COURSE LEARNING PLAN

UNIVERSITY OF BRAWIJAYA
FACULTY OF ANIMAL SCIENCE
DEPARTMENT OF ANIMAL SCIENCE
UNDERGRADUATE STUDY PROGRAM OF ANIMAL SCIENCE
LEARNING PLAN: Ruminants Production Management

Course	Code	Weight (credits)	Semester	Compilation Date
Ruminants Production Management	PEP4015	2 credits (1-1)	EVEN	January 15, 2020

Authorization	Course Coordinator	Head of Undergraduate Study Program of Animal Science	Vice Dean 1
	Dr. Ir. Tri Eko Susilorini, MP. IPM.ASEAN Eng	Dr. Herly Evanuarini, S.Pt.MP	Dr.M.Halim Natsir,S.Pt,MP. IPM. ASEAN Eng

Learning Outcomes (LO)

PLO

1. LO 3. Demonstrate attitudes of friendly and caring about animal welfare and permissible *(halal)* consumption.
2. LO 5. Able to examine the implications of the development or implementation of science and technology that consider and apply humanities values in accordance with their expertise based on scientific principles, procedures, and ethics to produce excellent solutions and ideas
3. LO 8. Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility
4. LO 13. Able to apply animal technology that is oriented towards improving production, efficiency, quality, and sustainability based on mastery of animal science including breeding, feed, processing of products, marketing management and organizing a sustainable animal production system, and applying entrepreneurial concepts

CLO

After taking the Ruminant Animal Production Management Course, the students are:

1. Able to apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare (PLO 3, 5, 13)
2. Able to design ruminant animal businesses based on animal production systems according to the physiological status (PLO 8, 13)
3. Able to evaluate production management in the ruminant animal industry effectively and efficiently (PLO 8.13)
4. Able to analyze and develop the potential of the ruminant animal industry (PLO 5, 13)

Brief Course Description

This course consists of the process of analyzing, designing, implementing, and evaluating the management of dairy and meat production including cattle, buffalo, goats, and sheep.

Topic/Sub-Course/Subject	1. Introduction 2. Dairy and Broiler Judging 3. Dairy and Broiler Maintenance Management 4. Ruminant Production System 5. Health and well-being of dairy and meat cattle 6. Designing Dairy and Meat Animal Industry 7. Evaluating the Dairy and Meat Industry Business	
References	1. Devendra, C. 2007. Goats: Biology, Production, and Development in Asia. Academy of Sciences Malaysia. Malaysia. 2. Kuswati dan T.Susilowati.2017. Industri Sapi Potong. First Edition. UB Press. Malang. 3. Moran, J. 1993. Calf Rearing. Rhone-Poulenc Animal Nutrition PTY.LTD. Melbourne. 4. Schmidt and Van Vleck. 1974. Principles of Dairy Science. W.H. Freeman and Company. USA. 5. Susilorini, T.E. and Kuswati. 2020. Budidaya Kambing dan Domba. First Edition. UB Press. Malang. 6. Solaiman, S.G.2010. Goat Science and Production. Wiley Blackwell. USA. 7. Surjowardojo, P. 2019. Ekspresi Mastitis Pada Sapi Perah. Second Edition. INDO-PRESS Publishing in collaboration with Aditya Media Publishing. Malang 8. Surjowardojo, P., et al. 2019. Mastitis Pada Sapi Perah. UB Press. Malang 9. Surjowardojo, P., et al. 2019. Aneka Ternak Perah. PENERBIT BASKARA MEDIA - Aditya Media Group. Malang 10. Susilorini, T.E., M.E. Sawitri dan Muharlien. 2008. 22 Ternak Potensial. Sixth Edition. Penerbit Penebar Swadaya. Jakarta. 11. Taylor, R.E and T.G.Field. 2004. Scientific Farm Animal Production: An Introduction to Animal Science. The eighth edition. Pearson/Prentice Hall.USA 12. Trimberger, G.W., W.M. Etgen dan D.M. Galton. 1987. Dairy Cattle Judging Techniques. Fourth Edition. Waveland Press Inc. Illinois.	
Learning media	Software	Hardware
	1. PowerPoint 2. Google Class Room 3. Video 4. Skech up 5. VLM 2 UB	1. Whiteboard 2. Computer 3. LCD
Teaching Team	1. Dr. Ir. Tri Eko Susilorini, MP. IPM.ASEAN Eng 2. Dr. Ir. Puguh Surjowardojo, MS.	

