

Academic Program Description Form

University Name: Tikrit University

Faculty/Institute: College of Agriculture

Scientific Department: Animal Production Department

Academic or Professional Program Name: Bachelor of Agricultural Sciences/Animal Production

Final Certificate Name: Bachelor of Agricultural Sciences/Animal Production

Academic System: Season

Description Preparation Date: 5/3/2024

File Completion Date: 21/4/2024

Signature:

Head of Department Name:
professor Abdullah isam noaman

Date: 22/4/2024

Signature:

Scientific Associate Name:

assistant professor Mohammed saleh Mohammed

Date: 22/4/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 22/4/2024

Signature:



Signature:

Approval of the Dean

معاون العميد للشؤون العلمية
أ.م.د. عبد الله محمد عبد الله

1. Program Vision

Program vision is written here as stated in the university's catalogue and website.

Achieving quantitative and qualitative changes in scientific research to keep pace with the development of animal production in the world.

2. Program Mission

Program mission is written here as stated in the university's catalogue and website.

Spreading scientific awareness in society and providing it with graduates who are scientifically and practically qualified to manage and develop animal production according to scientific standards.

3. Program Objectives

General statements describing what the program or institution intends to achieve.

The department participates with state and community institutions in developing and solving problems of livestock projects based on scientific research

4. Program Accreditation

Does the program have program accreditation? And from which agency?

No

5. Other external influences

Is there a sponsor for the program?

6 Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews•
Institution Requirements	9	9	% 15.25	
College Requirements	13	31	% 22.03	
	37	107	% 62.71	

Department				
Requirements				
Summer Training				
Other				

This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
1	0011101	analytical chemistry	2	3
	0C11102	Principles of soil science	2	3
	0C11103	Principles of plant protection	2	3
	0011104	Principles of animal production	2	3
	0011105	Space	1	3
	U011016	Computer applications 1	-	3
	U011017	Specialized English language1	1	-
	U011018	Human rights and public freedoms	1	-
	0C21101	organic chemistry	2	3
	0021102	Principles of field crops	2	3
	0C21103	Principles of statistics	2	3
	0021104	Principles of domestic birds	2	3
	0C21105	mathematics	2	-
	0021106	General animal	2	3
	2	0011201	Biochemistry	2
0011202		Hygiene of the animal products	2	3
0011203		Principles of fish	2	3
0C11204		Principles of horticulture	2	3
0C11205		Agricultural guidance principles	2	-
0011206		Principles of microbiology	-	3
0011207		Animal production mechanization	2	3
0021201		Genetics	2	3
0021202		Fodder crops and pastures	2	3
0021203		Breeding and production of fish	2	3
0021204		General principles of dairy	2	3

	0021205	Principles of agricultural economy	2	-
	U021026	Freedom and democracy	1	-
	U021027	Computer applications 2	-	3
	U021028	Specialized English language2	1	-
3	0011301	Animal Physiology	2	3
	0011302	Hatching and hatchery management	2	3
	0011303	Animal nutrition	2	3
	0011304	Animal production economics	3	-
	0011305	Environment and behavior of animal	2	-
	0C11306	Design and analysis of experiments	2	3
	0C11307	Medical and veterinarian insects	2	3
	U011038	Specialized English language 3	1	-
	0021301	Poultry Physiology	2	3
	0021302	Poultry Technology	2	3
	0021303	Feed and feed	2	3
	0021304	Animal diseases	2	3
	0021305	Animal breeding	2	3
	0021306	Reproductive Physiology	2	3
	U021037	Computer applications 3	-	3
4	0011401	Poultry nutrition	2	3
	0011402	Poultry breeding	2	3
	0011403	Sheep and goat production	2	3
	0011404	Meat production	2	3
	0011405	poultry management	2	3
	06114C0	Pasture Management	2	3
	0C21407	Graduate research project	-	3
	0021401	poultry diseases	2	3
	0021402	Molecular science	2	3
	0021403	Production of dairy cattle	2	3
	0021404	Meat science	2	3
	0021405	Buffalo production	2	-
	021046U	Specialized English language 4	1	-
	0C21407	Seminars	1	-

	0C21408	Graduate research project	-	3
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8. Expected learning outcomes of the program

Knowledge Learning Outco

Skills

Ethics

9. Teaching and Learning Strategies

10. Evaluation methods

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Animal production	Fish ecology and biology			39	
Professor	Animal production	Poultry nutrition				
Professor	Animal production	Meat science and technology				
Professor	Animal production	Poultry Physiology				
Professor	Animal production	Poultry breeding				
Professor	Animal production	Poultry Management				
Professor	Animal production	Animal Management				
Professor	Animal production	Meat production				
Professor	Animal production	Animal nutrition				
Professor	Animal production	Fish nutrition				
Professor	Animal production	Animal Physiology				
assistant professor	Animal production	Poultry breeding				
assistant professor	Animal production	Reproductive Physiology				
assistant professor	Animal production	Animal Physiology				
assistant professor	Animal production	Sheep and goat production				
assistant professor	Animal production	Meat production				
assistant professor	Animal production	Aquaculture and fish biology				
assistant professor	Animal production	Poultry technology				
assistant professor	Animal production	Poultry Physiology				
Lecturer	Animal production	Animal nutrition				
Lecturer	Animal production	Animal Physiology				
Lecturer	Animal production	Poultry Management				
Lecturer	Animal production	Poultry nutrition				
assistant Lecturer	Animal production	Poultry breeding				
assistant Lecturer	Animal production	Animal Physiology				
assistant Lecturer	Animal production	Meat production				

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full—time, and part—time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

central

13. The most important sources of information about the program

State briefly the sources of information about the program.

1. The college and university website
2. University guide
3. Central Library
4. The most important books and sources for the department
5. Internet

14. Program Development Plan

	0021405	Buffalo production	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	021046U	Specialized English language 4	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	0C21407	Seminars	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	0C21408	Graduate research project	Basic	*	*	*	*	*	*	*	*	*	*	*	*

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:	
Space	
2. Course Code:	
0011105	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60/2	
7. Course administrator's name (mention all, if more than one name)	
Name: Emad tariq Email:	
8. Course Objectives	
Course Objectives	<p style="text-align: right;">.....</p> <ul style="list-style-type: none"> • Get the basic information and data needed to prepare and map. <div style="text-align: right;">.....</div> <input type="checkbox"/> <input type="checkbox"/> The main means of carrying out land-related operations of settlement, division and reclamation <input type="checkbox"/> Planning and construction of projects such as canals, dams and roads...
9. Teaching and Learning Strategies	
Strategy	

