


COURSE LEARNING PLAN


	UNIVERSITY OF BRAWIJAYA FACULTY OF ANIMAL SCIENCE DEPARTMENT OF ANIMAL SCIENCE UNDERGRADUATE STUDY PROGRAM OF ANIMAL SCIENCE LEARNING PLAN: Egg Processing Industry			
Course	Code	Weight (credits)	Semester	Compilation Date
Egg Processing Industry	PET 4005	3 (2-1) credits	V	July 27, 2020
Authorization	Course Coordinator		Ka PS S1	Vice Dean 1
	Dr. Ir. Imam Thohari, MP., IPM., ASEAN Eng.		Dr. Herly Evanuarini, S.Pt, MP	Dr.Ir. Halim Natsir, MP, IPM, ASEAN Eng
Learning Outcomes (LO)	PLO			
	1. LO (8): Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility 2. LO (11): Able to show performance, both independently and in teamwork (inter- and multi-disciplinary), identify and analyze to solve problems in quality and measurable way 3. LO (12): Able to design and conduct experiments, analyze and interpret data to make correct decisions in solving problems in the field of animal science, meet ethics, and have environmental insight			
	CLO			
	1. Able to identify the internal and external factors related to the egg processing industry 2. Able to connect SWOT and PEST analyses related to the egg processing industry 3. Able to evaluate SWOT and PEST analyses affecting the egg processing industry 4. Able to design an egg processing industry in the form of a business plan			
Brief Course Description	The Egg Processing Industry Course provides knowledge about egg technology; bioactive compound in eggs; SWOT and PEST analyses, and designing and making an Egg Processing Industry in the form of a business plan			
Topics	1. Whole Egg Industry 2. Liquid Egg Industry 3. Powdered Egg/Egg Flour Industry 4. Traditional Egg Industry 5. Non-Traditional Industry 6. SWOT Analysis 7. PEST Analysis 8. Business Plan			
References	William J Stadelman, Debbie Newkirk, Lynne Newby. 1995. Egg Science and Technology, Fourth Edition. CRC Press			

		Thohari, I., Padaga, M., Mustakim, Rahayu, P.P. 2017. Buku Ajar Teknologi Hasil Ternak. UB Press. Malang Haryoto. 2009. Teknologi Tepat Guna Pengawetan Telur Segar. Yogyakarta: Kanisius. Winarno, F. G. 2008. Kimia Pangan dan Gizi. Jakarta: PT Gramedia Pustaka Utama.				
Learning Media		Software		Hardware		
		Software, PowerPoint, Video		Laptop, LCD, White Board		
Teaching Team		1. Dr.Ir. Imam Thohari, MP., IPM., ASEAN Eng. 2. Dr.Ir. Manik Eirry Sawitri, MS 3. Dr. Herly Evanuarini, S.Pt., MP 4. Dr. Agus Susilo, S.Pt., MP., IPM., ASEAN Eng. 5. Ir. Aris Sri Widati, MS 6. Eny Sri Widyastuti, Ir. MP 7. Ria Dewi Andriani, S.Pt, MSc. MP 8. Mulia Winirsya Apriliyani, S.Pt., MP 9. Dr. Premy Puspitawati Rahayu, S.Pt., MP				
Prerequisite Courses		Introduction to THT, PHT, Animal Product Technology, Quality Control				
Week	Sub-CLO	Indicator	Learning Materials / Topics	Learning Methods	Criteria & Form of Assessment	Weighted Score (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
I	Able to describe the egg processing industry in general	Understanding of the egg processing industry	Introduction Lecture Contract, Explanation of RPKPS, Overview of the Egg Industry	Lecture Discussion	Describe an overview of the egg industry in general	5
II	Able to explain the growing whole egg industry correctly	Correct understanding of the growing whole egg industry	Whole Egg Preservation Industry (Unopened) Shell Sealing/Shell Treatment	Lecture Discussion	Describe the whole egg industry (unopened) Shell Sealing/Shell Treatment	5
III	Able to explain the growing whole egg industry correctly	Correct understanding of the growing whole egg industry	Whole Egg Preservation Industry (Unopened) ● Thermostabilization ● Dry Packing ● Lime Water Process	Lecture Discussion	Structured Assignment (International Scientific Article Review)	7.5
IV	Able to explain the liquid egg industry correctly	Correct understanding of the liquid egg industry	Liquid Egg Industry (Without Shell)	Lecture Discussion	Quiz	5

