

Course Description Form

1. : Course name	
Animal production economics	
2. :Code Course code	
ECAP326	
3. : Chapter/Year	
Fall semester 2025---2026	
4. : Date this description was prepared	
2025/9/1	
5. :Available attendance forms	
Integrated + In-person	
6. :Number of study hours (total) / Number of units (total)	
hour / 3 units 30	
7. Name of the course administrator (if more than one name is mentioned)	
:Email A Name: Asst. Prof. Dr. Imad Abdulaziz Ahmed Al imadabdulaziz79@uomosul.edu.iq	
8. objectives Course	
:theoretical Enabling the student to understand and comprehend what is related to the economics of - .animal production Enabling the student to know the natural and economic resources and factors of - .production Enabling the student to know the production function, the formulas of this function, the - nature and cases of the production function, the economic derivatives of the production .function, and solving an exercise Enabling the student to know the types of costs, the characteristics of these costs, the - .average costs, and solve an exercise .Enabling the student to understand the properties and features of isoquant curves - .The student can learn how to determine the optimal production volume The student can understand the importance of substitution and expansion in the use of .economic resources The student can learn about the criteria for evaluating animal production projects .	
9. Teaching and learning strategies	
Interactive lecture, brainstorming, factors affecting the production process	Strategy

Interactive lecture, brainstorming, necessary and sufficient condition for maximizing value	
Interactive lecture, brainstorming, demonstrations of models of the nature and cases of the production function	
Interactive lecture, brainstorming, presentations, exercises for economic derivatives of production	
Interactive lecture, brainstorming, presentations, cost average exercises	
Interactive lecture, brainstorming, dialogue and discussion	
Interactive lecture, brainstorming, dialogue and discussion, assignment and report	
Interactive lecture, brainstorming, dialogue and discussion, assignment and report	
Interactive lecture, brainstorming, dialogue and discussion, assignment and report	
,Interactive lecture, brainstorming, dialogue and discussion	
He is assigned to prepare a homework to solve an exercise within the process .of substitution between resources, and then discuss it with the students	
Interactive lecture, brainstorming, dialogue and discussion, assignment and report	
Interactive lecture, brainstorming, dialogue and discussion	
He is responsible for preparing a report on the scientific visit and preparing it .for discussion with the students	
He is assigned to prepare a homework to solve an exercise within these .criteria and prepare it for discussion with the students	

10 Course structure .

Evaluation method	Learning method (theoretical)	Name of unit or topic	Required learning outcomes	watches	week
discussion s	Interactive lecture, brainstorming, dialogue and discussion	Basic principles of economics Animal production	The student A1 learns about the economics of production and the nature of resources and factors involved in the production .process	2 theoretical	First week
Short Exam 1	Interactive lecture, brainstorming, dialogue and discussion	Higher derivatives	The student B1 learns about higher derivatives, maxima and minima as an input to production and .costs	2 theoretical	Second week
a report	Interactive lecture, brainstorming, dialogue and discussion	Production function and first principles To choose	It shows the B2 student the concept of the production function, its assumptions, and the nature of the production .function cases	2 theoretical	The third week
Short exam 2	Interactive lecture, brainstorming, dialogue and discussion	Economic derivatives of the production function	It explains to B3C1 the student the three stages of production, along with solving exercises on applying the laws of economic derivatives to the production .function	2 theoretical	Week 4
discussion s	Interactive lecture, brainstorming, dialogue and discussion	The economic concept of production costs	Explains to B4C2 the student the concept of costs and their types and solves an exercise on the application of economic derivatives to .costs	2 theoretical	Week 5
exam 3	Interactive	Economical size	Shows the B5	2	Week 6

	lecture, brainstorming, dialogue and discussion		student the short-run and long-run cost curves and the relationship between them using graphical forms	theoretical	
First semester exams	Interactive lecture, brainstorming, dialogue and discussion	equal cost lines	Explains to the B6 student the tabular, Indian and algebraic methods for determining the least cost combination	2 theoretical	Week 7
Duty	Interactive lecture, brainstorming, dialogue and discussion	Production function for suppliers	Students learn A2 about indifference curves, their properties and shapes	2 theoretical	Week 8
discussions	Interactive lecture, brainstorming, dialogue and discussion	Determine the optimal size of a resource Production of a production function with a resource One variable	It is clear For B7 students to maximize profits while determining the optimal size of resources and the optimal size of production	2 theoretical	Week 9
Duty	Interactive lecture, brainstorming, dialogue and discussion	Allocation of production resources and choice between products	The production A3 possibilities curve explains to students the type of relationship between competitive, complementary, independent, and related goods	2 theoretical	Week 10
Short Exam 4	Interactive lecture, brainstorming, dialogue and discussion	Substitutive relationships between resources	Shows students C3 how to substitute between resources to achieve a given level of production	2 theoretical	Week 11
discussions	Interactive lecture, brainstorming, dialogue and discussion	Evaluation of animal production projects	Students learn A4 about the evaluation stages and how some projects are subject to error	2 theoretical	Twelfth week

Short Exam 5	Interactive lecture, brainstorming, dialogue and discussion	Price relationships and selection indicators	Shows students C4 the obstacles to achieving maximum revenue and the relationship between productivity and .maximum revenue	2 theoretical	thirteenth week
Second semester exams	Interactive lecture, brainstorming, dialogue and discussion	Scientific visit	He rules The E1 student made a scientific visit to some calf and lamb fattening fields in Nineveh .Governorate	2 theoretical	Fourteenth week
Short Exam 5	Interactive lecture, brainstorming, dialogue and discussion	Indicators and criteria for evaluating livestock production projects	It shows the C5 values of the criteria: Net Present Value - Cost Benefit Ratio - Net Present Value - Cost Benefit to determine the economic feasibility of establishing the .project	2 theoretical	Week 15

Course Evaluation -11				
Relative weight %	degree	Calendar appointment - week	Evaluation methods	T
5	5	My theory week 1-15	Final theoretical report	1
10	10	Week 3	Quiz Short Test 1	2
15	15	Week 9	Midterm exam theoretical	3
10	10	Week 12	Quiz Short Test 2	4
60	60	Theoretical exam week	Final theoretical exam	5
100	100		the total	
Learning and teaching resources -12				
Animal Production Economics: Dr. Salem Tawfiq Al-Najfi				
Agricultural Production Economics: King Saud University - College of Food and Agricultural Sciences				



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رئيس قسم الإنتاج الحيواني




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Course description template

: Course Name .8					
Animal environment and behavior					
:Course code .1					
ANEB327					
:Chapter/Year .2					
My semester (Autumn semester) 2025					
: date numbers this Description .3					
2025/9/1					
: Available attendance formats .3					
In-person + online					
:Number of study hours (total) / Number of units (total) .4					
Theory * 15 weeks 30 2 hours unit 2					
Name of course coordinator .5					
nmb@uomosul.edu.iq M. Nadia Mohamed Bashir					
objectives : To enable the student to describe and define the environment and its impact on the lives and behavior of animals, how to deal with and overcome influential conditions, and .to understand the specific characteristics of each animal To enable the student to understand and comprehend the animal's environment and behavior within the critical conditions of the environment and how to control and deal with it in order to .control and preserve the animal and its productivity and provide suitable conditions for its life					
Teaching and learning strategies .9					
Auditory methods (instructor's explanation of the topic) Writing style on the board .Direct dialogue between instructor and student, with student evaluation of class participation Computer-aided presentation style					
Course Structure .10					
Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week

Exams Reports Discussions quizzes	Auditory methods instructor's) explanation of (the topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of class .participation Computer-aided presentation style	ology Introduction to	1 The student learns about the environment and –its living and non-living components the biosphere, and .ecosystems mutual relations in biosystem	2 Theory	the first
Short ,quizzes homework assign ,ments discussions	Auditory ,methods visual Writing style on the blackboard a method Direct dialogue	Environment and animal habitat	1 It identifies the methods of energy transfer within the .ecosystem energy transfer Within the food chain and pyramid cycling materials in nature	2 Theory	second
Short ,quizzes homework assign ,ments discussions	Audio-visual methods Writing style on the blackboard a method Direct dialogue	Environmental zones	2: It is familiar with ,the physical chemical, and biological factors that control animal .dispersal	2 Theory	the third

Short ,quizzes homew ork assign ,ments discuss .ions	auditory methods visual writing style on the blackboard a method Direct dialogue	The impact of environmental factors	c1 It illustrates the ,effect of light, heat and humidity on .animal life	2 Theory	Fourth
Short ,quizzes homew ork assign ,ments discuss .ions	Audio-visual methods writing style on the blackboard a method Direct dialogue	Animal control devices	a 1 t identifies control devices and how .they work	2 Theory	Fifth
Short ,quizzes homew ork assign ,ments discuss .ions	Auditory ,methods writing style on the blackboard a method Direct dialogue	The mechanism of adaptation in animals	c2 It explains how the animal adapts and adjusts to its .environment	theory 2	Sixth
Short ,quizzes homew ork	Auditory ,methods writing style on the blackboard a method Direct dialogue	Thermoregulation	c1 It explains the factors affecting energy and heat loss from an .animal's body	2 Theory	Seventh

assign ,ments discuss .ions					
Short ,quizzes homew ork assign ,ments discuss .ions	auditory methods visual Writing style on the blackboard a method Direct dialogue	Animal adaptation to environmental conditions	;b 1 It shows and explains the mechanism by which sheep and goats adapt to the .desert climate	2 Theory	Eighth
Short ,quizzes homew ork assign ,ments discuss .ions	Auditory ,methods Writing style on the blackboard a method Direct dialogue	Camels and their adaptation to the desert environment	ca 1 Recognizes appearance The external appearance of camels d their capabilities in culating water within his body	2 Theory	Ninth
Short ,quizzes homew ork assign ,ments discuss .ions	auditory methods visual Writing style on the blackboard a method Direct dialogue	The effect of climate on animals	;b 1 It shows the impact of climate fluctuations on animals and ways .to prevent them	2 Theory	tenth

Short quizzes homework assignments discussions	Auditory methods Writing style on the blackboard a method Direct dialogue	and Climate diseases	c 1 He remembers The impact of climatic factors on animal life and the spread of diseases Studying the climate and weather of the environment, climatic factors in the animal environment temperature Humidity	2 Theory	atheistic ten
Short quizzes homework assignments discussions	Auditory methods Writing style on the blackboard a method Direct dialogue	weather conditions	a 1 recognizes measuring devices Pressure and wind movement and its direction	2 Theory	second ten
Discussions and dialogue	Auditory methods Writing style on the blackboard a method Direct dialogue	light and heat	b 1 the effect is explained light, sunstroke, heat cramps, fever, the effect of heat on chemical composition For qualities blood	2 Theory	the third ten

			pollution	1a He knows the components of barn air and their permissible proportions	2 Theory	Fourth ten
He writes a report about what he saw on the trip			A scientific trip to one of the scientific centers	1c He writes a report about the scientific trip		Fifth ten
	Relative % weight	Degree	Calendar date (week)	Assessment methods		T
	%13	Theory 7 + 6 practical	My theory is for one week (15) My work week (15)	Final theoretical report + final report for the subject The process		1
	%6	Theory 4 + .2 Practical	Week (3)	(1)Quiz		2
	%15	10 + Theory 5 practical	Week (9)	Midterm exam (theoretical and (practical		3
	%6	Theory 4 + .2 Practical	Week (12)	(2)Quiz		4
	%20	20	Practical exam week	Final practical test		5
	%40	40	Theory exam week	Final theory test		6
	%100	100		the total		

The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, and written exams, reports, etc	
Learning and teaching resources .12	
A- Relying on the prescribed curricula issued by the Ministry b) Relying on the curricula prepared by the subject teacher	Required textbooks (methodology, if applicable)
Book on the Environment of Agricultural Animals by Dr. Akram Light- footed tails	Main references (sources)
Scientific reports from scientific websites (the internet)	Recommended supporting books and references (scientific journals, reports...)
Scientific websites specializing in ecology and zoology	references , websites



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Course description template

1. Course Name	
Design and analysis of agricultural experiments	
2. Course code	
DAAE302	
3. Year / Semester	
6 202 – 5 202 Chapter (Autumn) First	
4. Date this description was prepared	
2025/9/1	
5. Available forms of attendance	
online + In-person	
6. (total) Number of units / (total) Number of study hours	
Number of units: 3/15 weeks * (theory + 3 practical 2) hours 75	
7. if there is more than one, please) Name of the course coordinator (mention it	
Abdullah Fathi Abdulmajid dr.abdullah@uomosul.edu.iq .Dr .Prof : Name nahed.alhamdany@uomosul.edu.iq Nahed Sharif Omar .M	
8. Course objectives	
: Practical Enabling the student to learn about data collection methods categorizing them and choosing the appropriate design for them, if it was a characteristic One, two, or more attributes are analyzed to determine their significance . Results or lack thereof	Course objectives : My theory – Enabling the student to understand and comprehend what relates to experimental design - Enabling the student to learn the most important methods in designing experiments – Enabling the student to understand the nature of data, its components, and features - The most important and appropriate designs for analyzing this data – Enabling the student to become familiar with methods of data collection and classification

	For the purpose of designing and analyzing the experiment Enabling the student to identify the most important designs when the data was suitable for analysis – The data is placed in a simple table or a complex table The student can judge the significance of the results based on the hypothesis testing
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9. Teaching and learning strategies

: Practical - Adapting to teamwork reveals leadership skills - Adapting tasks and reports to identify the mental skills	: My theory lecture Interactive Brainstorming and discussion Dialogue to tasks and reports Adapting Conducting a scientific visit - to specialized research centers Designing and analyzing experiments and computing centers	strategy
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10. Course structure

Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week
, Short quizzes homework , assignments discussions	Auditory method Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	Introduction to Experimental Design :Practical Statistical measures	It includes an introduction to Experimental design (research definition Applying the scientific method and analysis Contrast :Practical Estimates statistical measures Centering or mediating behavior (solving examples (On that basis	Look at 1 Y practical	1

, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on the board Dialogue style Live : Practical Assigning tasks and report	:Theory Basic rules in Experimental design :Practical Statistical measures	: Theoretical 1 bIt covers the most important rules Fundamentals of experimental design Identifying the most (important rules requirements of the experiment : Practical 1 aEstimates the measurements Dispersion or) Statis (Variation (Solve examples of this)	Theory 2 practical	2
, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	Theory Single-factor experiment : Practical Statistical measures	:Theory 1 c masters the experime with random) worker C (design complete definition of design and its features Its flaws And its use in t case of Record view One and estimate Effects by following th method squares The minor : Practical a 1 Estimates statistic measures Dispersion or difference i (solving examples (On that basis	Theory 2 practical	3

Midterm exam with final 1 exam	: Theoretical auditory method Writing style on blackboard Dialogue style Live Assigning tasks and report	: Theoretical Hypothesis testing : Practical Complete random design	: Theoretical 1 c. hypothesis Mas .testing least significant , Der (Duncan , difference : Practical 1 b identifies examples of Complete random design By applying examples of t	Theory 2 practical	4
, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical Design of random sectors The complete : Practical Estimating the components of variance	: Theory b1 Proficient in section design Complete randomness design definition Its advantages, disadvantages and basic principles of application Applying an example of t : Practical a 1 masters the estimation variance components For completely random design by selection The most important rules the analysis table Contrast	Theory 2 practical	5
, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical relative efficiency To design complete random sectors Compared to a completely random design : Practical Estimating the components of variance	: Theory c1 shows relative efficiency To design completely random sectors Compared to a completely random design By clarifying the law relative efficiency and estimating lost value : Practical a 1 masters the estimation variance components	Theory 2 practical	6

			For completely random design using an application Questions on complete random design indirect		
, Short quizzes homework , assignments discussions	:Theory auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical Latin square design : Practical Estimating the components of variance	: Theory 2 bHe mastered the square design Latin By defining the design and its features Its flaws The basis of application and the application of an example On that	Theory 7 practical	7
, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical relative efficiency To design the Latin square compared with remaining designs : Practical Design of random sector The complete	: Practical 2 c. Proficient in estimating the components of variance For completely random design : Theoretical 2 cIt illustrates relative efficiency To design the Latin square compared with The remaining designs are subject to the application of the law Relative efficiency and its estimation :Practical 2 b identifies examples of Random sector design The complete picture,	Theory 2 practical	8

			applying examples of that		
Midterm exam final with 2 exam	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical Factorial experiments : Practical relative efficiency Designing random sect Compared to a completely random design	: Theoretical 2 b. Masters factori experiments Definition and application factorial experiment a Using fully random design defining the experiments, their advantages and disadvantages factorial experiments : Practical Determines relative efficiency Designing random sectors Compared to a complete random design By applying an example a calculating Lost value	Theory 2 practical	9

A short quiz with assigned duties and tasks	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical Factorial experiences Three-factor : Practical Latin square design	: Theoretical 2 c) Concludes factor experiments Three-factor equivalent model The mathematician and t analysis of variance table : Practical 1 bGive examples of Designing a Latin square using an example On the design	Theory 2 practical	10
, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical Factorial experiments i design Complete random sect : Practical Examples of LSD	:Theory 1 dHe infers factoria experiments In the design of random sectors The complete Equation the mathematical model and the analysis of variance table : Practical 2 bIt provides examples of Direct Latin square design	Theory 2 practical	11
, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical General questions about CRD (Comprehensive review : Practical Examples of LSD	: Theoretical c 2It sets questions on .design Complete random, direct and indirect : Practical 2 bIt provides examples of Indirect Latin square design	Theory 2 practical	12

, Short quizzes homework , assignments discussions	: Theoretical Auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical General questions on RCBD (Comprehensive review : Practical Examples of LSD	: Theoretical c 2It sets questions on design Direct full random sector indirect : Practical 2 bIt provides examples of design Latin square and estimation Design effects	Theory 2 practical	13
Midterm Exam With a final 3 test	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical Questions about the Latin square Comprehensive) 1 (Review : Practical The missing value and how to estimate it in LSD Design	: Theoretical c 2Questions are placed in the box Direct and indirect Latin Practical: 2 c Explaining the value Lost and relative efficiency of design The Latin square and give questions about it	Theory 2 practical	14
, Short quizzes homework , assignments discussions	: Theoretical auditory method Writing style on blackboard Dialogue style Live : Practical Assigning tasks and report	: Theoretical Questions about work experiments (Comprehensive review : Practical Factorial experiments	:Theory 2 cApplying questions on Factorial experiments using design Complete Random : Practical 2 c provides an example experiments Workers	Theory 2 practical	15

11. Course evaluation

is distributed according to the tasks assigned to the student, such as daily preparation, daily, 100
.etc , oral, monthly, and written exams, reports

% Relative weight	Degree	) Calendar date (week	Assessment methods	T
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%13	6 + Theory 7 Practical	My theory is for (15) one week My work week (15)	final + Final theoretical report report for the course The process	1
%6	2 + Theory 4 Practical	(3) Week	(1) Short Quiz	2
%15	5 + Theory 10 Practical	(9) Week	theoretical and) Midterm exam (practical	3
%6	2 + Theory 4 Practical	(12) Week	(2) Short Quiz	4
%20	20	Practical exam week	Final practical test	5
%40	40	Theory exam week	Final theory test	6
%100	100		the total	

12. Learning and teaching resources

Book on Design and Analysis of Experiments	(methodology, if applicable) Required textbooks
	(sources) Main references
Lectures and books published by Iraqi universities	Recommended supporting books and (.etc ,scientific journals, reports) references
Websites specializing in designing and analyzing experiments	Electronic references, websites



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رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
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Course Description Form

1. Course Name:	
Animal Nutrition	
2. Course Code:	
ANUT325	
3. Semester / Year:	
2025-2026	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence + Electronic	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 hours / 4 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Muthanna Ahmed Mohammed Tayeb -Email: muthanna_tayeb@uomosul.edu.iq Name: sarmad hashim taha -Email:sarmed.almaula@uomosul.edu.iq	
8. Course Objectives	
Theoretical Enabling the student to understand and comprehend what is related to animal nutrition Its relationship to animal production projects and the economic aspect Enabling the student to become familiar with the components of food and food compounds Enabling the student to know the metabolic pathways of different foods and their relationship to the productive performance of animals Enabling the student to address the nutritional needs of animals according to their production to prevent the occurrence of nutrition-related diseases	Practical Enabling the student to become familiar with the most important laboratory methods To measure food ingredients and food fraud
9. Teaching and Learning Strategies	
Strategy	- Interactive lecture -Brainstorming

- Dialogue and discussion
- Field Training
- Practical exercises
- Field project
- Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hr. theoretical 3 hr. practical	theoretical : The student learns about the relationship of nutrition science to other sciences and the composition of the animal body and its food :Practical The student applies preventive procedures for laboratory safety	theoretical : Expansion and development in nutrition science :Practical General instructions and instructions on the use of the laboratory and safety and security conditions	:theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam Assignment of duty discussions
2	2 hr. theoretical 3 hr. practical	theoretical The student links the properties of water to the effect of thirst on animals and the need for water and excretion from the body For my work The student remembers previous information about preparing chemical solutions in chemistry lessons	theoretical The role of water and its needs for the body :Practical Preparing standard solutions	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
3	2 hr. theoretical 3 hr. practical	:Theoretical A The student remembers the forms of energy and understands the cycle of energy production in the body	Theoretical : Energy, its transformations and enzymes Practical take samples	:Theoretical Methods audio style Writing on Blackboard H style Dialogue	short exam- Assignment of - duty discussions

		Practical B The student implements, according to the correct scientific method, the method of taking feed samples for analysis		Direct :practical Assigning tasks And report	
4	2 hr. theoretical 3 hr. practical	Theoretical A The student understands the differences in the digestive system between animals and the effect of nutritional level on digestion Practical C The student discovers modern devices for analyzing food and an overview of how they work	Theoretical Digestive processes in agricultural animals Practical Types of tests and modern and classic devices for food analysis	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
5	2 hr. theoretical 3 hr. practical	Theoretical A The student lists the types of sugars found in the composition of carbohydrates Practical B The student practically carries out the estimation of moisture in feed	Theoretical Carbohydrates Practical Methods for measuring moisture in different feed, calculating matter	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
6	2 hr. theoretical 3 hr. practical	Theoretical A The student identifies the most important products of carbohydrate fermentation in agricultural animals and explains the reason for the difference between them Practical	Theoretical Carbohydrate metabolism Practical Steps to measure ash and detect adulteration in feed	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks	short exam- Assignment of - duty discussions

		B The student applies the correct steps to find the ash content of feed		And report	
7	2 hr. theoretical 3 hr. practical	Theoretical C The student links the types of fats in food and their relationship to fats deposited in the body Practical B The student applies the correct procedures to find the feed content of ether (fat) extract	Theoretical Fats Practical Steps to measure fat in feed	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
8	2 hr. theoretical 3 hr. practical	Theoretical A The student understands the mechanism of difference between animals in digesting and absorbing fats and recognizes the resulting nutritional diseases associated with them Practical B The student applies the procedures To estimate nitrogen in feed	Theoretical Fat digestion and metabolism Practical Steps for determining nitrogen in feed	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
9	2 hr. theoretical 3 hr. practical	Theoretical A The student learns about the types of proteins, their properties, and the forms of nitrogen excreted from the body Practical B The student implements the procedures and steps for fiber analysis	Theoretical Proteins Practical Types of fibers and methods of estimating them	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions

10	2 hr. theoretical 3 hr. practical	Theoretical C The student distinguishes between the products of digestion among animal species and links them to metabolic changes and production Practical B The student calculates, using special equations, the energy values of feed	Theoretical Metabolism of proteins Practical Methods of measuring and calculating energy in feed	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
11	2 hr. theoretical 3 hr. practical	Theoretical C The student identifies the most important symptoms of deficiency and the effects of the major elements and their relationship to each other Practical A The student calculates using special equations, the values of the nitrogen-free extract	Theoretical Major inorganic elements Practical Methods for measuring nitrogen- and starch-free extract	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
12	2 hr. theoretical 3 hr. practical	Theoretical C The student identifies the most important symptoms of deficiency and the effects of microelements Practical B The student is proficient in producing good quality hay	Theoretical Minor inorganic elements Practical How the threshing machine works and the quality of the threshing machine	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam- Assignment of - duty discussions
13	2 hr. theoretical 3 hr. practical	Theoretical A The student understands the	Theoretical The role of electrolytes in	:Theoretical Methods audio	short exam- Assignment of - duty

		relationship of inorganic elements and the acid-base balance of feeds and dealing with their negative effects Practical B The student proficient in producing good quality silage	barrier balance Practical How to make silage and the quality of silage	style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	discussions
14	2 hr. theoretical 3 hr. practical	Theoretical A The student remembers the most important functions and symptoms of deficiency of water-soluble vitamins Practical B The student creates mixtures reactions in the right proportions form the reactions	Theoretical Vitamins Practical Methods of mixing feeds to form diets	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam-Assignment of - duty discussions
15	2 hr. theoretical 3 hr. practical	Theoretical A The student learns about the role of antibiotics, how they work, growth regulators, and their use in animal production Practical C The student calculates the energy and protein content of the diet	Theoretical Biological value of protein Practical Ways and how to calculate energy and protein in diets	:Theoretical Methods audio style Writing on Blackboard H style Dialogue Direct :practical Assigning tasks And report	short exam-Assignment of - duty discussions

11. Course Evaluation

	Calendar methods	Calendar date (week)	Class	Relative weight %
1	Report 1	fourth week	2.5	2.5
2	Report 2	The fifth week	2.5	2.5
3	Short test (1) Quiz	the sixth week	2	2
4	Short test (2) Quiz	The fourteenth week	2	2
5	Short test (3) Quiz	The fifteenth week	1	1

6	Semester test (1)	the sixth week	7.5	7.5
7	Semester test (2)	The eleventh week is difficult	7.5	7.5
8	Final theoretical test	Final semester exams	40	40
9	Practical field project	The fifteenth week	5	5
10	Field evaluation	The third and fifth week	2	2
11	Practical short test (1) Quiz	The first week	1	1
12	Short practical test (2) Quiz	fourth week	0.5	0.5
13	Short practical test (3) Quiz	The fourteenth week	1	1
14	Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final practical test		20	20
	total	100%	100%	100%

12. Learning and Teaching Resources

Required textbooks (curricular books any)	Animal Nutrition 1967 Leonardo Minro and John Losley
Main references (sources)	Animal Nutrition 2021, 8 Edition, McDonald, et al
Recommended books and references (scientific journals reports...)	NRC, 2001 and NRC 2007
Electronic References, Websites	Reports and articles



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description

Course Name .1					
Hatching and Hatchery Management					
Course code .2					
HAHM324					
Semester/Year 2025-2026 .3					
Autumn season					
Date this description was prepared .4					
2025/9/1					
Available forms of attendance .5					
Integrated					
Number of study hours (total) / Number of units (total) .6					
units4 / hours (2 theory + 3 practical) * 15 weeks 75					
Name of course coordinator (if applicable) More than one name is .7 (mentioned)					
Email dr_faiyz@uomosul.edu.iq Name: Dr. Faez Sami Saad El- Din ahmed.alniemy@uomosul.edu.iq M.D. Ahmed Mohamed Thabet					
objectives Course .8					
Give an introduction to each topic in a simple style and from real-life • .situations elaborate on all aspects of the topic, providing real-life examples to • .illustrate its nature and benefits present questions about the topic to demonstrate students' understanding • .through their answers Conducting surprise exams and preparing practical reports •					Course objectives
Teaching and learning strategies .9					
Auditory methods (instructor's explanation of the topic) Writing style on the board Direct dialogue between instructor and student, with student .evaluation of class participation In addition to blended learning, the theoretical part of the material is .given electronically on a platform .The practical part of the course is given in person Class Room					strategy
Course structure .10					
Evaluati on Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week

Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	a-The female reproductive system b) Egg formation and the hormones that control it Quiz exam out of 10 Genetics and its branches Introduction to the structure of the animal cell - a comparison between primitive and .advanced cells Natural and artificial . hatching The student is instructed to prepare a report on a topic related to the .subject	:My theory List the factors :a1 that affect the quality of hatching eggs before and after they . are laid by the hen :practical The student a 1 knows what natural hatching is and what .artificial hatching is	2 Theory 3 practical 1	Week 1
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	A- The male .reproductive system Factors that affect .fertility The importance and functions of the male reproductive system in .birds Conditions that must be met in the specifications and location of the .hatchery Quiz exam out of 10	:theoretical The studentb1: understands the physiology of the male reproductive system and states Factors that affect fertility :practical The student mentions the conditions that must be met in the specifications and location of the .hatchery	2 Theo ry 3 practical cal	Week 2
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	hatching eggs A- Factors that affect the quality of hatching eggs before they are laid .by the hen Conditions that must be met by fertilized eggs .brought to the hatchery Scientific visit	:theoretical List the factors :a1 that affect the quality of hatching eggs before and after they .are laid by the hen :practical	2 Theory 3 practical 1	Week 3

	student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person		The student :B1 specifies the conditions that must be met in the fertilized eggs brought to the .hatchery		
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	Treating eggs before hatching ,plural) ,Transportation) .(election Vital care during the .hatching process .The exam is out of 10	:theoretical Learn about egg :a 2 treatment before hatching (The group Transportation election : practical The student :b1 knows how to perform vital care during the .hatching process	2 Theory 3 practical 1	Week 4
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform.	A- Conditions that must be met in hatching eggs b- Physicochemical properties of the whole .egg and its components Scientific visit Factors that affect my fertility and hatching . rates	:theoretical He knows the :a 1 conditions that must be met in hatching eggs, the physicochemical properties of a whole egg, and its .components : practical The student b2 identifies the factors that affect the percentage of fertility .and hatching	2 Theory 3 practical 1	Week 5

	The practical part of the course is given in .person				
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	A-Storage of hatching eggs and the factors .affecting it b) Types of hatcheries and incubators C- Designing buildings and managing the .hatchery Quiz exam out of 10 .Selecting hatching eggs The student is assigned to solve a question and discuss it orally with the other students in the . classroom	:theoretical Explains the :C1 storage of hatching eggs and the factors affecting it, types of and incubators hatcheries, building design , and hatchery .management :practical b1 : The student the most identifies to important points consider when selecting hatching a17 . eggs	2 Theory 3 practical 1	Week 6
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	. Hatching components Comparison of hatching factors between natural and artificial incubation Internal inspection of hatching eggs before they are placed in the . incubators	:theoretical Understands the :a1 :elements of hatching ,ventilation ,temperature, humidity .and turning : Practical Mentions how to :b2 perform internal inspection of hatching eggs before putting them into the . incubators	2 Theory 3 practical 1	Week 7
Exams Reports Discussions quizzes Conducting a scientific visit for	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor	. First midterm exam	:theoretical Recognizes the :b 2 internal inspection of hatching eggs before they are placed in incubators :practical	2 Theory 3 practical 1	Week 8

the .students	and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person		Proves :c 1 mathematically how to measure the Hue .unit		
Exams Reports Discussio ,ns quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	A- Preparing eggs for hatching and stages of embryonic development b) Critical periods in the .life of the fetus C- The mechanism of hatching and abnormal .positions of the embryo Measurement of the Hue unit, air gap height , and egg viability for hatching	:theoretical Knows the :b2 number of hatching eggs, stages of embryonic development, critical periods in embryonic life, hatching mechanism, and abnormal embryonic . positions :Practical Describes how to :a1 measure the height of the air gap to determine the suitability of eggs for .hatching	2 Theory 3 practica 1	Week 9
Exams Reports Discussio ,ns quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform.	Sources of hatching eggs and care for parent .flocks Preparing machines Hatching, cleaning and sterilizing hatcheries	:theoretical Identifies :a2 sources of hatching eggs and care for breeder flocks :practical The student :b 2 documents how to prepare the hatching machines, as well as how to clean and sterilize the hatcheries .	2 Theory 3 practica 1	Week 10

	The practical part of the course is given in .person				
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	Identifying and evaluating the quality of . hatched chicks Fumigating and storing hatching eggs Surprise quiz out of 10	:theoretical identifies and a1 evaluates the quality . of hatched chicks :Practical knows a1 The student how to steam and .store hatching eggs	2 Theory 3 practical 1	Week Eleven
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	. Hatching plan Quiz 10 Preparing eggs for hatching and checking them during hatching	:Theory Understands the :b1 hatching plan :Practical The student :a1 knows how to prepare eggs for hatching and examine them during .hatching	2 Theory 3 practical 1	Week Twelve
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	A- Health care for hatcheries The cost of producing chicks and the factors .affecting profits deaths during the hatching period	:theoretical Explains the :C2 health care of hatcheries :Practical The student :a 1 learns from a text	2 Theory 3 practical 1	Week 13

	and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person		about embryonic deaths during the .hatching period		
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform. The practical part of the course is given in .person	Detecting hatching problems . (Causes and treatment) newly hatched chicks And calculating the quantitative results at the end of the hatching period	:theoretical Calculates the :c2 cost of chick production and the factors affecting profits :Practical The studenta1 knows points on how to treat newly hatched . chicks	2 Theory 3 practica 1	Week Fourteen
Exams Reports Discussions quizzes	Audio and visual methods (instructor's explanation of the (topic Writing style on the board Direct dialogue between instructor and student, with student evaluation of .class participation In addition to blended learning, the theoretical part of the material is given the electronically on Classroom platform.	Second semester exam	:Theory Understands :a 1 hatching problems Causes and) (Treatment :Practical The student learns a2 a mathematical method for calculating quantitative results at the end of the .hatching period	2 Theory 3 practica 1	Week fifteen

	The practical part of the course is given in person.				
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11. Course evaluation

Relative % weight	Degree	Calendar date (week)	Assessment methods	T
%13	+Theory 7 practical 6	My theory, week 15 My work week 15-1	+ Final theoretical report practical experiment reports	1
%6	Theory + 2 4 Practical	Week (3)	(1)Quiz	2
%15	+ Theory 10 Practical 5	Week (9)	Theory and)Midterm Exam (Practical	3
%6	Theory + 2 4 Practical	Week (12)	Quiz (2) Short	4
%20	20	Practical exam week	Final practical test	5
%40	40	Theory exam week	Final theory test	6
%100	100	the total		

12. Learning and teaching resources

atching and Hatchery Management Book with Lectures	Required textbooks (methodology, if applicable)
	Main references (sources)
	Recommended supporting books and references (...scientific journals, reports)
Searching on internet sites	references , websites



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رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية



Course Description Form



1. Course Name: Medical and veterinary insects

2. Course Code: MEVI221

3. Semester / Year: 2end 2025-2026

4. Description Preparation Date: quarterly 1/9/2025

5. Available Attendance Forms: groups +elctrony

6. Number of Credit Hours (Total) / Number of Units (Total) 75H. 3 Units

7. Course administrator's name (mention all, if more than one name)

Name: dr.Renna Riadh faleh Email: renna.reyadh@uomosul.edu.iq

Name: Ekhlas Zydid Mohammd Email: ekhlas.1977@uomosul.edu.iq

8. Course Objectives

Theoretical:

- Enabling students to understand and assimilate insects

Medical and its relationship to the transmission of diseases to human beings and their poultry animals

- Enabling students to know the most important methods of preventing medical insects

- Enabling students to familiarize themselves with the most important methods of insect control

Medical

- Enabling students to discern and detect the whereabouts of medical insects

- The student can judge the types of medical insects

Practical:

- Enabling students to identify the most important laboratory methods in identifying

Distinguishing between the most important medical insects and practical experiences of diagnosis

Presence of various medical insects



Course Description Form

They are transmitted to the most important endemic diseases.

9. Teaching and Learning Strategies

Theoretical:

- Interactive lecture
- Brainstorming
- Assignment of tasks and report
- Presentations of models of the most important medical insects
- Presentation of models of the most important symptoms of diseases borne by medical insects
- Dialogue and discussion

Practical:

- Commissioning teamwork to uncover leadership skills
- Assignment of tasks and report for each experience

10. Course Structure

Wee k	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3 Practical	Theoretical a1: The concept of medical entomology and the medical significance of these insects Practical b1: xamines some medical insects	Theoretical: Medical and Veterinary Entomology: Principles and Applications. The Role of Arthropods in Disease Transmission: A Contemporary Perspective in Public Health. Disease-Transmitting Arthropods: Taxonomy, Biology, and Control. Practical: Comparative Anatomy of Mouthparts in Medical and Veterinary Arthropods. Adaptation of Mouthparts in Disease-Transmitting Arthropods. Feeding Mechanics in Medically Important Arthropods.	Theoretical: Audio Methods Writing Style On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
2	2 Theoretical	Theoretical a2: Explains the medical importance as a vector of disease	Theoretical: Historical profile of medical and veterinary arthropods, the relationship of medical insects to the overall health of humans and animals	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignmen and reporting	Short Tests, Duty Assignment, Discussions



Course Description Form

	3 Practical	and how insects are transported Practical c2: identifies which areas are more prevalent with mosquitoes	Practical:: Category of insects includes: rank of cockroach (American cockroach - eastern cockroach - Egyptian cockroach - German cockroach) types of parts of the mouth first		
3	2 Theoretical 3 Practical	Theoretical b2: The most important factors affecting disease epidemic Practical b1: Explains the insect's body parts and identify them in detail	Theoretical: insect damage to humans and animals, pathological condition that arises directly by insects, insects as a middle breadwinner or as a vector of pathogenic microbes, humans and animals, methods of spread of infection by insects Epidemiology Practical: Wings liquidation rank/bed bugs, sucking lice rank/body lice - pubic lice - buffalo lice, rodent lice rank/chicken lice-bathroom lice.	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
4	2 Theoretical 3 Practical	Theoretical a4: It governs the appropriateness of means of prevention. Practical b2: Explains the parts of the mouth and learn them in detail	Theoretical: insects as median breadwinner of parasitic worms, mammals and pathogen-carrying stores Practical: Rodent lice, two wing rank/sand fly - Hamush	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
5	2 Theoretical 3 Practical	Theoretical b2: Suggests a suitable way to control the vector of diseases and how to transport insects and sticks Practical c3: Examines insects	Theoretical: classification of the division of arthropods, division of arthropods into their groups of medical and veterinary significance Cockroach and its types Practical: Cockroach of its kinds and life cycles	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
6	2 Theoretical	Theoretical b3: Recognizes diseases transmitted by	Theoretical: fly insects, blow, types and worsening Practical: Nagaf family/Nagf stomach of horses - Naghf	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignment	Short Tests, Duty Assignment, Discussions



Course Description Form

	3 Practical	medical insects flies Practical b3: Examines models	cow skin - Naghf sheep's nose.	and reporting	
7	2 Theoretical 3 Practical	Theoretical b2: Learn about the medical importance of lice and how to get rid of them. Practical b4: Detects types of flea-borne diseases	Theoretical: The importance of studying parts of the mouth in medical and veterinary terms, anatomical studies of parts of the mouth in medical and veterinary insects for homosexuals, fleas and rushes Practical: Medical importance of Al-Harams//Flea/Burgas	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
8	2 Theoretical 3 Practical	Theoretical b1: Explain the medical importance of bed bugs and how to get rid of them Practical c1: Assessment of the medical importance of these insects	Theoretical: Mouth Parts Bed Bugs Medical Importance Practical: Medical Importance of Bed Bugs and Life Cycle	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
9	2 Theoretical 3 Practical	Theoretical b2: The medical importance of flies with a reference to the most important diseases transmitted by flies and veins Practical c1: examines different samples of flies and mosquitoes insects	Theoretical: mosquitoes. Mosquito mouth parts – Types - Medical importance, malaria disease, and the life cycle of Plasmodium malaria – Ways to control mosquitoes and limit the spread of malaria –Flies - Fly mouth parts – Horse fly mouth parts Practical: Diptera description, life cycle, and medical importance of mosquitoes, with reference to the most important diseases transmitted by mosquitoes and flies	Theoretical: Audio Methods Writing Sty On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
10	2 Theoretical	Theoretical a2: Recognizes the medical	Theoretical: mouth parts, black flies and sand flies models of medical and	Theoretical: Audio Methods Writing Sty On the board direct	Short Tests, Duty Assignment,



Course Description Form

	3 Practical	importance of black flies and rum flies Practical c1 :examines different samples of insects	veterinary insects harmful to the overall health of humans and animals Practical: black flies and sand flies mouth parts, types	dialogue style Practical: Assignment and reporting	Discussions
11	2 Theoretical 3 Practical	Theoretical b2: Recognizes lice and their types Practical b3: Discover it under Pinoculler	Theoretical: sucking lice - rodent lice - human lice of its kinds - prevention of it - treatment - control of diseases and damage caused by it Practical: sucking lice - rodent lice - human lice of its kind - feather axis lice - poultry body lice - romaine chicken lice - duck lice - cow lice - horse lice - goat lice	Theoretical: Audio Methods Writing Style On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
12	2 Theoretical 3 Practical	Theoretical b2: Masters prevention and control using pesticides for ticks Practical c1: Examines models	Theoretical: ticks and classifying the medical importance of ticks for humans and animals, with a reference to the epidemic diseases that he transmits for livestock and preventive and therapeutic methods for him practical: description of ticks, life cycle, medical importance for ticks and preventive and therapeutic methods of him	Theoretical: Audio Methods Writing Style On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
13	2 Theoretical	Theoretical d2: Conducts panel discussions on the medical importance of a dream or any other selected	Theoretical: The medical significance of a dream/a mite try man - prevention and treatment - a mite try sheep - a mite try goat Practical: The medical	Theoretical: Audio Methods Writing Style On the board direct dialogue style Practical: Assignment and	Short Tests, Duty Assignment, Discussions



Course Description Form

	3 Practical	insect Practical d2: Examines model	significance of a mite /a mite try man - prevention and treatment - a mite try sheep - a mite try goat	reporting	
14	2 Theoretical 3 Practical	Theoretical b2: Identifying health risks and their impact on human health and the effect of neglect on public health Practical d2: Examines models	Theoretical: Medical significance mite Try livestock - mite try horses - mite try dogs, Practical: mite, medical importance and life role	Theoretical: Audio Methods Writing Style On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions
15	2 Theoretical 3 Practical	Theoretical c1: Masters the Importance of Parasitic Pathogens to Man and Life Practical e1: Examines models	Theoretical: conditions to be followed when treating animals with pesticides, medical and veterinary animal resistance to pesticides Practical: The medical importance of home medical insects and civilizations and how to prevent it	Theoretical: Audio Methods Writing Style On the board direct dialogue style Practical: Assignment and reporting	Short Tests, Duty Assignment, Discussions

11. Course Evaluation

	Calendar Methods	Calendar Date (Week)	Grade	Relative Weight%
1	Theoretical Final Report + Practical Experience Reports	Theoretical week 15 practical week 1-15	7 Theoretical + 6 Practical	13%
2	Short Test (1) Quiz	Week (2-5)	4Theoretical + 2 Practical	6%
3	Midterm Exam half-test (theoretical and practical)	Week (8,14)	10 Theoretical + 5 Practical	15%
4	Short Test (2) Quiz	Week(9-12)	4Theoretical + 2 Practical	6%
5	Final Practical Test	20	20	20%
6	Final theoretical test	40	40	40%
			100	

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Medical and veterinary insects - d cos Salem Jameel Lectures prepared by the teacher
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Course Description Form



Main references (sources)	Book (Medical and Veterinary Pests Abdulalim Saad Solomon 201
Recommended books and references (scientific journals, reports...)	Veterinary Parasitology, by Dr. Ghazi 'qub Azal, Emirate, Basra University
Electronic References, Websites	https://books-library.website/t-Insect/download-4

أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني



أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description

1. Course Name:

Animal physiology

2. Course Code:

ANPH323

3. Semester / Year:

Semester 1 / 2025– 2026

4. Description Preparation Date

12/10/2025

5. Available Attendance Forms:

Lectures and electronic

6. Number of Credit Hours

(75) / Number of Units (4)

7. Course administrator's name (mention all, if more than one name)

Assist prof .Dr. Mohammad Salem Ibrahim Email: mohammad_almoteoty@uomosul.edu.iq

Assistant teacher. Jasim Younes Jasim : jasim.younis@uomosul.edu.iq

8. Course Objectives

Course Objectives

Enabling the student to understand and comprehend what is related to animal physiology

Its relationship to animal production projects and the economic aspect

Enabling the student to become familiar with the components of blood and the systems inside the body

Enabling the student to know the physiological basis of various body systems in farm animals

Introducing the student to the types of fodder materials.

Enabling the student to become familiar with the most important laboratory methods

To measure cellular and non-cellular components of blood and the functioning of body systems

Teaching and Learning Strategies

Strategy

Classroom lectures

Online Lectures

Videoconferencing

Course Structure

We ek	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	Theoretic 2 Practical 3	Theoretical: a1 The student learns about the cell, its structure, components, and the function of each, as well as cellular tissues. They learn about the types of cellular tissues and their locations in the animal body. Using PowerPoint, they learn about the hormones and enzymes of the digestive system and	Theoretical: Study of the cell and its structure / Immunity	Methods audio Writing style On the board Dialogue style	short exam Assignment of duty discussion

		their functions in the organism's body, the types of large intestine movements in animals, the mechanism of each type, and its benefits. They also learn about the lymphatic system. Practical: b1 It explains the laboratory equipment used in laboratories, the mechanisms and methods of material transfer and mechanization of its transfer across the cell membrane, blood drawing and the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, how a blood slide works, and the circulatory system, its parts and functions in animals, and blood groups.	Practical: Laboratory equipment used in laboratories	Direct practical: Assigning tasks And report	
2	Theoretic 2 Practical 3	Theoretical a1 The student learns about the cell, its structure, and its components. The function of each component, cellular tissues, and the types of cellular tissues and their locations in the animal's body. Using PowerPoint, the student learns about the hormones and enzymes of the digestive system and their functions in the body of a living organism, and about the types of large intestine movements in animals, the mechanism of each type, and their benefits. The student also learns about the lymphatic system, its structure and parts, and the nervous system and its parts. practical b1 It explains the laboratory equipment used in laboratories, the mechanisms and methods of material transfer and mechanization of its transfer across the cell membrane, blood drawing and the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, how a blood slide works, and the circulatory system, its parts, and their functions in animals.	Theoretical: Cellular tissues and their types Practical: Draw blood	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion

3	Theoretical 2 Practical 3	Theoretical: b 1 B: The student remembers the mechanisms and methods of transporting substances and mechanizing their transport across the cell membrane Practical a2 It explains the laboratory equipment used in laboratories, the mechanisms and methods of material transfer and mechanization of its transfer across the cell membrane, blood drawing and the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, how a blood slide works, and the circulatory system, its parts, and their functions in animals.	Theoretical: Mechanism and mechanization of transport across the cell membrane Practical Blood functions	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s
4	Theoretical 2 Practical 3	Theoretical a2 The student understands the functions of blood in the body and its importance, understands the digestive system and the differences in the digestive system between animals and the function of each part, understands the Rh factor and its impact on health, and understands the peripheral nervous system and its functions in animals. Practical b1 This section explains the laboratory equipment used, the mechanisms and methods of material transfer, the mechanization of material transfer across cell membranes, blood collection and the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, animals.	Theoretical The digestive system, its components and functions Practical Make a blood slide	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s
5	Theoretical 2 Practical 3	Theoretical a1 The student learns about the cell, its structure and components, the function of each, cellular tissues, and the different types of cellular tissues and their locations in the animal's body. Using PowerPoint, the student learns about the hormones and enzymes of the digestive system and their functions in the body of a living organism, and about the different types of large intestine movements in animals.	Theoretical Digestive hormones and enzymes	Methods audio Writing style On the board Dialogue style Direct practical: Assigning	hort exam Assignme nt of duty discussion s

		practical c1 It covers how to calculate hemoglobin, estimate the erythrocyte sedimentation rate (ESR), and understand blood composition and components. It also covers white blood cell count, histology, tissue sectioning, and how to perform it.	Practical Hemoglobin	tasks And report	
6	Theoretical 2 Practical 3	theoretical b1 This section explains the laboratory equipment used, the mechanisms and methods of material transfer, the mechanization of material transfer across the cell membrane, blood collection and the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, how a blood slide works, the circulatory system and its parts and functions in animals, blood groups, the urinary system and its parts and components, the components of blood serum and plasma, and the functions of the urinary system in animals. Practical Section c2 Calculates the packed cell volume in blood and estimates red blood cell count. The student learns about the types of small intestine movements in animals, the mechanism of each type, and its benefits	Theoretical Small bowel movements and the benefits of each Practical Size of stacked cells	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s A field visit to living and educational centers inside or outside the universit
7	Theoretical 2 Practical 3	Theory a1 The student learns about the cell, its structure, and its components. They learn the function of each component, cellular tissues, and the different types of cellular tissues and their locations in the animal body. Using PowerPoint, they learn about the hormones and enzymes of the digestive system and their functions in the organism. They learn about the types of large intestine movements in animals, the mechanism of each type, and its benefits. They learn about the lymphatic system, its structure and parts. Practical Section c1 It covers how to calculate hemoglobin, estimate the erythrocyte sedimentation rate (ESR), and understand blood composition and components. It also covers white blood	Theoretical Structure of the large intestine and the types and benefits of movements in the large intestine Practical Erythrocyte sedimentatio n rate	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s

		cell count, histology, tissue sectioning, and how to perform it.			
8	Theoretical 2 Practical 3	Theoretical b1: Explains laboratory equipment used in laboratories, mechanisms and methods of substance transport, mechanization of substance transport across cell membranes, blood collection and the most important methods used, types of small intestinal motility in animals, the mechanism of each type and its benefits, explains how a blood slide works, explains the circulatory system and its parts and functions in animals, blood groups, the urinary system and its parts and components, the components of blood serum and plasma, and the functions of the urinary system in animals. Practical c2: Calculates the packed cell volume in blood and estimates red blood cells.	Theoretical Circulation device, its structure and parts Practical Estimation of red blood cells is calculated	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s
9	Theoretical 2 Practical 3	Theoretical c1: This course covers the calculation of hemoglobin, erythrocyte sedimentation rate (ESR), blood composition and components, white blood cell count, and histology, including tissue sectioning and its procedures. Practical c1: This course covers the calculation of hemoglobin, erythrocyte sedimentation rate (ESR), blood composition and components, white blood cell count, and histology, including tissue sectioning and its procedures.	Theoretical Blood composition and its components Practical White blood cells	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s
10	Theoretical 2 Practical 3	Theory a1: The student learns about the cell, its structure, and its components. They learn the function of each component, cellular tissues, and their types. They learn about the locations of cellular tissues in the animal body. Using PowerPoint, they learn about the hormones and enzymes of the digestive system and their functions in the organism. They learn about the types of large intestine movements in animals, the mechanism of each type, and its benefits. They learn about the lymphatic system, its structure and parts. They	Theoretical The lymphatic system and its components Practical Blood	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s

		Practical c1 This course covers the calculation of hemoglobin, estimation of erythrocyte sedimentation rate (ESR), blood composition and components, white blood cell count, and histology, including tissue sectioning and its procedures.	measurement		
11	Theoretical 2 Practical 3	theoretical a1 The student learns about the cell, its structure, and its components. They learn the function of each component, as well as cellular tissues, and the different types of cellular tissues and their locations in the animal's body. Using PowerPoint, they learn about the hormones and enzymes of the digestive system and their functions in the body, and about the different types of large intestine movements in animals, the mechanism of each type, its benefits, and the lymphatic system. practical b2 It explains the laboratory equipment used in laboratories, the mechanisms and methods of material transfer and mechanization of its movement across the cell membrane, blood sampling, the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, how a blood slide works, and the circulatory system, its parts, and their functions in animals.	Theoretical The nervous system and nerve cell structure Practical Blood groups	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions
12	Theoretical 2 Practical 3	theoretical a1 The student learns about the cell, its structure, and its components. They learn the function of each component, cellular tissues, and the different types of cellular tissues and their locations in the animal's body. Using PowerPoint, they learn about the hormones and enzymes of the digestive system and their functions in the body. They learn about the different types of large intestine movements in animals, the mechanism of each type. practical a2 The student understands the functions of blood in the body and its importance, understands the digestive system and the	Theoretical The central nervous system and its parts Practical Rhesus factor	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions

		differences in the digestive system between animals and the function of each part, understands the Rh factor and its impact on health, and understands the peripheral nervous system and its functions in animals.			
13	Theoretical 2 Practical 3	theoretical a2 The student understands the functions of blood in the body and its importance, understands the digestive system and the differences in the digestive system between animals and the function of each part, understands the Rh factor and its impact on health, and understands the peripheral nervous system and its functions in animals. practical b2 It explains the laboratory equipment used in laboratories, the mechanisms and methods of material transfer and mechanization of its movement across the cell membrane, blood drawing and the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, how a blood slide works, and the circulatory system, its parts, and their functions in animals.	Theoretical peripheral nervous system Practical Urinary tract	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s
14	Theoretical 2 Practical 3	theoretical a1 The student learns about the cell, its structure and components, the function of each, and cellular tissues, identifying the different types and their locations in the animal's body. Using PowerPoint, the student learns about hormones and enzymes of the digestive system and their functions in the body, as well as the different types of large intestine movements in animals, the mechanism and benefits of each type, and the lymphatic system. practical b1 This section explains the laboratory equipment used, the mechanisms and methods of material transfer, the mechanization of material transfer across cell membranes, blood collection, the most important methods used, the types of small intestinal motility in animals, the	Theoretical The respiratory system and its parts Practical Serum and blood plasma	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s

		mechanism of each type and its benefits, how a blood slide works, the circulatory system and its parts and functions in animals, blood groups, the urinary system and its parts and components, the components of blood serum and plasma, and the functions of the urinary system in animals.			
15	Theoretical 2 Practical 3	theoretical b2 It explains the laboratory equipment used in laboratories, the mechanisms and methods of material transfer and mechanization of its movement across the cell membrane, blood drawing and the most important methods used, the types of small intestinal motility in animals, the mechanism of each type and its benefits, how a blood slide works, and the circulatory system, its parts, and their functions in animals. practical c1 It covers how to calculate hemoglobin, estimate the erythrocyte sedimentation rate (ESR), and understand blood composition and components. It also covers white blood cell count, histology, tissue sectioning, and how to perform it.	Theoretical The urinary system in animals Practical Histology and tissue sectioning	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignme nt of duty discussion s

9. Course Evaluation

Distribution of the score from 100 according to the tasks assigned to the student such as daily preparation 5 degrees and daily examinations 5 degrees and monthly 80 degrees and reports 10 degrees

10. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of Fodder and feeding
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	http://www.anypdftools.com/buy/buy-pdf-splitter.html

11- Course evaluation

Calendar methods	Calendar appointment	Class	Relative weight%
Theoretical final report + practical	My theory is week 15	7 theoretical + 6 practical 4	13%

Short test	My work week 1 - 15	theoretical + 2 practical 10	6%
A theoretical and practical midterm test	week (3)	theoretical + 5 practical 4	15%
Short test	week (9)	theoretical + 2 practical	6%
Final practical test	week (12)	20	20%
Final theoretical test	Final exam week	40	40%
total	Final exam week	100	%100

12. Learning and teaching resources

Required textbooks (methodology, if any)	Animal physiology book
Main references (sources) Recommended supporting	
Assisted reproductive technologies in animals Farm 2018 Reproduction in farm animals	Journal of Animal and Poultry Sciences
Electronic references, Internet sites	Environmental physiology of farm animals