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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	4	Definition of space, types of surveys, requirements for good surveying, importance of space in agriculture.	Space	Explanation, model presentation and lecture	the exam
Second	4	Measurement systems and measurement units errors and errors.	Space	Explanation, model presentation and lecture	the exam
Third	4	Direct distance measurement and bar scanning, station selection conditions, field book, chain permitting methods	Space	Explanation, model presentation and lecture	the exam
Fourth	4	Direct distance measurement and bar scanning, station selection conditions, field book, chain permitting methods	Space	Explanation, model presentation and lecture	the exam
Fifth	4	Indirect distance measurement, indirect measurement bases, indirect measuring devices and instruments,	Space	Explanation, model presentation and lecture	the exam

		theodolite device.			
Sixth	4	Urban exam.	Space	Explanation, model presentation and lecture	the exam
seventh	4	The scale of the drawing its types and the factors of determining it	Space	Explanation, model presentation and lecture	the exam
Eighth	4	Spaces, regular and irregular shapes, spaces in coordinates	Space	Explanation, model presentation and lecture	the exam
Ninth	4	Lifting using tape	Space	Explanation, model presentation and lecture	the exam
Tenth	4	Lifting using flat panel	Space	Explanation, model presentation and lecture	the exam
Eleventh	4	Leveling and calculating points levels	Space	Explanation, model presentation and lecture	the exam
Twelfth	4	Longitudinal and transverse sections	Space	Explanation, model presentation and lecture	the exam
Thirteenth	4	Urban exam.	Space	Explanation, model presentation and lecture	the exam
Fourteenth	4	Finding drilling and depth of filling, calculating cutting and filling areas	Space	Explanation, model presentation and lecture	the exam
Fifteenth	4	Topographic maps and methods of representation	Space	Explanation, model presentation and lecture	the exam

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	
Main references (sources)	
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	

Course Description Form

1. Course Name:

mathematics

2. Course Code:

0C21105

3. Semester / Year:

Semester

4. Description Preparation Date:

5 - 3 - 2024

5. Available Attendance Forms:

Weekly

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

60/2

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

Name: samawal sadi abduallah Email: samawalsadi@tu.edu.iq

8. Course Objectives

Course Objectives

Provides an overview of the concepts and results in complex analysis that may be useful in the field of science and engineering. It also gives an introduction to functions and matrices, transforming ideas and results, and is intended for a number of applications.

9. Teaching and Learning Strategies

Strategy

10. Course Structure	

Week	Hours	Required Learning		Unit or subject name	Learning method	Evaluation
		Outcomes			method	
First	2	Matrices	mathematics	Explanation, model presentation and lecture		the exam
Second	2	Determinants	mathematics	Explanation, model presentation and lecture		the exam
Third	2	Cramer's base	mathematics	Explanation, model presentation and lecture		the exam
Fourth	2		mathematics	Explanation, model presentation and lecture		the exam
Fifth	2	Coordinates, slope	mathematics	Explanation, model presentation and lecture		the exam
Sixth	2	Straight line, conic sections	mathematics	Explanation, model presentation and lecture		the exam
seventh	2	Boundaries and continuity	mathematics	Explanation, model presentation and lecture		the exam
Eighth	2	Derivatives	mathematics	Explanation, model presentation and lecture		the exam
Ninth	2	Derivative applications	mathematics	Explanation, model presentation and lecture		the exam
Tenth	2	Integration (finite and infinite)	mathematics	Explanation, model presentation and lecture		the exam
Eleventh	2	Integration approach	mathematics	Explanation, model presentation		the exam

				and lecture	
Twelfth	2		mathematics	Explanation, model presentation and lecture	the exam
Thirteenth	2	Integration by parts	mathematics	Explanation, model presentation and lecture	the exam
Fourteenth	2	Integration applications	mathematics	Explanation, model presentation and lecture	the exam
Fifteenth	2	Volume, curve length, surface area	mathematics	Explanation, model presentation and lecture	the exam

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	Calculus :Thomas
Main references (sources)	
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	

Course Description Form

1. Course Name:	
principles of agricultural economics	
2. Course Code:	
0021205	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30/3	
7. Course administrator's name (mention all, if more than one name)	
Name: yasera baker tariq Email:	
8. Course Objectives	
Course Objectives	<p style="text-align: center;">.....</p> <input type="checkbox"/> Identifying the concept of economics <input type="checkbox"/> Identifying production, distribution and consumption, a function of costs in the short and long term, research methods in economic issues
	<input type="checkbox"/> Identifying the economic problem, micro and macro economics, economic system
	<input type="checkbox"/> .Course Outcomes and Methods of Teaching, Learning and Assessment
	<input type="checkbox"/>
9. Teaching and Learning Strategies	

Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Concept of economics, definition of agricultural economics, and its branches, human needs, characteristics of human needs, economic problem, micro and macroeconomics, economic systems, concept of indicative planning process	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Second	2	Concept of economics, definition of agricultural economics, and its branches, human needs, characteristics of human needs, economic problem, micro and macroeconomics, economic systems, concept of indicative planning process	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Third	2	Price system, change in demand, change in supply,	principles of agricultural economics	Explanation, model presentation and lecture	the exam

		basic elements of demand theory, consumer spending, demand function, demand for goods and prices, market demand curve, change in the demand curve for a commodity and income			
Fourth	2	Price system, change in demand, change in supply, basic elements of demand theory, consumer spending, demand function, demand for goods and prices, market demand curve, change in the demand curve for a commodity and income	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Fifth	2	Foundations of supply theory, supply function, change in supply curve, supply curve	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Sixth	2	Foundations of supply theory, supply function, change in supply curve, supply curve	principles of agricultural economics	Explanation, model presentation and lecture	the exam
seventh	2	The foundations of the market price theory, what are the factors affecting the market price, the	principles of agricultural economics	Explanation, model presentation and lecture	the exam

		change in the demand curve, supply and demand, the laws of supply and demand			
Eighth	2	The foundations of the market price theory, what are the factors affecting the market price, the change in the demand curve, supply and demand, the laws of supply and demand	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Ninth	2	Elasticity of supply and demand, price elasticity of demand, price elasticity of supply, cross elasticity, elasticity of change in the volume of revenue, income elasticity	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Tenth	2	Elasticity of supply and demand, price elasticity of demand, price elasticity of supply, cross elasticity, elasticity of change in the volume of revenue, income elasticity	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Eleventh	2	Price control, tax, some applications in price theory, prices and wages, the upper limits of	principles of agricultural economics	Explanation, model presentation and lecture	the exam

		permissible prices, the minimum limits of permissible prices, price fluctuations, the price extrapolation program			
Twelfth	2	Price control, tax, some applications in price theory, prices and wages, the upper limits of permissible prices, the minimum limits of permissible prices, price fluctuations, the price extrapolation program	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Thirteenth	2	Consumer behavior theory, budget line, on change in income, change in price, price relationship with opportunity costs, inflation and deflation	principles of agricultural economics	Explanation, model presentation and lecture	the exam
Fourteenth	2	Consumer behavior theory, budget line, on change in income, change in price, price relationship with opportunity costs, inflation and deflation	principles of agricultural economics	Explanation, model presentation and lecture	the exam

Fifteenth	2	Production organization' ownership style' stages of production	principles of agricultural economics	Explanation, model presentation and lecture	the exam
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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	educational psychology books
Main references (sources)	Internet
Recommended books and references (scientific journals, reports....	<ol style="list-style-type: none"> 1. Providing modern books and references and adding new vocabulary appropriate to circumstances and events. 2-Delegating students, especially the first of them to their scientific departments, outside Iraq, especially in developed countries. 3. Scientific cooperation with international universities through the development of teaching staff to see the development in the scientific field of competence for the course
Electronic References, Websites	

