UNIVERSITAS SUMATRA UTARA (USU)
FACULTY OF AGRICULTURE
ANIMAL SCIENCE STUDY PROGRAM

Document Code

SEMESTER LEARNING PLAN (RPS)

COURSE (Course)	CODE	MK Group	WEIGHT (credits)		SEMESTER	Date of Compilation
DESIGN AND BUILD LIVESTOCK CAGES	PTN 3209	Exact	**Theory** =2	**Practice** =1	VI(SIX)	**October 23, 2024**

	RPS Developer Lecturer	Vice Dean I	Chairman of LINK-UP USU
AUTHORIZATION / APPROVAL		Dr. Lisnawita, SP, MP	Prof. Dr. Dwi Suryanto M.Sc.

Learning Outcomes	**LO Charged Course Learning**	
	LO01	Able to apply logical, critical, systematic and innovative thinking through the approach and implementation of animal husbandry science and technology by applying the STAR character.
	LO13	Understanding the concept of identification, security with a multidisciplinary approach in the field of animal husbandry science
	Course Learning Outcomes (CLO)	**CLO Weight**
	CLO0120: Able to explain logically and critically regarding the design of livestock pen construction including objectives, suggestions and infrastructure that are adjusted to the type and physiological status of livestock.	50%
	CLO1314: able to apply cage construction techniques in the livestock sector	50%
	Final Ability of Each Learning Stage (Sub-CLO)	
	Sub-CLO1	After taking this course, students will be able to formulate the introduction and basic concepts of cage design.
	Sub-CLO2	After taking this lecture, students will be able to formulate the determining factors for cage design.
	Sub-CLO3	After taking this lecture, students will be able to formulate the classification and types of cages.
	Sub-CLO4	After taking this course, students will be able to formulate materials and construction of cages.

	Sub-CLO5	After taking this course, students will be able to formulate technology in the design and construction of cages.
	Sub-CLO6	After taking this lecture, students will be able to formulate the layout of the cage.
	Sub-CLO7	After taking this course, students will be able to formulate aspects of health and biosecurity of cages.
	Sub-CLO8	After taking this course, students will be able to formulate cost and efficiency analysis of livestock pens.

Correlation of CLO with Sub-CLO

	Sub-CLO 1	Sub-CLO 2	Sub-CLO 3	Sub-CLO 4	Sub-CLO 5	Sub-CLO 6	Sub-CLO 7	Sub-CLO 8
CLO 0120	√	√	√	√				
CLO 1314					√	√	√	√

Brief Description of Course

After completing the course on Design and Construction of Livestock Pens, sixth semester students of the Animal Husbandry Study Program, Faculty of Agriculture, University of North Sumatra are expected to be able to formulate and understand the design and construction of pens so that it is easier to cultivate livestock that has high profits.

Study Material:

Learning materials

BK 07. Application and Development of Animal Science and Technology

1. Introduction and Basic Concepts of Cage Design
2. Determining Factors of Cage Design
3. Classification and Types of Cages
4. Cage Construction Materials
5. Technology in Cage Design
6. Cage Layout
7. Health and Biosecurity Aspects of Cages
8. Cost and Efficiency Analysis of Cage

Library

Main:

1. **Fadilah, M. (2010).**Modern Livestock Pen Management. Jakarta: Agromedia Publisher.
2. **Tilman, A. (2008).**Animal Housing and Welfare: Practical Guidelines. London: Wiley-Blackwell.
3. **Damron, WS (2018).**Introduction to Animal Science: Global, Biological, Social, and Industry Perspectives. Pearson.
4. **Sutardi, T. (2015).**Poultry Farming Techniques and Technology. Yogyakarta: Kanisius.
5. **Hurtado, A.E., & Carvalho, P. (2016).**Sustainable Livestock Production and Housing. Springer.