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description Form

1. Course Name:					
Feed and Feeding					
2. Course Code:					
FEFD330					
3. Semester / Year:					
Semester 2 / 2025– 2026					
4. Description Preparation Date:					
1/2/2026					
5. Available Attendance Forms:					
Lectures and online					
6. Number of Credit					
Total hours (60) theoretical 2 hr. + practical 2 hr./ Number of Units (3)					
7. Course administrator's name (mention all, if more than one name)					
Name: Professor. Omar Dheyaa Mohammed Email: dr.omaralmallah@uomosul.edu.iq Name: Mohammed Riyadh Mohammed Email: mohammed.alhmdany@uomosul.edu.iq					
8. Course Objectives					
Course Objectives			Introducing the student to the types of fodder materials. Preparing hooks according to the production status of the animal Balancing the Relationships		
9. Teaching and Learning Strategies					
Strategy		Classroom lectures Online Lectures Videoconferencing			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	Theoretical 2 Practical 2	a: The student learns about Feed composition and specifications a 1 : The student recognizes general terms in	T: Composition of components feeds and their specifications p: Explanation of general terms in	Electronic and presence education	Quiz+ Homework+ report

		nutrition and feed formulation	nutrition and feed formulation		
Second	Theoretical 2 Practical 2	a 1: The student remembers the importance and role of water in the body. a 1 The student recognizes the methods of analyzing feed and calculating the components.	T: The importance of water in the animal body p: Methods of analysis and calculating feed ingredients	Electronic and presence education	Quiz+ Homework+ a report
Third	Theoretical 2 Practical 2	a 1: The student remembers what the importance of carbohydrates in berries. a 1: The student recognizes ways to categorize forages and their chemical composition	T: The importance of carbohydrates in animal relationships p: Division of feed and their chemical composition	Electronic and presence education	Quiz+ Homework+ a report
Fourth	Theoretical 2 Practical 2	a 1: The student recalls the benefits of of fats associated with animal nutrition. a 1 : The student recognizes the needs of agricultural animals	T: The importance of fat in animal feed p: nutritional requirements of animals	Electronic and presence education	Quiz+ Homework+ a report
Fifth	Theoretical 2 Practical 2	a 2: The student understands the new protein system and its role in bond formation c 1: The student calculates the protein and energy needs of dairy and meat for protein and energy	T: The importance of proteins in nutrition and the new protein regimen p: Nutritional requirements of agricultural animals	Electronic and presence education	Quiz+ Homework+ a report
Sixth	Theoretical 2 Practical 2	c: The student identifies the methods used to evaluate feed. c 1: The student calculates the coefficient of digestion of food compounds	T: Estimating the nutritional value of materials forage p: Calculate the digestibility coefficient of food compounds	Electronic and presence education	Quiz+ Homework+ a report
seven	Theoretical 2 Practical 2	a: The student discusses the factors influencing the quality of feed	n: Factors affecting the nutritional value of nutritional value of feed p: Energy fate in the body	Electronic and presence education	

		a: The student demonstrates the energy fate in the body			
Eighth	Theoretical 2 Practical 2	d: The student explains the different types of different types of feedstuffs concentrated and coarse a: The student understands how to balancing the ration	n: Classification of feedstuffs Concentrated and coarse P: Balancing relationships Energy and protein balance and its importance	Electronic and presence education	Quiz+ Homework+ a report
Ninth	Theoretical 2 Practical 2	c: The student explains the factors that that affect the regulation of feed intake b1: Apply Examples of balancing bovine leeches	T: Feed intake and factors influencing it P: Balancing cows' diets	Electronic and presence education	Quiz+ Homework+ a report
Tenth	Theoretical 2 Practical 2	a: The student recognizes the basic rules of relationship formation. b 1: Apply Examples of balancing sheep relationships	T: Basic rules of formation of relationships P: Balancing Sheep Relationships	Electronic and presence education	Quiz+ Homework+ a report
Eleven	Theoretical 2 Practical 2	b: The student calculates the proportions of of bush ingredients by Pearson's method. b 1: Apply Examples of balancing goat bush	T: Using the square method Pearson's method for balancing a bush P: Balancing goat relationships	Electronic and presence education	Quiz+ Homework+ a report
twelve	Theoretical 2 Practical 2	a 2: The student understands the basics of preparation of treats d: The student will experiment with making a recipe based on the information they have been given.	T: Preparation of perches p: Mathematical examples of forming relationships Scientific visit to a laboratory to learn about feed production techniques	Electronic and presence education	Quiz+ Homework+ a report
Thirteen	Theoretical 2 Practical 2	a: The student recognizes the importance of enzymatic and non-enzymatic additive in improve feed quality. c: The student discusses reports on feed preparation and balancing.	T: enzymatic and non-enzymatic supplementation and its relation with feed quality and Economic return P: Discuss reports on Preparing the ration balance	Electronic and presence education	Quiz+ Homework+ a report

Fourteen	Theoretical 2 Practical 2	a: The student recognizes how to set up a tutor b 1: The student applies the threshing method	T: Teaching: Methodology and quality assessment p: Preparation of the thresher in the field	Electronic and presence education	
Fifteen	Theoretical 2 Practical 2	a: The student recognizes how to make silage b 1: The student applies the preparation of silage	T: Silage: Method of work and quality assessment p: Field Silage Setup	Electronic and presence education	Quiz+ Homework+ a report

11. Course Evaluation

Distribution of the score from 100 according to the tasks assigned to the student such as daily preparation 5 degrees and daily examinations 5 degrees and monthly 80 degrees and reports 10 degrees

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Feed and feeding book
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	tp://www.anypdftools.com/buy/buy-pdf-splitter.html



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رئيس قسم الإنتاج الحيواني




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animal diseases Course description

Course Name.1					
animal diseases					
Course code .2					
ANDI331					
Semester/ Year .3					
Chapter Two 2025–2026					
Date this description was prepared .4					
2026/2/1					
Available forms of attendance.5					
My presence					
Number of study hours (total) / Number of units (total) .6					
Theory + 3 Practical / 3.5 units 2					
Name of course coordinator (if applicable) More than one name is .7 (mentioned					
M.M. Alaa Shamel (Theory Teacher)					
objectives Course .8					
Classification of diseases according to their duration of spread, their causes, – and contributing factors Disease identification The various diseases that affect large animals – (ruminants) Knowledge of diseases affecting large animals, their clinical signs, and – .methods of treatment					
Teaching and learning strategies .9					
. Interactive lecture – . Brainstorming – .Dialogue and discussion – .Practical exercises – –					
Course structure .10					
Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week

Exams Duties discussions	:Theory Audio-visual methods using computers Writing on the board, dialogue style Live	:Theoretical The relationship of animal diseases With wealth animal	The :a 1 student learns On the classification of diseases And on rinderpest and on Vaccines given to animals And on different roads To give pharmaceutical And on Dose estimation And therapeutic he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic . poisoning	2 Theory	1
Exams Duties discussions	:Practical Quizzes, assignments, discussions	Practical: Organisms that cause disease infection	The :a 2 student understands the biological processes that .cause disease The classification of diseases and understanding what medications and vaccines are, and what immunity is. inherited Acquired immunity	3 practical	
Exams Duties discussions	:Theory Quizzes, assignments, discussions	:Theoretical viral diseases	The :a 1 student learns On the classification of diseases And on	2 Theory	2

			rinderpest and on Vaccines given to animals And on different roads To give pharmaceutical And on Dose estimation And therapeutic he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic poisoning		
Exams Duties discussions	:Practical Auditory ,methods visual Writing style on The blackboard, a method Direct dialogue	:Practical classification Diseases	The :a 2 student understands the biological processes that .cause disease The classification of diseases and understanding what medications and vaccines are, and what immunity is. inherited Acquired immunity	practical 3	
Exams Duties discussions	:Theory For auditory ,methods Writing style on he blackboard, a method Direct dialogue	:Theoretical Viral diarrhea in calves and lambs, bluetongue disease , sheep pox	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of	2 Theory	3

			anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt and nitrate poisoning .occurs		
Exams Duties discussions	:Practical For auditory ,methods Writing style on The blackboard, a method Direct dialogue	:Practical Factors causing the disease	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt and nitrate poisoning .occurs	practical 3	

Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical pseudomembranous chickenpox In cattle / bacterial diseases	It shows the b1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot- and-mouth disease and How to administer the medication against Liver flukes and Lungworms and the importance of the smallpox vaccine chicken	2 Theory	4
Exams Duties discussions	.Laboratory work	:Practical This is how the disease occurs	It shows the b1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot- and-mouth disease and How to administer the medication against Liver flukes and Lungworms	practical 3	

			and the importance of the smallpox vaccine chicken		
Exams Duties . Discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Enterotoxemia ,tetanus) The sedum (intestinal	The :a 1 student learns On the classification of diseases And on rinderpest and on Vaccines given to animals And on different roads To give pharmaceutical And on Dose estimation And therapeutic he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic poisoning	2 Theory	5
Exams Duties discussions	Laboratory work	:Practical response to disease or infection	It shows the b 1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot- and-mouth disease and How to administer the medication against	practical 3	

			Liver flukes and Lungworms and the importance of the smallpox vaccine chicken		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Mastitis , with Lung disease , lamb diarrhea	The :a 2 student understands the biological processes that .cause disease The classification of diseases and understanding what medications and vaccines are, and what immunity is. inherited Acquired immunity	2 Theory	6
Exams Duties discussions	The student writes a report about what he saw on the trip. scientific	:Practical inflammation and cleansing germ scientific trip	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of	practical 3	

			Merck vaccine administration, and how salt and nitrate poisoning occurs		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct dialogue	:Theory Salmonella in cows Hemorrhagic sepsis and putrefaction The cloven	It shows the b 1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot-and-mouth disease and How to administer the medication against Liver flukes and Lungworms and the importance of the smallpox vaccine chicken	2 Theory	7
Exams Duties discussions	Laboratory work	:Practical Different ways to give pharmaceutical	The :a 1 student learns On the classification of diseases And on rinderpest and on Vaccines given to animals And on different roads To give pharmaceutical And on Dose estimation And therapeutic	practical 3	

			he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic poisoning		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Calf strangulation , breakfast Sha'i , breakfast sticks	It shows the b 1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot- and-mouth disease and How to administer the medication against Liver flukes and Lungworms and the importance of the smallpox vaccine chicken	2 Theory	8
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Dose estimation therapeutic	The student :1 learns On the classification of diseases And on rinderpest and on Vaccines given to animals And on different roads To give	practical 3	

			pharmaceutical And on Dose estimation And therapeutic he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic poisoning		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:My view Thalleria, disease Toxoplasmosis, disease trypanosomes	It shows the b 1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot- and-mouth disease and How to administer the medication against Liver flukes and Lungworms and the importance of the smallpox vaccine chicken	2 Theory	9
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	Practical: Scientific trip	The :a 2 student understands the biological processes that .cause disease The classification of diseases and	practical 3	

			understanding what medications and vaccines are, and what immunity is. inherited Acquired immunity		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Parasitic diseases (liver worms, worms lung	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt and nitrate poisoning .occurs	2 Theory	10
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	Practical: Laboratory work	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is ,	practical 3	

			inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt and nitrate poisoning .occurs		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Myiasis, scabies ticks and lice	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt	2 Theory	11

			and nitrate poisoning .occurs		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Laboratory work	The :a 1 student learns On the classification of diseases And on rinderpest and on Vaccines given to animals And on different roads To give pharmaceutical And on Dose estimation And therapeutic he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic poisoning	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	Newcastle :Theoretical Milk fever, poisoning from poisonous plants	It shows the b 1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot-and-mouth disease and How to administer the medication against	2 Theory	12

			Liver flukes and Lungworms and the importance of the smallpox vaccine chicken		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Newcastle disease vaccine for chickens	The :a 1 student learns On the classification of diseases And on rinderpest and on Vaccines given to animals And on different roads To give pharmaceutical And on Dose estimation And therapeutic he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic poisoning	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:My view Salt poisoning , chemical pesticide poisoning And the intrusive	It shows the b 1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot-and-mouth disease and	2 Theory	13

			How to administer the medication against Liver flukes and Lungworms and the importance of the smallpox vaccine chicken		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Gumboro vaccine	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt and nitrate poisoning .occurs	3 practical	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Phosphorus and arsenic poisoning	The :a 1 student learns On the classification of diseases And on rinderpest and	2 Theory	14

			on Vaccines given to animals And on different roads To give pharmaceutical And on Dose estimation And therapeutic he recognizes on vaccine Rinderpest , sheep pox and on ,vaccine Types of pollen strains and On phosphorus and arsenic poisoning		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical chickenpox vaccine	It shows the b 1 student how the disease occurs and The animal's body's response to the disease or The infection and the methods of administration Dipping methods and How to get vaccinated against foot-and-mouth disease and How to administer the medication against Liver flukes and Lungworms and the importance of the smallpox vaccine . Chicken	3 practical	
Exams Duties discussions	Auditory methods, the method of writing	:Theoretical	It is clear :c1 For the student	2 Theory	

	on the board, the method of direct .dialogue	Ammonia poisoning poisoning , with nitrates	symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt and nitrate poisoning .occurs		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Merck vaccine	It is clear :c1 For the student symptoms The illness ember The wicked one Environmental factors that cause disease what is , inflammation and bacterial cleansing, symptoms of anthrax, types of vaccines given to cattle sheep, and , horses, methods of vaccination against these	practical 3	

			diseases, the importance of the Gumboro vaccine, timing of Merck vaccine administration, and how salt and nitrate poisoning .occurs		
Course evaluation.11					
Relative % weight	Degree	Calendar date (week)	Assessment methods	T	
%40	Theory + 15 25 Practical	Week (9)	Midterm exam (theoretical (and practical	1	
%20	20	Practical exam week	Final practical test	2	
%40	40	Theory exam week	Final theory test	3	
%100	100		the total	4	
Learning and teaching resources .12					
Animal and poultry diseases (author's work) Dr. Sameh Hidayat Arslan Nizar Jabbar Musleh and Dr. Hisham Abdullah Bashir			Required textbooks (methodology, if applicable)		
			Main references (sources)		
Lectures and books published by Iraqi universities			Recommended supporting books and references scientific journals,) (...reports		
			references , websites		



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أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description Form

1. Course Name:					
Animals Breeding					
2. Course Code:					
ANB332					
3. Semester / Year:					
Spring 2025–2026					
4. Description Preparation Date:					
1/2/2025					
5. Available Attendance Forms:					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours (2 + 2) *15 weeks / 3 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Esraa Mobasher Tawfwq Email: esraa-mobasher@uomosul.edu.iq					
Name: Raghad Ismail Saeed Email: raghad.alnuaimy@uomosul.edu.iq					
8. Course Objectives					
Course Objectives		- Introducing students to the basics of genetics, including Mendel's laws... - Defining the gene, what its components are, how to calculate the frequency of the gene, and the factors affecting it What are the components of phenotypic variation and patterns of gene expression - Calculating the average effect of the gene and the effect of gene replacement and estimating the kinship coefficient Internal breeding and genetic features in the animal population and ways to improve them.... - Conducting examinations and preparing practical reports			
9. Teaching and Learning Strategies					
Strategy		Audio methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with student's evaluation in class participation			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2Theoretical 2 My work	Theoretical:	Principles of Statistics Necessary in Animal Breeding Improvement	Audio and visual methods (teaching explanation of the topic)	Exams, reports, discussion quizzes

		a1: The student will learn general principles of animal breeding and improvement (statistics, genetics and factors affecting it, analysis of variance, crossbreeding, selection, frequency coefficient, correlation, hereditary equivalent, etc.) Practical: a1: The student will learn general principles of animal breeding and improvement (statistics, genetics and factors affecting it, analysis of variance, crossbreeding, selection, frequency coefficient, correlation, hereditary equivalent, etc.)	Practical: Measures of Concentration Measures of Dispersion	Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation and class participation	
Second	2Theoretical 2 My work	Theoretical b1: Explain the most important gene expressions (grouping dominant, and supplementary effects) and breeding based on genetic and phenotypic similarity and the intensity of selection. Practical a1: The student learns general principles of animal breeding and improvement (gene statistics and the factors affecting it, analysis of variance, crossbreeding, selection, frequency coefficient, correlation, genetic equivalent, etc.).	Theoretical: Some genetic principles in animal breeding and improvement, gene expression patterns Practical: Measures of correlation (regression coefficient and correlation coefficient).	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation and class participation	Exams, reports, discussions, quizzes
Third	2Theoretical 2 My work	Theoretical: c1: Explains the concept of Hardy-Wineberg's rule, describes gene expression calculations, variation calculations, gene effect, and gene substitution. Practical: a1: The student learns general principles of animal breeding and improvement (gene statistics and influencing factors, analysis of variance)	Theory: Gene repetition, calculation of gene repetition in the presence of a pair of genes with a pooling and dominant effect random crosses, Hardy-Wanberg rule Practical: Explaining the concept of gene repetition	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation and class participation	Exams, reports, discussion, quizzes

		crossbreeding, selection, frequency coefficient, correlation, heritability, etc.)			
Fourth	2Theoretical 2 My work	Theoretical B2: Explains the importance of the factors affecting gene replication and how to calculate them (migration, mutation, chance selection) Practical A5: It shows the importance of the factors affecting gene replication and defines mutation, its types, migration and its effect on gene replication	Theoretical Factors affecting gene duplication Practical Factors affecting gene duplication (mutation and migration)	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation class participation	Exams, reports, discussions, quizzes
Fifth	2Theoretical 2 My work	Theoretical C1: Explains the Hardy Weinberg rule, including gene expression calculations, gene variance calculations, gene effect, and gene substitution Practical A1: Students learn the general principles of animal breeding and improvement (gene statistics and influencing factors, analysis of variation, crossbreeding, selection, frequency coefficient, correlation, heritability, etc.)	Theory Physical Variation Practical Factors Affecting Gene Frequency (Chance and Selection) First Semester Examination	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation class participation	Exams, reports, discussions, quizzes
Sixth	2Theoretical 2 My work	Theoretical C2: Explains the concept of kinship and how to calculate it in the case of inbreeding, and calculates genetic equivalent, frequency coefficient, and genetic correlation using different methods. Practical A1: The student learns general principles of animal breeding and improvement (gene statistics and the factors affecting it, analysis of variance, crossbreeding, selection, frequency coefficient, correlation, genetic equivalent, etc.).	Theory: Relationship between relatives Practical: Analysis of variance and normality distribution	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation class participation	Exams, reports, discussions, quizzes

Seventh	2Theoretical 2 My work	Theory c2: Explains the concept of kinship and how to calculate in the case of inbreeding calculating the gene equivalent, frequency coefficient, and genetic linkage using different methods. Practical c2: Explains the concept of kinship and how to calculate in the case of inbreeding calculating the gene equivalent, frequency coefficient, and genetic linkage using different methods	Theory: Calculating the kinship coefficient Practical: Kinship and relationships between individuals	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation and class participation	Exams, reports, discussion quizzes
Eighth	2Theoretical 2 My work	Theoretical b1: Explain the most important gene expressions (group dominant, and superdominant effects) and breeding based on genetic and phenotypic similarity and the intensity of selection. Practical c2: Explain the concept of kinship and how to calculate in the case of inbreeding, calculate the gene equivalent, frequency coefficient, and genetic linkage using different methods.	Theoretical Types of Indoor Education Scientific visit to the Molecular Genetic Laboratories at the University Practical Indoor Education	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation and class participation	Exams, reports, discussion quizzes
Ninth	2Theoretical 2 My work	Theoretical a1: The student learns general principles of animal breeding and improvement (gene statistics and the factors affecting it, analysis of variance, crossbreeding selection, frequency coefficient, correlation, gene equivalent, etc.) Practical	Theory: Breed Mixing Practice: Hardy-Weinberg Rule	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation and class participation	Exams, reports, discussion quizzes

		c1: Explains the concept Hardy-Wineberg's rule, describes the calculation gene expression, variance, g effect, and gene substitution			
Tenth	2Theoretic 2 My wo	Theoretical C2: Explains the concept of kinship and how to calculate it in the case of inbreeding, calculates the genetic equivalent, frequency coefficient, and genetic linkage using different methods. Practical C2: Explains the concept of kinship and how to calculate it in the case of inbreeding, calculates the genetic equivalent, frequency coefficient, and genetic linkage using different methods..	Theory Some genetic characteristics of the population (genetic equivalent) and methods for estimating them Practical Genetic characteristics of the animal population (genetic equivalent))	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation class participation	Exams, reports, discussion quizzes
Eleven	2Theoretic 2 My wo	Theory c2: Explains the concept of kinship and how to calculate it in the case of inbreeding, calculating the genetic equivalent, frequency coefficient, and genetic linkage using different methods. Practical: c2: Explains the concept of kinship and how to calculate it in the case of inbreeding, calculating the genetic equivalent, frequency coefficient, and genetic linkage using different methods.	Theoretical Some genetic characteristics of the population (Frequency coefficient) Practical Explanation of concept of frequency coefficient its purpose, and traits for which it calculated	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation class participation	Exams, reports, discussion quizzes
Twelve	2Theoretic 2 My wo	Theory c2: Explains the concept of kinship and how to calculate it in the case of inbreeding, calculates genetic equivalent, frequency coefficient, genetic correlation using different methods. Practical	Theoretical Some genetic characteristics of the population (genetic linkage) Practical Calculating the genetic linkage between traits using different methods	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation class participation	Exams, reports, discussions quizzes

		a1: The student learns general principles of animal breeding and improvement (gene statistics and the factors affecting it, analysis of variance, crossbreeding, selection, frequency coefficient, correlation, genetic equivalent, etc.).			
Thirteen	2Theoretical 2 My work	Theory A1: The student learns general principles of animal breeding and improvement (gene statistics and the factors affecting it, analysis of variance, crossbreeding, selection, frequency coefficient, correlation, genetic equivalent, etc.) Practical C1: Explains the concept of Hardy-Wineberg's rule, describes the calculation of gene expression, variance, gene effect, and gene substitution	Theory Selection Practical Exercises on genetic replication	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation of class participation	Exams, reports, discussions, quizzes
Fourteen	2Theoretical 2 My work	Theoretical b1: Explain the most important gene expressions (group dominance, and supremacy effects) and breeding based on genetic and phenotypic similarity and the intensity of selection. Practical a1: The student learns general principles of animal breeding and improvement (gene statistics and the factors affecting it, analysis of variance, crossbreeding, selection, frequency coefficient, correlation, genetic equivalent, etc.).	Theoretical: Electrophoresis intensity and electrophoretic difference Practical: Measures correlation (regression coefficient, correlation coefficient)	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher and the student, with student's evaluation of class participation	Exams, reports, discussions, quizzes
Fifteen	2Theoretical 2 My work	Theoretical b2: Demonstrates the importance of genetic engineering and introduces modern methods in animal breeding and improvement. E1: Determines which breeding methods and breeds are best	Theoretical Genetic Engineering and Molecular Genetics in Animal Breeding Improvement	Audio and visual methods (teaching explanation of the topic) Style of writing on blackboard The method of direct dialogue between the teacher	Exams, reports, discussions, quizzes

		animal breeding and prepare detailed report on them. Practical a1: Students learn the genetic principles of animal breeding and improvement (genetics, statistics and influence factors, analysis of variance, breed mixing, selection frequency coefficient, correlation, genetic equivalence etc.).	Scientific Visit Animal Product Fields in Relevant Colleges Practical Evaluation of Animal Records (Report & Discussion) Genetic Foundation of Animal Improvement	the student, with student's evaluation class participation	
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11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Animal husbandry book / written by Hassan Karam and Salah Jalal
Main references (sources)	
Recommended books and references (scientific journals, reports...)	-Falconer, D.S. and Mackay, T.F. 2012.
Electronic References, Websites	Journal of Agriculture



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description Form

1. Course Name:	
Technology of poultry products	
2. Course Code:	
PPTE329	
3. Semester / Year:	
Second Semester	
4. Description Preparation Date:	
1/2/2026	
5. Available Attendance Forms:	
Built-in	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 hours (2 theoretical + 4 practical) * 15 weeks / 4 unit	
7. Course administrator's name (mention all, if more than one name)	
Name: Faiyz Sami Saaduldeen Yasser Ghanem Saleh	
Email: dr_faiyz@uomosul.edu.iq yaserkesab75@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	• Deliver an introduction on each topic in a simple manner and from the reality of public life. • Explanation at length of all aspects of the subject, giving live examples to explain the nature and benefit. • Presenting questions about the topic to demonstrate students' understanding through their answers. • Conducting surprise exams and preparing practical reports.
9. Teaching and Learning Strategies	
Strategy	Audio methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform, and the practical part of the subject is given in person.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first week	2 Theoretical 4 practical	Theoretical: a: The student understands the reality of poultry production in Iraq and the Arab world. Practical: a: The student mentions the measurement of shell thickness.	The reality of poultry production in Iraq and the Arab world, The importance of expanding poultry production, The reality of eggs, the reality of poultry meat production. Measure the thickness of the crust	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class :participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform The practical part of subject is given in person	Exams, reports, discussions, quizzes
second week	2 Theoretical 4 practical	Theoretical: a. The student learns about the types of poultry projects. Practical: c. The student mathematically calculates the specific gravity of an egg.	Types of poultry projects. Measuring the specific weight of the egg Coz test 10 marks	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's	Exams, reports, discussions, quizzes

				evaluation in class :participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform The practical part of the subject is given in person	
third week	2 Theoretical 4practical	Theoretical: bUnderstand the nutritional value, composition, and importance of eggs in human nutrition. Practical: A: Describe the color of the shell.	Nutritional value of eggs, egg composition, The importance of eggs in human nutrition, Factors affecting the nutritional value of eggs, The egg contains cholesterol. Measure the weight percentage of the shell. Scientific visit	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class :participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform The practical part of the subject is given in person	Exams, reports, discussions quizzes

fourth week	2 Theoretical 4 practical	Theoretical: a. Identify the chemistry of eggs and their products. Practical: a. Rewrite the factors that affect shell quality.	Chemistry of eggs and their products, The shell and membranes of the egg, Egg whites, egg yolks. Shell colour	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class :participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform The practical part of the subject is given in person	Exams, reports, discussions, quizzes
Fifth week	2 Theoretical 4 practical	Theoretical: a. Egg microbiology identifies pre- and post-laying egg contamination. Practical: a. Restate the factors that affect shell quality.	micro logia eggs, Egg contamination before and after delivery. The ability of the egg to resist microorganis ms, Changes caused by the egg's microorganis ms. Factors affecting the quality of veneer	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the	Exams, reports, discussions, quizzes

				subject is given electronically and on the Class Room platform :The practical part of the subject is given in person	
sixth week week	2 Theoretical 4 practical	Theoretical: A: Understands egg storage and marketing. Practical: a: Mentions the albedo height scale.	Egg storage and marketing, changes that occur to eggs during storage, Methods of preserving and storing eggs, Necessary steps to maintain egg quality, marketing liquid eggs, Marketing dried eggs. Albedo height meter. Coz test 10 marks	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class :participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform The practical part of the subject is given in person	Exams, reports, discussions, quizzes
seventh week	2 Theoretical 4 practical	Theoretical: a. Learn about poultry meat production and broiler preparation, receiving and incubating chicks. Practical: C. Mention the egg-laying height scale.	poultry meat production, Preparing meat chickens, Receiving the chicks' meal and incubating them, commercial breeds of broilers, Standard rates for the economic	: Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's	Exams, reports, discussions, quizzes, Conducting scientific v for students

			characteristics of broiler chickens and the factors affecting them	evaluation:in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform The practical part of the subject is given in person	
eighth week	2 Theoretical 4 practical	Theoretical: a. Know the chemical and nutritional properties of poultry meat and the composition of poultry meat. Practical: c. Demonstrate mathematically how to calculate the unit measure of HO.	Chemical and nutritional properties of poultry meat, Composition of poultry meat, poultry meat in special diets, factors affecting the chemical composition of poultry meat The first exam	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform :The practical part of the subject is given in person	Exams, reports, discussions, quizzes
ninth week	2 Theoretical 4 practical	Theoretical: a. Knows the processes of preparing poultry meat for consumption. Identifies the	Processes for preparing poultry meat for consumption, Types of poultry birds	:Audio and visual methods (teaching explanation of the topic)	Exams, reports, discussions, quizzes

		types of poultry used in meat production. Practical: a. Recalls something about the quality of the yolk.	used in meat production, Poultry meat preparation processes, Cutting poultry carcasses. poultry meat assembly, Yolk quality Scientific visit	Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform The practical part of the subject is given in person	
tenth week	2 Theoretical 4 practical	Theoretical: a. Determines the quality of poultry meat and methods of preserving it in poultry varieties intended for marketing. Practical: c. Calculates the shape of the yolk mathematically.	The quality of poultry meat and methods of preserving it in poultry varieties prepared for marketing, Grading live poultry and the characteristics adopted in grading, Grading poultry carcasses prepared for cooking, Maintaining quality.. Yolk shape Coz test 10 marks	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation:in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform C5:The practical part of the	Exams, reports, discussions, quizzes

				subject is given in person	
eleventh week	2 Theoretical 4 practical	Theoretical: a. Define meat storage, refrigeration requirements, freezing poultry meat, and freezing requirements in poultry slaughterhouses. Practical: a. Describe yolk color and the factors affecting it.	cold storage, cooling requirements, freezing poultry meat, Freezing requirements in poultry slaughterhouses, Methods used in freezing poultry meat, Changes in the nutritional value of poultry meat during storage. Yolk color and factors affecting it.	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform :The practical part of the subject is given in person	Exams, reports, discussions, quizzes
twelfth week	2 Theoretical 4 practical	Theoretical: a. Understand the microbiology of poultry meat. Practical: a. Rewrite the methods for measuring yolk color.	Microbiology of poultry meat. Methods for measuring yolk color Coz test 10 marks	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning,	Exams, reports, discussions, quizzes

				the theoretical part of the subject is given electronically and on the Class Room platform :The practical part of the subject is given in person	
thirteenth week	2 Theoretical 4 practical	Theoretical: a. Determines the flavor and tenderness of poultry meat. Practical: a. Recalls blood spots and flesh.	Flavor and tenderness of poultry meat. Bloody and fleshy spots. Coz test 10 marks	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform :The practical part of the subject is given in person	Exams, reports, discussions, quizzes
fourteenth week	2 Theoretical 4 practical	Theoretical: a. Explain the effect of cooking methods on the flavor, tenderness, and nutritional value of poultry meat. Practical:	The effect of cooking methods on the flavor and tenderness of poultry meat and its nutritional value.	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the	Exams, reports, discussions, quizzes

		a. Describe the grading and inspection of eggs.	Egg grading and examination. Coz test 10 marks	teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform :The practical part of the subject is given in person	
fifteenth week	2 Theoretical 4 practical	Theoretical: a. Identify the inedible by-products of poultry. Practical: a. List the factors affecting egg weight.	Inedible poultry by-products. Factors affecting egg weight. The second exam	:Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation In addition to blended learning, the theoretical part of the subject is given electronically and on the Class Room platform :The practical part of the subject is given in person	Exams, reports, discussions, quizzes

11.