Course Description Form

1. Course Name:					
General Dairy Principles					
2. Course Code:					
0021204					
3. Semester / Year:					
Semester					
4. Description Preparation Date:					
5 - 3 - 2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75/3					
7. Course administrator's name (mention all, if more than one name)					
Name: Email:					
8. Course Objectives					
Course Objectives			<input type="checkbox"/> Introducing students to the general principles of dairy and getting acquainted with the important developments in this industry <input type="checkbox"/> Assisting students in dairy manufacturing - processes <input type="checkbox"/> Overcoming the obstacles facing the demand in the manufacturing process <input type="checkbox"/>		
9. Teaching and Learning Strategies					
Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

First	5	Introduction to milk	General Dairy Principles	Explanation, model presentation and lecture	the exam
Second	5	Introduction to milk	General Dairy Principles	Explanation, model presentation and lecture	the exam
Third	5	Introduction to milk	General Dairy Principles	Explanation, model presentation and lecture	the exam
Fourth	5	Factors affecting milk production	General Dairy Principles	Explanation, model presentation and lecture	the exam
Fifth	5	steps in the industry	General Dairy Principles	Explanation, model presentation and lecture	the exam
Sixth	5	Milk Ingredients	General Dairy Principles	Explanation, model presentation and lecture	the exam
seventh	5	fat	General Dairy Principles	Explanation, model presentation and lecture	the exam
Eighth	5	lactose	General Dairy Principles	Explanation, model presentation and lecture	the exam
Ninth	5	lactose	General Dairy Principles	Explanation, model presentation and lecture	the exam
Tenth	5	Protein	General Dairy Principles	Explanation, model presentation and lecture	the exam
Eleventh	5	Milk microorganisms	General Dairy Principles	Explanation, model presentation and lecture	the exam
Twelveth	5	Milk microorganisms	General Dairy Principles	Explanation, model presentation and lecture	the exam
Thirteenth	5	Milk enzymes	General Dairy Principles	Explanation, model	the exam

				presentation and lecture	
Fourteenth th	5	Milk enzymes	General Dairy Principles	Explanation, model presentation and lecture	the exam
Fifteenth	5	Milk enzymes	General Dairy Principles	Explanation, model presentation and lecture	the exam

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 Physiology, Al-Hasani, Zia Hassan and Al-Hiti, Sadiq Muhammad Amin. (1990). Higher Education Press, University of Baghdad.
Main references (sources)	1- The Internet, the Internet
Recommended books and references (scientific journals, reports....	<ol style="list-style-type: none"> 1- Veterinary Physiology (Mohy Al-Din, Khairallah and Yousef, Walid Hamad. (1987) Directorate of Dar Al-Kutub for Printing and Publishing - University of Mosul - Republic of Iraq. 2- Endocrine Physiology and Reproduction in Mammals and Birds "Mohieddin, Khair Al-Din and Youssef, Walid Hamid and Touhleh, Saad Hussein. (1990). Ministry of Higher Education and Scientific Research, House of Wisdom for Printing and Publishing, Mosul, Iraq. 3- The Internet
Electronic References, Websites	Iraqi academic scientific journals

Course Description Form

1. Course Name:	
Horticulture Principle	
2. Course Code:	
0C11204	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name:	
Email:	
8. Course Objectives	
Course Objectives	<p style="text-align: center;">.....</p> <ul style="list-style-type: none"> • Identify the importance of horticulture and its various techniques in contributing to providing food, medicine, and a safe, healthy environment for the individual and society. <input type="checkbox"/> Determine the most appropriate methods for propagating horticultural plants, their various divisions, and the agricultural processes necessary for their cultivation and growth. <input type="checkbox"/> Classification of horticultural plants according to their different groups. <input type="checkbox"/> Linking the relationship between different environmental conditions and the requirements for the growth, development and production of horticultural crops. <input type="checkbox"/> Practice some applications in propagating and caring for horticultural plants. <input type="checkbox"/> Demonstrating his skills in working within a single team in performing and completing the course's group tasks or assignments.
9. Teaching and Learning Strategies	

<p>Strategy</p>	<p>Cognitive objectives: After studying this course, the student is expected to be able to:</p> <p>A.1- Improve the ability to think, analyze and develop solutions to problems associated with various production processes of horticultural plants.</p> <p>A2- The ability to perform various agricultural operations and understand agricultural systems for horticultural plants.</p> <p>A3- Increase awareness and understanding of quality control methods for different horticultural plants and how to improve the quality of the final product.</p> <p>A4- Evaluate and analyze the performance of various methods to solve the problem of horticultural plants production in Iraq.</p> <p>A5- Criticism of the wrong procedures used in horticultural plants fields.</p> <p>A6- Familiarity with most of the most important environmental factors that affect the growth of horticultural plants under our local conditions.</p> <p>A7- Explaining to students the foundations of the strategy that must be used to overcome these environmental factors that may limit agricultural development in Iraq.</p> <p>B - The skills objectives of the course.</p> <p>Upon completion of the program, the graduate must be able to:</p> <p>B1- Plans and designs various programs to solve problems related to the production and improvement processes of horticultural plants.</p> <p>B2- Collects data and information related to increasing the productivity of horticultural plants in quantity and quality.</p> <p>B3- Evaluates the phenomena of decreased production of horticultural plants under the conditions of different regions.</p> <p>B4- Propose a plan to solve the problems in light of the data you obtain.</p> <p>B5- It links different scientific concepts to explain the phenomena that occur during the production of horticultural plants.</p> <p>B6- A program is proposed to improve production quantitatively and qualitatively, whether it is a genetic program (horticultural plants breeding) or a physiological program (nutrition, irrigation, etc.).</p> <p>B-7 Chooses safe ways to avoid risks that may occur during production operations.</p> <p>B-8 Takes the necessary professional decisions to solve urgent production problems.</p>
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	Horticulture Principle	Introduction to horticulture Definition - The importance of horticulture - Branches of horticulture - Division Plants horticulturally – reality and ambition	Explanation, model presentation and lecture	the exam
Second	5	Horticulture Principle	Environmental factors And the floor Soil - climate factors affecting the growth and spread of horticultural plants - soil and terrain factors - agricultural operations	Explanation, model presentation and lecture	the exam
Third	5	Horticulture Principle	Nurseries, nursery components and supplies - types of nurseries - their importance	Explanation, model presentation and lecture	the exam
Fourth	5	Horticulture Principle	Propagation of horticultural plants. Sexual propagation - Asexual propagation	Explanation, model presentation and lecture	the exam
Fifth	5	Horticulture Principle	Establishing orchards Conditions - needs - planning - pre-planting operations - Agriculture – care, service and maintenance of the orchard	Explanation, model presentation and lecture	the exam
Sixth	5	Horticulture Principle	Types of pruning, methods and timing of the procedure.	Explanation, model presentation	the exam

				and lecture	
seventh	5	Horticulture Principle	First semester test	Explanation, model presentation and lecture	the exam
Eighth	5	Horticulture Principle	Floriculture - ornamental plants, their types and classifications	Explanation, model presentation and lecture	the exam
Ninth	5	Horticulture Principle	Gardens - their types - their goals - their importance	Explanation, model presentation and lecture	the exam
Tenth	5	Horticulture Principle	Growth and development Horticultural plants The use of growth regulators in gardening and their role in the growth, propagation and flowering of horticultural plants	Explanation, model presentation and lecture	the exam
Eleventh	5	Horticulture Principle	Olericulture - its goals and importance	Explanation, model presentation and lecture	the exam
Twelveth	5	Horticulture Principle	Greenhouses - their importance and goals in the field of horticulture	Explanation, model presentation and lecture	the exam
Thirteenth	5	Horticulture Principle	Tissue culture - its definition - its steps - its importance	Explanation, model presentation and lecture	the exam
Fourteenth	5	Horticulture Principle	The second semester theoretical exam	Explanation, model presentation and lecture	the exam
Fifteenth	5	Horticulture Principle	Post-harvest transactions - their definition - the order in which they are carried out - their importance - their objectives	Explanation, model presentation and lecture	the exam