	Supporters: 1. Journals and publications
Supporting lecturer	
Required Courses	-

Week 2-	**Final ability of each learning stage (Sub-CLO)**	**Evaluation**		**Form of Learning; Learning methods; Student Assignments; [Estimated Time]**		**Study Materials (Learning materials)**	**Assessment Weight (%)**
		Indicator	**Criteria and Techniques**				
(1)	**(2)**	**(3)**	**(4)**	**Asynchronous (5)**	**Synchronous (6)**	**(7)**	**(8)**
1	**Sub-CLO1:** Students can formulate general overview of the eye lecture namely Introduction and Basic Concepts of Design and Construction of Cages	Accuracy in explaining the importance of livestock pen design	**Criteria:** - **Technique:** Non-Test	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 1. Attendance absence 2. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. **Learning methods:** *Self-Paced Learning* **Mode (Learning Management System):** elearning@usu.ac.id	TM (1 week x 2 credits x 50 minutes) **Activity:** *1. Offline Learning* *2. Class Discussion* *3. Note Taking* **Media:** *1. Power Point Presentation* *2. Text Book* **Learning methods**: *1. Lecturer* *2. Discussion* *3. Self-Paced*	**Subject:** 1. Study Contract *2.* The scope of livestock cage design and construction *3.* Definition and purpose *4.* Basic principles of drum design *5.* The role of the cage	5%

2-3	**Sub-CLO 2:** Students can formulate about the determining factors of cage design	1. Accuracy in formulating climate and environment 2. Accuracy in formulating livestock welfare 3. Accuracy in formulating livestock specifications 4. Accuracy in formulating the capacity and scale of livestock businesses	**Criteria:** Assessment rubric. **Technique:** *Non-Test*	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 1. Attendance absence 2. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. 3. Responding to the opening question **Mode (Learning Management System):** elearning@usu.ac.id	TM (1 week x 2 credits x 50 minutes) **Activity:** *1. Offline Learning* *2. Class Discussion* *3. Note Taking* **Media:** *1. Power Point Presentation* *2. Text Book* **Learning methods**: *1. Lecturer* *2. Discussion* 3. *Self-Paced*	**Subject:** 1.Climate and environment (ventilation, temperature, humidity, lighting). 2.Animal welfare. 3.Specification of livestock species requirements (cows, goats, chickens, etc.). 4. Capacity and scale of livestock business.	5%
4-6	**Sub-CLO 3:** After taking this lecture, students will be able to formulate the classification and types of cages.	1. Accuracy in explainingindividual cages and colony cages 2. Accuracy in formulating closed or open cages 3. Accuracy in formulating permanent, semi-permanent and portable cages 4. Accuracy in formulating the type of roof	**Criteria:** Assessment rubric. **Technique:** *Test:* *1. Case method*	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 1. Attendance absence 2. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. 3. Responding to the opening question ***Case Method 1:***	TM (1 week x 2 credits x 50 minutes) **Activity:** *1. Offline Learning* *2. Class Discussion* *3. Note Taking* **Media:** *1. Power Point Presentation* *2. Text Book* **Learning methods**: *1. Lecturer* *2. Discussion* *3. Self-Paced*	**Subject:** 1.Individual cages vs group cages. 2.Closed house and open house systems. 3. Permanent, semi-permanent and portable cages.	Case Method 1: 15%

				1. Divide the groups evenly (the lecturer divides) 2. Create a paper on types of livestock pens, maximum 15 pages from the table of contents to the bibliography, TMR font size 12, 1.5 spacing, sent in PDF format. 3. Group presentation **Mode (Learning Management System):** elearning@usu.ac.id			
7	**Sub-CLO 4:** After taking this course, students will be able to formulate materials and construction of cages.	1. Accuracy in explainingselection of building materials 2. Accuracy in explainingadvantages and disadvantages of materials 3. Accuracy in explainingconstruction cost analysis	**Criteria:** Assessment rubric. **Technique:** *Test:* *1. Quiz*	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 1. Attendance absence 2. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. 3. Responding to the opening question ***Quiz 1:*** *Quiz to measure students' understanding*	TM (1 week x 2 credits x 50 minutes) **Activity:** *1. Offline Learning* *2. Class Discussion* *3. Note Taking* **Media:** *1. Power Point Presentation* *2. Text Book* **Learning methods**: *1. Lecturer* *2. Discussion* *3. Self-Paced*	**Subject:** 1. Selection of building materials (wood, bamboo, concrete, light steel, etc.). 2.The advantages and disadvantages of each type of material. 3. Analysis of construction costs of local and imported materials.	Quiz 1: 5%