S	Calendar methods	Calendar appointment (week)	degree	Relative weight %
1	Theoretical final report + practical experience reports	theory week 15 practical week 1-15	7 theoretical + 6 practical	13%
2	Short test (1) Quiz	Week (3)	4 theoretical + 2 practical	6%
3	Midterm Exam (theoretical and practical)	Week (10)	10 theoretical + 5 practical	15%
4	Short test Quiz (2)	Week (12)	4 theoretical + 2 practical	6%
5	Final practical test	Practical exams week	20	20%
6	Final theoretical test	theoretical exams week	40	40%
	total		100	100

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	



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Course Description Form

1. Course Name:					
The physiology of reproduction					
2. Course Code:					
REPH333					
3. Semester / Year:					
Semester 2 / 2025- 2026					
4. Description Preparation Date:					
1/2/2026					
5. Available Attendance Forms:					
Lectures and electronic					
6. Number of Credit Hours / Number of Units					
(60) Hours theoretical 2hr. + practical 2hr. : / (3) Units					
7. Course administrator's name (mention all, if more than one name)					
Name: literature. Mohammad Salem Ibrahim mohammad_almoteoty@uomosul.edu.iq					
Literature: Wasem Khaled Ahmed wassemkhalid1986@uomosul.edu.iq					
8. Course Objectives					
Course Objectives				Introducing the student to the types of food materials. Preparing hooks according to the product status of the animal Balancing the Relationships	
9. Teaching and Learning Strategies					
Strategy		Classroom lectures Online Lectures Videoconferencing			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	Theoretic 2 Practical 2	Theory: a1 Students will learn about hormones and their structure. The explanation will begin by stating that hormones are chemical substances secreted by the body to control its various functions. Hormones are produced by the endocrine glands and travel through the bloodstream to specific parts of the body called target organs. The explanation will also cover how hormones act as messengers, regulating growth, development, metabolism, reproduction, and psychological state. Each hormone has a specific function, such as insulin, which regulates blood sugar levels, or testosterone,	Theoretical: hormones, the structure, method and regulation of the action of hormones Practical: microscope and laboratory equipment in the physiology laboratory	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	short exam Assignment of duty discussion

		which develops male characteristics and stimulates sperm production. The concept can be simplified for students by saying that hormones are "chemical messages" sent from the factory (gland) to the consumer (organ) to regulate the body's functions in a balanced way. Understanding hormones helps students understand how the body controls its vital processes and how any imbalance in them affects health and reproduction. This will be facilitated by using a PowerPoint presentation. Practical: b1 This section introduces students to the light microscope, its components, the types of lenses available, their magnification power, and their various uses. It explains that the light microscope consists of several parts that work together to magnify and clearly view microscopic objects. Its components are divided into mechanical and optical parts. Students will also learn about laboratory equipment in the physiology lab, such as water baths and centrifuges, and how each works			
2	theoretic 2 Practical 2	Theoretical a2: Students will understand the pituitary gland, its structure, hormones, types of hormones, and the effect of each hormone on specific parts of the body. For example, follicle-stimulating hormone (FSH) and its effect on ovarian function in females, and testosterone and its effect on sperm production in the testes, as well as bone growth and its effect on the development of secondary sexual characteristics. Using PowerPoint, students will learn about other pituitary hormones, including prolactin and thyroid-stimulating	theoretical The pituitary gland, its structure and hormones practical Anatomy of the male reproductive system	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussion
2					

		hormone (TSH). Practical b2: Students will learn the anatomy of the male reproductive system of a ram or bull, which consists of the penis and testes. Sperm and testosterone are produced in the Leydig cells. The practical component of the reproductive system, the bulbourethral, prostate, and Cowper's glands, will also be explained, highlighting the importance of their secretions in providing sperm with the necessary components for motility, budding, and nourishment.			
3	Theoretical 2 Practical 2	Theory: a1 The student will learn about the pineal and adrenal glands, their structure, functions, locations, and the most important characteristics of their hormones. The pineal gland is a small gland located in the center of the brain. It secretes a hormone called melatonin. This hormone helps regulate sleep and wakefulness in the human body. Its secretion increases in darkness and decreases in light, thus helping the body distinguish between day and night. It also contributes to regulating the body's biological clock and plays a role in regulating some changes related to growth and puberty. (PowerPoint presentation used for this purpose.) Practical: c1 The student will apply what they have learned to the anatomy of the female reproductive system. The female reproductive system in sheep is the system responsible for reproduction, producing and maintaining a pregnancy. This system consists of the ovaries, fallopian tubes, uterus, cervix, vagina, and	Theoretical: The pineal gland and the adrenal gland, their structure, functions, locations, and the most important characteristics of the hormone practical Anatomy of the female reproductive system	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignmen t of duty discussions
3					

		external genitalia. The ovaries are small organs that produce eggs and secrete female hormones such as estrogen and progesterone. The fallopian tubes transport the egg from the ovary to the uterus, where fertilization usually occurs. The uterus in sheep consists of two uterine horns, which is where the embryo develops.			
4	Theoretical 2 Practical 2	Theory a2 The student understands the function of the male reproductive system. The ram's reproductive system is a group of organs that work together to produce sperm and complete the fertilization process. It consists of the two testes, located within the scrotum, which are responsible for producing sperm and secreting testosterone. Each testis is connected to the epididymis, where sperm mature and are stored. The sperm then travel through the vas deferens to the urethra. The system also contains accessory glands such as the seminal vesicles, the prostate gland, and the two bulbourethral glands, which secrete fluids that form seminal fluid. The urethra is the duct that transports seminal fluid. (With the help of a PowerPoint presentation) Practical c2 The student calculates the measurements, dimensions, and tissue composition of the testis. The testis consists of a strong outer capsule called the tunica albuginea. Internally, the testis is divided into lobes separated by tissue septa. Each lobe contains coiled seminiferous tubules, which are responsible for spermatogenesis. The seminiferous tubules are lined with cells	The male reproductive organs are the testicles, epididymis, vas deferens, and accessory glands Practical Testicle dimensions and testicular tissue composition	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions
4					

5	Theoretical 2 Practical 2	theory b1 The student explains the hormones associated with reproduction (estrogens, androgens, and progesterone). These hormones are chemical substances that regulate the reproductive system and its functions. Follicle-stimulating hormone (FSH) is secreted by the pituitary gland and helps in the formation of eggs in females and sperm in males. Luteinizing hormone (LH) is secreted by the pituitary gland and stimulates ovulation in females and testosterone secretion in males. Estrogen is secreted by the ovaries and helps in the development of female reproductive organs and regulates the menstrual cycle. Progesterone maintains the uterine lining and helps maintain pregnancy. Testosterone is secreted by the testes and develops male characteristics and helps in sperm production. Prolactin plays a role in milk production after childbirth. Oxytocin helps in uterine contractions during childbirth and contributes to milk ejaculation. (PowerPoint presentation used for this purpose.) Practical c1 The student applies embryo transfer, a scientific method that helps increase the production of animals of a single species using assisted reproductive technologies. The process begins by taking an egg from a female with desirable traits and then fertilizing it with a sperm. Sperm, either in vitro or within the female's body after early embryonic development, is transferred to the uterus of another female, known as a surrogate mother. She receives the embryo and it develops	Theoretical Hormones related to reproduction (estrogens, androgens, progesterone) practical Embryo transfer	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions
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		until birth. This process is closely monitored to ensure a successful pregnancy. This method helps improve genetic traits and increase productivity without requiring the original female to carry the entire pregnancy. To simplify the concept for students, we take an egg and sperm from a select male and place the resulting embryo in the uterus of another female to develop and give birth.			
6	Theoretical 2 Practical 2	Theory a1 The student will learn about the types of chemical messengers of hormones. The student can begin by explaining that the body uses hormones as chemical messengers to regulate various functions. It can be explained that these messengers act over different distances and reach specific cells via the blood or directly between cells. The first type is hormones secreted into the bloodstream, which travel long distances to reach specific organs and alter their activity. The second type is local hormones, which affect neighboring cells directly without entering the bloodstream. It can also be mentioned that some hormones act within the same cell that secreted them; these are called endogenous hormones. It is recommended to use examples from everyday life, such as insulin, and to use a PowerPoint presentation. Practical c2 The student will apply methods of semen collection. The student can begin by explaining the purpose of semen collection, which is to use it in artificial insemination to improve genetic production. It can be said that there are several methods of semen collection that rely on	theoretical Types of chemical messengers in the organism's body, regulating hormone secretion Practical Methods of semen collection	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions Scientific visit to the Faculty Veterinary Medicine
6					

		stimulating the ram safely and under supervision. One common method is the use of an artificial collector, where the ram is trained to mate with a dummy resembling a female, and the semen is collected in a special container. Another method relies on manual stimulation under the supervision of an expert.			
7	Theoretical 2 Practical 2	Theory b2 This section explains the sexual cycles and their types in animals, including autoovulatory animals. When explaining the sexual cycles in farm animals to students, it can begin by explaining that these cycles are recurring periods in the female that enable her to conceive. This cycle is controlled by hormones that regulate egg maturation and the uterus's readiness to receive the embryo. The cycle usually begins with signs of heat or readiness for mating, which farmers easily recognize. Ovulation then occurs, which is the release of the egg from the ovary in preparation for fertilization. If fertilization occurs, the fertilized egg implants in the uterine lining, and pregnancy begins. If fertilization does not occur, the female's body begins a new cycle after a specific period that varies depending on the animal species. The concept can be simplified for students by comparing the cycle to the period of the body's readiness for pregnancy and its readiness to reproduce repeatedly and regularly. Using diagrams can help students clearly see and easily remember the stages of the cycle, and PowerPoint presentations can be helpful. Practical c1 This section involves students	theoretical Sexual cycles and their types in animals, self-ovulating animals, animals practical Measuring the volume, consistency and pH of semen	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions

		applying the procedures for measuring the volume, consistency, and pH of semen. To explain the measurement of semen characteristics in rams to students, it can begin by explaining that...			
8	Theoretical 2 Practical 2	Theory a2 The student understands the reproductive seasons in farm animals and the synchronization of estrus in ewes. To explain the reproductive seasons in sheep, one can begin by explaining that sheep are seasonal breeding animals, meaning their sexual cycles depend on the length of day or night. The estrous cycle in females usually begins in the autumn when daylight hours decrease and melatonin secretion increases. This hormonal stimulation causes the female to enter heat or readiness for mating. These seasons last for several months, during which ovulation and natural or artificial insemination occur. After the season ends, the female enters a rest period before starting a new cycle in the following season. The concept can be simplified for students by stating that sheep breed at a specific time of year to ensure the lambs are born during a suitable season for life and growth. This can be aided by a PowerPoint presentation. Practical c2 The student calculates the number of live, dead, and malformed sperm. To explain how to estimate live, dead, and malformed sperm in rams, one can begin by explaining that the purpose is to determine semen quality and sperm viability for artificial insemination. After semen collection, the process is...	Theoretical Reproductive seasons in farm animals, standardization of estrus in ewes Practical The measurement of live, dead and deformed sperm is calculated	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	short exam Assignment of duty discussions

9	Theoretical 2 Practical 2	Theory a1 The student will learn about the differences between growth and sexual maturity in farm animals (definition, age of sexual maturity in animals). Explaining the difference between growth and sexual maturity in farm animals to the student can begin by explaining that growth is the process by which the body size increases, the animal's organs develop, and its strength generally increases. Growth includes an increase in height and weight, and the development of muscles, bones, and internal organs. Sexual maturity is the stage at which the animal becomes capable of reproduction and producing offspring. During sexual maturity, the reproductive organs mature, and sex hormones begin to work to produce sperm in males. Practical c2 The student will calculate sperm concentration using a hemocytometer. To explain how to measure sperm concentration using a hemocytometer, the student can begin by explaining that the goal is to determine the number of sperm in a unit volume of semen to assess its quality. First, the semen is diluted with a suitable medium to facilitate counting under a microscope. Then, a portion of the diluted semen is placed on a hemocytometer, which is a glass slide divided into fine squares to facilitate counting. The squares are examined under a microscope, and the sperm present are counted. Using the mathematical formula, the number of sperm can be estimated.	Theoretical Growth and sexual maturity in farm animals (definition, age of sexual maturity in animals) Practical Sperm concentration by hemocytometry	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignmen t of duty discussions
10	Theoretical 2	Theory a2 The student explains what	theoretical Compares sexual	Methods audio	hort exam Assignmen

	Practical 2	sexual maturity is in farm animals (its definition, age of sexual maturity). To explain sexual maturity in farm animals to students, one can begin by explaining that sexual maturity is the stage at which an animal becomes capable of reproduction and producing offspring. Sexual maturity includes the completion of the development of the reproductive organs and their ability to produce sperm in males and eggs in females. The age of sexual maturity varies depending on the animal species; it occurs earlier in some small animals such as sheep and later in larger animals such as cows and horses. The concept can be simplified for students by saying that sexual maturity means the body is ready to reproduce, while the age of sexual maturity determines when the animal becomes capable of mating. Practical c1 The student applies semen dilution procedures. To explain how to apply semen dilution to students, one can begin by explaining that the purpose of dilution is to reduce sperm concentration to facilitate counting and examination or to prepare it for artificial insemination. First, a specific amount of fresh semen is taken, then an appropriate volume of dilution solution is added to it, which preserves sperm viability. After thorough mixing, the semen becomes	maturity in farmed animals (definition, age of sexual maturity) Practical A semen dilution is applied	Writing style On the board Dialogue style Direct practical: Assigning tasks And report	t of duty discussions
11	Theoretical 2 Practical 2	Theory a1 The student learns about insemination and fertilization in farm animals. To explain the difference between insemination and fertilization, one can begin by explaining that insemination is the	theoretical Pollination and fertilization in farm animals Practical Semen freezing	Methods audio Writing style On the board Dialogue style	hort exam Assignment of duty discussions

		introduction of sperm into the female's reproductive system, either naturally during mating or artificially using artificial insemination. Fertilization, on the other hand, is the process by which the egg and sperm meet to form an embryo inside the female's uterus. Simply put, insemination is the delivery of sperm, while fertilization is the union of the sperm and egg, resulting in pregnancy. The concept can be simplified for students by saying that insemination is like sending a message, and fertilization is like receiving the message and achieving its purpose. Practical c1 The student applies the procedure for freezing semen. To explain the procedure for freezing semen, one can begin by explaining that the goal of freezing is to preserve semen for extended periods without loss of viability for later use in artificial insemination. First, semen is collected from the animal, and its characteristics are assessed in terms of motility, morphology, and sperm concentration. Then, the semen is diluted with a suitable solution containing substances that protect the sperm during freezing. The semen is then packaged in small, special vials called		Direct practical: Assigning tasks And report	
12	Theoretical 2 Practical 32	Theory a2 The student understands the processes of conception and delivery in farm animals. To explain conception, delivery, and fertilization in farm animals to students, one can begin by explaining that fertilization is the process by which the egg meets the sperm inside the female's body to form the embryo. After fertilization, pregnancy begins,	theoretical Pregnancy and childbirth in farm animals, fertilization and pregnancy Practical Components of seminal plasma	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions

		which is the stage in which the embryo grows inside the female's uterus until it is fully developed and ready for birth. Delivery is the process of the embryo leaving the mother's uterus after it has fully developed; this is birth itself. The concept can be simplified for students by saying that fertilization is like the beginning of life, pregnancy is the period of embryonic development, and delivery is the end of pregnancy when the female gives birth to her young. Practical b2 The student explains the components of seminal plasma. To explain the components of seminal plasma to students, one can begin by explaining that seminal plasma is the fluid that carries sperm and forms part of seminal fluid. The plasma contains water, which makes up the largest part and helps sperm motility. It also contains sugars such as fructose, which provide the energy necessary for sperm. It also contains proteins and enzymes that protect and maintain sperm.			
13	Theoretical 2 Practical 2	Theory a2 The student understands the function of the mammary gland and the hormonal control of its development in farm animals, as well as the lactation process. To explain the mammary gland, its hormonal control, and the lactation process to students, one can begin by explaining that the mammary gland is the organ responsible for producing milk and feeding the young after birth. The mammary gland consists of milk ducts and small sacs that produce milk and deliver it to the teat. The mammary gland develops	theoretical The mammary gland and hormonal control over its development in farm animals and the lactation process practical Artificial insemination in cows	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions

		under the influence of certain hormones before birth, such as estrogen and progesterone, which stimulate tissue growth and the formation of ducts and milk ducts. After birth, the secretion of prolactin increases, stimulating milk production, while oxytocin helps to propel milk towards the teat during lactation. Practical c1 The student applies artificial insemination procedures in cows. To explain artificial insemination in cows to students, one can begin by explaining that artificial insemination is the mechanical introduction of sperm into the female's reproductive system instead of natural mating. Semen is collected from the bull, evaluated, and examined to ensure its viability and quality. The semen is then diluted and prepared in a way that preserves sperm activity until the time of insemination.			
14	Theoretical 2 Practical 2	Theory a1 The student will learn about fertility, infertility, and the factors that cause reduced fertility in farm animals. To clarify fertility, infertility, and the factors that cause reduced fertility in farm animals for the students, one can begin by explaining that fertility is an animal's ability to reproduce and produce healthy offspring. Infertility, on the other hand, is the inability of an animal to become pregnant or produce young despite suitable mating conditions. Reduced fertility can occur due to multiple factors, including hormonal problems that affect sexual maturation or ovulation. Infectious and internal diseases also play a role in reducing an animal's ability to conceive. Malnutrition and vitamin and mineral	theoretical Fertility, infertility, and factors causing low fertility in farm animals Practical Management of vaccination bulls	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignmen t of duty discussions

		deficiencies also affect the health of the reproductive system and reduce fertility. Stress and poor environmental conditions can weaken animals. Practical b2 The student will learn about the methods of managing artificial insemination bulls. To clarify the management of artificial insemination bulls for the students, one can begin by explaining that managing bulls in artificial insemination programs aims to collect high-quality semen safely and regularly. Bulls with superior genetic traits and good health are selected to ensure improved production in cows. Management includes providing a balanced diet.			
15	Theoretical 2 Practical 2	Theory a2 The student understands the factors affecting infertility in males and females. To explain these factors to students, one can begin by explaining that fertility depends on the health of the reproductive system, the quality of eggs and sperm, and hormone function. In males, low sperm production, poor sperm motility, or abnormal sperm morphology can lead to infertility. Infectious or chronic diseases affect the testes and accessory glands, reducing a man's ability to reproduce. Malnutrition and deficiencies in essential vitamins and minerals such as zinc and selenium also affect sperm production. Stress and adverse environmental conditions lead to decreased sexual activity. Practical c1 The student applies the processes of identifying and characterizing bull ejaculate. To explain bull ejaculate	theoretical Factors affecting infertility in males and females Practical Explains the specifications of the bull toss	Methods audio Writing style On the board Dialogue style Direct practical: Assigning tasks And report	hort exam Assignment of duty discussions
14					

		characteristics to students, one can begin by explaining that an ejaculate is the amount of seminal fluid released by a bull in a single act of mating or during natural copulation. The ejaculate consists of seminal fluid, sperm, and accessory glands that add nutrient-rich fluids. The amount of ejaculate varies among bulls depending on age, health status, and breed.			
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11. Course Evaluation

Distribution of the score from 100 according to the tasks assigned to the student such as daily preparation 5 degrees and daily examinations 5 degrees and monthly 80 degrees and reports 10 degrees

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of Fodder and feeding
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	http://www.anypdftools.com/buy/buy-pdf-splitter.html

11- Course evaluation

Calendar methods	Calendar appointment	Class	Relative weight%
Theoretical final report + practical	My theory is week 15	7 theoretical + 6 practical 4	13%
Short test	My work week 1 - 15	theoretical + 2 practical 10	6%
A theoretical and practical midterm test	week (3)	theoretical + 5 practical 4	15%
Short test	week (9)	theoretical + 2 practical	6%

Final practical test	week (12)	20	20%
Final theoretical test	Final exam week	40	40%
total	Final exam week	100	%100

12. Learning and teaching resources

Required textbooks (methodology, if any)	Required textbooks (methodology, if any)
Book on the physiology of reproduction and pollination Artificial 1990	Main references (sources) Recommended supporting
Assisted reproductive technologies in animals Farm 2018 Reproduction in farm animals	books and references (scientific journals, reports....)
NRC National Report Bulletin 2001, 2007	Electronic references, Internet sites



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description of the Avian Physiology

1.Course Name					
Avian Physiology					
2.Course Code					
POPH328					
3.Term / Year					
Second Semester 2025-2026					
4.Description Preparation Date:					
1/2/2026					
5.A. Available Attendance Forms					
learning in-person					
6.Number of Credit Hours (Total of Units					
90 hours (2 Theoretical + 4 Practical)/ 4 units					
7.Course administrator's name (mention all, if more than one name)					
Dr. Abdullah Fathi Abdul-Majeed dr.abdullah@uomosul.edu.iq Dr. Wassem Khalid Ahmad wassemkhalid1986@uomosul.edu.iq					
8.Course Objectives					
- Enabling the student to understand and comprehend the functions of the various poultry body systems. - Enabling the student to understand and comprehend the mechanism of work of the organs of the body of poultry birds. - The student is introduced to several laboratory tests that are performed on blood.					
9.Teaching and Learning Strategies					
- Interactive lecture - Brainstorming - Dialogue and discussion - Practical exercises					
10.Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject Name	Learning method	Evaluation Method
1	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system,	Origin of blood cells, their types, and the factors affecting them.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.

		endocrine glands, digestive system, male and female reproductive systems).			
	4 Practical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Origin of blood cells, their types, and the factors affecting them.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
2	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Blood and lymph components and some of their physical properties.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	b2: The student practices the process of blood drawing, performing a blood smear, and some blood tests.	Blood and lymph components and some of their physical properties.	Laboratory work.	Exams , assignment, discussions.
3	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Physiology of the heart and blood circulation.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.

	4 Practical	b1: The student explains the function and components of the heart in poultry.	Physiology of the heart and blood circulation.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
4	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Central and Peripheral Nervous System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	b1: The student explains the structure of the nervous system and its mechanism for regulating different body organs.	Central and Peripheral Nervous System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
5	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Physiology of the Respiratory System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	b1: The student clarifies the physiological mechanism of the respiratory system and the process of gas exchange in poultry.	Physiology of the Respiratory System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
6	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various	Physiology of the Respiratory System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.

		body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).			
	4 Practical	c1: The student compares the respiratory system in birds and mammals.	Physiology of the Respiratory System.	Laboratory work.	Exams , assignment, discussions.
7	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Physiology of the Urinary System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	b1: The student explains the mechanism of renal filtration and the regulation of kidney function and salt glands in birds.	Physiology of the Urinary System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
8	2 Theoretical	a2: The student is familiar with the importance of endocrine glands, their types, hormones, and the factors affecting them.	Endocrine Glands, their Hormonal Secretions and Hormones.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	a2: The student is familiar with the action of anterior and posterior pituitary hormones and the physiological effect of each hormone.	Endocrine Glands, their Hormonal Secretions and Hormones.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
9	2 Theoretical	a2: The student is familiar with the importance of endocrine glands, their types, hormones, and the factors affecting them.	Endocrine Glands, their Hormonal Secretions and Hormones.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.

	4 Practical	a2: The student is familiar with the action of the thyroid, parathyroid, and ultimobranchial (or bronchial) gland hormones.	Endocrine Glands, their Hormonal Secretions and Hormones.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
10	2 Theoretical	a2: The student is familiar with the importance of endocrine glands, their types, hormones, and the factors affecting them.	Endocrine Glands, their Hormonal Secretions and Hormones.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	b1: The student explains the physiological effect of the adrenal gland and its various hormones.	Endocrine Glands, their Hormonal Secretions and Hormones.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
11	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Physiology of the Digestive System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	a2: The student is familiar with the importance of the components of the digestive system, the pancreas, and the hormones and enzymes secreted from it.	Physiology of the Digestive System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
12	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male	Physiology of the Digestive System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.

		and female reproductive systems).			
	4 Practical	c1: The student compares the process of digestion and absorption in birds and mammals.	Physiology of the Digestive System.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
13	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Male Reproductive System in Birds.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	c1: The student clarifies the process of artificial insemination and the factors affecting fertility in birds.	Male Reproductive System in Birds.	Laboratory work.	Exams , assignment, discussions.
14	2 Theoretical	a1: The student recognizes the anatomical and functional structure of the main body systems and their basic functions in poultry (The blood and various body fluids, nervous system, respiratory system, urinary system, endocrine glands, digestive system, male and female reproductive systems).	Female Reproductive System in Birds.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	c1: The student clarifies the components of the female reproductive system, the mechanism of egg component formation, oviduct movement, and egg laying.	Female Reproductive System in Birds.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.

15	2 Theoretical	b1: The student explains the main events of the hatching process.	Female Reproductive System in Birds.	Auditory styles, writing style on the board, direct dialogue style.	Exams , assignment, discussions.
	4 Practical	c1: The student clarifies the hatching process and the main events accompanying this process.	Female Reproductive System in Birds.	Laboratory work.	Exams , assignment, discussions.