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	Principles of Gardening, written by Dr. - Faisal Rashid Nasser Al-Kanani, 1988, University of Mosul.
Main references (sources)	Principles of horticulture, Dr. Bahram Khorshid Muhammad Al-Daoudi, 1988, Saladin University
Recommended books and references (scientific journals, reports....	Principles of horticulture, Dr. Karim Saleh - Abdul and Dr. Saad Zaghloul Al-Najjar, 1984, Saladin University.
Electronic References, Websites	Horticulture, Janek, 1985, Arab House for Publishing and Distribution

Course Description Form

1. Course Name:	
Freedom and Democracy	
2. Course Code:	
U021026	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
15/1	
7. Course administrator's name (mention all, if more than one name)	
Name: Ibraheem Mohammad salih Email:	
8. Course Objectives	
Course Objectives	<p style="text-align: center;">.....</p> <input type="checkbox"/> The goal of teaching the curriculum is that the goal of teaching the subject of freedom and democracy is a Greek word that means (rule by the people). The Greeks practiced direct democracy, meaning the participation of members of the people in several decisions. Does this mean that democracy is the best product? Not necessarily, as majority rule may lead to the selection of candidates of race, sect, or religion. <input type="checkbox"/>
9. Teaching and Learning Strategies	
Strategy	
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	1	Human rights in ancient civilizations	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Second	1	Human rights in Greek and Egyptian civilization	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Third	1	Human rights in Iraq's ancient civilizations	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Fourth	1	Human rights in Islam	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Fifth	1	Universal Declaration of Human Rights	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Sixth	1	Constitution of the Republic of Iraq of 2005	Freedom and Democracy	Explanation, model presentation and lecture	the exam
seventh	1	The concept of democracy. Development - definition - dimensions	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Eighth	1	Roots of the concept of democracy	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Ninth	1	Human rights in ancient civilizations	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Tenth	1	Human rights in Greek and Egyptian civilization	Freedom and Democracy	Explanation, model presentation and lecture	the exam
Eleventh	1	Human rights in Iraq's ancient civilizations	Freedom and Democracy	Explanation, model presentation and lecture	the exam

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

Methodical Book 1- Human Rights, Children and Democracy (Prof. Dr. Maher Saleh Allawi), Chairman of the Authoring Committee. Prof. Dr. Raad Naji Al-Jeddah. Prof. Dr. Riyad Aziz Hadi. Prof. Dr. Kamel Abdel Ankoud (2009

Animal Physiology, Al-Hasani, Zia Hassan and Al-Hiti, Sadiq Muhammad Amin. (1990). Higher Education Press, University of Baghdad.

Course Description Form

1. Course Name:	
Hygiene of the animal products	
2. Course Code:	
0011202	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Maysaloon Wail Ibraheem Email: maysaloon2019@tu.edu.iq	
Name: Mohaeman abd Alsalam Mohammed Email: mohaeman.a.m@tu.edu.iq	
8. Course Objectives	
<p>Course Objectives</p>	<ul style="list-style-type: none"> • The student takes an idea about the health of animal products (milk, meat, eggs) • The student learns how to treat the animal before slaughter (rest, water, nutrition) • The student begins to learn how to examine the animal outwardly and estimate age through the teeth Explanation of the issue of bleeding and its effect on The quality of meat and the factors affecting it • The student learns the steps of the health examination After the animal is slaughtered • the student becomes aware of the changes that occur in the carcass (throwing stiffness) • Student's mastery of milk examination methods Explanation of eggs and their physical and chemical properties Egg contamination and transmission of infectious diseases <div style="text-align: right; margin-top: 10px;"> <input type="checkbox"/> </div>
9. Teaching and Learning Strategies	

Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	Animal treatment during transportation	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Second	5	Slaughter shops	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Third	5	Slaughtering	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Fourth	5	Rigor mortis	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Fifth	5	Carrying meat	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Sixth	5	Conserving meat	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
seventh	5	Filling meat	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Eighth	5	Food label	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Ninth	5	Milk	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Tenth	5	Dairy specifications	Hygiene of the animal products	Explanation, model presentation and lecture	the exam

Eleventh	5	Milking method	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Twelveth	5	The egg	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Thirteenth	5	Egg specifications	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Fourteenth	5	Pollution of eggs	Hygiene of the animal products	Explanation, model presentation and lecture	the exam
Fifteenth	5	Animal treatment during transportation	Hygiene of the animal products	Explanation, model presentation and lecture	the exam

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 Physiology, Al-Hasani, Zia Hassan and Al-Hiti, Sadiq Muhammad Amin. (1990). Higher Education Press, University of Baghdad.
Main references (sources)	1- The Internet, the Internet
Recommended books and references (scientific journals, reports....	<ol style="list-style-type: none"> 1- Veterinary Physiology (Mohy Al-Din, Khairallah and Yousef, Walid Hamad. (1987) Directorate of Dar Al-Kutub for Printing and Publishing - University of Mosul - Republic of Iraq. 2- Endocrine Physiology and Reproduction in Mammals and Birds "Mohieddin, Khair Al-Din and Youssef, Walid Hamid and Touhleh, Saad Hussein. (1990). Ministry of Higher Education and Scientific Research, House of Wisdom for Printing and Publishing, Mosul, Iraq. 3- The Internet
Electronic References, Websites	Iraqi academic scientific journals

Course Description Form

1. Course Name:	
Biochemistry	
2. Course Code:	
0011201	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Adel abdulrahmman Email:	
8. Course Objectives	
Course Objectives	<p style="text-align: center;">.....</p> <ul style="list-style-type: none"> • he student will master the knowledge of the chemical structures of living components and their functions in an efficient manner <p style="text-align: center;">.....</p> <input type="checkbox"/> Distinguishing between acids Amino and nucleard th e role of each <input type="checkbox"/> Distinguish between types of fats, their composition an functions
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	Carbohydrates	Biochemistry	Explanation, model presentation and lecture	the exam
Second	5	Reactions of sugars with non-oxidative acids	Biochemistry	Explanation, model presentation and lecture	the exam
Third	5	Mulch revealed	Biochemistry	Explanation, model presentation and lecture	the exam
Fourth	5	Silvanov revealed	Biochemistry	Explanation, model presentation and lecture	the exam
Fifth	5	Biel revealed	Biochemistry	Explanation, model presentation and lecture	the exam
Sixth	5	Aldehyde group reactions	Biochemistry	Explanation, model presentation and lecture	the exam
seventh	5	Benedict revealed	Biochemistry	Explanation, model presentation and lecture	the exam
Eighth	5	Parvoid detection	Biochemistry	Explanation, model presentation and lecture	the exam
Ninth	5	Fahlank revealed	Biochemistry	Explanation, model presentation and lecture	the exam
Tenth	5	Detection of	Biochemistry	Explanation,	the exam

		polysaccharides		model presentation and lecture	
Eleventh	5	Iodine detection	Biochemistry	Explanation, model presentation and lecture	the exam
Twelfth	5	Hydrolysis of starch with mineral acids	Biochemistry	Explanation, model presentation and lecture	the exam
Thirteenth	5	Xanthoprotective interaction proteins	Biochemistry	Explanation, model presentation and lecture	the exam
Fourteenth	5	Biuret detection	Biochemistry	Explanation, model presentation and lecture	the exam
Fifteenth	5	Carbohydrates	Biochemistry	Explanation, model presentation and lecture	the exam