	3. Dr. Ir. Kuswati, MS. IPM.ASEAN.Eng 4. Dr. Ir. Moch. Nasich, MS. 5. Dr. Ir. Agus Budiarto, MS 6. Dr. Ir. Hary Nugroho, MS 7. Aswah Ridhowi, S.Pt. M.Sc. 8. Firmansyah Tri Saputra, S.Pt.MP. 9. Irida Novianti,S.Pt.M.Agr.Sc. 10. Wike Andre Septian, S.Pt.M.Si
Prerequisite Courses	Dairy Animal Production Science Beef cattle Production Science

Week	Sub-Course Learning Outcome	Indicator	Learning Materials / Topics	Learning Methods	Criteria & Form of Assessment	Weighted Score (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Able to identify opportunities in the ruminant animal industry	- Able mention the potential and opportunities of the dairy and meat industry	Introduction	Lecture, discussion	- Criteria: ability to give opinion based on database - Form of Assessment: Midterm Exam	7%
2	Able to analyze the potential of the ruminant animal industry	- Able to assess production capabilities visually	Judging/Assessing Dairy Cattle	Lecture, discussion and practicum	- Criteria: ability to give opinion based on database - Form of Assessment: Midterm Exam	
3	Able to apply management and technology oriented to the ruminant animal industry	- Able to determine the dairy farming system (extensive or semi intensive) - Be able to explain ideal maintenance: (1) Calves (2) pigeon	Dairy Animal Maintenance Management	Lecture, discussion and assignment	- Criteria: Ability to determine good maintenance management - Form of Assessment: Midterm Exam	
4	Able to apply management and technology	- Able to explain ideal maintenance: (1)	Dairy Animal Maintenance	Lecture, discussion and assignment	- Criteria: Ability to determine good maintenance management	

	oriented to the ruminant animal industry	lactation, (2) dry cow, (3) and (4) stud.	Management II		- Form of Assessment: practicum and Midterm Exam	
5	Able to design ruminant animal business based on ruminant animal production system according to the physiological status	- Able to determine the dairy farming production system - Able to identify the potential of each production system based on the agroecosystem - Able to explain the dynamics of lactating cows	Dairy Cattle Production System	Lecture, discussion and assignment	- Criteria: ability to state the ideal production system for dairy cows and to design sustainable milk production - Form of Assessment: Midterm Exam	
6	Able to apply management and technology oriented to the ruminant animal industry	- Able to apply good dairy farming practices - Able to carry out animal handling in accordance with Animal Welfare - Able to recognize signs of dairy cattle disease and how to prevent them - Able to conduct the principles of animal welfare in the management of dairy farming	Dairy animal health and welfare	Lecture, discussion and assignment	- Criteria: ability to apply good dairy farming practices, animal welfare - Form of Assessment: Assignment, final exam	
7	Able to design ruminant animal business based on ruminant animal	- Able to determine a suitable location for the dairy farming	Designing Dairy Animal Industry	Lecture, discussion and assignment	- Criteria: the ability to describe and analyze effectively and efficiently in	

	production system according to the physiological status	industry according to commodities - Able to describe the layout plan of the housing complex in accordance with the function of the housing section - Able to describe housing in accordance with the conditions and commodities of dairy farming			the design and design of dairy farming - Form of Assessment: Assignment, Practicum Final Exam	
8	Midterm Exam					
9	Able to analyze the potential of the ruminant animal industry	- Able to visually assess production capabilities	- Judging of Broiler/beef cattle - BCS	Lecture, discussion and practicum	- Criteria: Ability to mention animal body parts that have economic value. Ability to determine BCS score - Form of Assessment: Practicum Final Exam and Final Exam	
10	Able to apply oriented management and technology to the ruminant animal industry	- Able to determine the maintenance system (extensive or semi intensive) - Able to conduct maintenance of: (1) Parent-Child (2) Willing, and (3) Stud	Management of Animals (broiler/beef cattle)	Lecture, discussion and assignment	- Criteria: Ability to conduct maintenance management - Form of Assessment: Practicum and Final Exam	
11	Able to design ruminant animal business based on	- Able to determine the beef cattle production system	Broiler/beef cattle	Lecture, discussion and assignment	- Criteria: ability to state the production system: Pure Breed, Cow Calf, Stocker	

	ruminant animal production system based on the physiological status	- Able to identify the potential of each production system according to the agroecosystem	Production System		Program, Finishing / Fattening, Fattening calf program - Form of Assessment: Final Exam	
12	Able to apply oriented management and technology to the ruminant animal industry	- Able to implement biosecurity - Able to conduct animal handling in accordance with Animal Welfare - Able to recognize signs of animal disease - Able to conduct the principles of animal welfare in animal raising management	Health and welfare of broiler/beef cattle	Lecture, discussion and assignment	- Criteria: ability to conduct biosecurity, animal welfare, and recognize signs of disease - Form of Assessment: Assignment, Final Exam of Practicum	
13	Able to design ruminant animal business based on ruminant animal production system according to physiological status	- Able to explain animal export-import requirements - Able to explain animal transportation requirements in accordance with Animal Welfare	Export-Import Management and Animal Transportation	Lecture, discussion and assignment	- Criteria: ability to enumerate import and export requirements and transport management respectively - Form of Assessment: Assignment, Final Exam of Practicum	
14	Able to design ruminant animal business based on ruminant animal production system according to physiological status	- Able to determine a suitable location for the animal industry according to commodities - Able to describe the layout plan of the	Designing and Ruminant Farming	Lecture, discussion and assignment	- Criteria: the ability to develop and analyze logically the design of meat/boiler production - Form of Assessment: Assignment, Final Exam of Practicum	