11.Course Evaluation

No.	Evaluation methods	Calendar Appointment (Week)	Score	Relative Weight%
1	Midterm test (theoretical and practical)	Week / 9	25 Theoretical + 15 Practical	40 %
2	Final Practical Test	Practical Exams Week	20	20%
3	Final theoretical test	Theoretical Exam Week	40	40 %
4	Total		100	100%

12.Learning and Teaching Resources

Required Textbooks (Curriculum, if applicable)	Physiology of domestic birds: Al-Hassani, Diaa Hassan (1990) Baghdad: Ministry of Higher Education and Scientific Research.
Main References (Sources)	Sturkie, P. D. (Ed.). (2012). <i>Avian physiology</i> . Springer Science & Business Media.
Supporting Books and References Recommended (Scientific Journals, Reports, ...)	Veterinary Physiology: Mohi El-Din, Khair El-Din and Yusuf, Waleed Hamid (1987). Directorate of Dar Al-Kitab for Printing and Publishing – University of Mosul –Iraq
E-References , Websites	



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Course Description

: Course Name .1	
meat production	
: Course code .2	
MEPR431	
Semester / Year : Annual .3	
First semester / Fourth stage / 2025–2026	
Date this description was prepared .4	
2025/9/1	
: Available attendance formats .5	
My presence	
:Number of study hours (total) / Number of units (total) .6	
(hours)/ 3 units 4) hours practical2 /hours theory 2	
Name of course coordinator (if applicable) More than one name is .7 (mentioned)	
Dr. Safwan Luqman Shihab M.M. Raghad Nabil Dawood	
Course objectives .8	
practical to learn about different animals and the most –1 famous breeds Knowing the requirements for any type of –2 production and the ideal conditions that suit those animals Field operations necessary for farm animals –3	theoretical the most important operations that take place on –1 meat of all kinds Knowing the most important forage crops that –2 contribute to a particular type of animal production Identifying the most common animals in the area –3 and thus finding Programs for breeding and increasing their production Identifying the most important nutrients and –4 compounds that animals need
Teaching and learning strategies .9	
practical Assigning teamwork to reveal leadership skills Assigning tasks and reporting on each breed	theoretical Interactive lecture Dialogue and discussion

Utilizing the office hours of the department's professors	Reports seminars
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Course structure .10

Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week
Short exams Assignment of duty discussions	theoretical auditory methods Whiteboard writing style dialogue style Live practical signing tasks and report	theoretical The importance of meat practical The importance of meat in nutrition .man	theoretical He understands the :a importance of meat and its connection to other sciences, its importance in human nutrition, the general characteristics of farm animal models, field operations in animal farms, and the most important differences in muscle and .fat distribution practical He understands the :a importance of meat and its connection In other sciences, and its importance in nutrition Human beings and their general characteristics animal model , and field operations in animal farms, and to learn about the most important differences based on muscle and fat distribution	Theory 2 practical 3	1
Short exams Assignment of duty discussions	theoretical auditory methods Whiteboard writing style dialogue style Live practical signing tasks and report	theoretical .Raising beef cattle practical General features of the meat animal	theoretical It explains the :b 1 processes involved in raising beef cattle, describes and outlines the arbitration schedule, explains the factors affecting meat production, details beef cattle production programs, emphasizes the importance of weight, feed, and health records, discusses the impact of energy on meat production, explains how to	Theory 2 practical 3	2

		model	take body measurements, and describes dual-purpose .cattle practical He understands the :a importance of meat and its connection to other sciences, its importance in human nutrition, the general characteristics of farm animal models, field operations in animal farms, and the most important differences in muscle and .fat distribution		
Short exams Assignment of duty discussions	theoretical auditory methods Whiteboard writing style dialogue style Live practical signing tasks and report	theoretical .Beef cattle breeds practical Arbitration table	theoretical explains the processes :b 1 involved in raising beef cattle, describes and outlines the arbitration schedule, explains factors affecting meat production, details beef cattle production programs, emphasizes the importance of weight, feed, and health records, discusses the impact of energy on meat production, explains how to take body measurements, describes dual-purpose .cattle practical It explains the :b 1 processes involved in raising beef cattle, describes and outlines the arbitration schedule, explains the factors affecting meat production, details beef cattle production programs, emphasizes the importance of weight, feed, and health records, discusses the impact of energy on meat production, explains how to take body measurements, and describes dual-purpose .cattle	Theory 2 practical 3	3
Short	theoretical auditory methods Whiteboard	theoretical .Sources of meat	theoretical meat sources, Shows :C1 explains the meaning of growth and development in	Theory 2 practical 3	4

exams Assignment of duty discussions	writing style dialogue style Live practical signing tasks and report	practical Field operations	meat animals, shows the relationship between live weight and carcass weight, highlights the importance of birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm animals. practical He understands the :a importance of meat and its connection to other sciences, its importance in human nutrition, the general characteristics of farm animal models, field operations in animal farms, and the most important differences in muscle and .fat distribution		
Short exams Assignment of duty discussions	theoretical auditory methods Whiteboard writing style dialogue style Live practical signing tasks and report	theoretical Body growth and .development practical Field operations	theoretical meat sources, Shows :C1 explains the meaning of growth and development in meat animals, shows the relationship between live weight and carcass weight, highlights the importance of birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm animals. practical He understands the :a importance of meat and its connection to other sciences, its importance in human nutrition, the general characteristics of farm animal models, field operations in animal farms, and the most important differences in muscle and	Theory 2 practical 3	5

			.fat distribution		
Short exams Assign ment of duty discuss ions	theoretical auditory methods Whiteboard writing style ialogue style Live practical signing tasks and report	theoretical Factors affecting .meat production practical Field operations	theoretical It explains the :b 1 processes involved in raising beef cattle, describes and outlines the arbitration schedule, explains the factors affecting meat production , details beef cattle production programs, emphasizes the importance of weight, feed, and health records, discusses the impact of energy on meat production, explains how to take body measurements, and describes dual-purpose .cattle practical He understands the :a importance of meat and its connection to other sciences, its importance in human nutrition, the general characteristics of farm animal models, field operations in animal farms, and the most important differences in muscle and .fat distribution	Theory 2 practical 3	6
Short exams Assign ment of duty discuss ions	theoretical auditory methods Whiteboard writing style ialogue style Live practical signing tasks and report	theoretical The relationship between live weight And the weight of the sacrificed .animal practical Demands of those who benefit from . the meat	theoretical meat sources, Shows :C1 explains the meaning of growth and development in meat animals, shows the relationship between live weight and carcass weight, highlights the importance of birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm .animals practical It addresses Specifies :c2 the demands of meat animal consumers , identifies the most important methods	Theory 2 practical 3	7

ions			processes involved in raising beef cattle, describes and outlines the arbitration schedule, explains the factors affecting meat production, details beef cattle production programs, emphasizes the importance of weight, feed, and health records, discusses the impact of energy on meat production, explains how to take body measurements, and describes dual-purpose .cattle		
Short exams Assign ment of duty discuss ions	theoretical auditory methods Whiteboard writing style ialogue style Live practical signing tasks and report	theoretical Changes in the proportions of components The carcass during the growth stage and development Distribution difference Muscles and bones practical Animal tracking records farm	theoretical He understands the :a importance of meat and its connection to other sciences, its importance in human nutrition, the general characteristics of farm animal models, field operations in animal farms, and the most important differences in muscle and .fat distribution practical meat sources, Shows :C1 explains the meaning of growth and development in meat animals, shows the relationship between live weight and carcass weight, highlights the importance of birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm .animals	Theory 2 practical 3	11
Short exams Assign ment	theoretical auditory methods Whiteboard writing style ialogue style Live practical	theoretical Energy and its effect on formation Muscles and the factors that affect them	theoretical meat sources, Shows :C1 explains the meaning of growth and development in meat animals, shows the relationship between live weight and carcass weight, highlights the importance of	Theory 2 practical 3	12

of duty discussions	signing tasks and report	practical Weight and nutrition records Animal health records farm	birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm animals. practical It explains the :b 1 processes involved in raising beef cattle, describes and outlines the arbitration schedule, explains the factors affecting meat production, details beef cattle production programs, emphasizes the importance of weight, feed, and health records, discusses the impact of energy on meat production, explains how to take body measurements, and describes dual-purpose .cattle		
Short exams Assign ment of duty discussions	theoretical auditory methods Whiteboard writing style ialogue style Live practical signing tasks and report	theoretical Hormones and their relationship to growth The animal's body evolved practical Birth and death report and its importance in meat production projects	theoretical It explains the :b 1 processes involved in raising beef cattle, describes and outlines the arbitration schedule, explains the factors affecting meat production, details beef cattle production programs, emphasizes the importance of weight, feed, and health records, discusses the impact of energy on meat production, explains how to take body measurements, and describes dual-purpose .cattle practical meat sources, Shows :C1 explains the meaning of growth and development in meat animals, shows the relationship between live weight and carcass weight,	Theory 2 practical 3	13

			highlights the importance of birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm animals.		
Short exams Assignment of duty discussions	theoretical auditory methods Whiteboard writing style dialogue style Live practical signing tasks and report	theoretical Reproduction in beef cattle And the factors that affect it practical Measuring body composition Animal by equations predictive	theoretical meat sources, Shows :C1 explains the meaning of growth and development in meat animals, shows the relationship between live weight and carcass weight, highlights the importance of birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm animals. practical meat sources, Shows :C1 explains the meaning of growth and development in meat animals, shows the relationship between live weight and carcass weight, highlights the importance of birth reports, lists famous meat breeds worldwide, explains types of records, discusses the impact of energy on meat production, and explains the concept of reproduction in farm animals.	Theory 2 practical 3	14
Short exams Assignment of duty	theoretical auditory methods Whiteboard writing style dialogue style Live practical signing tasks and report	theoretical The concept of fattening in beef cattle And the factors that affect it practical	theoretical It addresses Specifies :c2 the demands of meat animal consumers , identifies the most important methods used to measure meat production efficiency, and determines the most significant factors affecting the fattening process	Theory 2 practical 3	15

discussions			practical sides which field :e1 operations followed and involved in field work		
Course evaluation .11					
% Relative weight	Degree	Calendar date (week)	Assessment methods	T	
%13	+ Theory 7 practical 6	Theory (15 weeks My work is 1-15 weeks	Final theoretical report + practical reports	1	
%6	Theory + 2 4 Practical	Week 3	(1)Quiz	2	
%15	+ Theory 10 practical 5	Week 9	(Theory and Practical)Exam	3	
%6	Theory + 2 4 Practical	Week 12	(2)Quiz	4	
%20	20	Practical exam week	Final practical test	5	
%40	40	Theory exam week	Final theory test	6	
%100	100	the total			
Learning and teaching resources .12					
Book on Meat Production and Preservation			Required textbooks (methodology, if applicable)		
			Main references (sources)		
			Recommended supporting books and references (scientific journals, reports...)		
organized health Global , and organized food and medicine American			references , websites		



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رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description Computer Applications 4

: Course Name .1	
Computer Applications 4	
: Course code .2	
COMA401	
: Chapter / Year .3	
semester / 2025–2026 First	
: Date this description was prepared .4	
2025/9/1	
: Available attendance formats .5	
In person , online	
:Number of study hours (total) / Number of units (total) .6	
units2 / working hours45	
Name of course coordinator (if applicable) More than one name is .7	
(mentioned	
Najla Matta Ishaq	
Course objectives .8	
	Enabling the student to become familiar with – and its SAS statistical software the .applications in agricultural experiments Enabling the student to know and understand – and the SAS Programs in the language application of the steps and procedures statistical program SAS followed for using the in analyses related to agricultural .experiments Enabling the student to write programs in a – for various agricultural and SAS language .scientific experiments To equip the student with the skills to deal – with data types when writing programs in the .SAS language

	Enabling the student to correct grammatical – and linguistic errors that appear when SAS executing programs written in the language . understand, and interpret the results and outputs SAS language . of programs written in the				
Teaching and learning strategies .9					
	Interactive lecture - brainstorming - Dialogue and - discussion Field training - practical exercises - Field project - self-learning -				
Course structure .10					
Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week
. The final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	software? - SAS Information storage and retrieval - Data manipulation and programming - Report writing - Statistical analysis Records processing - for entering data Methods SAS package the into	The student learns 1. . about the program and its SAS importance and use in statistical data analysis and the tools .available in it Understanding methods for entering SAS the data into package The student learns about methods of entering data into the . program SAS	practical 3	the first
, a report . The final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-	windows – Program SAS writing and loading window – Program execution steps window – Results window. Who uses ?SAS General things -SAS Why	:a 2 The student becomes familiar with program the SAS windows , the purpose of each window and how to deal with it, and	practical 3	he second

	learning	that people who want to for SAS software use statistical analysis . purposes should know	becomes familiar with the general things that people who want SAS to use the for the program purpose of statistical . analysis should have		
Assigning a task, .the final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	stages of the The computer-aided analysis process General steps for writing .SAS program an	The student :c1 explains the stages of the computer-aided .analysis process The student demonstrates the general steps for SAS writing an .program	practical 3	the third
The short test, . the final test	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	Functions (abs,int , sqrt,mod , min,max , arsin,sin , cos,log ,log10) (N,SS , mean,std , var,stderr , sum,cv , uss,css ,range)	The student C2: employs functions, their importance, and their usage formulas in writing a program SAS language. in the	practical 3	Fourth
Assigning a task, .the final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	Generating new data from the input data set using arithmetic operations or .functions	process of generating new data from the input data set using mathematical operations or functions and their formulas in writing a SAS program in the language.	practical 3	Fifth
Scientific visit . The final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	IF Generating data using - .conditional statements to convert a How continuous variable into classes Scientific visit +	IF data usingof statements . Conditional statements and their usage in writing a SAS program in the language The student tests the conversion of a continuous variable .into classes	practical 3	Sixth
Midterm exam 1 . final exam,	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-	Using conditional - statements to delete data from a dataset in the program Midterm Exam 1 +	from a dataset data Using it . and formulas in writing a program SAS language in the	practical 3	Seventh

	learning				
The test is practical, the . final test	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	Sorting and arranging data PROC SORT using the statement Determine whether the * variable follows a normal (Proc distribution or not univariate)	The student works b1 on sorting and arranging data and its usage formulas in writing a program in . languageSAS the The student determines whether the variable follows a normal distribution or .not	practical 3	Eighth
Assigning a task, .the final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	Applications in descriptive statistics One-way frequency distribution table Two-way frequency distribution table PROC FREQ	The student uses ab 2 procedure to find the frequency distribution table for one-way and two-way orthogonal distributions and their formulas for use in writing a program in SAS.	practical 3	Ninth
The short test, . the final test	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	Measures of mediation and measures of .dispersion PROC MEANS	The student b3 produces measures of and mediation dispersion using Its format in writing a SAS program in the language	practical 3	tenth
Assigning a task, .the final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	testt-	tries to find a student T and its usage . test formulas in writing a SAS program in the language	practical 3	atheistic ten
The practical test . The final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	Analysis of variance for balanced data analysis PROC ANOVA formula	The student b 5. evaluates the creation of an analysis of variance (ANOVA) table for balanced data and the formulas used in writing a SAS program in the language.	practical 3	he second ten
Midterm exam 2 . final exam,	Interactive lecture, brainstorming, dialogue and discussion, practical	Analysis of variance for unbalanced data Analysis of Variance formula PROC GLM +	6. The student will try to find an analysis of variance ANOVA) table for (unbalanced data and formulas for	practical 3	the third ten

	exercises, self-learning	Midterm Exam 2	using it in writing a SAS program in the language.		
Assigning a task, .the final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	Correlation PROC CORR Coefficient Formula	The student b 7 identifies the correlation coefficient and its usage formulas in writing a SAS program in the language.		Fourth ten
The practical , test . The final exam	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, self-learning	regression PROC REG formula	The student will 8. deduce the regression equation and its formulas for use in writing a program in SAS language . the		Fifth ten

Course evaluation .11

Relative weight %	Degree	Assessment date (one week)	Evaluation methods	T
%2	2	Week 2	Report 1	1
%1	1	Week 3	Assignment of Duty 1	2
%2	2	Week 4	Short TestQuiz1	3
%1	1	Week 5	Assignment of Duty 2	4
%1.5	1.5	Week 6	Scientific visit	5
%10	10	Week 7	Midterm Exam 1	6
%2.5	2.5	Week 8	Test 1 Practical	7
%1	1	Week 9	Assignment of duty 3	8
%2	2	Week 10	Short TestQuiz2	9
%1	1	Week Eleven	Assignment of duty 4	10
%2.5	2.5	Week Twelve	Practical Test 2	11
%10	10	Week 13	Midterm Exam 2	12
%1	1	Week Fourteen	Assignment of duty 5	13
%2.5	2.5	Week fifteen	Practical Test 3	14
60	60	Final exams	Final practical test	15
%100	100		the total	

Learning and teaching resources .12

A curriculum was prepared by the computer science professors at the college based on the .SAS software guide	Required textbooks (methodology, if applicable)
SAS software guide - A Handbook of Statistical Analyses - using SAS. (authors: Geoff Der and Brian S.	Main references (sources)

Everitt) Statistical SAS Data Analysis Using the Software , by Dr. Firas Rashad Al-Samarrai	
. Statistical Analysis Using the SAS Package Prepared by: Abdullah Al-Shahrani	Recommended supporting books and references (scientific journals, reports, etc.)
https://www.sas.com/en_sg/training/offers/free-training.html https://video.sas.com/detail/videos/how-to-tutorials https://www.udemy.com/course/sas-programming-for-beginners https://sascrunch.com/courses/sas-base-programming-for-absolute-beginners-free-version/	references , websites



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Course description template

Course Name .1	
Feeding domestic birds	
Course code .2	
POBN428	
Semester/ Year .3	
First semester, Autumn 2025–2026	
Date this description was prepared .4	
2025/9/1	
Available forms of attendance .5	
In-person + online	
Number of study hours (total) / Number of units (total) .6	
Units4 / Theory + 3 Practical 2	
Name of course coordinator (if applicable) More than one name is .7 (mentioned)	
khmm9191@uomosul.edu.iq :Email .A -Name: M.D. Khalid Hadi Mustafa Al A'imel -Name: Dr. Ahmed Mohammed Thabet Qasim Al ahmed.alniemy@uomosul.edu	
objectives Course .8	
:practical aching the student the practical aspects of – the scientific material plying the practical aspect in a way that –2 bles him to benefit from it in the labor market	:theoretical bling the student to learn the basic components of -1 .animal feed student should become familiar with the most -2 .important sources of animal feed ching the student the correct scientific principles for -3 .forming relationships bling the student to understand the relationship between -4 the bird's nutritional needs . productive performance
Teaching and learning strategies .9	
:practical .Practical applications in poultry farms – 1 .Scientific visits to feed mills –2 .Explanation and clarification –3 .Dialogue and discussion –4 .Reports –5	:theoretical .Interactive lecture –1 .Explanation and clarification –2 .Brainstorming –3 .Dialogue and discussion –4

Course structure .10

Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Energy – Energy Sources – Carbohydrates :Practical Primary feed materials	:theoretical The student knows – A1 what energy is – energy sources – carbohydrates :Practical The student – a2 the primary feed describes .materials	2 Theory 3 practical	the first
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Lipids and fats - Fat breakdown - Benefits and harms of fats :practical Sources of proteins, fats, and vitamins	:Theoretically The student learns – A2: about lipids and fats – classification of fats – benefits and harms of fats :practical lists – b1 The student sources of proteins, fats, and vitamins	2 Theory 3 practical	the second
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Energy measurements - the relationship between energy and food composition :practical Feed concentrates and pre-prepared mixtures	:theoretical The student – a2 understands the reasons why protein is not used as an energy source – the biological division of .energy :practical The student will– b2 from feed benefit concentrates and pre-prepared mixtures	2 Theory 3 practical	the third
Exams Assignment of duty	Theory: Visual and auditory methods	:theoretical Dietary rationing - symptoms of energy deficiency and excess	:theoretical The student learns – A2 about dietary rationing –	2 Theory	Fourth

discussions	Explanation and dialogue style Practical: Assigning tasks and reporting	:practical Preparation of protein concentrates	symptoms of energy deficiency and excess :practical The student will – C2 benefit from preparing protein concentrates	3 practical	
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Proteins - Types of proteins - Importance of proteins :practical Feed production and manufacturing	:theoretical student defines– A1 The proteins – types of proteins – importance of proteins :practical The student explains – b2 the production and manufacturing of animal feed	2 Theory 3 practical	Fifth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Amino acids - their functions - their classification - energy-to-protein ratio :practical Forming and combining relationships	:theoretical student – A2 The describes amino acids – their functions – their classification – the energy– to–protein ratio :practical – C1 The student documents the formation and synthesis of relationships	2 Theory 3 practical	Sixth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Chicken Amino Acid Requirements - Effects of Protein or Amino Acid Deficiency or Excess Field Project – :practical Forming and Synthesizing Relationships – A Field Project	:theoretical The student explains – b2 the amino acid requirements of chickens – the effect of protein deficiency or excess or amino acid deficiency – Field Project :practical chooses – C1 The student to form and synthesize	2 Theory 3 practical	Seventh

			relationships – a field project		
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Vitamins - Vitamin Classification - Factors Affecting Poultry Vitamin Requirements :practical Contamination of animal feed with toxins	:theoretical The student learns – A2 about vitamins – Vitamin classification – Factors affecting poultry vitamin requirements :practical –c2 The student demonstrates contamination of feed materials with toxins	2 Theory 3 practical	Eighth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Inorganic elements - their classification - their functions - the effect of their deficiency and excess in poultry diets :practical Mycotoxins and their prevention	:theoretical student – b1 The documents the inorganic elements – their classification – their functions – the effect of their deficiency and excess in poultry diets :practical explains – C2 The student mycotoxins and how to prevent them	2 Theory 3 practical	Ninth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Water - its functions - water quality :practical Specifications of a good feed formula	:theoretical – A1 The student mentions water – its functions – the type of water :practical the lists–b1 The student specifications of a good feed formula	2 Theory 3 practical	tenth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue	:theoretical Digestion - Functions of the digestive system - Factors affecting the speed of food passage through the digestive system	:theoretical The student – A1 remembers digestion – functions of the digestive system – factors affecting	2 Theory	eleventh

	style Practical: Assigning tasks and reporting	:practical Standardization and Quality Control	the speed of food passage through the digestive system :Practical The student explains –c2 standardization and quality control	3 practical	
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical The end products of nutrient digestion – protein digestion – carbohydrate digestion – fat digestion – Field project :practical Animal feed storage a field project –	:Theory lists the –a1 The student end products of nutrient digestion: protein digestion, carbohydrate digestion, and fat digestion (Field Project) . :practical The student learns – A2 animal feed storing about materials – Field Project	2 Theory 3 practical	twelfth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Rancidity of fats and oils - Digestion of minerals - Digestion of vitamins :practical Feed storage	:theoretical The student learns – a2 about: Rancidity of fats and oils – Digestion of minerals – Digestion of vitamins :practical The student benefits – b2 from storing animal feed materials	2 Theory 3 practical	thirteenth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Metabolism - Carbohydrate metabolism - Fat metabolism :practical Vital tests	:theoretical The student learns – A2 about metabolism – carbohydrate metabolism fat metabolism – :practical The student explains – b2 the vital tests	2 Theory 3 practical	fourteenth
Exams Assignment of duty	Theory: Visual and auditory methods	:theoretical Protein metabolism - Mineral metabolism - Water metabolism	:theoretical The student knows – a1 about protein metabolism	2 Theory	fifteenth

discussions	Explanation and dialogue style Practical: Assigning tasks and reporting	:practical Quality of mixed feed	mineral metabolism – – water metabolism :practical student explains– b2 The type of mixed feed	3 practical	
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Course evaluation .11

Relative % weight	Degree	Calendar date (week)	Assessment methods	T
%13	Theory + 7 Practical 6	My theory, week 15 My work week 1-15	Final theoretical report + practical experiment reports	1
%6	Theory + 4 Practical 2	Week (3)	(1)Quiz	2
%15	Theory 10 5 + Practical	Week (9)	Midterm exam (theory and practical)	3
%6	Theory + 4 Practical 2	Week (12)	(1)Quiz	4
%20	20	Practical exam week	Final practical test	5
%40	40	Theory exam week	Final theory test	6
%100	100		the total	

Learning and teaching resources .12

Book on feeding domestic birds	Required textbooks (methodology, if applicable)
Poultry Nutrition Book	Main references (sources)
	Recommended supporting books and references (...scientific journals, reports)
	references , websites



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رئيس قسم الإنتاج الحيواني




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Course Description

Course Name .1	
Breeding and improving domestic birds	
Course code .2	
492 POBB	
Year / Semester .3	
2026–2025 FourPhase Chapter) Autumnal(First	
Date this description was prepared .4	
1/9/2025	
Available forms of attendance .5	
My presence	
(total) Number of units / (total) Number of study hours .6	
Units4 / Practical 3 + Theory 2	
. if applicable) More than one name is mentioned) Name of course coordinator .7	
haytham-mohammed@uomosul.edu.iq Dr. Haitham Mohammed Sabih Hadi : Name nahed-alhmdany@uomosul.edu.iq Sharif M.M. Nahed	
Course objectives .8	
: Practical abling the student to identify the most important genes that .It controls productive traits and genetic equivalent values ch attribute and its use can be used to determine if .improvement is possible .The trait can be genetic or environmental	Course objectives : Theoretically abling the student to understand and – nprehend matters related to education and improvement ultury and its relationship to improving breeds . and increasing production abling the student to learn about the most – important breeds and hybrids . And to use it to improve the quality abling the student to become familiar with – selection and improvement methods . Genetic abling the student to discover non-- qualifying traits . Desirable and improved e student can judge chicken production based

			. on the genes that control it In it nducting a scientific visit to research centers - specializing in improvement Poultry farming and increasing its production		
Teaching and learning strategies .9					
: Practical . Adapting to teamwork reveals leadership skills – apting to tasks and taking them out to the fields to – identify the most important Types of breeds and hybrids –		: Theoretically lecture Interactive Brainstorming and discussion Dialogue to tasks and reports Adapting ers for models of chicken – breeds		strategy	
Course structure .10					
Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week
, Short quizzes homework assignments discussions ,	: Theoretically uditory methods Writing style on blackboard Dialogue style Live	: Theoretically gin and e sification of poultry	: Theoretically student a1 recognizes ed on origin and classification ultry and developmental stages	theory 2	1
	: practical Assigning tasks and report	: practical Poultry classification	biological characteristics netics and characteristics hromosome In poultry : practical e student a1 recognizes ed on origin and classification ultry and developmental stages	actical 3	

			biological characteristics genetics and characteristics chromosome In poultry		
, Short quizzes homework assignments discussions ,	: Theoretically auditory methods writing style on the board Dialogue style Live : practical Assigning tasks and report	: Theoretically chromosomes : Practical exercises on Mendel's Law (Isolation	: Theoretically student a 1 recognizes ed on origin and classification poultry and developmental stages biological characteristics genetics and characteristics chromosome In poultry : Practical A husband discovers b1 One of Genes is done by solving questions for a couple e of the genes and its phenotypic expression	Theory 2 actical 3	2

, Short quizzes homework assignments discussions ,	: Theoretically auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically outward expression For genes : Practical : Practical the law Mendel's Second of Distribution (Independent	: Theoretically husband discovers b1 One of Genes s is done by solving .questions for a couple e of the genes and its phenotypic expression : Practical A husband discovers b1 One of Genes s is done by solving .questions for a couple e of the genes and its phenotypic expression	theory 2 actical 3	3
, Short quizzes homework assignments discussions ,	: Theoretically auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	redity : Theory Mandali ineage and opinions Mandali : Practical General exercises	: Theoretically is familiar with a2 ndelian genetics . and opinions ndelian genealogy and knowledge Scientific heredity basis ndali and law Isolation distribution ependent and methods of education : Practical eals the c1 modifications in ndelian ratios for one pair m genes and heredity couple From the genes	theory 2 actical 3	4

			availing dual . superiority Gene exercises promote deadly		
, Short quizzes homework assignments discussions ,	: Theoretically uditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically Genealogical alterations Mandali : Practical x-linked inheritance	: Theoretically reals the c1 modifications in ndelian ratios for one pair m genes and heredity couple From the genes availing dual . superiority Gene exercises promote deadly : Practical reals the c1 modifications in ndelian ratios for one pair m genes and heredity couple From the genes availing dual . superiority Gene exercises promote deadly	Theory 2 actical 3	5

homework assignments discussions ,	: Theoretically auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically Inheritance of traits Sex-related : Practical x-linked inheritance	: Theoretically termining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement : Practical termining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement	theory 2 actical 3	6
homework assignments discussions ,	: Theoretically auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically eritance of the customary form : Practical x-linked inheritance	: Theoretically termining c2 inheritance Customary form mmon belief and editary nature of the spur formed legs and determining heredity alitative traits in ckens and selection criteria	theory 2 actical 3	7

			: Practical etermining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement		
, Short quizzes homework , assignments discussions	: Theoretically Auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically Inheritance of traits Quality in . Chicken : Practical Genetic markers	: Theoretically etermining c2 inheritance Customary form mmon belief and editary nature of the spur formed legs and etermining heredity alitative traits in chickens and selection : Practical etermining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education	theory 2 actical 3	8

			and improvement		
, Short quizzes homework , assignments discussions	: Theoretically Auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically ne deformities in the feathers . Chicken : Practical Election experiences	: Theoretically etermining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement : Practical etermining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement	Theory 2 actical 3	9