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	Biochemistry, Biochemistry (Basil Kamel Dalali) University of Mosul, edited by the professor Dr. Tariq Younis Ahmed and Assistant Professor Dr. Louay Abdel Ali Al-Hilali
Main references (sources)	
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Genetics	
2. Course Code:	
0021201	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Haitham rajab manhee Email: Haithamalkaisi85@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"><input type="checkbox"/> To familiarize the student with the history and development of genetics<input type="checkbox"/> Introducing the student to the importance of genetics and its relationship to other sciences, focusing on the farm of animal production<input type="checkbox"/> Introduce the student to the basics of the transmission of traits across generations according to Mendelian inheritance<input type="checkbox"/> Introduce the student to the extensions of genetics after Mendelian genetics<input type="checkbox"/> Introduce the student to what is genetic material and its replication<input type="checkbox"/> Introduce the student to the

basics of gene expression and how to regulate gene expression



9. Teaching and Learning Strategies

Strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	A brief history of genetics and its development, the relationship of genetics with other sciences, definition of genetic terms	Genetics	Explanation, model presentation and lecture	the exam
Second	5	Mendel's experiments on monohybrid, dihybrid, Mendel's first law, Mendel's second law, inheritance of traits affected by one or two pairs of genes, definition of genetic terms	Genetics	Explanation, model presentation and lecture	the exam
Third	5	Dominance degrees, genetic interaction	Genetics	Explanation, model presentation and lecture	the exam
Fourth	5	Genetic hypothesis and good-matching test (chi-square) with Mendelian ratios	Genetics	Explanation, model presentation and lecture	the exam
Fifth	5	Study of sex chromosomes, sex-determining systems in organisms, sex-linked inheritance, sex-determining inheritance, sex-	Genetics	Explanation, model presentation and lecture	the exam

		influenced inheritance			
Sixth	5	Genetic Crossing Over, Genetic Linkage, Determination of Link Strength through New Conjugates, Multiple Crossing, Chromosomal Mapping	Genetics	Explanation, model presentation and lecture	the exam
seventh	5	Inheritance of multiple alleles, inheritance of ABO blood groups, inheritance of M, N blood groups, inheritance of Rh groups in human blood	Genetics	Explanation, model presentation and lecture	the exam
Eighth	5	Nuclear genetics and factors affecting it	Genetics	Explanation, model presentation and lecture	the exam
Ninth	5	Study of hereditary animal diseases, chromosomal abnormalities and their comparison with the normal condition	Genetics	Explanation, model presentation and lecture	the exam
Tenth	5	The stages of making DNA, protein and genetic code	Genetics	Explanation, model presentation and lecture	the exam
Eleventh	5	Virus inheritance	Genetics	Explanation, model presentation and lecture	the exam
Twelveth	5	Genotypic frequency and frequency genotypes, Hardy-Weinberg rule and balanced population	Genetics	Explanation, model presentation and lecture	the exam
Thirteenth	5	Evolution of species, factors affecting the evolution of species	Genetics	Explanation, model presentation and lecture	the exam
Fourteen	5	Extinction, periods of	Genetics	Explanation,	the exam

th		widespread extinction of species in the history of the globe, causes of extinction in the modern era		model presentation and lecture	
Fifteenth	5	Preserving biological diversity, natural reserves, freezing and preserving sperm, preserving embryos, genetic engineering techniques	Genetics	Explanation, model presentation and lecture	the exam

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	. Abd al-Latif Faleh al-Baldawi, Abd al-Razzaq Abd al-Hamid al-Rawi and Haitham Jassam Muhammad al-Ani (1987) Inheritance, Dar al-Kutub for Printing and Publishing - Mosul
Main references (sources)	-----
Recommended books and references (scientific journals, reports....	The Internet, the Internet, the Internet Iraqi academic scientific journals
Electronic References, Websites	Iraqi academic scientific journals

Course Description Form

1. Course Name:	
Design and analysis of experiments	
2. Course Code:	
0C11306	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Haitham rajab manhee Email: Haithamalkaisi85@tu.edu.iq	
8. Course Objectives	
Course Objectives	<input type="checkbox"/> Examines the design and analysis of experiments <input type="checkbox"/> Recognize the importance of conducting experiments and descriptive and statistical analysis of agricultural experiments <input type="checkbox"/> Researching the importance of knowing the appropriate design for each experiment according to the number of observations and the studied factors.
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	Introduction to the concept of statistics and statistical symbols	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Second	5	Measures of central tendency and measures of dispersion with application	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Third	5	Probability and binomial expansion with application and hypothesis testing	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Fourth	5	Normal distribution - Z-test, T-test and Chi-square test	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Fifth	5	Simple Regression and Correlation - Concept and Types with Applied Examples - Expectancy Equation	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Sixth	5	Regression and Multiple Correlation - With Application Examples	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
seventh	5	Concepts in the design and analysis of agricultural experiments (design - experiment - experimental unit - experimental error - degrees of freedom - level of significance - analysis of variance - mathematical model)	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Eighth	5	Complete random design (CRD) in the case of equal replicates - importance - characteristics - determinants - mathematical model - analysis of variance table - practical	Design and analysis of experiments	Explanation, model presentation and lecture	the exam

		examples			
Ninth	5	Complete random design (CRD) in case of unequal replications - significance - mathematical model - analysis table Contrast - Practical Examples	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Tenth	5	The stages of making DNA, protein and genetic code	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Eleventh	5	Virus inheritance	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Twelfth	5	Genotypic frequency and frequency genotypes, Hardy-Weinberg rule and balanced population	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Thirteenth	5	Evolution of species, factors affecting the evolution of species	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Fourteenth	5	Extinction, periods of widespread extinction of species in the history of the globe, causes of extinction in the modern era	Design and analysis of experiments	Explanation, model presentation and lecture	the exam
Fifteenth	5	Preserving biological diversity, natural reserves, freezing and preserving sperm, preserving embryos, genetic engineering techniques	Design and analysis of experiments	Explanation, model presentation and lecture	the exam

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	Design and analysis of agricultural experiments. Department of Animal Production, College of Agriculture. University of Al Mosul . 340 pages. Written by Prof. Khasha Mahmoud Al-Rawi and Dr. Abdul-Aziz Muhammad Al-Khashab 1981
Recommended books and references (scientific journals, reports....	Iraqi academic scientific journals