				of protein as a nutrient needed by poultry **Mode (Learning Management System):** elearning@usu.ac.id			
8	MID SEMESTER EXAMINATION						15%
9-10	**Sub-CLO 6:** After taking this course, students will be able to formulate technology in the design and construction of cages.	1.Accuracy in explaining the application of ventilation technology 2.Accuracy in explaining the automatic feeding and drinking system 3.Accuracy in explaining livestock waste management	**Criteria:** Assessment rubric. **Technique:** *Test:* *1. Case method*	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 1. Attendance absence 2. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. 3. Responding to the opening question ***Case Method 2:*** 1. Divide the groups evenly (the lecturer divides) 2. Create a 15-page ventilation technology paper from the table of contents to the bibliography, TMR font size 12, 1.5 spacing, sent in PDF format.	TM (1 week x 2 credits x 50 minutes) **Activity:** *1. Offline Learning* *2. Class Discussion* *3. Note Taking* **Media:** *1. Power Point Presentation* *2. Text Book* **Learning methods**: *1. Lecturer* *2. Discussion* *3. Self-Paced*	**Subject:** 1.Application of ventilation and cooling technology (cooling system). 2.Automatic feeding and drinking system. 3. Waste management system for the barn (biogas, compost, drainage).	Case Method 2: 15%

				Mode (Learning Management System): elearning@usu.ac.id			
11	**Sub-CLO 7:** After taking this lecture, students will be able to formulate the layout of the cage.	1. Accuracy in explaining the layout of the cage 2.Accuracy in explaining design and safety 3. Accuracy in formulating the arrangement of livestock entry and exit routes	**Criteria:** Assessment rubric. **Technique:** *Test:* *1. Case method*	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 4. Attendance absence 5. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. 6. Responding to the opening question ***Case Method 3:*** 3. Divide the groups evenly (the lecturer divides) 4. Create a paper for each group on the layout of livestock pens, 15 pages from the table of contents to the bibliography, TMR font size 12, 1.5 spacing, sent in PDF format. **Mode (Learning Management System):**	TM (1 week x 2 credits x 50 minutes) **Activity:** *4. Offline Learning* *5. Class Discussion* *6. Note Taking* **Media:** *3. Power Point Presentation* *4. Text Book* **Learning methods**: *4. Lecturer* *5. Discussion* *Self-Paced*	**Subject:** 1.Layout of the cage to maximize work efficiency. 2. Accessibility and safety design for livestock and workers. 3. Arrangement of livestock entry and exit routes	*Case Method 3:* *10%*

				elearning@usu.ac.id			
12-13	**Sub-CLO 8:** After taking this lecture, students will be able to formulate aspects of health and biosecurity of cages.	1. Accuracy in explainingdesign to reduce disease 2. Accuracy in explaining the sanitation and disinfection system of the cage 3. Accuracy in linking cross-contamination risk management	**Criteria:** Assessment rubric. **Technique:** *Non-Test:*	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 1. Attendance absence 2. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. 3. Responding to the opening question **Mode (Learning Management System):** elearning@usu.ac.id	TM (1 week x 2 credits x 50 minutes) **Activity:** *1. Offline Learning* *2. Class Discussion* *3. Note Taking* **Media:** *1. Power Point Presentation* *2. Text Book* **Learning methods**: *1. Lecturer* 2. *Discussion* 3. *Self-Paced*	**Subject:**1.Design to reduce the risk of disease. 2. Sanitation and disinfection system of the cage. 3. Management of cross contamination risks.	5%
14-15	**Sub-CLO 9**: After taking this course, students will be able to formulate cost and efficiency analysis of livestock pens.	1. Accuracy in explainingeconomic feasibility study of construction of cages 2. Accuracy in explainingreturn on investment calculation 3. Accuracy in explainingoptimization of operational costs of the cage	**Criteria:** Assessment rubric. **Technique:** *Test:* 1. *Case method*	KM+PT (1 week x 2 credits x 120 minutes) **Activity:** 1. Attendance absence 2. Download and read the Syllabus (RPS), Learning Implementation Plan (SAP), Course Agreement, and Learning Materials. 3. Responding to the opening question ***Case Method 4:***	TM (1 week x 2 credits x 50 minutes) **Activity:** *1. Offline Learning* *2. Class Discussion* *3. Note Taking* **Media:** *1. Power Point Presentation* *2. Text Book* **Learning methods**: *1. Lecturer* 2. *Discussion* 3. *Self-Paced*	**Subject:** 1.Economic feasibility study of cage construction. 2. Calculation of Return on Investment (ROI) of the cage. 3. Optimization of operational costs of the cage.	Case Method 4: 10%