, Short quizzes homework , assignments discussions	: Theoretically Auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically lethal genes : Practical similarities between relatives	: Theoretically etermining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement : Practical etermining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement	theory 2 actical 3	10
, Short quizzes homework , assignments discussions	: Theoretically auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically conditional lethal e genes : Practical netic and enotypic correlation	: Theoretically student a1 recognizes ed on origin and classification oultry and developmental stages ological characteristics netics and characteristics romosome In poultry : Practical	theory 2 actical 3	11

			termining b2 inheritance Associated traits and self-naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement		
, Short quizzes homework , assignments discussions	: Theoretically auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically phenotypic contrast : Practical genetic and phenotypic correlation	: Theoretically termining b2 inheritance Associated traits and self-naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement : Practical termining b2 inheritance Associated traits and self-naturalization Chromosomal abnormalities nowledge of statistical asures for education and improvement	theory 2 actical 3	12
, Short quizzes	: Theoretically auditory methods Writing style on d	: Theoretically genetic equivalent methods of	: Theoretically termining b2 inheritance	theory 2	13

homework , assignments discussions	blackboard Dialogue style Live : practical Assigning tasks and report	estimating it nducting a field visit to the fields Animal production : Practical analyzes correlation values etic and phenotypic reciating the By election	Associated traits and self- naturalization Chromosomal abnormalities owledge of statistical asures for education and improvement : Practical ermining c2 inheritance Customary form mmon belief and editary nature of the spur formed legs and determining heredity alitative traits in ckens and selection criteria	actical 3	
, Short quizzes homework , assignments discussions	: Theoretically auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically Election ng engineering techniques Modern genetics in Animal production : Practical Style education	: Theoretically ermining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities owledge of statistical asures for education and improvement : Practical is familiar with a2 ndelian genetics . and opinions ndelian genealogy	theory 2 actical 3	14

			and knowledge Scientific heredity basis Mendali and law Isolation distribution dependent and methods of education		
, Short quizzes homework , assignments discussions	: Theoretically Auditory methods Writing style on blackboard Dialogue style Live : practical Assigning tasks and report	: Theoretically genetic link : Practical External Education	: Theoretically termining b2 inheritance Associated traits and self- naturalization Chromosomal abnormalities knowledge of statistical asures for education and improvement : Practical is familiar with a2 Mendelian genetics . and opinions Mendelian genealogy and knowledge Scientific heredity basis Mendali and law Isolation distribution dependent and methods of education	Theory 2 actical 3	15

Course evaluation .11

is distributed according to the tasks assigned to the student, such as daily preparation, daily, oral, 100
etc , monthly, and written exams, reports

% Relative weight	Degree	) Calendar date (week	Assessment methods	T
%13	Theory 7 + 6	My theory is for (15) one week My work week	final + Final theoretical report report for the course The process	1

		practical	(15)		
	%6	Theory 4 + 2 practical	(3) Week	(1) Short Quiz	2
	%15	10 + Theory 5 practical	(9) Week	theoretical and) Midterm exam (practical	3
	%6	Theory 4 + 2 practical	(12) Week	(2) Short Quiz	4
	%20	20	Practical exam week	Final practical test	5
	%40	40	Theory exam week	Final theory test	6
	%100	100		the total	

Learning and teaching resources .12

Book on breeding and improving domestic birds	thodology , if) Required textbooks (applicable
	(sources) Main references
Lectures and books published by universities Iraqi	Recommended supporting books and ,scientific journals, reports) references (.etc
bsites specializing in poultry breeding and improvement	references , websites



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description

Course Name .1	
Poultry management and production	
Course code .2	
PBPM432	
Semester/ Year .3	
First semester, Autumn 2025–2026	
Date this description was prepared .4	
2025/9/1	
Available forms of attendance .5	
In-person + online	
Number of study hours (total) / Number of units (total) .6	
units3 / 75 hours (Theory + 3 Practical 2)	
Name of course coordinator (if applicable) More than one name is .7 (mentioned	
nawaf.gazi@uomosul.edu.iq :tends A The letter Name: Dr. Nawaf Ghazi Abboud ahmed.alniemy@uomosul.edu.iq :Email .A -Name: Dr. Ahmed Mohamed Thabet Al	
objectives Course .8	
:practical Producing the student to the types and breeds of – 1 .poultry .Teaching the student methods of managing it –2 Teaching the student modern methods of production –3	:theoretical enable the student to identify poultry, its –1 .types and classification e student should learn about the –2 .importance of poultry production Teaching the student the correct scientific –3 foundations of education .Poultry production abling the student to know how to make –4 the most of it .From poultry production
Teaching and learning strategies .9	
:practical .Practical applied training in the poultry field –1 .Dialogue and discussion –2 .Writing reports –3	:theoretical .Interactive lecture –1 .Explanation and clarification –2 .Brainstorming –3 .Dialogue and discussion –4

Course structure .10

Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical The concept of managing and caring for poultry projects :practical Types of domestic birds – The importance of poultry production	:theoretical student defines that :a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds :practical should beb1 : The student able to identify the types of domestic birds, the importance of poultry production , poultry classification (scientific, , (economic, and geographical and types of the importance poultry products, and explain the types of housing, hatching, .and hatchery management	2 Theory 3 practical	the first
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical The economic importance of poultry projects :practical Poultry classification Scientific – classification – Economic classification – Geographical classification	:My theory student defines that :a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds :practical should beb1 : The student able to identify the types of domestic birds, the importance of poultry production , poultry	2 Theory 3 practical	the second

			classification (scientific, , (economic, and geographical and types of the importance poultry products, and explain the types of housing, hatching, .and hatchery management		
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Types of poultry housing and their construction requirements :practical The importance and types of poultry products	:theoretical student defines that : a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds :practical should be b1 : The student able to identify the types of domestic birds, the importance of poultry production , poultry classification (scientific, , (economic, and geographical and types of the importance poultry products, and explain the types of housing, hatching, .and hatchery management	2 Theo ry 3 pract ical	the third
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Environmental factors affecting poultry farming and production :practical Poultry housing – Types of housing – Site selection criteria	:theoretical student defines that : a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds :practical should be b1 : The student	2 Theo ry 3 pract ical	Fourt h

			able to identify the types of domestic birds, the importance of poultry production , poultry classification (scientific, , (economic, and geographical and types of the importance poultry products, and explain the types of housing, hatching, .and hatchery management		
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Poultry farming supplies :practical Poultry farm supplies Waterers and their – types – Feeders and their types	:theoretical student defines that :a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds :practical student defines that :a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds	2 Theo ry 3 pract ical	Fifth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical The student selects eggs suitable for hatching :practical Heating, cooling, ventilation and lighting systems in classrooms	:theoretical should beb1 : The student able to identify the types of domestic birds, the importance of poultry production , poultry classification (scientific, , (economic, and geographical and types of the importance poultry products, and explain the types of housing, hatching, .and hatchery management	2 Theo ry 3 pract ical	Sixth

			:practical Explains heating, :Section 2 cooling, ventilation, and lighting methods in poultry houses , the appropriate environmental factors that must be provided for raising poultry , and methods for preparing poultry houses to receive a new batch of chicks – Field Project		
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Methods and management of broiler breeding :practical Suitable environmental factors that must be provided for poultry ,farming (ventilation ,humidity ,the heat (Lighting, brush	:theoretical student defines that :a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds :practical Explains heating, :Section 2 cooling, ventilation, and lighting methods in poultry houses , the appropriate environmental factors that must be provided for raising poultry , and methods for preparing poultry houses to receive a new batch of chicks – Field Project	2 Theory 3 practical	Seventh
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Methods and management of laying hen hybrids Field project :practical Hatching methods – Types of hatcheries – Specifications of eggs suitable for hatching – Hatching requirements – Field project	:theoretical student defines that :a1 in Basic Concepts and care administration In what Poultry projects Economic Importance Includes Types ,Poultry classification ,Education Supplies ,Housing and ,Hatching basics in Production requirements . And whiteness meat herds	2 Theory 3 practical	Eighth

			:practical should be able to identify the types of domestic birds, the importance of poultry production, poultry classification (scientific, , (economic, and geographical and types of the importance poultry products, and explain the types of housing, hatching, .and hatchery management		
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Forced plucking and how it is performed :practical Methods of preparing poultry houses to receive a new batch of chicks – a field project	:theoretical The student understands :a 2 compulsory molting and how it is performed, methods of managing and raising turkeys, ducks, and geese, and managing broiler and egg breeding stock and commercial .flocks :practical It explains the heating, b 2 cooling, ventilation, and lighting methods in poultry houses, the appropriate environmental factors that must be provided for raising poultry, and methods for preparing poultry houses to receive a new batch of chicks. Field project	2 Theory 3 practical	Ninth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Management of broiler and egg breeders and commercial flock :practical Broiler management Poultry meat – production – Factors affecting it	:theoretical The student understands :a 2 compulsory molting and how it is performed, methods of managing and raising turkeys, ducks, and geese, and managing broiler and egg breeding stock and commercial .flocks :practical student It applies that :c 1 Related The process Skills Poultry projects Management Operations to implement via employment ,Hatching	2 Theory 3 practical	tenth

			The eggs evaluation ,Hatcheries to equip ,For hatching righteous systems Use ,Education halls And and cooling heating Preparation ,ventilation herds feeding Relationships		
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Poultry flocks from heat stress :practical Management of laying hens – Egg production in poultry Factors affecting it –	:theoretical Explains the Section 2: heating, cooling, ventilation, and lighting methods in poultry houses , the appropriate environmental factors that must be provided for raising poultry , and methods for preparing poultry houses to receive a new batch of chicks – Field Project :practical student It applies that :c 1 Related The process Skills Poultry projects Management Operations to implement via employment ,Hatching The eggs evaluation ,Hatcheries to equip ,For hatching righteous systems Use ,Education halls And and cooling heating Preparation ,ventilation . Herds feeding Relationships	2 Theo ry 3 pract ical	elev enth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Administrative procedures to promote bird health and immunity :practical Management – Reproduction – Factors –Fertility Affecting Fertility	:theoretical Explains the Section 2: heating, cooling, ventilation, and lighting methods in poultry houses , the appropriate environmental factors that must be provided for raising poultry , and methods for preparing poultry houses to receive a new batch of chicks – Field Project :practical student It applies that :c1 Related The process Skills Poultry projects Management Operations to implement via employment ,Hatching The eggs evaluation ,Hatcheries to equip ,For hatching righteous systems Use ,Education halls And and cooling heating Preparation ,ventilation . Herds feeding Relationships	2 Theo ry 3 pract ical	twelft h

Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Methods of managing and raising turkeys, ducks, and geese :practical Healthcare – The vaccination process and its methods	:theoretical The student understands :a 2 compulsory molting and how it is carried out , as well as methods of managing and raising turkeys, ducks, and .geese :practical student It applies that :c1 Related The process Skills Poultry projects Management Operations to implement via employment ,Hatching The eggs evaluation ,Hatcheries to equip ,For hatching righteous systems Use ,Education halls And and cooling heating Preparation ,ventilation herds feeding Relationships	2 Theo ry 3 pract ical	thirte enth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Poultry breeding, management, and production – a field project :practical Massacres – Stages of the Slaughter Process – A Field Project	:theoretical student It applies that :c1 Related The process Skills Poultry projects Management Operations to implement via employment ,Hatching The eggs evaluation ,Hatcheries to equip ,For hatching righteous systems Use ,Education halls And and cooling heating Preparation ,ventilation herds feeding Relationships : practical. student Documents that :d1 Production employment Data Records Using Poultry herds ,Approved And models For Artistic Reports Preparation and ,Field projects The effective communication inside the job difference with . The field	2 Theo ry 3 pract ical	fourt eenth
Exams Assignment of duty discussions	Theory: Visual and auditory methods Explanation and dialogue style Practical: Assigning tasks and reporting	:theoretical Feeding poultry flocks :practical Record keeping and organization	:theoretical student It applies that :c1 Related The process Skills Poultry projects Management Operations to implement via employment ,Hatching The eggs evaluation ,Hatcheries to equip ,For hatching righteous systems Use ,Education halls And and cooling heating Preparation ,ventilation herds feeding Relationships :practical student Documents that :d1 Production employment Data Records Using Poultry herds	2 Theo ry 3 pract ical	fiftee nth

			Approved And models For Artistic Reports Preparation and Field projects The effective communication inside the job difference with . The field		
Course evaluation .11					
Relative % weight	Degree	Calendar date (week)	Assessment methods	T	
%13	Theory + 6 7 Practical	My theory, week 15 My work week 1-15	Final theoretical report + practical experiment reports	1	
%6	Theory + 2 4 Practical	Week (3)	(1)Quiz	2	
%15	Theory + 5 10 Practical	Week (9)	Midterm exam (theory (and practical	3	
%6	Theory + 2 4 Practical	Week (12)	(1)Quiz	4	
%20	20	Practical exam week	Final practical test	5	
%40	40	Theory exam week	Final theory test	6	
%100	100	the total			
Learning and teaching resources .12					
Poultry Production, Dr. Suhaib Abdul-Razzaq, 1985, Ministry of Higher Education and Scientific Research – University of Baghdad Management (Author) Dr. Saad Abdul Hussein Naji, 2006, College of Agriculture / University of Baghdad – Technical Bulletin of the Poultry Science Association Management of Laying Hens, by Dr. Saad Abdul Hussein Naji, 2007, College of Agriculture, University of Baghdad – Technical Bulletin of the Association I go crazy Dosology Breeder Management (Author) Dr. Saad Abdul Hussein Naji, 2008, College of Agriculture – University of Baghdad – Technical Bulletin med, Ayad Shehab, et al. 2021. Management and Production - 5 Poultry Science Association of Poultry. University of Kufa				Required books Required (Methodology) If found	
Poultry Production, Dr. Suhaib Abdul-Razzaq, 1985, Ministry of Higher Education and Scientific Research – University of Baghdad Al-Zujaji, Rida Jawad and Ismail Khalil Ibrahim, 1981. Hatching and management Hatcheries. First Edition, University of Baghdad Al-Yassin, Ali Abdul-Khaliq and Muhammad Hassan Abdul-Abbas. 2010. Poultry Nutrition. .University of Baghdad Management (Author) Dr. Saad Abdul Hussein Naji, 2006, College of Agriculture / University of Baghdad – Technical Bulletin of the Poultry Science Association Management of Laying Hens, by Dr. Saad Abdul Hussein Naji, 2007, College of Agriculture, University of Baghdad – Technical Bulletin of the Association Poultry Science Breeder Management (Author) Dr. Saad Abdul Hussein Naji, 2008, College of Agriculture – University of Baghdad – Technical Bulletin of the Poultry Science Association Biosecurity Guide for Poultry Farming in the Middle East and North Africa				in references (sources)	
line	Iraqi academic scientific journals Sources: Naji, Saad Abdul Hussein. 1999. A Guide to Raising Broiler Chickens ,The Arab Food Organization's guide to raising laying hens . Company			Recommend d supporting books and references scientific)	

	journals, (...reports
https://www.hyline.com/userdocs/pages/BRN_COM_ARB.pdf Farming Guide , Company http://en.aviagen.com/brands/ross/products/ros , Aviagen Loman Company Guide to Poultry Farming http://www.ltz.de/en/downloads/management , whiteness https://www.wikiwand.com .1 https://www.thepoultrysite.com/ .2 /https://www.cobb-vantress.com/en_US .3 https://www.bigdutchman.com/en/egg-production/products	Electronic , references Internet sites



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أ.د. خالد حساني سلطان
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Course Description Form

1. Course Name:

Sheep and goats Production

2. Course Code:

SHGP430

3. Semester / Year:

Autumn 2025

4. Description Preparation Date:

1/9/2025

5. Available Attendance Forms:

Presence + Electronic

6. Number of Credit Hours (Total) / Number of Units (Total)

75 hours (2 + 3) *15 weeks 4 Units

7. Course administrator's name (mention all, if more than one name)

Name: Assist. Prof. Dr. Muthanna Fathi Abdullah Email: muthanna.f.a@uomosul.edu.iq

Name: Assist. Prof. Wissam Jassim Muhammed Email:

8. Course Objectives

Theoretical

- Enabling the student to understand and comprehend what is related to sheep and Goats nutrition and their relationship to animal production projects and the economic aspect
- Enabling the student to become familiar with the breeds of sheep and goats
- Enabling the student to know milk production in sheep and goats and the factors affecting it
- Enabling the student to know the diseases that affect sheep
- Goats and methods of processing them.
- Enable the student to know how to create a flock of sheep and goats
- Enabling the student to know the properties of wool and the factors affecting its production.
- Enable the student to know reproduction in sheep and goats and measure reproductive efficiency in addition to the factors affecting the death of embryos.

Practical

Enabling the student to become familiar with the most important field operations related to raising sheep and goats.

9. Teaching and Learning Strategies

Strategy

- Interactive lecture
- Brainstorming
- Dialogue and discussion

		- Field Training - Practical exercises - Field project - Self-education			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2Theoretical	a1: The student learns an introduction to sheep and goat production	Introduction to sheep and goat production	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a2: The student becomes familiar with some English terms related to sheep and goats	List the foreign terms used in raising sheep and goats	Assigning tasks And report	Assignment of duty discussions
Second	2Theoretical	b1: Shows the most important sheep and goat production systems	List the foreign terms used raising sheep and goats	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	b2: The student becomes familiar with some of the field operations that take place in sheep farms.	Seasonal field operations conducted on sheep and goats	Assigning tasks And report	-short exam -Assignment of duty -discussions
Third	2Theoretical	a1: The position of sheep and goats in the animal kingdom is mentioned	The position of sheep in the animal kingdom	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between	Exams, reports, discussions, quizzes

				the teacher and the student, with the student's evaluation in class participation	
	3 Practical	a2: The student becomes familiar with the field operations that are carried out once on flock of sheep and goats	One-time field operations sheep and goats	Assigning tasks And report	-short exam -Assignment of duty -discussions
Fourth	2Theoretical	a2: Explains the importance of reproduction and fertility in sheep and goats	Reproduction and fertility sheep and goats	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	b1: Experiment with performing some field operations that are carried out only once on a flock of sheep and goats	One-time field operations sheep and goats	Assigning tasks And report	-short exam - Assignment of duty -discussions
Fifth	2Theoretical	a1: Recognizes the breeding season and the factors that influence it.	Breeding season and factors affecting it	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a1: The student learns about breeding methods and types of sheep	A visit to the fields of one the research stations	Assigning tasks And report	-short exam -Assignment of duty -discussions

		and goat breeds			
Sixth	2Theoretical	a2: The student understands the mechanisms for improving the qualities of fertility and fertility.	Ways to improve fertility and fecundity	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a2: The student understands the procedures to be followed to prepare for the vaccination season.	Preparations for the vaccination season	Assigning tasks And report	-short exam -Assignment of duty -discussions
Seventh	2Theoretical	c2: The student explains the methods used in establishing and managing a flock of sheep and goats.	Establishing and managing flock of sheep and goats	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	c1: The student lists the procedures that must be followed to prepare for the birthing season.	Preparing for lambing season	Assigning tasks And report	-short exam -Assignment of duty -discussions
Eighth	2Theoretical	a2: Understands the methods of raising and feeding sheep and goats	Breeding and feeding methods In sheep and goats	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of	Exams, reports, discussions, quizzes

				direct dialogue between the teacher and the student, with the student's evaluation in class participation	
	3 Practical	a1: The student learns about some weaning methods in sheep and goats	Weaning and its types in sheep	Assigning tasks And report	-short exam -Assignment of duty -discussions
Ninth	2Theoretical	c2: Explains the importance of nutrition in different stages of growth	Nutrition at different stages of growth	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a2: Explains the parts of the reproductive system in sheep and goats	Reproductive systems in sheep	Assigning tasks And report	-short exam -Assignment of duty -discussions
Tenth	2Theoretical	a2: Understands the mechanism of milk production in sheep and goats	Milk production in sheep and goats	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a1: The student learns about the types of records used in sheep and goat management.	Records	Assigning tasks And report	-short exam -Assignment of duty -discussions
Eleven		c2: The student	Growth, development	Audio and visual	Exams,

	2Theoretical	explains the concept of growth, development, and meat production in sheep and goats.	and meat production in sheep and goats	methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	reports, discussions, quizzes
	3 Practical	a2: The student acquires the necessary experience to carry out the judging and exhibition process.	Arbitration and exhibitions	Assigning tasks And report	
Twelve	2Theoretical	c1: Calculates the biological efficiency values for meat production	Biological efficiency of meat production	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a1: The student learns about the types and requirements of sheep and goat pens.	Sheep dwellings and pens	Assigning tasks And report	-short exam -Assignment of duty -discussions
Thirteen	2Theoretical	a1: The student learns about wool and hair production systems in sheep and goats	Wool and hair production	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the	Exams, reports, discussions, quizzes

				teacher and the student, with the student's evaluation in class participation	
	3 Practical	a2: The student becomes familiar with the methods used in shearing wool.	Shear the wool	Assigning tasks And report	-short exam -Assignment of duty -discussions
Fourteen	2Theoretical	a1: The student learns some basic principles of sheep and goat genetics and breeding.	Genetics and improvement of sheep and goats	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a2: It covers the slaughtering process and the cuts of the carcass.	Slaughtering and cutting	Assigning tasks And report	-short exam -Assignment of duty -discussions
Fifteen	2Theoretical	a2: Understands how to use modern technologies to sustain sheep and goat production	The future of the sheep and goat industry and intensive production -Using modern technology to sustainability sheep and goat production	Audio and visual methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with the student's evaluation in class participation	Exams, reports, discussions, quizzes
	3 Practical	a1: The student learns about some diseases that affect sheep and goats and how to treat them.	Scientific visit to the Veterinary Hospital	Assigning tasks And report	-short exam -Assignment of duty -discussions

11. Course Evaluation

Evaluation methods	Evaluation date	degree	Relative weight%
Theoretical final report + practical experience reports	Theoretical 1 – 15 week Practical 1 – 15 week	7 Theoretical + 6 Practical	%13
Quizzes	3 rd week	4 Theoretical + 2 Practical	%6
Theoretical and practical midterm test	9 th week	10 Theoretical + 5 Practical	%15
Quiz	12 th week	4 Theoretical + 2 Practical	%6
Final practical test	Week Final Exam.	20	%20
Final theoretical test	Week Final Exam	40	%40
The total		100	100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Sheep and Goats Production (book)
Main references (sources)	Sheep Production and Management (2005)
Recommended books and references (scientific journals, reports...)	Sheep and Goats Handbook for Ethiopia (2008)
Electronic References, Websites	NRC National Report Bulletin 2001, 2007



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Description of the rangeland management course

1. Course Name:	
Pasture Management	
2 - Course code :	
PAMA432	
3 - Term/Year:	
First Autumn 2025/2026	
4 – Date this description was prepared	
2025/09/1	
5 – Available forms of attendance:	
My	
attendance is 6 – Total number of study hours / Total number of units:	
(75 hours) (3 units)	
7 - Name of the course coordinator (if there is more than one, mention it)	
omer.shabban@uomosul.edu.iq khaleelibk@uomosul.edu.iq	Name: Dr. Omar Ali Shaaban, M.M. Khalil
Ibrahim 8- Course Objectives	
practical : • Enabling the student to identify the most important plants Pastoralism and types of natural pastures • Methods of protecting and assessing their animal load and utilization	Theoretical • Enables understanding and comprehension of rangeland management material • Enabling the student to learn about the most important methods of protecting natural pastures ; enabling the student to become familiar with the most important types of natural pastures. Identifying and determining the palatability of pasture plants • Enabling the student to • The student can judge the quality of pasture plants.
9 – Teaching and Learning	
Practical: Assigning tasks and reports for each field visit to demonstrate leadership skills, including teamwork.	Strategies : Interactive lecture theory , brainstorming, dialogue and discussion, assignment of tasks and reports , viewing examples
of forage crop plants. 10 – Cou	

Evaluation Method	Learning method	Unit or topic name	Required educational outcomes		Hours	Week
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board is a method of direct dialogue. My work: Assigning tasks and reporting	Theory: The importance of pastures Practical botanical description of plants The grass family	He adopts unique ideas in the management of natural pastures. And its relationship to other sciences He compares different samples of pasture plants	a1 a6	2 Theory 3 Practical	1
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board; direct dialogue method (practical): assigning tasks and writing a report ;	Theory: Types of Pasture; Practical: Botanical Description of the Leguminous Family	It identifies the main causes of rangeland degradation. It identifies which plants are most toxic.	a2 a7	2 Theory 3 practical,	2
Short quizzes, homework assignments, discussions	theoretical: auditory methods Writing on the board; direct dialogue method (practical): assigning tasks and writing a report ;	Theoretical: Factors affecting pasture vegetation. Practical: Technical methods for measuring pasture vegetation.	It compares the factors affecting pasture vegetation and compares those factors and their effects on plants. It distinguishes between poisonous plants and others.	a3 a8	2 theoretical, 3 practical	3
Short quizzes, homework assignments, discussions	theoretical: auditory methods Writing on the board, direct dialogue method, practical: assigning tasks and reporting	Theoretical: Grazing areas in Iraq. Practical: Measuring quantitative attributes	He gives examples of the extent to which rangelands are degraded. Which types of plants are best suited for growing in pastures?	a4 a9	2 Theory 3 Practical	4
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board, direct dialogue method, practical: assigning tasks and reporting	Theory: Physiology of Forage Plants, Part 1 Practical: Measuring qualitative characteristics	He finds ways to protect natural pastures and these can be applied to the pastures of Nineveh Governorate. It distinguishes between poisonous and non- poisonous plants	a5 a10	2 Theory 3 Practical	5
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board, direct dialogue method, practical: assigning tasks and reporting	Theoretical: Physiology of Pasture Plants, Part Two ;	It implements the most important steps to identify the most common legume plants in natural pastures , giving	1b	6.2 Theory	
	Writing on the board, direct dialogue method, practical: assigning tasks and reporting	Practical: Grazing Systems	examples of plants and indicating which are most frequently grazed.	3b	3 practical	
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board, direct dialogue method, practical: assigning tasks and reporting	Theory: Animal Management in Pastures Practical: Salting	It implements the most important recommendations for cultivating the most common grasses in natural pastures. It identifies the types and quantities of toxins present in plants. Pastures	b2 b4	2 Theory 3 practical	7
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board, direct dialogue method, practical: assigning tasks and reporting	Exploiting the pasture, Part One (Practical): animal behavior	He distinguishes between the most important factors through which pasture vegetation can be improved It distinguishes between different types of animals	c1 b5	2 Theory 3 Practical	8

Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board is a method of direct dialogue. Practical: Assigning tasks and	Theory: Pasture Exploitation, Part Two Practical: Methods for measuring rangeland utilization	He selects the most important poisonous grazing plants found in natural pastures. It describes different types of plants to cultivate in pastures and identifies the	c2 b6	2 Theory 3 Practical	9
Short quizzes, homework assignments, discussions	writing a report. Theoretical: Auditory methods. Writing on the board, direct dialogue method, practical: assigning tasks and reporting	Theoretical approach to pasture condition; practical approach: methods for measuring pasture condition	most harmful plants in natural pastures. He takes different samples of pasture plants to determine their suitability for animal feed.	d1 b7	2 Theory 3 practical	10
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board; direct dialogue method (practical): assigning tasks and writing a report ;	Theoretical: Animal Load; Practical: Methods of measuring animal load	It explains some of the benefits of natural pastures and includes sample work on pasture plants.	d2 c3	2 Theory 3 practical,	11
Short quizzes, homework assignments, discussions	theoretical: auditory methods Writing on the board; direct dialogue method (practical): assigning tasks and writing a report ;	Theoretical: Cladding Practical: Cladding methods	It illustrates the extent to which humans benefit from pastures . And ways to benefit from them He writes a report on poisonous and non-poisonous plants.	d3 c4	2 theoretical 3 practical	12
Short quizzes, homework assignments, discussions	theoretical: auditory methods Writing on the board is a	Theory: Harmful Plants Practical: Identifying some	It supports the protection and restoration of rangelands and methods for measuring their growth. It distinguishes between harmful and non-harmful plants	4D	2 Theory	13
	practical , direct dialogue method : Assigning tasks and reporting	harmful plants in pastures	5c is harmful		3 practical	
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board, direct dialogue method, practical: assigning tasks and report	Field visit to the natural pastures My work: Identifying plants for natural pastures	It acknowledges the environmental and biological risks that affect Salma Al-Marai He explains why some plants are decreasing in the pasture.	e1 d5	2 Theory 3 practical	14
Short quizzes, homework assignments, discussions	Theoretical: Auditory Methods Writing on the board, direct dialogue method, practical: assigning tasks and report	Theoretical: Field visit to industrial pastures Practical: Problem solving	He decides to use one of the methods of pasture protection and tries planting some growing plants.	e2 d6	2 Theory 3 practical	15