Course Description Form

1. Course Name:	
Feed and diet	
2. Course Code:	
0021303	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Abdullah isam noaman	Email: Abdullah.noaman@tu.edu.iq
Name: Falah hasan salih	Email: Falahhasan1984@tu.edu.iq
8. Course Objectives	
Course Objectives	<input type="checkbox"/> It examines the type of food used in the formation of diets <input type="checkbox"/> It includes how to design and create nutritional diets <input type="checkbox"/> Preparing the feed <input type="checkbox"/> -Mixing relationships <input type="checkbox"/> -Estimation of food components in the feed to prepare the diets <input type="checkbox"/> -Estimation of the type of diet and nutritional supplements used according to the physiological condition of the animal
9. Teaching and Learning Strategies	

Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	To familiarize the student with the classification of feed	Feed and diet	Explanation, model presentation and lecture	the exam
Second	5	To familiarize the student with the specifications of feed	Feed and diet	Explanation, model presentation and lecture	the exam
Third	5	That the student knows how to measure the nutritional value of feed	Feed and diet	Explanation, model presentation and lecture	the exam
Fourth	5	To familiarize the student with the biological value of feed	Feed and diet	Explanation, model presentation and lecture	the exam
Fifth	5	To familiarize the student with the nutritional energy of forage	Feed and diet	Explanation, model presentation and lecture	the exam
Sixth	5	To familiarize the student with how to calculate energy and protein in the diet	Feed and diet	Explanation, model presentation and lecture	the exam
seventh	5	To familiarize the student with how to calculate the starch coefficient	Feed and diet	Explanation, model presentation and lecture	the exam
Eighth	5	To familiarize the student with the Scandinavian unit	Feed and diet	Explanation, model presentation and lecture	the exam
Ninth	5	To familiarize the student with the physical parameters of forage	Feed and diet	Explanation, model presentation and lecture	the exam
Tenth	5	To familiarize the student with the needs of sustainability, growth and production	Feed and diet	Explanation, model presentation and lecture	the exam

Eleventh	5		Feed and diet	Explanation, model presentation and lecture	the exam
Twelveth	5	To familiarize the student with the usefulness of inorganic elements in nutrition	Feed and diet	Explanation, model presentation and lecture	the exam
Thirteenth	5	To familiarize the student with the importance of the lesson and its benefits	Feed and diet	Explanation, model presentation and lecture	the exam
Fourteenth	5	To familiarize the student with vitamins and their importance in nutrition	Feed and diet	Explanation, model presentation and lecture	the exam
Fifteenth	5	To familiarize the student with non-protein nitrogen compounds	Feed and diet	Explanation, model presentation and lecture	the exam

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	Food and Nutrition of Field Animals Edited by Ali Abdul Karim and Farouk Habib Gharib - University of Basra 1986
Main references (sources)	<p>1- Animal nutrition translated by d. Ahmed Al-Haj Taha , 19 69 , Ministry of Higher Education and Scientific Research - University of Mosul</p> <p>Animal feeding Translated by Dr. Saad -2 Abdel Hussein Naji, 1985 Institute of Technical - Institutes</p> <p>Sheep and goats production, written by Dr. -3 Zuhair Fakhri Al-Jalili and Jalal Elia Al-Qas , College of Agriculture - University of 1990 Baghdad</p> <p>Cows production written by Dr. Yassin Al- -4 Masri and Tawfiq Al-Dalla , 1998 8, Faculty of Agriculture - Damascus University</p> <p>The Internet, the Internet -5</p>
Recommended books and references (scientific journals, reports....	Iraqi academic scientific journals
Electronic References, Websites	ANIMALS NUTRITION

Course Description Form

1. Course Name:	
The economics of agricultural production	
2. Course Code:	
0011304	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45/3	
7. Course administrator's name (mention all, if more than one name)	
Name: ysera baker tareq	Email:
8. Course Objectives	
<p>Course Objectives</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Identify - the concept of the economics of agricultural production - the objectives of the economics of agricultural production - the nature of productive resources. <input type="checkbox"/> <input type="checkbox"/> Identifying preliminary principles in the economics of agricultural production <input type="checkbox"/> Identify and determine the optimum size From a resource to a production function with a single variable resource - product profit maximization <input type="checkbox"/> Learn about maximizing profits By determining the optimal size of production- Short-term balance The demand curve for the variable production component.

	<input type="checkbox"/> Identify the supplier-based production function - Curves both production (equal production curves). <input type="checkbox"/>
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9. Teaching and Learning Strategies

Strategy	
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	3	Preliminary principles in the economics of agricultural production - general concepts (fixed and variable elements - short and long term) - the concept of economics of agricultural production - goals of the economics of agricultural production - the nature of the first production materials	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Second	3	The relations between resources and agricultural production - the productive function and the first principles of selection. The principle of diminishing returns and rational production - production functions - forms of production functions - no production functions - economic wisdom of production functions	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Third	3	Determining the optimum size of the	The economics of agricultural production	Explanation, model	the exam

		production resource for a production function with one variable resource - maximizing the profits of the product - maximizing profits by determining the optimal size of the resources - maximizing profits by determining the optimal volume of production - short-run equilibrium - the demand curve for the variable production factor		presentation and lecture	
Fourth	3	Production function with suppliers curves both production (equal production curves), characteristics of curves both production, curve shapes both production, flexible resource replacement	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Fifth	3	Price relations and selection indicators, introduction, price ratios between resources, the relationship between the value of productivity and achieving maximum revenues, obstacles to achieving maximum revenues in agricultural production projects	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Sixth	3	The best combination of factors of production, factor prices and equal-cost lines, maximization of result about a fixed cost, cost about a certain level of	The economics of agricultural production	Explanation, model presentation and lecture	the exam

		production, and substitution between the factors of production.			
seventh	3	Optimal supplier combination and cost reduction, Introduction, If the minimum replacement rate is stable, in the case of the minimum replacement rate, the expansion path of production, the effect of replacement by expanding the use of resources	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Eighth	3	Distribution of resources between different production projects, introduction, diversity and specialization in agricultural production, the curve of production potential and choice between agricultural products, related goods, competing, additional goods or projects, integrated projects, methods of determining the combination of the bulk outputs of the profits created when resources are limited	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Ninth	3	Production costs, introduction, belief concept of production costs, the principle of alternative costs, visible and invisible costs, costs from a time point of View, production costs in the short and long term	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Tenth	3	Agricultural	The economics of	Explanation,	the exam

		production cost functions, introduction, economic derivatives of agricultural production cost functions, the relationship between production and cost functions in agricultural projects, and cost functions in both traditional and modified production theories	agricultural production	model presentation and lecture	
Eleventh	3	Cost functions and agricultural production unit, introduction, cost functions and maximum profits for agricultural projects, cost functions and lowest loss of agricultural production projects	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Twelveth	3	Introduction, proportional relations and size of agricultural projects, oligarchy relations and size of agricultural production project	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Thirteenth	3	Economies of scale, long-term output, long-term cost curves, the relationship between short-term cost curves and long-term costs, the relationship between long-term and short-term marginal costs	The economics of agricultural production	Explanation, model presentation and lecture	the exam
Fourteenth	3	Capacity returns, introduction, increased capacity returns, stable capacity returns, decreased capacity returns, variable ratios law, technical progress, and production functions	The economics of agricultural production	Explanation, model presentation and lecture	the exam