				1. Divide the groups evenly (the lecturer divides) 2. Create a 15-page cost analysis paper on the cage from the table of contents to the bibliography, TMR font size 12, 1.5 spacing, sent in PDF format. **Mode (Learning Management System):** elearning@usu.ac.id			
16	FINAL SEMESTER EXAMINATION						15%

Assessment Design:

CLO Code and Percentage	Sub-CLO Code	Evaluation Form	Percentage (%)	Total	Implementation of Evaluation
CLO0120 (50%)	Sub-CLO1	Mid Therm Exam	5.5	50%	Week 8
	Sub-CLO2	Mid Therm Exam	5.5		Week 8
	Sub-CLO3	Case Method	5		Week 3
	Sub-CLO4	Quis	5		Week 4
	Sub-CLO3	Case method	5	50%	Week 3

CLO1314 (50%)	Sub-CLO6	Case method	5		Week 9
	Sub-CLO7	Final Exam	5		Week 10
	Sub-CLO8	Case method	5		Week 11
Total			100%	100%	

Assessment Plan:

Evaluation Form	Sub-CLO	Assessment Instrument [Frequency]		Invoice (proof)	Assessment Credit (%)
		Formative	**Summative**		
Quiz/Q&A	Sub-CLO3 and Sub-CLO8	Assessment rubric [2 times]	-	Quiz answers uploaded to kelas.usu.ac.id	10
Case Methode	Sub-CLO4 and Sub-CLO9	Feedback results case analysis [5 times]	Assessment rubric [2 times]	Logbook/worksheet/slides uploaded to kelas.usu.ac.id	50
Written exam 1 (UTS)	Sub-CLO1, Sub-CLO2, Sub-CLO3, Sub-CLO4, Sub-CLO5, Sub-CLO6 and Sub-CLO7	-	Assessment rubric [1 time]	Written exam result sheet	20
Written exam 2 (UAS)	Sub-CLO8, Sub-CLO9, Sub-CLO10, Sub-CLO11, Sub-CLO12, Sub-CLO13 and Sub-CLO14	-	Assessment rubric [1 time]	Written exam result sheet	20
Total					**100%**

Explanation:

a) Quiz 10%

During the semester there will be 2 quizzes held in class. The quizzes will be conducted via e-learning and have been scheduled in advance. The material being tested is announced by the lecturer and written in the RPS.

b) *Case Method*50%
During the semester there will be a case method, each student will make a paper and report from each case method in groups. The case method in this course is done 5 times. The paper that has 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 are presenting.

c) Midterm Exam 20%
The midterm exam covers all the materials that have been discussed since the beginning of the semester until the 7th meeting, both reading and lecture. This exam is conducted in class with multiple choice questions, short answers, and essays.

d) Final Exam 20%
The final semester exam covers all the material that has been discussed since the 9th to 15th meeting, both reading and lecture. This exam is conducted in class in the form of multiple choice questions, short answers, and essays.