		housing complex in accordance with the function of the housing section - Able to describe housing in accordance with animal conditions and commodities				
15	Able to evaluate production management in the ruminant animal industry effectively and efficiently	- Able to determine success in the meat industry - Able to analyze problems - Able to solve problems n	Evaluating the Beef/broiler Animal Industry	Lecture, discussion and assignment	- Criteria: the ability to analyze problems and solve problems logically - Form of Assessment: Assignment, Final Exam	
16	Final Exam					

ASSESSMENT RUBRIC

	UNIVERSITY OF BRAWIJAYA **FACULTY OF ANIMAL SCIENCE** **DEPARTMENT OF ANIMAL SCIENCE** **UNDERGRADUATE STUDY PROGRAM OF ANIMAL SCIENCE**		
Course	Ruminants Production Management		
Score Level	CLO and PLO	Conversion	PLO Score
PLO 3: Demonstrate attitudes of friendly and caring about animal welfare and permissible *(halal)* consumption PLO 5: Able to examine the implications of the development or implementation of science and technology that consider and apply humanities values in accordance with their expertise based on scientific principles, procedures, and ethics to produce excellent solutions and ideas CLO 1: Able to apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare (LO 3, 5, 13)			
Very Good (4)	Showing the ability to apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare **comprehensively** based on the potential of the ruminant animal industry	>80-100	0.5
Good (3)	Showing the ability to apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare **well** based on the potential of the ruminant animal industry	>70-80	0.375
Moderate (2)	Showing **limited** ability to apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare based on the potential of the ruminant animal industry	>60-70	0.25
Poor (1)	Showing **very limited** ability to apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare based on the potential of the ruminant animal industry	≤60	0.125
Score Level	CLO and PLO	Conversion	PLO Score
PLO 8: Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility PLO 13: Able to apply animal technology that is oriented towards improving production, efficiency, quality, and sustainability based on mastery of animal science including breeding, feed, processing of products, marketing management and organizing a sustainable animal production system, and applying entrepreneurial concepts CLO 2: Able to design ruminant animal businesses based on animal production systems according to their physiological status			

Very Good (4)	Showing the ability to design a ruminant animal business based on a ruminant animal production system according to physiological status **comprehensively**	>80-100	0.5
Good (3)	Showing the ability to design a ruminant animal business based on a ruminant animal production system according to physiological status **well**	>70-80	0.375
Moderate (2)	Showing **limited** ability to design a ruminant animal business based on a ruminant animal production system according to physiological status	>60-70	0.25
Poor (1)	Showing **very limited** ability to design a ruminant animal business based on a ruminant animal production system according to physiological status	≤60	0.125
Score Level	CLO and PLO	Conversion	PLO Score
PLO 8: Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility PLO 13: Able to apply animal technology that is oriented towards improving production, efficiency, quality, and sustainability based on mastery of animal science including breeding, feed, processing of products, marketing management and organizing a sustainable animal production system, and applying entrepreneurial concepts CLO 3: Able to evaluate production management in the ruminant animal industry effectively and efficiently			
Very Good (4)	Showing ability in applying management and technology oriented to the ruminant animal industry **comprehensively**	>80-100	0.5
Good (3)	Showing ability in applying management and technology oriented to the ruminant animal industry **well**	>70-80	0.375
Moderate (2)	Showing **limited** ability in applying management and technology oriented to the ruminant animal industry	>60-70	0.25
Poor (1)	Showing **very limited** ability in applying management and technology oriented to the ruminant animal industry	≤60	0.125
Score Level	CLO and PLO	Conversion	PLO Score
PLO 5: Able to examine the implications of the development or implementation of science and technology that consider and apply humanities values in accordance with their expertise based on scientific principles, procedures, and ethics to produce excellent solutions and ideas PLO 13: Able to apply animal technology that is oriented towards improving production, efficiency, quality, and sustainability based on mastery of animal science including breeding, feed, processing of products, marketing management			

and organizing a sustainable animal production system, and applying entrepreneurial concepts CLO 4: Able to evaluate production management in the ruminant animal industry effectively and efficiently			
Very Good (4)	Showing the ability to evaluate production management in the ruminant animal industry effectively and **comprehensively**	>80-100	0.5
Good (3)	Showing the ability to evaluate production management in the ruminant animal industry effectively and **well**	>70-80	0.375
Moderate (2)	Showing **limited** ability to evaluate production management in the ruminant animal industry effectively	>60-70	0.25
Poor (1)	Showing **very limited** ability to evaluate production management in the ruminant animal industry effectively	≤60	0.125