Fifteenth	3	Preliminary principles in the economics of agricultural production - general concepts (fixed and variable elements - short and long term) - the concept of economics of agricultural production - goals of the economics of agricultural production - the nature of the first production materials	The economics of agricultural production	Explanation, model presentation and lecture	the exam
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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	product economics books
Main references (sources)	Internet
Recommended books and references (scientific journals, reports....	<p>Development Plan Rapporteur Study</p> <ol style="list-style-type: none"> 1. Providing modern books and references and adding new vocabulary appropriate to circumstances and events. 2. Delegating students, especially the first among them, to their scientific departments outside Iraq, especially in developed countries, to develop skills according to their desire and the specializations in the Department of Economics and Agricultural Extension. 3. Scientific cooperation with international universities through the development of teaching staff to see the development in the scientific field of competence for the course
Electronic References, Websites	-----

Course Description Form

1. Course Name:	
Animal Diseases	
2. Course Code:	
0021304	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: abdulkhaliq Ahmed Farhan	Email: dr.abdulkhaliq45@tu.edu.iq
Name: Ashraf Kamil Azeez	Email: ashraf.kamil@tu.edu.iq
8. Course Objectives	
Course Objectives	<input type="checkbox"/> Animal pathology investigates how to diagnose disease through initial clinical signs and develop preventive and curative measures for it <input type="checkbox"/> It includes how the pathogen works <input type="checkbox"/> It studies how the pathogen is transmitted <input type="checkbox"/> - Learn how to perform sterilization in animal strabismus <input type="checkbox"/> Identifying the types of food used in animal nutrition that are related to metabolic diseases.
9. Teaching and Learning Strategies	

Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	To learn about the relationship of animal diseases with livestock	animal diseases	Explanation, model presentation and lecture	the exam
Second	5	To learn the classification of diseases	animal diseases	Explanation, model presentation and lecture	the exam
Third	5	The student learns about infectious and non-communicable diseases	animal diseases	Explanation, model presentation and lecture	the exam
Fourth	5	The student learns about bacteria, viruses, fungi and protozoa	animal diseases	Explanation, model presentation and lecture	the exam
Fifth	5	To teach the student about internal and external parasites	animal diseases	Explanation, model presentation and lecture	the exam
Sixth	5	To teach the student about the ways of the causes of infection	animal diseases	Explanation, model presentation and lecture	the exam
seventh	5	That the student learns the body's defenses against the mother is satisfied	animal diseases	Explanation, model presentation and lecture	the exam
Eighth	5	To teach the student about an overview of vaccines	animal diseases	Explanation, model presentation and lecture	the exam
Ninth	5	To teach the student a general overview of infectious diseases that are transmitted from animals to humans	animal diseases	Explanation, model presentation and lecture	the exam
Tenth	5	To teach the student about the most important bacterial infectious diseases,	animal diseases	Explanation, model presentation and lecture	the exam

		their symptoms and ways to prevent them			
Eleventh	5	The student learns about the most important viral infectious diseases, their symptoms, and ways to prevent them	animal diseases	Explanation, model presentation and lecture	the exam
Twelveth	5	To teach the student about the most important blood parasites and their symptoms	animal diseases	Explanation, model presentation and lecture	the exam
Thirteenth	5	The student learns about the most important infectious diseases caused by internal parasites and their symptoms	animal diseases	Explanation, model presentation and lecture	the exam
Fourteenth	5	To teach the student about the most important infectious diseases caused by external parasites and their symptoms	animal diseases	Explanation, model presentation and lecture	the exam
Fifteenth	5	That the student learn about the most important infectious diseases caused by bacteria and viruses and their symptoms in sheep	animal diseases	Explanation, model presentation and lecture	the exam

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	1- Animal diseases (1990). Higher Education Press, University of Baghdad.
Main references (sources)	2- The Internet
Recommended books and references (scientific journals, reports....	Animal Diseases, General Institution for Technical Education and Vocational Training (2006), Kingdom of Saudi Arabia.
Electronic References, Websites	The Internet

Course Description Form

1. Course Name:	
Environment and behavior of animal	
2. Course Code:	
0011305	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Ahmed Taies Taha Email: dr.att@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"><input type="checkbox"/> Introduce the student to the concept of the environment and its relationship to animals<input type="checkbox"/> Study the departments of ecology and their definitions<input type="checkbox"/> Define the components of an ecosystem<input type="checkbox"/> Study of environmental factors and their impact on the animal and the administrative aspect of the fields <input type="checkbox"/> The relationship of behavior and the environment to animal reproduction and productivity <input type="checkbox"/> Study of animal behavior in various

	stages of its life □
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9. Teaching and Learning Strategies

Strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Introduction to behavior, its definition and types Behavior and evolution migration behavior in animals	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Second	2	Animal behavior, environment and group formation.	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Third	2	Communication behavior between animals genetics and its impact on animal behavior	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Fourth	2	ruminant behavior	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Fifth	2	poultry behavior	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Sixth	2	Abnormal behavior of farm animals	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
seventh	2	grazing animals	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Eighth	2	A general introduction and a brief history of ecology and its divisions	Environment and behavior of animal	Explanation, model presentation and lecture	the exam

Ninth	2	Convection, radiation, conduction, evaporation and ecosystem components	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Tenth	2	Animal distribution laws	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Eleventh	2	Heat sources in the animal body and the factors affecting them (heat stress)	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Twelveth	2	Heat and humidity and their effect on the animal	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Thirteenth	2	Wind and light and their effect on animals	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Fourteenth	2	Housing design and environmental specifications	Environment and behavior of animal	Explanation, model presentation and lecture	the exam
Fifteenth	2	Ventilation systems in different animal houses	Environment and behavior of animal	Explanation, model presentation and lecture	the exam

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	1- Animal behavior lectures. Dr. Ahmed Abdel Alaw 2- Agricultural Animal Environment Akram Thanoun (1992) 3- Fundamentals of animal ecology d. Muhammad Al-Naama and Muhammad Maher (2011)
Main references (sources)	1- The environment of agricultural animal Akram Thanoun 2- Animal Behavior John Paul Scott Translated by: Abdel Hamid Khalil - Abdel Hafez Helmy Mohamed
Recommended books and references (scientific journals, reports....	Academic scientific journals
Electronic References, Websites	-----

Course Description Form

1. Course Name:					
Animal breeding					
2. Course Code:					
0021305					
3. Semester / Year:					
Semester					
4. Description Preparation Date:					
5 - 3 - 2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75/3					
7. Course administrator's name (mention all, if more than one name)					
Name: samawal sadi abdullah Email: samawalsadi@tu.edu.iq					
Name: Haitham rajab manhee Email: Haithamalkaisi85@tu.edu.iq					
8. Course Objectives					
Course Objectives			<input type="checkbox"/> Teaching and training students on the genetic principles of animal breeding and improvement programs <input type="checkbox"/> <input type="checkbox"/> Teaching students on traditional methods and modern trends used in improving animals <input type="checkbox"/> Teaching students how to use genetic engineering in breeding and improving animals <input type="checkbox"/>		
9. Teaching and Learning Strategies					
Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

