring livestock body sizes, determining body condition and determining livestock age.
9. Students are able and skilled in handling livestock before, during and after slaughter.
10. Students are able to explain and are skilled at carrying out carcass assessments.
11. Students are able to explain about meat and are skilled at evaluating meat quality.

Course: Science and Technology of Beef Livestock Production

Sub CP-MK	Criteria	(45-49)	(50-59)	(60-74)	(75-100)
		<i>Inferior</i>	<i>average</i>	<i>Good</i>	<i>Excellent</i>
2-9	<i>Receive input, share information, and listen to other team members (peers)</i>	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.
	<i>Completion of work according to the established schedule</i>	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.

	<i>Participate in work with full responsibility</i>	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.
	<i>Respond to each other team member</i>	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	<i>Individual Presence</i>	12 meetings	13 meetings	14 meetings	15-16 meetings