Calculating PLO score: $\frac{Level\ Skor}{\sum level\ skor} \times \frac{\sum CLO}{\sum PLO}$

CPPS= PLO :4/4 = 1

Noted: CLO = CPMK

Lecture Portfolio

	UNIVERSITY OF BRAWIJAYA **FACULTY OF ANIMAL SCIENCE** **DEPARTMENT OF ANIMAL SCIENCE**		
Course: Management of Ruminant Animal Production	Code: PEP 60006	RMK:	Semester: 3
Lecturers	1. Dr. Ir. Tri Eko Susilorini, MP. IPM.ASEAN Eng 2. Dr. Ir. Puguh Surjowardojo, MS. 3. Dr. Ir. Kuswati, MS. IPM.ASEAN.Eng 4. Dr. Ir. Moch. Nasich, MS. 5. Dr. Ir. Hary Nugroho, MS 6. Dr. Ir. Agus Budiarto, MS 6. Aswah Ridhowi, S.Pt. M.Sc. 7. Firmansyah Tri Saputra, S.Pt.MP. 8. Irida Novianti,S.Pt.M.Agr.Sc. 9. Wike Andre Septian, S.Pt.M.Si		

Introduction (Describe the explanation needed about this course, experiences that have been done)

This course covers the process of analyzing, designing, implementing, and evaluating the management of dairy and meat production including cattle, buffalo, goats, and sheep.

1	**Objectives** (Describe general or specific course objectives)
	After taking this course, the students are able to: 1. Apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare 2. Design ruminant animal businesses based on animal production systems according to their physiological status 3. Evaluate production management in the ruminant industry effectively and efficiently 4. Analyze and develop the potential of the ruminant animal industry
2	**Learning Strategy** (Describe the strategies used to achieve course objectives - CLO)
	Offline and Online, Learning Videos, Group Assignments, Structured Assignments, QUIZ, Midterm Exam, Final Exam, Practicum
3	**Lecture Management** (Describe the management of lectures: lectures, tutorials, practicum, assignments, major assignments, etc.)
	1) Lecture: Duration of 50 minutes/meeting (14 meetings, Online) 2) Practicum 50 minutes/meeting (14 meetings, Online) 3) Structured Assignments/Group Assignments/Quiz, Online *4)* Attendance: 80% of total attendance

4	**Lecture Content/Topic** (explain the suitability with the applicable curriculum)
	● Introduction ● Dairy and Broiler/beef cattle Judging/assessment ● Dairy and Broiler//beef cattle Maintenance Management ● Ruminant Production System ● Health and well-being of dairy and meat cattle ● Designing and Dairy and /beef cattle/meat Animal Industry ● Evaluating the Dairy and Meat Industry Business
5	**Lecture Participants** (provide an overview of lecture participants)
	The lecture participants are 5th semester students who have passed the prerequisite courses: Beef Cattle Production Science, Dairy Animal Production Science, Animal Breeding Science, Reproduction Science
6	**Attendance Percentage** (% attendance of lecturers; % attendance of students)
	% attendance of lecturer: 100% % attendance of students: 80%
7	**Evaluation System** (explain homework, quizzes, group assignments, practicum, etc.)
	Midterm Exam: 30% Final Exam:30 % Practicum :20 % Structured assignment/quiz:20%
8	**Class Observation** (explain important and interesting things encountered during the lecture)
	Attendance, Activeness in discussions and Compliance with assignment
9	**Learning Outcomes** (explain the achievement of the goals that have been set including learning outcome that can be explained)
	1. Able to apply management and technology oriented to the ruminant animal industry based on the concept of animal welfare 2. Able to design ruminant animal businesses based on animal production systems according to their physiological status 3. Able to evaluate production management in the ruminant animal industry effectively and efficiently 4. Able to analyze and develop the potential of the ruminant animal industry
10	**Obstacles** (give an overview of the main obstacles in learning)
	There is limited time for 50 minutes lecture and lack of practicum infrastructure
11	**Score Distribution** (provide the score distribution following the learning outcome of this course)
	Midterm Exam: 30% Final Exam:30 % Practicum:20 % Structured assignment/quiz:20%
12	**Conclusion**
13	**Improvement Recommendations**
	Appendices:

	1. 2. etc.