V	Able to explain the powdered egg industry correctly	Correct understanding of the powdered egg industry (the technology and process)	Powder Egg Industry <ul style="list-style-type: none"> • Fermentation process • Heating (Pan Drying, Freeze Drying, Spray Drying, Dum Drying) 	Lecture Discussion	Describe the technology and process used for powdered eggs and methods that can be used to process powdered eggs	5
VI	Able to explain the powdered egg industry correctly	Correct understanding of the powdered egg industry (the proper packaging)	Powder Egg Industry <ul style="list-style-type: none"> • Packaging • Canning 	Lecture Discussion	Describe the technology and process used for powdered eggs and the proper packaging	5
VII	Able to explain the traditional egg industry correctly	Correct understanding of the traditional egg industry	Traditional Egg Industry <ul style="list-style-type: none"> • Salted Egg • Pindan • Pitam 	Presentation Discussion	Structured Assignment (International Scientific Article Review)	7.5
VIII	MIDTERM EXAM					
IX	Able to explain the traditional egg industry correctly	Correct understanding of the traditional egg industry	Traditional Egg Industry <ul style="list-style-type: none"> • Chinese Egg/ Century Egg • Smoke Salted Egg • Egg Cracker 	Lecture Discussion	Assignment (Searching Processed Egg Products on the market)	5
X	Able to explain the non-traditional egg industry correctly	Correct understanding of the non-traditional egg industry, such as mayonnaise, lecithin, and lysosome	Non-Traditional Egg Industry <ul style="list-style-type: none"> • Mayonnaise • Lecithin • Lysosome 	Lecture Discussion	Quiz	5
XI	Able to make a SWOT analysis for the establishment of an egg processing industry	Correct understanding of the SWOT analysis for the establishment of an egg processing industry	SWOT Analysis	Lecture Discussion	Structured Assignment (Journal-Based Products and make a SWOT analysis of the product)	7.5
XII	Able to make a PEST analysis for the establishment of an egg	Correct understanding of the PEST analysis for the establishment of	PEST Analysis	Lecture Discussion	Able to make a small project and PEST analysis	7.5

	processing industry	an egg processing industry				
XIII	Able to make a business plan in the Egg Processing Industry	Correct understanding of the business plan in the Egg Processing Industry	Business Plan	Small Project and Discussion	Make a Business Plan Document	15
XIV	Able to make a business plan in the Egg Processing Industry	Correct understanding of the business plan in the Egg Processing Industry	Business Plan	Seminar	Able to represent and counter the possibilities that occur in the business plan	7.5
XV	Able to make a business plan in the Egg Processing Industry	Correct understanding of the business plan in the Egg Processing Industry	Business Plan	Seminar	Able to represent and counter the possibilities that occur in the business plan	7.5
XVI	FINAL EXAM					

ASSESSMENT RUBRIC

	UNIVERSITY OF BRAWIJAYA FACULTY OF ANIMAL SCIENCE DEPARTMENT OF ANIMAL SCIENCE UNDERGRADUATE STUDY PROGRAM OF ANIMAL SCIENCE		
Course	Egg Processing Industry		
Score Level	PLO and CLO	Conversion	PLO Score
PLO 8: Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility PLO 11: Able to show performance, both independently and in teamwork (inter- and multi-disciplinary), identify and analyze to solve problems in quality and measurable way CLO 1: Able to understand and analyze the internal factors (Human Resources, Raw Material Capital, Infrastructure and Facilities and Culture of the Egg Processing Industry) and the external factors (Socio-Economic, Political, Environmental and Technological factors)			
Very Good (4)	Able to understand and analyze the internal factors (Human Resources, Raw Material Capital, Infrastructure and Facilities and Culture of the Egg Processing Industry) and the external factors (Socio-Economic, Political, Environmental and Technological factors) very well <ol style="list-style-type: none"> 1. Identify the internal factors in IPT 2. Identify the external factors in IPT 3. Analyze the internal factors 4. Analyze the external factors 	>80-100	0,50
Good (3)	Able to understand and analyze the internal factors (Human Resources, Raw Material Capital, Infrastructure and Facilities and Culture of the Egg Processing Industry) and the external factors (Socio-Economic, Political, Environmental and Technological factors) well <ol style="list-style-type: none"> 1. Identify the internal factors in IPT 2. Identify the external factors in IPT 3. Analyze the internal factors 	>70-80	0,375
Moderate (2)	Able to understand and analyze the internal factors (Human Resources, Raw Material Capital, Infrastructure and Facilities and Culture of the Egg Processing Industry) and the external factors (Socio-Economic, Political, Environmental and Technological factors) limitedly <ol style="list-style-type: none"> 1. Identify the internal factors in IPT 2. Identify the external factors in IPT 	>60-70	0,25
Poor (1)	Able to understand and analyze the internal factors (Human Resources, Raw Material Capital, Infrastructure and Facilities and Culture of the Egg Processing Industry) and the external factors (Socio-Economic, Political, Environmental and Technological factors) very limitedly <ol style="list-style-type: none"> 1. Identify the internal factors in IPT 	≤60	0,125
Score Level	PLO and CLO	Conversion	PLO Score