Relative weight	Grade 7	Calendar appointment:	Assessment	Sequence
13%	(Theory) / Grade 6 (Practical)	Week 15 (theoretical)	methods: Final theoretical report, practical	1
6%	4 Theory, 2 Practical	My work 1-15	experiment reports, short test (1 quiz)	2
15%	10 Theory, 5 Practical	Week 3	Midterm exam	3
6%	4 Theory, 2 Practical	Week 9	Short Quiz 1	4
20%	20	One week of practical	Final practical	
40%	40	exams, one week of written exams	exam, final written exam	5 6
100%	100%			Total 12
– Learning and teaching				
The book "Forage Crops and Pastures" by Muhammad Sayyid Radwan and Abdullah		(methodology) Required textbooks		
Al-Fakhri lists the main references and sources.		Main references (sources):		
Archives Forage and Crops		Recommended books and supporting references (scientific journals, reports,		
The Arab Organization for Agricultural Development (AOAD) is an ICARDA organization.		etc.), electronic references, websites		



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description of the Research Project 2

1. Course Name:					
Research Project 2					
2. Course Code:					
REPR403					
3. Semester / Year:					
Second semester (spring)/ Fourth class/2025-2026					
4. Description Preparation Date:					
1/2/2026					
5. Available Attendance Forms:					
Presence + Electronic					
6. Number of Credit Hours (Total) / Number of Units (Total): units					
45 hours/1.5 units					
7. Course administrator's name (mention all, if more than one name):					
L.Dr. Nawaf Gazi Abuud nawaf.gazi@uomosul.edu.iq					
8. Course Objectives					
• The student is unable to understand and understand how to choose the title of the project that was researched • Enabling the student to know the most important methods for conducting a graduation research project experiment • Enable the student to become familiar with how to choose the necessary parameters to solve the problem of the research project under study • Empowering the student with the ability to write a graduation research project report • The student can judge the quality of the graduation research project by analyzing the results obtained in the practical part • Enable the student to learn how to collect resources for writing a graduation research project					
9. Teaching and Learning Strategies					
- Interactive lecture -Brainstorming - Dialogue and discussion -Field Training - Practical exercises - Field project -Self-education					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Name of Unit or subject	Learning method	Evaluation method
First	3 Practical	B: The student explains t	How to choose a topic	Interactive lecture	Short test

		sources necessary to choose the title of his graduation research project	for a graduation research project	brainstorming, dialogue and discussion, self-learning	
Second	3 Practical	C: The student discusses parts of writing the vocabulary of the graduation research project	How to choose source and writing method	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Third	3 Practical	B: The student reviews supported characteristics best demonstrate the presentation of his research	Preparing presentation	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fourth	3 Practical	A: The student learns about the things that make his method of presenting his graduation research project simple, understandable, and clear.	elocution	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fifth	3 Practical	C: The student cites examples of the most important results obtained in his graduation research project	Discussion and answering questions	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Sixth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation research project	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Seventh	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation research project	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
eighth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation research project	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Ninth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation research project	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Tenth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation research project	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Eleventh	3 Practical	C: The student identifies most important scientific	Discussing the graduation research	Interactive lecture brainstorming,	Short test

		points that support his graduation research project	project	dialogue and discussion, self-learning	
Twelveth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation researchproject	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Thirteenth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation researchproject	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fourteenth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation researchproject	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fifteenth	3 Practical	C: The student identifies most important scientific points that support his graduation research project	Discussing the graduation researchproject	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test

11. Course Evaluation

week	Calendar methods	Evaluation date (one week)	Grade	Relative weight %
1	Report 1	fourth week	2.5	2.5
2	Report 2	The fifth week	2.5	2.5
3	Short test (1) Quiz	the sixth week	2	2
4	Short test (2) Quiz	The fourteenth week	2	2
5	Short test (3) Quiz	The fifteenth week	1	1
6	Semester test (1)	the sixth week	7.5	7.5
7	Semester test (2)	The eleventh week is difficult	7.5	7.5
8	Final theoretical test	Final semester exams	40	40
9	Report 3	The fifteenth week	5	5
10	Homework	The third and fifth week	2	2
11	Practical short test (1) Quiz	The first week	1	1
12	Short practical test (2) Quiz	fourth week	0.5	0.5
13	Short practical test (3) Quiz	The fourteenth week	1	1
14	Live graphics	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final practical test	Final semester exams	20	20
	the total		100	100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Different lectures
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Main references (sources)	-----
Recommended books and references (scientific journals, reports...)	-----
Electronic References, Websites	-----



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Course Description Form

1. Course Name:					
English Language 4					
2. Course Code:					
ENGL 400					
3. Semester / Year:					
2025/2026					
4. Description Preparation Date:					
01/02/2026					
5. Available Attendance Forms:					
Presence + Online live meeting and Google classroom					
6. Number of Credit Hours (Total) / Number of Units (Total)					
30 Hours 2 Unit					
7. Course administrator's name (mention all, if more than one name)					
Name: Omar AbdulHameed Al-Kurjia Email : omarkj @uomosul.edu.iq					
8. Course Objectives					
Course Objectives		- studying the English language in special and scientific language - Widening student mind about scientific and literature English vocabularies - Helping the students to think and write in English			
9. Teaching and Learning Strategies					
Strategy		Making use of the electronic available methods a like auditory or visual in addition to the white board plus google classroom			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2hours Presence	(a1)The student should be able to know the basics of the English language	Practicing English with “ No Place like Home” + Reading out clearly and learning pronunciation + Vocabulary	Electronic lectures, videos, posters and other methods related to learning	Exams Reports Discussions quiz

2	2hours Presence	(a1)The student should be able to know the tenses of the English language	Expat Tales : Ian Walker in Chile: Spoken English informal Reading out, Listening, speaking, everyday English	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
3	2hours Presence	(a1)The student should be able to know the rules of the English language	Expat Tales 2 : Thomas Creed in Korea: Language + conversation with students	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
4	2hours Presence	(a1)The student should be able to know the basics of the English language	Practicing English with “ The Blind Assassin” + Reading out clearly and learning pronunciation + Vocabulary	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
5	2hours Presence	(a1)The student should be able to know the basics of the English language	Starting with Sheep” Dealing with English in Agriculture within different specialties (reading and pronunciation)	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
6	2hours Presence	(a1)The student should be able to know the basics of the English language	Language Focus Part 1 English in Agriculture 2 : Homemade butter	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
7	2hours Presence	(a1)The student should be able to know the basics of the English language	Conspiracy Theory 1 : The Death of Diana Reading out, Listening, speaking,	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
8	2hours Presence	(a1)The student should be able to know the basics of the English language	Two Famous Brands : Starbucks Coffee Reading out, Listening, speaking, everyday English	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
9	2hours Presence	(a1)The student should be able to know the basics of the English language	Conspiracy Theory 2 : The Apollo Moon Landings , Reading out,	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz

			Listening, speaking,		
10	2hours Presence	(a1)The student should be able to know the basics of the English language	Cospiracy Theory 3 : The death of JFK ., Reading out, Listening, speaking, everyday English	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
11	2hours Presence	(a1)The student should be able to know the basics of the English language	Apple Macintosh Progressive interaction with students+ feedback+	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
12	2hours Presence	(a1)The student should be able to know the basics of the English language	The Kippers” Read, Digest and Analyze”	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
13	2hours Presence	(a1)The student should be able to know the basics of the English language	The Coldest & Earliest places on Earth Reading out , Translation to Arabic , learning pronunciation	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
14	2hours Presence	(a1)The student should be able to know the basics of the English language	F.R.I.E.N.D.S Past .Reading out , Translation to Arabic , learning pronunciation	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
15	2hours Presence	(a1)The student should be able to know the basics of the English language	Jamie Oliver (The Worlds Greatest Chef) interaction with students+ feedback+	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

No.	Evaluation Methods	Evaluation Date (Week)	Marks	Relative Weight (%)
1	Quiz (1)	Week 4	Theoretical (5)	5
2	Monthly Exam (1)	Week 6	Theoretical (15)	15
3	Quiz (2)	Week 8	Theoretical (5)	5
4	Monthly Exam (2)	Week 13	Theoretical (15)	15
5	Quest rate.	Seasonal rates are announced at the end of the semester.	Theoretical: (40)	40
6	Final Theoretical Test.	The Week Of Theoretical Exams.	60	60
Total			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

Main references (sources)	New Headway - English course Upper Intermediate 2020
Recommended books and references (scientific journals, reports...)	New Headway - English course Upper Intermediate 2020
Electronic References, Websites	• British Council – Upper-Intermediate (B2) https://learnenglish.britishcouncil.org/general-english/upper-intermediate-b2 (Grammar, vocabulary, listening, and reading exercises) • Perfect English Grammar https://www.perfect-english-grammar.com (Detailed grammar explanations and exercises)



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course description

1. CourseName:	
Meat since	
2. Course Code:	
MTSC437	
3. Semester/Year: Annual	
Second semester / fourth stage 2025-2026	
4. The date this description was prepared	
1/2/2026	
5. Available attendance forms	
My presence	
6. :Number of study hours (total)/number of units (total)	
2theoretical hours / 2 practical hours (4 hours) / 3 units	
7. Name of the course administrator (if more than one name is mentioned)	
D. Safwan Luqman Shihab Safwan.l.s@uomosul.edu.iq	
Raghad Nabeel Dawood Raghad_nabeel@uomosul.edu.iq	
8. Course objectives	
practical 1-Identify and learn about different animals and the most famous breeds. 2-Identify the requirements necessary for any type of production and the ideal conditions that suit those animals 3-Field operations necessary for farm Animals.	Theoretical 1- The most important operations performed on all types of meat 2- Identify the most important fodder crops that contribute to a specific type of animal production. 3- Identify the most important animals spread in the region and thus find them Programs to raise them and increase their production. 4- Identify the most important nutritional elements and compounds that animals need.
9. Teaching and learning strategies	
practical Assigning teamwork to reveal leadership skills Assigning tasks and reporting on each breed Utilizing office hours for department professors	theoretical Interactive lecture Dialogue and discussion Reports Seminar
10. CourseName:	

11. Course structure					
Evaluation method	Learning method	Name the unit or topic	Required learning outcomes	hours	week
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogues style Direct practical Assigning tasks And report	theoretical Introduction to meat science Meat production problems practical Devices tools Used in laboratory Meat	theoretical a1 Remember the importance Economics of meat production practical a1 Recognizes devices tools used in meat laboratory	Theoretical 2 practical 2	1
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogues style Direct practical Assigning tasks And report	theoretical Nutritional value of meat practical Skeletal system Hinge	theoretical c1 Determines nutritional value For meat practical a1 Familiar the device Skeleton and skeletal system detailed	Theoretical 2 practical 2	2
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogues style Direct practical Assigning tasks And report	theoretical General composition of meat practical Animal body structure	theoretical c2 Explains fiber Muscles and how they formed practical a1 Understands the structure body Animal	Theoretical 2 practical 2	3
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogues style Direct practical Assigning tasks And report	theoretical Muscle fibers. Muscle structure practical Animal body structure	theoretical b2 Explains fiber Muscles and formed practical a1 Understands structure body Animal	Theoretical 2 practical 2	4

Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogue style Direct practical Assigning tasks And report	theoretical Muscle tissue proteins practical Slaughterhouses and meat factories	theoretical b5 Discusses important Proteins in body practical a1 Learn massacres And meat factories	Theoretical 2 practical 2	5
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogue style Direct practical Assigning tasks And report	theoretical Development of adipose tissue And the factors affecting it practical Dressing percentage and factors Affecting	theoretical c1 Explains tissue development Fatty in the body practical a1 knows the Dressing percentage	Theoretical 2 practical 2	6
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogue style Direct practical Assigning tasks And report	theoretical Types of skeletal tissues in the animal body and the factors affecting. practical Approximate analysis meat And how take Samples.	theoretical b2 Lists tissue types Structure and development practical a1 Knows and understands Analysis Approximate meat and method of taking samples	Theoretical 2 practical 2	7
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogue style Direct practical Assigning tasks And report	theoretical Changes occurring in components body after slaughter. practical The important technologies used To market beef cattle And the factors affecting it	theoretical b2 Explains the important changes Occurring after slaughter practical b2 Explains Marketing techniques Cattle and carcasses	Theoretical 2 practical 2	8
Short exams	theoretical Auditory Methods Writing style on the	theoretical The phenomenon of rigor mortis and factors Affecting	theoretical b2 Explains the concept of the phenomenon	Theoretical 2 practical 2	10

Assignme nt of duty discussios	Blackboard Dialogu style Direct practical Assigning tasks And report	practical Stages of preparing the animal for slaughter And cutting	rigor mortis practical c2 Explains the animal conditioning For slaughtering and cutting		
Short exams Assignme nt of duty discussion	theoretical Auditory Methods Writing style on the Blackboard Dialogu style Direct practical Assigning tasks And report	theoretical Meat characteristics And the factors affecting it practical Stages of preparing the animal for slaughter And cutting	theoretical a3 identify Meat characteristics practical b2 Shows the animal's condition For slaughtering and cutting	Theoretical 2 practical 2	11
Short exams Assignme nt of duty discussion	theoretical Auditory Methods Writing style on the Blackboard Dialogu style Direct practical Assigning tasks And report	theoretical Meat characteristics And the factors affecting it practical The important means used for transportation carcass	theoretical a1 Recognizes the characteristics of meat practical c3 Explains means of transportation carcass	Theoretical 2 practical 2	12
Short exams Assignme nt of duty discussion	theoretical Auditory Methods Writing style on the Blackboard Dialogu style Direct practical Assigning tasks And report	theoretical Methods of storing and preserving meat the factors affecting it practical Meat palatability and the most important factors determine it	theoretical c4 Distinguish the most important methods For storage and preservation Meat practical b2 Determines the most important factors Palatability of meat	Theoretical 2 practical 2	13
Short exams Assignme nt of duty	theoretical Auditory Methods Writing style on the Blackboard Dialogu style Direct practical Assigning tasks	theoretical Contamination and spoilage in meat And the factors affecting it practical	theoretical b3 Distinguish between the most important sources Contamination and spoilage of meat practical	Theoretical 2 practical 2	14

discussions	And report	Distinguishing between animal carcass	a1 Describes the distinction between Animal carcass		
Short exams Assignment of duty discussions	theoretical Auditory Methods Writing style on the Blackboard Dialogue style Direct practical Assigning tasks And report	theoretical Contamination and spoilage in meat And the factors affecting practical Minced meat industry Sausage industry	theoretical a1 Expresses the most important sources Contamination and spoilage in meat practical c5 Explains the most important operations Processing of meat	Theoretical 2 practical 2	15

12. Course evaluation

% Relative weight	Class	Calendar date (week)	Calendar methods	T
%13	7theoretical + 6practical	Theoretical (15 weeks My work is 1-15 weeks	Theoretical final report + practical reports	1
%6	4 theoretical + 2 practical	Week 3	Short test (1) Quiz	2
%15	10 theoretical + 5 practical	Week 9	Midterm Exam (theoretical and practical).	3
%6	4 theoretical + 2 practical	Week 12	Short test (2) Quiz	4
%20	20	Practical exams week	Final practical test	5
%40	40	The week of theoretical exams	Final theoretical test	6
%100	100	total		

13 Learning and teaching resources	
Meat production and preservation book	Required textbooks (methodology, if any)
	Main references (references)
	Recommended supporting books and references (scientific journals, reports....)
The World Health Organization and the Food and Drug Administration American	Electronic references, Internet sites



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أ.د. خالد حساني سلطان
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Molecular Biology Course Description

1. Course Name:
Molecular Biology
2. Course Code:
MOB1345
3. Semester/ Year: Annual
Spreing Semester / Fourth Stage / 2025–2026
4. Date of preparation of this description
1/2/2026
5. Available Attendance Forms:
Present + electronic
6. Number of credit hours (total) / number of units (total):
2 hours theoretical / 4 hours practical (6 hours) / 4 units
7. Course administrator's name (if more than one name)
Assoc. Prof. Ghadeer Abdel Moneim Mohamed ghadeer_abd@uomosul.edu.iq L. Rowaida Zuhair Younis rwaida_al_gha@uomosul.edu.iq
8. Course Objectives
The learner should be able to describe the animal cell and identify its molecular components from the nucleus, its membrane, cytoplasm and other contents. Study the functions of cell components and organelles. differentiating between types of DNA and RNA, Identify genetic material (DNA), its components and molecular structure, distinguish between garden types and their divisions according to the type of planning Familiarity with the ways in which substances pass through the cell membrane monstrates cell reproduction methods omprehensive study of RNA (and its types
9. Teaching and learning strategies
- Interactive Lecture - Brainstorming - Dialogue and discussion - Field Training - Practical exercises - Field Project - Self-learning

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical	a 1: Recognize molecular biology and describe the cell and its types	An overview of the concept of molecular biology and an introduction and definition of cell description and its types	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester1 exam, final exam
	4 Practical	a 1: To learn about the microscope, identify its types, the difference between microscopes, and how each type works	General information about the microscope and its types and to identify its importance in the examination of all samples that the microscope is used to detect and identify it and know the parts of the microscope through the identification and dealing with the microscope	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Practical quiz1
2	2 Theoretical	a 1: Differentiates between DNA and RNA E1: contributes to the identification of the cell nucleus and its components	The nucleus and its components, nitrogenous bases and how to reproduce nucleic acids	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester1 exam, final exam
	4 Practical	A: Introduce the student to what a cell is, what it consists of, what types of cells in the body and how they perform their functions within the body	Providing the opportunity for the student to examine with light microscopy to identify the cell and its contents, as well as to identify its types through the examined samples of cell types taken from various tissues, and to identify their functions.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz
3	2 Theoretical	A: Recognizes the cytoplasm and identifies the types of cytoplasmic reticulum	Definition of cytoplasm, cytoplasm, cytoplasmic reticulum and their types and colgi bodies	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester1 exam, final exam
	4 Practical	A : The student's knowledge of the types of tissues in the animal's body	The student's knowledge of the	Interactive lecture, brainstorming, dialogue	Practical quiz

			types of tissues in the animal's body	and discussion, field training, self-learning	
4	2 Theoretical	A: Determines the role of mitochondria in energy production and familiarity with the role of lysosomes and peroxisomes	Energy production and the role of lysosomes, peroxisomes and central bodies	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester1 Exam, Final Exam, Report
	4 Practical	A: Introducing the student to what is connective tissue, what are its types, and what is meant by muscle tissue	Introducing the student to the types of connective tissue as well as muscle tissue	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Short practical test, report
5	2 Theoretical	A: Familiarize themselves with the ways in which substances cross the cell membrane	Methods and steps of crossing substances through the cell membrane	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester1 Exam, Final Exam, Report
	4 Practical	A: Knowing what blood is, what is compounded and what are the types of blood cells	Introducing the student by examining blood samples with a light microscope and identifying the types of blood cells	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Semester Practical Test 1
6	2 Theoretical	A: Defines what osmosis is and the most important benefits of the sodium-potassium pump-	Crossing materials by osmosis and explaining the benefits of sodium-potassium pump -	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	4 Practical	A: The student knows what the cell cycle is and when interphase occurs	Introduce the student to the cell cycle by displaying slides that show the cell cycle and clarify the cell interphase,	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz with report
7	2 Theoretical	A: Recognizes cellular ingestion, drinking and cellular vomiting	Crossing large molecules through the cell membrane through ingestion, cellular drinking, and cellular vomiting	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester2 exam, final exam
	4 Practical	B: Introducing the student to the concept of cell division, what it means, and how the process of division of the nucleus and cytoplasm takes place.	Explain and introduce the student to how the process of cell division, which includes the division of the nucleus as well as the division of the cytoplasm, is carried out by showing illustrative images of these divisions processes.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Practical quiz with report
8	2 Theoretical	A: Efficient transport methods explained	The most important effective mobile methods	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester2 exam, final exam

	4 Practical	A: The student knows how cells are multiplied and identify the types of cells	Introducing the student to the process of cell proliferation through light microscopy as well as slideshows that illustrate the process of cellular reproduction in the tissue	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz with report
9	2 Theoretical	A: Defined on energy+ Scientific visit	Stages of cellular respiration and energy production	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester2 exam, final exam
	4 Practical	A : The student knows how cell division is done and identify its types	After the student knows the process of reproduction of cells, it is necessary to know how this is done and what are the steps gradually for this process through the division and reproduction of all the contents of the cell, as well as the reproduction of the genetic material in it, which is the clone of DNA, RNA .	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Semester Practical Test 2
10	2 Theoretical	A: Material-level phosphorylation	Phosphorylation at the material level	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester Exam2
	4 Practical	A: Introduce the student to the phases of mitosis that occur in the cell.	The importance of introducing the student to the phase of mitosis of the cell through the presentation of explanatory posters for this process and the need for the student to know the important changes that occur to the cell in this phase.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz
11	2 Theoretical	A: Identify the chemical composition of substances involved in cell structure	Types of chemicals involved in the structure of a living cell	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final Exam
	4 Practical	A: Introducing the student to cytoskeleton, what it means and how it occurs	The student's knowledge and distinction of the types of divisions that occur to the cell and how the cytoplasmic streaming is	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz

			carried out and the need to know the difference from other divisions.		
12	2 Theoretical	A: Identifies carbohydrates and glycogen types	Types of carbohydrates	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final Exam
	4 Practical	A : Identify by the student when meiosis occurs and how	Knowing and realizing the student of the time that In which meiosis occurs and what changes occur in the cell.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz ,report
13	2 Theoretical	B: Demonstrates cell reproduction methods	Types and methods of cell reproduction	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final Exam
	4 Practical	A: Introduce the student to the stages of meiosis and how it is done.	The need for the student to know the meiosis and where it starts, as well as the need to display explanatory posters for that.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz
14	2 Theoretical	A: Familiarity with the phases of mitosis	Know the phases of mitosis	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	4 Practical	A: Identify the different phases of meiosis and how those phases are formed	Introduce the student to the different phases of meiosis, how these phases are formed and when they begin.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical quiz , report
15	2 Theoretical	A: Meiosis Phase Familiarity+ Methods of Cell Breaking+ DNA extraction	The most important phases of meiosis	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	4 Practical	A : Introducing the student to the second meiosis and what are its phases	The student's knowledge of the second meiosis, when it begins, what phases it goes through, what differs from previous divisions, and what changes occur to the cell.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Short practical test with report

11. Course Evaluation

t	Evaluation methods	Calendar date (week)	Grade	Relative weight %
1	Report 1	Fourth week	2.5	2.5
2	Report 2	Fifth week	2.5	2.5
3	Quiz (1)	Sixth week	2	2
4	Quiz (2)	Fourteenth week	2	2
5	Quiz (3)	Fifteenth week	1	1
6	Semester Exam (1)	Sixth week	7.5	7.5
7	Semester Exam (2)	The first week is difficult	7.5	7.5
8	Final theoretical test	Final Semester Exams	40	40
9	Practical field project	Fifteenth week	5	5
10	Field Assessment	Third and fifth week	2	2
11	Practical Quiz (1)	First week	1	1
12	Practical Quiz (2) Quiz	Fourth week	0.5	0.5
13	Practical Quiz (3) Quiz	Fourteenth week	1	1
14	Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final Practical Test	Final Semester Exams	20	20
	Total	100	100%	100%

12. Learning and Teaching Resources

Required textbooks (methodology, if any)	
References (sources)	
Recommended books and references (scientific journals, reports...)	There isn't any
Electronic References, Websites	There isn't any



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description of the Seminar

1. Course Name:					
Seminar					
2. Course Code:					
SEM404					
3. Semester / Year:					
Second semester (spring)/ Fourth class/2024-2025					
4. Description Preparation Date:					
1/2/2026					
5. Available Attendance Forms:					
Presence + Electronic					
6. Number of Credit Hours (Total) / Number of Units (Total): units					
15 hours/1 unit					
7. Course administrator's name (mention all, if more than one name):					
Name: Muthanna Fathi Abdullah Email: muthanna.f.a@uomosul.edu.iq					
8. Course Objectives					
• Enable the student to understand and understand how to choose the title of the seminar • Enabling the student to know the most important ways to compile topics for writing a seminar • Enable the student to be familiar with how to choose the topic of the seminar • Empowering the student with the ability to write a seminar report • The student can judge the importance of the seminar topic by analyzing the vocabulary of the topic • Enable the student to learn how to collect resources for writing a seminar report					
9. Teaching and Learning Strategies					
- Interactive lecture -Brainstorming - Dialogue and discussion -Field Training - Practical exercises - Field project -Self-education					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Name of Unit or subject	Learning method	Evaluation method
First	2Theoretical	B: The student explains sources necessary to cho the title of his seminar	How to choose a semi topic	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test

Second	2Theoretical	C: The student discusses parts of writing the vocabulary of the seminar	How to choose source and writing method	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Third	2Theoretical	B: The student reviews supported features to be show his seminar presentation	Preparing presentation	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fourth	2Theoretical	A: The student learns about the things that make the way he delivers his seminar simple, understandable, a clear.	elocution	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fifth	2Theoretical	C: The student cites examples of the most important results obtained in his seminar	Discussion and answering questions	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Sixth	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Seventh	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
eighth	2Theoretical	C3: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Ninth	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Tenth	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Eleventh	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Twelveth	2Theoretical	C: The student identifies	Seminar discussion	Interactive lecture	Short test

		most important scientific points that support his seminar		brainstorming, dialogue and discussion, self-learning	
Thirteenth	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fourteenth	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test
Fifteenth	2Theoretical	C: The student identifies most important scientific points that support his seminar	Seminar discussion	Interactive lecture brainstorming, dialogue and discussion, self-learning	Short test

11. Course Evaluation

week	Calendar methods	Evaluation date (one week)	Grade	Relative weight %
1	Report 1	fourth week	2.5	2.5
2	Report 2	The fifth week	2.5	2.5
3	Short test (1) Quiz	the sixth week	2	2
4	Short test (2) Quiz	The fourteenth week	2	2
5	Short test (3) Quiz	The fifteenth week	1	1
6	Semester test (1)	the sixth week	7.5	7.5
7	Semester test (2)	The eleventh week is difficult	7.5	7.5
8	Final theoretical test	Final semester exams	40	40
9	Report 3	The fifteenth week	5	5
10	Homework	The third and fifth week	2	2
11	Practical short test (1) Quiz	The first week	1	1
12	Short practical test (2) Quiz	fourth week	0.5	0.5
13	Short practical test (3) Quiz	The fourteenth week	1	1
14	Live graphics	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final practical test	Final semester exams	20	20
	the total		100	100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Diffeent lectures
Main references (sources)	-----
Recommended books and references (scientific journals, reports...)	-----
Electronic References, Websites	-----



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني



أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course Description Form

1.Course Name:	
Buffalo Production	
2.Course Code:	
BUPR438.	
3.Semester / Year:	
Second season,2025-2026.	
4.Description Preparation Date:	
01/02/2026 .	
5.Available Attendance Forms: Blended learning (theoretical in-person)	
Attendance learning (theoretical in-person).	
6.Number of Credit Hours (Total),	
30 hours (2 hours theoretical per week),No. of units 2.	
7.Course administrator's name (mention all, if more than one name)	
Name: Mozhir Kadhum Kuaiber Almahdawi Email: mozhir2007@uomosul.edu.iq	
8.Course Objectives	
Course Objectives 1.To identify the historical emergence of the buffalo, its classification within the animal kingdom and numbers of buffalo in neighboring countries and its distributed in the world especially the breeds that exist in the Asian and African buffalo. 2.To describe the appropriate environment for raising buffalo in the world and types of housing for according to the region in which they are found.Learn about the productivity of buffalo in terms of milk and meat and most important factors affecting them 3.To identify most important morphological, physiological and nutritional characteristics of buffalo, as well as the most important modern technologies for feeding and breeding buffalo.	
9.Teaching and Learning Strategies	
Strategy	The main objectives of the strategy in buffalo breeding and production are to develop and improve local buffalo breeds specialized in producing milk and meat with high productivity and adapted to local conditions, in order to achieve increased productivity of milk and meat, improve self-sufficiency, reduce import gaps, and raise the standard of living of small breeders and farmers.The most important challenges facing the development and breeding of buffalo production in Iraq can be summarized in the following points: 1.The lack of a database on the distribution of animals in different governorates. 2.The lack of natural pastures with the rise in global prices for feed and its components. 3.The growing phenomenon of climate change and rising temperatures, which has led to creation of new areas attractive to families and disease vectors. 4.The need to increase awareness among small breeders of care methods that are appropriate for new breeds. 5.Accelerated growth in demand for animal products, especially buffalo milk, as a result of the steady increase in population.