ASSESSMENT RUBRIC

Post Test Quiz Assessment Rubric (10%)

The Pre/Post test questions consist of 5 essay questions done on one sheet of paper (done 4 times during 1 semester)

Value per question item	Criteria
20	Can answer questions correctly, complete the steps correctly, and completely correct
15	The steps for completing the questions are correct, there are a few errors.
10	Most of the steps in completing the questions are correct, there are many errors.
5	The steps for completing the question are not correct, the question cannot be completed

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

Minimum score = 25 (5 questions x 5 points)

Quiz score 1: (maximum score is 100)$20 \times \sum nilai\ per\ butir\ soal$

Quiz score 2: (maximum score is 100)$20 \times \sum nilai\ per\ butir\ soal$

Total score if you take all post-test quizzes with a perfect score is 200 x 10%[quiz percentage] = 20

Assessment Rubric for Group Presentation Assignment Case Method Knowledge of Livestock Products

Matter	Evaluation criteria				
Contents	Complete, with additional good material (20)	Complete (18)	Same as text book (16)	Not complete, but most of the material is covered (14)	Substantially incomplete (12)
Answering Discussion Questions	Able to answer all questions correctly (20)	Can answer most of the questions correctly but there are some questions that are not answered (18)	Able to answer some questions correctly, some others did not reach the target and there were questions that were not answered (16)	Most of the answers did not reach the target and there were unanswered questions (14)	Can't answer all questions (12)
Presentation	Clear, concise with good flow (20)	Clear, concise with sometimes poor flow (18)	Moderate presentation skills (16)	Presentation stutters (14)	Presentation not working (12)
Group organization	Very good organization, supporting each other's presentations (20)	Good organization (18)	Medium organization, some people are less organized (16)	Lack of organization often results in communication errors (14)	The organization was chaotic so the presentation was very disrupted (12)
Creativity	Very creative without going off target (20)	Creative creates enthusiasm (18)	Occasionally attracts attention (15)	Occasionally attracts attention (13)	Boring, makes you sleepy (11)
TOTAL	**100 (Very Good)**	**90-80 (Very well)**	**79-70 (Good)**	**69-50 (Pretty good)**	**59-40 (Not good)**

Information :

The total maximum score is 100. The numbers in brackets are the scores for each criterion. The number 100 will later be accumulated with the percentage of the Presentation Assignment (PjBL) value of 50%.

100 x 50% = 50 points
There are 4 presentation implementations (case method), so the percentage of the Case Method Group Assignment score for each implementation is: 50% : 4 = 12.5%. Points for each implementation of the Case Method Group Assignment: 100 x 12.5% = 12.5 points.

Essay Exam Assessment Rubric:

Assessment criteria	4 Very good	3 Good	2 Enough	1 Not enough
Understanding the Questions	Understand the question exactly once (25)	Understanding the questions (20)	Not understanding the question fully and correctly (15)	Don't understand the question (10)
Contents	Answers show understanding in-depth understanding of the material being asked and participants integrate the information that has been studied and/or assigned to be read during the lecture well and appropriately (25)	The answers demonstrate understanding of the material being asked and integrate some of the information that has been studied and/or assigned to be read during the lecture. (20)	The answer shows a lack of understanding of the material being asked and only integrates a small portion of information that has been studied and/or assigned to be read during lectures. (15)	The answer shows a lack of understanding of the material being asked so it is unclear and not integrated. information that has been studied and/or assigned to be read during lectures. (10)
Clarity of Writing	All written ideas are conveyed well and clearly. (25)	Most of the ideas in the writing are well and clearly conveyed. (20)	Some of the ideas in the writing are conveyed well and clearly. (15)	The ideas in the writing are not conveyed well and clearly. (10)
Clarity of Language	Uses foreign/Indonesian languages well and correctly with minimal grammatical errors and word choices that do not	Uses foreign/Indonesian languages well and correctly with minimal grammatical errors and word choices that interfere with understanding.	Uses foreign/Indonesian language quite well and correctly with some grammatical errors and word choices	Does not use foreign/Indonesian language properly and correctly because the writing contains many

	interfere with understanding (25)	(20)	(15)	grammatical errors and word choices (10)
Total	**81-100** **(Very well)**	**61-80** **(Pretty good)**	**41-60** **(Enough)**	**0-40** **(Not enough)**

Multiple Choice Exam Scoring Rubric:

Value per question item	**Criteria**
100/ many questions	Can answer questions correctly
0	The answer is not quite right/does not match the answer key provided.