PLO 11: Able to show performance, both independently and in teamwork (inter- and multi-disciplinary), identify and analyze to solve problems in quality and measurable way		CLO 2: Able to connect SWOT and PEST analyses related to the egg processing industry	
Very Good (4)	Able to apply science and technology in the egg processing industry very well to carry out SWOT and PEST analyses. 1. Identify SWOT 2. Identify PEST 3. Make a SWOT 4. Make a PEST	>80-100	1
Good (3)	Able to apply science and technology in the egg processing industry well to carry out SWOT and PEST analyses. 1. Identify SWOT 2. Identify PEST 3. Make a SWOT	>70-80	0.75
Moderate (2)	Able to apply science and technology in the egg processing industry limitedly to carry out SWOT and PEST analyses. 1. Identify SWOT 2. Identify PEST	>60-70	0.50
Poor (1)	Able to apply science and technology in the egg processing industry very limitedly to carry out SWOT and PEST analyses. 1. Identify SWOT	≤60	0.25
Score Level	PLO and CLO	Conversion	PLO Score
PLO 8: Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility		PLO 11: Able to show performance, both independently and in teamwork (inter- and multi-disciplinary), identify and analyze to solve problems in quality and measurable way	
CLO 3: Able to evaluate SWOT and PEST analyses affecting the egg processing industry			
Very Good (4)	Able to evaluate SWOT and PEST analyses affecting the egg processing industry very well 1. Analyze SWOT 2. Analyze PEST 3. Evaluate SWOT 4. Evaluate PEST	>80-100	1
Good (3)	Able to evaluate SWOT and PEST analyses affecting the egg processing industry well 1. Analyze SWOT 2. Analyze PEST 3. Evaluate SWOT	>70-80	0.75
Moderate (2)	Able to evaluate SWOT and PEST analyses affecting the egg processing industry limitedly 1. Analyze SWOT 2. Analyze PEST	>60-70	0.50
Poor (1)	Able to evaluate SWOT and PEST analyses affecting the egg processing industry very limitedly 1. Analyze SWOT	≤60	0.25

	2. Analyze PEST		
Score Level	PLO and CLO	Conversion	PLO Score
PLO 12: Able to design and conduct experiments, analyze and interpret data to make correct decisions in solving problems in the field of animal science, meet ethics, and have environmental insight CLO 4: Able to design an egg processing industry in the form of a business plan			
Very Good (4)	Showing the understanding of the requirements of the egg processing industry, including the industrial establishment, regulations, and design in making the business plan very well 1. Awareness of the regulations regarding the establishment of an egg processing industry 2. Requirements for the establishment of an egg processing industry, both administratively and technically 3. The economic and marketing calculations 4. Designing an egg processing industry in the form of a business plan	>80-100	1
Good (3)	Showing the understanding of the requirements of the egg processing industry, including the industrial establishment, regulations, and design well 1. Awareness of the regulations regarding the establishment of an egg processing industry 2. Requirements for the establishment of an egg processing industry, both administratively and technically 3. The economic and marketing calculations	>70-80	0.75
Moderate (2)	Showing the understanding of the requirements of the egg processing industry, including the industrial establishment, regulations, and design limitedly 1. Awareness of the regulations regarding the establishment of an egg processing industry 2. Requirements for the establishment of an egg processing industry, both administratively and technically	>60-70	0.50
Poor (1)	Showing the understanding of the requirements of the egg processing industry, including the industrial establishment, regulations, and design very limitedly 1. Awareness of the regulations regarding the establishment of an egg processing industry	≤60	0.25