10.Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 st	Theoretical 2	a1 The student learns about a historical overview, origin classification of buffalo and its position of Animal Kingdom.	A brief history of the buffalo's origins. The buffalo's classification within the animal kingdom. The economic importance of raising and producing buffalo.	Lectures and reports. Scientific bulletins, PowerPoint	Exams, reports, discussions and quizzes.
2 nd	Theoretical 2	a2 The student will gain complete information about characteristics, management, care and nutrition of the Iraqi buffalo.	Iraqi buffalo: its characteristics, management, nutrition, obstacles facing buffalo breeding and methods to improve it.	Lectures and reports. Scientific bulletins, PowerPoint	Exams, reports, discussions and quizzes.
3 rd	Theoretical 2	a1 The student learns about different parts of the body buffalo, distinctive characteristics of the buffalo and its physical and productive traits.	Sections of buffalo, phenotypic and genetic differences between Asian and African buffalo.	Lectures and reports. Scientific bulletins, PowerPoint	Exams, reports, discussions and quizzes.
4 th	Theoretical 2	a1 The student cleared the types of buffalo breeds that are widespread in Iraq, Arab world, and the world.	Wild and domesticated of buffalo breeds which spreads in Iraq, Arab homeland world and the world.	Lectures and reports. Scientific bulletins, PowerPoint	Exams, reports, discussions and quizzes
5 th	Theoretical 2	b1 The student identifies the types of buffalo dwellings, their features and its designs.	Buffalo barns, their types and its specifications.	Lectures and reports. Scientific bulletins, PowerPoint	Exams, reports, discussions and quizzes
6 th	Theoretical 2	b2 During the scientific visit (field work), the student examines necessary and practical information about the manufacturing of feeds were using in feeding of buffalo.	A scientific visit for the students to local feed manufacturing factories so that the students learn about the nutrition and diet of buffalo.	Lectures and reports. Scientific bulletins, PowerPoint	Exams, reports, discussions and quizzes

7 th	Theoretical 2	b2 The students explain the origin , breeding of the Iraqi buffalo and the advantages , obstacles of raising it.	The Iraqi buffalo, introduction, advantages, and obstacles of rearing.	Lectures and reports. Scientific bulletins, PowerPoint	Exams,reports, discussions and quizzes
8 th	Theoretical 2	a2 The student becomes familiar with the basic principles of meat production, muscle structure and the degree of appetite for meat.	The meat production of buffalo.	Lectures and reports. Scientific bulletins, PowerPoint	Exams,reports, discussions and quizzes
9 th	Theoretical 2	b2 The student explains the physical properties of milk and the productive performance of buffalo.	Milk production, effect of factors on milk production of buffaloes and milk substitutes.	Lectures and reports. Scientific bulletins, PowerPoint	Exams,reports, discussions and quizzes
10 th	Theoretical 2	c1 The student diagnoses the appearance of estrus signs and reproduction, methods of pregnancy testing of female buffalo.	The reproduction and Methods for examining pregnancy of buffalo females.	Lectures and reports. Scientific bulletins, PowerPoint	Exams,reports, discussions and quizzes
11 th	Theoretical 2	c2 The student identifies parts of the male reproductive system and function of each part for male buffalo.	The male reproductive system, its parts and functions for male buffalo.	Lectures and reports. Scientific bulletins, PowerPoint	Exams,reports, discussions and quizzes
12 th	Theoretical 2	b2 The student understands the basic principles of raising and caring for buffalo calves.	Caring for buffalo calves and lactation systems for suckling calves.	Lectures and reports. Scientific bulletins, PowerPoint.	Exams,reports, discussions and quizzes
13 th	Theoretical 2	c2 The student gains information about weaning and fattening systems of buffalo calves.	The weaning and fattening systems for buffalo calves.	Lectures and reports. Scientific bulletins, PowerPoint.	Exams,reports, discussions and quizzes
14 th	Theoretical 2	b2 The student identifies internal and external parasites that infect buffalo,explains the causes and its provide treatment.	Internal and external parasites, causes, symptoms and treatment.	Lectures and reports. Scientific bulletins, PowerPoint	Exams,reports, discussions and quizzes

15 th	Theoretical 2	c2 The student can diagnose the most common infectious diseases in buffalo during the scientific visit (field work) for university's veterinary teaching hospital.	A field scientific visit of students to the veterinary teaching hospital to familiarize students with common infectious diseases in buffalo, symptoms and treatment.	Lectures and reports. Scientific bulletins, PowerPoint .	Exams,reports, discussions and quizzes
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11.Course Evaluation:

No.	Evaluation methods	Evaluation date (week)	marks	Relative weight (%)
1	The first short test Quiz Theoretical:	Week 4: Theoretical: Short test (1) Quiz	Theoretical: 2.5	2.5%
2	Monthly exam (1).	Week 9: Theoretical test (1).	Theoretical: 15	15%
3	Second short test Quiz.	Week 11: Theoretical:Short Test (2) Quiz	Theoretical: 2.5	2.5%
4	Monthly exam (2).	Week 13: Theoretical test (2).	Theoretical: 15	15%
5	Reports	Week 15 : Submit reports.	Theoretical: 5	5%
6	Quest rate.	Seasonal rates are announced at end of the semester.	Theoretical: 40	40%
7	Final theoretical test.	The week of theoretical exams.	60	60%
8	Total	The final score of the theoretical of final exam at the end of academic year.	100	100%

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc .

12.Learning and Teaching Resources

Required textbooks (curricular books, if any).	1. Buffalo production lectures: Prof. Dr. Mozhir Kadhum Kuaiber/ Department of Animal Production ,College of Agricultural and Forestry/University of Mosul, for the year 2023. 2. Buffalo breeding and improvement/Professor Samim Fakhri Al-Dabbagh/Animal Production Department College of Agriculture and Forestry/University of Mosul. for the year 2020.
Main references (sources)	1. Production of meat from buffalo. Dr. Tariq Abdel Wahab Ahmed Daraz. Dr. Adolf Abdel Malak Khair Beshai. Dr. Hassan Bayoumi Abu El-Ela Agricultural Research Center / Animal Production Research Institute/ Ministry of Agriculture and Reclamation Territories/Egypt. for the year 2004. 2. Buffalo Production /Dr. Hassan Khalil Abdullah/Anglo-Egyptian Library/2003.
Recommended books and references (scientific journals, reports...)	1. Buffalo Health and Production. https://www.frontiersin.org/articles/10.3389/fvets.2021.810923/full 2. Journal of Buffalo Science. https://journals.indexcopernicus.com/search/journal/issue?issueId=325199&journalId=64237 3. Buffalo Health and Production. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8873098/ 4. Journal of Dairy Science. https://www.sciencedirect.com/science/article/pii/S0022030209703984
Electronic References, Websites	Buffalo Breeding Research Department/Animal Production Research Institute/Dokki - Giza/Egypt. http://www.arc.sci.eg/InstsLabs/Default.aspx?OrgID=135&TabId=0&NavId=2&lang=ar 2. Milk production in buffalo./ Written by Prof. Dr. Natiq Hamid Saleh Al-Qudsi./ College of Agricultural Engineering Sciences.University of Baghdad.Iraq.https://almerja.net/reading.php?idm=45840



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Description of the poultry diseases course

Course Name.1					
poultry diseases					
Course code .2					
PODI434					
Semester/ Year .3					
Chapter Two 2025–2026					
Date this description was prepared .4					
2026/2/1					
Available forms of attendance.5					
My presence					
Number of study hours (total) / Number of units (total) .6					
Theory + 3 Practical / 3.5 units 2					
Name of course coordinator (if applicable) More than one name is .7 (mentioned)					
M.M. Alaa Shamel Fakhri Al-Allaf (Theory Teacher)					
objectives Course .8					
Classification of diseases according to their duration of spread, their causes, – and contributing factors Disease identification The different diseases that affect poultry – Knowledge of poultry diseases, their clinical signs, and methods of treatment –					
Teaching and learning strategies .9					
Methods for using appropriate disinfectants in poultry houses – Use of insecticides to control external parasites in poultry – Diagnosing and treating diseases in fields –					
Course structure .10					
Evaluation Method	Learning method	Unit or topic name	Required learning outcomes	Hours	Week
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Disease and factors fection and signs clinical	The student :a 1 Disease, A understands infectious agents, and and clinical signs Nutritional diseases and illnesses Infectious disease in chickens The Corrieza The contagious / Poultry cholera and the	Theory 2	1

			And importance of biotin he understands Controlling infectious diseases and entry points , of infection into the body calcium and phosphorus and , deficiency inflammatory bowel disease. Hemorrhagic / Blue Comb Disease in Birds		
Exams Duties discussions	Laboratory work	:Practical Nutritional diseases	The student :a 1 Disease, A understands infectious agents, and Diseases and clinical signs diseases Nutrition and infectious in chickens and illness The Corrieza The contagious / Poultry cholera disease And its And he importance Biotin understands Controlling infectious diseases and entry points of infection Calcium and into the body deficiency and phosphorus inflammatory bowel disease Hemorrhagic / Blue Comb Disease in Birds	3 practical	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Infectious diseases in chickens	The student : a 1 Disease, A understands infectious agents, and and clinical signs Nutritional diseases and illnesses Infectious disease in chickens The Corrieza The contagious one / Poultry cholera and the And importance of biotin he understands Controlling infectious diseases and entry points , of infection into the body calcium and phosphorus and , deficiency inflammatory bowel disease. Hemorrhagic / Blue Comb Disease in Birds	Theory 2	2
Exams Duties discussions	Laboratory work	: Practical Vitamins	Explains to the :c1 importancethe student illness and Vitamins typhoid / Chicken paratyphoid disease and	practical 3	

			cases E. coli infection The different and inflammation of the fallopian tubes Synovitis and the importance of pantothenic acid and illness Hepatitis B and illness Gumboro disease Bird pox and its importance s ' Mark Manganese coccidiosis / disease birds		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Yolk sac inflammation and pleuritis	Shows the student : b1 Inflammatory disease yolk cyst and disease the , Bleurum , Avitamin importance of needs nutritionaland the andA Vitamin K importance of Vitamin And its importance It shows B2 Vitamin avian syphilis and laryngitis And the reed B12 Aerial and Vitamin lack and sodium and chlorine	Theory 2	3
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	Practical: A Vitamin	Shows the student : b1 Inflammatory disease yolk cyst and disease the , Bleurum , Avitamin importance of needs nutritionaland the andA Vitamin K importance of vitamin And its importance It shows B2 Vitamin avian syphilis and laryngitis And the reed B12 Aerial and Vitamin lack and sodium and chlorine	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Typhoid fever / Chickens chicken paratyphoid disease	Explains to the :c1 importancethe student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different and inflammation of the fallopian tubes Inflammation of the / Explains :c1 membrane	Theory 2	4

			the to the student importance illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different and inflammation of the fallopian tubes Synovitis and the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease Bird pox and its importance s ' Mark Manganese avian coccidiosis / disease Synovial fluid explains the importance of pantothenic acid and Hepatitis B and illness illness Gumboro disease Bird pox and its importance s ' Mark Manganese avian coccidiosis / disease		
Exams Duties discussions	Laboratory work	:Practical Nutritional requirements for vitamin	Shows the student : b1 Inflammatory disease yolk cyst and disease the , Bleurum , Avitamin importance of needs nutritionaland the andA Vitamin K importance of vitamin And its importance It shows B2 Vitamin avian syphilis and laryngitis And the reed B12 Aerial and Vitamin lack and sodium and chlorine	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Coryza disease The contagious one / poultry cholera	The student :a 1 Disease, A understands infectious agents, and Diseases and clinical signs diseases Nutrition and infectious in chickens and illness The Corrieza The contagious one / Poultry cholera disease And its And importance Biotin he understands Controlling infectious diseases and entry points of infection into the body Calcium and phosphorus	Theory 2	5

			deficiency and inflammatory bowel disease Hemorrhagic / Blue Comb Disease in Birds		
Exams Duties discussions	Laboratory work	:Practical K Vitamin	Shows the student : b1 Inflammatory disease yolk cyst and disease the , Bleurum , Avitamin importance of needs nutritionaland the andA Vitamin K importance of vitamin And its importance It shows B2 Vitamin avian syphilis and laryngitis And the reed B12 Aerial and Vitamin lack and sodium and chlorine	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Diseases E. caused by in poultrycoli	Explains to the :c1 importance the student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different And the disease of inflammation of the fallopian tubes /synovitis , and it explains the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease Bird pox and the importance s ' Mark of manganese avian coccidiosis / disease	Theory 2	6
Exams Duties discussions	Laboratory work	:Practical B Vitamin A 8 / complex B1Vitamin	The student learns a2 vitamin groupB about the and aboutB1 vitamin / anulomatous disease E. coli nd in chicken and folic acid a Newcastle disease in birds	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theory Granulomatou s disease E. coli in chicken	The student learns a2 vitamin B about the andB1 group / vitamin Granulomatous disease E. coli in chicken on And And on folic acid Newcastle disease in birds	Theory 2	7

Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	Practical: B2 Vitamin	Shows the student : b1 Inflammatory disease yolk cyst and disease the , Bleurum , Avitamin importance of needs nutritionaland the andA Vitamin K importance of vitamin And its importance It shows B2 Vitamin avian syphilis and laryngitis And the reed B12 Aerial and Vitamin lack and sodium and chlorine	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Inflammation of the fallopian tubes /synovitis	Explains to the :c1 importancethe student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different And the disease of inflammation of the fallopian tubes /synovitis, and it illustrates the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease (avian pox) and the importance s ' Mark of manganese avian coccidiosis / disease	Theory 2	8
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	Practical: Pantothenic acid	Explains to the :c1 importancethe student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different And the disease of inflammation of the fallopian tubes /synovitis , and it explains the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease (avian pox) and the importance s' Mark of manganese avian coccidiosis / disease	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on	:Theoretical avian syphilis	Shows the student : b1 Inflammatory disease yolk cyst and disease the importance , Bleurum	Theory 2	9

	the board, the method of direct .dialogue		, and Avitamin of needs Vitamin nutritional the importance of ,A and the ,K Vitamin importance of Vitamin avian It shows B2 syphilis and laryngitis And the reed Aerial and sodium and B12 Vitamin deficiency chloride		10
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Biotin	The student :a 1 Disease, A understands infectious agents, and Diseases and clinical signs diseases Nutrition and infectious in chickens and illness The Corrieza The contagious / Poultry cholera disease And its And he importance Biotin understands Controlling infectious diseases and entry points of infection Calcium and into the body deficiency and phosphorus inflammatory bowel disease Hemorrhagic / Blue Comb Disease in Birds	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Hepatitis B	Explains to the :c1 importancethe student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different and inflammation of the fallopian tubes Synovitis and the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease Bird pox and its importance s ' Mark Manganese avian coccidiosis / disease	Theory 2	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	folic :Practical acid	he student learns about a2 amin group / vitaminB the and aboutB1 anulomatous disease E. coli nd in chicken and folic acid a Newcastle disease in birds	practical 3	

Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Newcastle disease in birds	The student learns a2 vitamin B about the and B1 group /vitamin about granulomatous disease . E. coli in chickens , folic acid Newcastle and , deficiency . disease in birds	Theory 2	11
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Controlling infectious diseases and entry points of infection into the body	The student :a 1 Disease, A understands infectious agents, and and clinical signs Nutritional diseases and illnesses Infectious disease in chickens The Corrieza The contagious one / Poultry cholera and the And importance of biotin he understands Controlling infectious diseases and entry points , of infection into the body calcium and phosphorus and , deficiency inflammatory bowel disease. Hemorrhagic / Crested Disease Blue in birds	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical laryngitis And the reed Air	Shows the student : b1 Inflammatory disease yolk cyst and disease the importance , Bleurum , and Avitamin of needs Vitamin nutritional the importance of ,A and the ,K Vitamin importance of Vitamin avian It shows B2 syphilis and laryngitis And the reed Aerial and sodium and B12 Vitamin deficiency chloride	Theory 2	12
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical B12 Vitamin	Shows the student : b1 Inflammatory disease Yolk cyst and the , pleuropneumonia A vitamin importance of needs and its nutritional the ,A Vitamin K importance of Vitamin and the importance of , It shows B2 Vitamin avian syphilis and laryngitis And the reed B12 Aerial and Vitamin	practical 3	

			sodium and chloride deficiency		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Gumboro disease / Avian pox	Explains to the :c1 importancethe student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different And the disease of inflammation of the fallopian tubes /synovitis, and it illustrates the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease Bird pox and its importance s ' Mark Manganese avian coccidiosis / disease	Theory 2	13
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	Practical: Manganese	Explains to the :c1 importancethe student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different and inflammation of the fallopian tubes Synovitis and the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease Bird pox and its importance s ' Mark Manganese avian coccidiosis / disease	practical 3	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Theoretical Mark's Disease Avian / Coccidiosis	Explains to the :c1 importancethe student illness and Vitamins typhoid / Paratyphoid chicken and cases disease The E. coli infection different and inflammation of the fallopian tubes Synovitis and the importance of pantothenic acid . illness Hepatitis B and illness Gumboro disease Bird pox and its importance	Theory 2	14

			s ' Mark Manganese avian coccidiosis / disease		
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical Calcium and phosphorus deficiency	The student :a 1 Disease, A understands infectious agents, and Diseases and clinical signs diseases Nutrition and infectious in chickens and illness The Corrieza The contagious / Poultry cholera disease And its And he importance Biotin understands Controlling infectious diseases and entry points of infection Calcium and into the body deficiency and phosphorus inflammatory bowel disease Hemorrhagic / Blue Comb Disease in Birds	3 practical	
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:My view Hemorrhagic enteritis / Blue comb disease in birds	The student :a 1 Disease, A understands infectious agents, and Diseases and clinical signs diseases Nutrition and infectious in chickens and illness The Corrieza The contagious / Poultry cholera disease And its And importance Biotin he understands Controlling infectious diseases and entry points of infection into the body Calcium and phosphorus deficiency and inflammatory bowel disease Hemorrhagic / Blue Comb Disease in Birds	Theory 2	15
Exams Duties discussions	Auditory methods, the method of writing on the board, the method of direct .dialogue	:Practical sodium and chloride deficiency	Shows the student : b1 Inflammatory disease yolk cyst and disease the , Bleurum , Avitamin importance of needs nutritionaland the andA Vitamin K importance of vitamin And its importance It shows B2 Vitamin avian syphilis and laryngitis And the reed B12 Aerial and Vitamin	practical 3	

		relative weight %	Degree	Calendar date (week)	Assessment methods	T
		%40	Theory 25 15 + Practical	Week (9)	Midterm exam theoretical and) (practical	1
		%20	20	Practical exam week	Final practical test	2
		%40	40	Theory exam week	Final theory test	3
		%100	100		the total	4

Learning and teaching resources .11

Animal and poultry diseases (author's work) Dr. Sameh Hidayat Arslan, Dr. Jabbar Musleh and Dr. Hisham Abdullah Bashir	Required textbooks (methodology, if applicable)
	Main references (sources)
Lectures and books published by Iraqi universities	Recommended supporting books and references (scientific (...journals, reports
	references , websites



أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني




أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

Course description

1.	Course name
	Dairy cattle production
2.	Course Code:
	DACP436
3.	Semester/Year:
	Spring /2025
4.	Description Pre paration Date:
	1/2/2026
5.	Available forms of attendanc:
	in person
6.	Number of study hours (total) / number of units (total):
	Total hours 90 (theoretical + 4 practical(* 15 weeks 2(4 units
7.	Name of the course administrator
	M. Nadia Muhammad Bashir (theoretical teacher) M.M. Muhammad Abdel-Ilah (practical teacher)
	A- Cognitive objectives A1- One of the most important goals of the program is to know the most important processes performed on milk A2 - Preparing all requirements for establishing livestock projects by providing him with information related to the implementation of these projects and their administrative and nutritional .organization. Physiologically and economically A3 - Exploiting the different productive capabilities of animals and their interaction with appropriate feed materials to achieve an optimal production level, advance livestock for the better, and meet the market needs as much as possible for livestock products, especially milk, for which there is an increasing demand.
	B - The skills objectives of the course. B1 - Identify and learn about different animals and the most famous breeds in milk production worldwide. B2 - Knowing the requirements necessary for any type of production and the ideal conditions that suit those animals. B3 - Field operations necessary for farm animals.
8.	Teaching and learning strategies
	1- Theoretical lectures (audio, visual, computer-based presentation) 2- Practical lessons. (The student participates in field operations in the college field) 3- Field visits and observing the most important daily field operations that can be performed .on animals 4- .Search the internet
9.	Course structure

Evaluation method	Learning method	Required learning outcomes	the unit or topic	hours	the week
Short exams, assignments, discussions.	Theoretical: audio methods, And visual Brainstorming Direct dialogue Practical: Write a report on College field	Theoretical: a1 The economic importance of dairy cattle. Production and consumption (high milk). Arab and local milk production and consumption. -Factors that led to increased milk production. -Factors that led to a decline in milk production in Iraq. -Advantages and disadvantages of raising cows the milk Practical: c4 A visit to the college fields	The student gets to know Local and global production and consumption	2Theoretical 4 practical	First
Short exams, assignments, discussions.	Theoretical: audio methods, And visual brainstorming style Direct dialogue Practical: describe parts Milk animal body report	Theoretical: a2 Characteristics and advantages of types of dairy cattle Origin of livestock. Types of purebred dairy cattle. Dual-purpose cattle. Livestock in the Arab world. Iraqi livestock Practical: c5 Milk animal model	Recognize and distinguish types Global dairy cattle And local	2Theoretical 4 Practical	Second
Short exams, assignments, discussions.	audio methods, Writing style on Chalkboard style Direct dialogue Practical: Learn about the most important objectives	Theoretical: a2 Methods of caring for and feeding livestock a To care for pregnancy and dry periods.	Identify and explain to the student Methods of care and feeding Livestock	2Theoretical 4 Practical	Third

	of arbitration and the tools used	Birth and care of newborn calves and cows. Practical: c5 Livestock arbitration			
Short exams, assignments, discussions.	Auditory method And visual Writing style on Chalkboard style Direct dialogue Practical: Write a report On the importance of exhibitions	Theoretical; a1 Physiology and structure of the digestive system. - The mechanism of work of the digestive system Practical: c5 Exhibitions and their importance	The student recalls digestive system in Livestock	2Theoretical 4 Practical	Fourth
Short exams, assignments, discussions.	Theoretical: Audio-visual methods Writing style on Chalkboard style Direct dialogue Practical: participates in Animal numbering process In the field, field practice	Theoretical: a1 Breastfeeding methods Methods of artificial feeding Weaning methods Practical: c4 Numbering and its methods	Feeding suckling	2Theoretical 4 Practical	Fifth
Short exams, assignments, discussions.	Theoretical: audio methods, Writing style on Chalkboard style Direct dialogue Practical: attempt to estimate age in animals field in a practical way, Field practice Self-education	Theoretical: a1 Milk composition Factors affecting milk production Properties of milk Practical: d1 Estimate age	The student remembers and enumerates Factors affecting Milk production	2Theoretical 4 Practical	Sixth

Short exams, assignments, discussions.	Theoretical: audio methods, Writing style on Chalkboard style Direct dialogue Practical: particip in Animal milking In a practical way Self-learning practice Field	Theoretical: a1 Shape and physiology of the udder Practical: a1 Milking methods	The student remembers parts Installation and physiology of the udder	2Theoret ical 4 Practical	Seventh
Short exams, assignments, discussions.	Theoretical: audio methods, Writing style on Chalkboard style Direct dialogue Practical: Write a report on Udder installation	Theoretical: a1 Factors affecting milk production Practical: c1 Installation and physiology of the udder	Milk secretion	2Theoret ical 4 Practical	Eighth
Short exams, assignments, discussions.	Theoretical: Auditory method And visual Writing style on Chalkboard style Direct dialogue Practical: Views and views the records in the field Field practice Self-education	Theoretical: a1 Adjust the milk to 4% fat Laws for adjusting the milk season Laws of perseverance calculation Practical: a1 Records	milk period (calculations)	2Theoret ical 4 Practical	Ninth
Short exams, assignments, discussions.	Theoretical: audio methods, Writing style on Chalkboard style Direct dialogue Practical: Watch and write a report	Theoretical: b1 Laws for calculating fertility rates Practical: d1 Animal habitats	Reproductive efficiency And fertility	2Theoret ical 4 Practical	Tenth

	About housing in the field				
Short exams, assignments, discussions.	:Theoretical Auditory method And visual Writing style on Chalkboard style Direct dialogue :Practical Participates in operations Field by field, field practice	Theoretical; a1 Anatomy of the reproductive organs Practical: c1 Daily operations on the farm	Reproductive organs in Cows	2Theoretical 4 Practical	Eleventh
Short exams, assignments, discussions.	:Theoretical ,audio methods Writing style on Chalkboard style Direct dialogue :Practical Learn about ways to establish a herd	Theoretical: a1 Health care for vaccination bulls Practical: d1 Establishing the herd	Factors affecting fertility in theran	2Theoretical 4 Practical 1	Twelfth
Short exams, assignments, discussions.	:Theoretical ,audio methods Writing style on Chalkboard style Direct dialogue :Practical Knows the roads The process of estimating the percentage of fat	Theoretical: a1 Methods of pregnancy screening and embryo transfer Practical: d3 Calculations for estimating the percentage of fat and adjusting jewelry b	Pregnancy examination in cows	2Theoretical 4 Practical	Thirteenth
Discussions and dialogue	:Theoretical ,audio methods Writing style on Chalkboard style Direct dialogue :Practical It solves some issues related to milk season	Theoretical: c1 The origin and production of buffalo Buffalo care and feeding Practical: Calculations to evaluate reproductive efficiency	Economic importance For buffalo	2Theoretical 4 Practical 1	Fourteenth
He writes a report about what he saw		A scientific trip to one of the animal production fields ;c1		2Theoretical 4 Practical	Fifteenth

during the visit					
10. Course evaluation					
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc					
Relative % weight	Class	Calendar date (week)	Calendar methods	T	
%13	+ theoretical 7 practical 6	My theory for a week (15) My work week (15)	A theoretical final report + a final report on the subject the operation	1	
%6	+ Theoretical 4 2Practical	week (3)	Quiz Short test (1)	2	
%15	+theoretical 10 practical 5	week (9)	Midterm test (theoretical and (practical	3	
%6	+ 4Theoretical 2Practical	week (12)	Quiz Short test (2)	4	
%20	20	Practical exams week	Final practical test	5	
%40	40	The week of theoretical exams	Final theoretical test	6	
%100	100		the total		
Milk cattle production 2010			Required textbooks (methodology, if any)		
			Main references (sources)		
Animal Science magazine			Recommended supporting books and references (scientific journals, reports....)		
Agricultural sites specialized in raising dairy cows			Electronic references, Internet sites		

أ.د. عمر ضياء محمد
رئيس قسم الإنتاج الحيواني



أ.د. خالد حساني سلطان
رئيس اللجنة العلمية