Formula to Calculate PLO Score: $\frac{\text{Level Skor}}{\sum \text{level skor}} \times \frac{\sum \text{CLO Level Skor}}{\sum \text{PLO Level Skor}} \times \frac{\sum \text{CLO}}{\sum \text{PLO}}$

CLO Score Calculation


Assessed components	Component Weights	CLO Weight on the Score				Total
		CLO 1	CLO 2	CLO 3	CLO 4	
Midterm Exam	25	50	50			100

Final Exam	25			40	60	100
Practicum	25	10	20	30	40	100
Assignment	15			40	60	100
Quiz	5	40	40	20		100
Activeness	5		25	25	50	100
CLO WEIGHT						

PLO Score Calculation

CLO	CLO Score	CLO Weight	PLO		
			PLO 8	PLO 11	PLO 12
CLO 1			50	50	
CLO 2				100	
CLO 3			50	50	
CLO 4					100

Lecture Portfolio

		UNIVERSITY OF BRAWIJAYA FACULTY OF ANIMAL SCIENCE STUDY PROGRAM OF ANIMAL SCIENCE		
Course: Egg Processing Industry		Code: PET4005	RMK:	Semester: 6/7
Lecturers	<ol style="list-style-type: none">1. Dr.Ir. Imam Thohari, MP., IPM., ASEAN Eng.2. Dr.Ir. Manik Eirry Sawitri, MS3. Dr. Herly Evanuarini, S.Pt., MP4. Dr. Agus Susilo, S.Pt., MP., IPM., ASEAN Eng.5. Ir. Aris Sri Widati, MS6. Eny Sri Widyastuti, Ir. MP7. Ria Dewi Andriani, S.Pt, MSc. MP8. Mulia Winirsya Apriliyani, S.Pt., MP9. Dr. Premy Puspitawati Rahayu, S.Pt., MP			
Introduction (Describe the explanation needed about this course, the experiences that have been encountered) The Egg Processing Industry Course provides knowledge about egg technology; bioactive compound in eggs; SWOT and PEST analyses, and designing and making an Egg Processing Industry				
1	Objectives (Describe general and specific course objectives) After taking this course, the students are: <ol style="list-style-type: none">1. Able to identify the internal and external factors related to the egg processing industry2. Able to connect SWOT and PEST analyses related to the egg processing industry3. Able to evaluate SWOT and PEST analyses affecting the egg processing industry4. Able to design an egg processing industry in the form of a business plan			
2	Learning Strategies (Describe the strategy used to achieve the course objective - CLO) The learning strategies carried out in lectures include providing lectures, discussions, structured assignments, quizzes, and group presentations			
3	Lecture Management (Describe the lecture management: lectures, tutorials, practicum, assignments, major assignments, etc.) <ol style="list-style-type: none">1) Lecture: 100 minutes/meeting (14 meetings)2) Practicum of 150 minutes/meeting (14 meetings)3) Structured assignments/quizzes/group presentation4) Attendance: 80% of total attendance Management: Lecturer Duties: as a lecturer, assistant, facilitator, supervisor in all activities in the Egg Processing Industry course			

	Student Duties: searching for references from the topics presented and assigned to the Egg Processing Industry course
4	Lecture Contents (explain its suitability with the applicable curriculum) The topics in this course are: <ol style="list-style-type: none"> 1. Whole Egg Industry 2. Liquid Egg Industry 3. Powdered Egg/Egg Flour Industry 4. Traditional Egg Industry 5. Non-Traditional Industry 6. SWOT Analysis 7. PEST Analysis 8. Business Plan
5	Lecture Participants (provide an overview of the lecture participants) The course participants are 6 th or 7 th semester students who have passed the THT and Quality Control courses
6	Attendance Percentage (% lecturer attendance; % student attendance) % lecturer attendance: 100% % student attendance: 80%
7	Evaluation System (explain the homework, quizzes, group assignments, practicum, etc.) <ol style="list-style-type: none"> 1) Midterm Exam 25% 2) Final Exam 25% 3) Practicum 25% 4) Assignment 15% 5) Quiz 5% 6) Activeness 5%
8	Class Observation (explain important and interesting things that were encountered during the lecture) <ol style="list-style-type: none"> 1. The class meeting will discuss the assignments that have been given to each group based on predetermined topics. Active students: proven by their enthusiasm in delivering the results of assignments and active discussions with other members in discussing the topic, and the students seem to have learned and understood the topic presented. The students who get the reward will be announced in the class to motivate other friends to be more diligent and serious in doing their work. 2. The lecturers reflect on the material presented, so that they know the students' response to what has been presented, and can find out whether the students understand what has been discussed or not. The students' response is very important to determine whether the lecturers' strategy in teaching is proper or not.

	<p>3. The things that have been achieved by the students in the class need to be considered, whether the learning strategies carried out have been able to achieve CLO in the Egg Processing Industry course or not.</p> <p>The observations that need to be made include:</p> <ol style="list-style-type: none">1. Prerequisite2. GPA3. Google form --- pretest on the students' interest (not the material) so that the lecturers know what to do with the conditions of the students in their class																		
9	<p>Learning Outcomes (explain the achievement of the objectives that have been set, also include the learning achievements that can be explained)</p> <p>The expected learning outcomes include:</p> <ol style="list-style-type: none">1. LO (8): Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility2. LO (11): Able to show performance, both independently and in teamwork (inter- and multi-disciplinary), identify and analyze to solve problems in quality and measurable way3. LO (12): Able to design and conduct experiments, analyze and interpret data to make correct decisions in solving problems in the field of animal science, meet ethics, and have environmental insight																		
10	<p>Obstacles (provide an overview of the main obstacles in the learning process)</p>																		
11	<p>Score Distribution (provide the score distribution following the learning achievements of this course)</p> <table><tr><td>1)</td><td>Midterm Exam</td><td>25%</td></tr><tr><td>2)</td><td>Final Exam</td><td>25%</td></tr><tr><td>3)</td><td>Practicum</td><td>25%</td></tr><tr><td>4)</td><td>Assignment</td><td>15%</td></tr><tr><td>5)</td><td>Quiz</td><td>5%</td></tr><tr><td>6)</td><td>Activeness</td><td>5%</td></tr></table>	1)	Midterm Exam	25%	2)	Final Exam	25%	3)	Practicum	25%	4)	Assignment	15%	5)	Quiz	5%	6)	Activeness	5%
1)	Midterm Exam	25%																	
2)	Final Exam	25%																	
3)	Practicum	25%																	
4)	Assignment	15%																	
5)	Quiz	5%																	
6)	Activeness	5%																	
12	<p>Conclusion</p> <p>The success of facilitating the students to achieve several LOs in the Egg Processing Industry course is as follows:</p> <ol style="list-style-type: none">1. LO (8): Able to cooperate effectively and carry out a self-evaluation process towards the workgroup under their responsibility2. LO (11): Able to show performance, both independently and in teamwork (inter- and multi-disciplinary), identify and analyze to solve problems in quality and measurable way3. LO (12): Able to design and conduct experiments, analyze and interpret data to make correct decisions in solving problems in the field of animal science, meet ethics, and have environmental insight																		
13	<p>Improvement Recommendations</p> <ol style="list-style-type: none">1. The students who passed each LO 8, LO 11 and LO 12 were almost 80% of the total students in the class.																		

	<p>2. The highest LO was obtained at LO 12 which referred to the development of a comprehensive insight and mindset in accordance with the science and the field of the animal industry. Then, it was followed by LO 11 and LO 12 which had the same score.</p> <p>LO that was difficult to achieve was due to the learning strategy that was not in accordance with the character of the students in the class, so it is necessary to make improvements to the learning process so that it can improve the achievement of the Egg Processing Industry course in this class.</p>
	<p>Appendices:</p> <p>1. Assignment</p> <p>2. Quiz</p> <p>3. The results of the learning process</p>