First	5	Introduction to the breeding and improvement of agricultural animals and the formation of breeds - the objectives of agricultural animal breeders - a review of variance, quantitative and qualitative traits and critical traits - internal and external breeding	Animal breeding	Explanation, model presentation and lecture	the exam
Second	5	Basic rules in animal husbandry - kinship coefficient, internal breeding coefficient and hybrid vigor - the concept of exclusion and replacement - genetic parameters	Animal breeding	Explanation, model presentation and lecture	the exam
Third	5	The inheritance of quantitative traits - the concept of multiplication and gradation - the concept of generation range	Animal breeding	Explanation, model presentation and lecture	the exam
Fourth	5	Average effect of gene and gene replacement	Animal breeding	Explanation, model presentation and lecture	the exam
Fifth	5	Estimation of genetic parameters (genetic equivalent - genetic and phenotypic correlation - frequency coefficient) - heterogeneity	Animal breeding	Explanation, model presentation and lecture	the exam
Sixth	5	Estimation of educational values (BV), best linear prediction (BLUP) values, and true productivity	Animal breeding	Explanation, model presentation and lecture	the exam
seventh	5	The concept and types of election - Election for more than one adjective - Electoral evidence	Animal breeding	Explanation, model presentation and lecture	the exam
Eighth	5	Factors that increase	Animal breeding	Explanation,	the exam

		the efficiency of selection - the effect of herd variance and intensity of selection on the amount of genetic yield		model presentation and lecture	
Ninth	5	Correction for genetic factors	Animal breeding	Explanation, model presentation and lecture	the exam
Tenth	5	Genetic improvement in the presence of overlap between the environment and heredity	Animal breeding	Explanation, model presentation and lecture	the exam
Eleventh	5	General and private compatibility ability	Animal breeding	Explanation, model presentation and lecture	the exam
Twelveth	5	Uses of educational values in improvement plans - an applied aspect	Animal breeding	Explanation, model presentation and lecture	the exam
Thirteenth	5	Components of genetic improvement plans at the national level	Animal breeding	Explanation, model presentation and lecture	the exam
Fourteenth	5	Fixed and Random Mathematical Models - Practical Examples	Animal breeding	Explanation, model presentation and lecture	the exam
Fifteenth	5	Appropriate sample size in scientific research - terms	Animal breeding	Explanation, model presentation and lecture	the exam

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	. Breeding and improving animal Dr. Tawfiq Naguib Ghazal Animal breeding by Dr. Salah Jalal and Dr. Hassan Karam
Recommended books and references (scientific journals, reports....	Iraqi academic scientific journals

Course Description Form

1. Course Name:	
Animal nutrion	
2. Course Code:	
0011303	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 – 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Abdullah isam noaman	Email: Abdullah.noaman@tu.edu.iq
Name: Falah hasan salih	Email: Falahhasan1984@tu.edu.iq
8. Course Objectives	
Course Objectives	<input type="checkbox"/> Science investigates how to manage and feed ruminants from birth to the end of production <input type="checkbox"/> Ruminant nutrition includes how to design and create diets <input type="checkbox"/> Identify the types of foodstuffs used in feeding ruminants and calculate their needs according to type, age, and production status <input type="checkbox"/> Learn how to choose feed in hot and cold climates and know the optimal temperatures for rearing and the lighting and ventilation systems used in raising milk and meat cows. <input type="checkbox"/>
9. Teaching and Learning Strategies	

Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	The student gets to know the most important feed materials for ruminants	Animal nutrtnion	Explanation, model presentation and lecture	the exam
Second	5	Digestive processes in ruminants and monogastric animals	Animal nutrtnion	Explanation, model presentation and lecture	the exam
Third	5	The student will be familiar with carbohydrates, their classification, and their importance	Animal nutrtnion	Explanation, model presentation and lecture	the exam
Fourth	5	The student gets to know proteins, their types, and their importance	Animal nutrtnion	Explanation, model presentation and lecture	the exam
Fifth	5	The student gets to know the most important materials related to fats and oils	Animal nutrtnion	Explanation, model presentation and lecture	the exam
Sixth	5	For the student to know how to calculate the energy and protein in the diet	Animal nutrtnion	Explanation, model presentation and lecture	the exam
seventh	5	The student gets to know food energy and its divisions	Animal nutrtnion	Explanation, model presentation and lecture	the exam
Eighth	5	The student will learn about the digestion of	Animal nutrtnion	Explanation, model presentation and lecture	the exam

		carbohydrates			
Ninth	5	The student will learn about protein digestion	Animal nutrition	Explanation, model presentation and lecture	the exam
Tenth	5	The student will learn about the digestion of fats	Animal nutrition	Explanation, model presentation and lecture	the exam
Eleventh	5	For the student to get to know Types of diets and modern and ancient protein systems	Animal nutrition	Explanation, model presentation and lecture	the exam
Twelfth	5	The student will be familiar with the methods used to estimate digestibility	Animal nutrition	Explanation, model presentation and lecture	the exam
Thirteenth	5	The student gets to know antibiotics and enzymes	Animal nutrition	Explanation, model presentation and lecture	the exam
Fourteenth	5	The student gets to know the needs of sustainability and production	Animal nutrition	Explanation, model presentation and lecture	the exam
Fifteenth	5	For the student to become familiar with the formation of scientific relationships to meet the needs of sustainability and production	Animal nutrition	Explanation, model presentation and lecture	the exam

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	1- Animal Nutrition, Translated By Dr. Ahmed Al-Haj Taha Saleh, Dr. Atallah Saeed, And Dr. Muhammad Ramzbi Energy 2- Animal Nutrition Mcdonald, Edwards, Greenhaigh 1981,2002 3 - International Information Network, The Internet
Main references (sources)	Iraqi academic scientific journals
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	Animal Nutrition

Course Description Form

1. Course Name:	
Hatching and hatchery management	
2. Course Code:	
0011302	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Ahmed Khalid Ahmed	Email: AHMEDKHALID76700@tu.edu.iq
Name: Sohaib Mahmood abd	Email: sohaibmahmood1983@tu.edu.iq
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • The science of hatching and poultry production studies how to chicks, starting from the moment of collecting hatching eggs un <ul style="list-style-type: none"> <input type="checkbox"/> It includes how to design and create poultry halls <input type="checkbox"/> Transfer the eggs from the hall to the hatchery and manage them <input type="checkbox"/> Learn how to sterilize eggs and hatchers <input type="checkbox"/> Identifying the types of food used in feeding poultry and calcul according to the type age, and production status



Learn how to manage the hatchery in hot and cold weather, and humidity

9. Teaching and Learning Strategies

Strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	History and development of natural and artificial hatching	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Second	5	Male reproductive system, male sexual maturity, fertility	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Third	5	Sexual maturity, ovulation and cutting of eggs, installation of eggs	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Fourth	5	Treatment of eggs before hatching (collection, selection, storage, heating eggs)	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Fifth	5	Fetal growth inside and outside the mother's body and its development	Hatching and hatchery management	Explanation, model presentation and lecture	the exam

Sixth	5	Anomalies of the fetus and their genetic and environmental causes	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
seventh	5	Vital stages during the	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Eighth	5	Test(1)	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Ninth	5	Building design and hatchery management	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Tenth	5	Scientific management of hatcheries and biosecurity	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Eleventh	5	Caring for the flock of mothers and sources of hatching eggs	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Twelveth	5	Nutrition, genetics and its relationship to hatching	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Thirteenth	5	Determining and dividing the quality of the hatched chicks and feeding them after hatching	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Fourteenth	5	Economic feasibility of hatcher	Hatching and hatchery management	Explanation, model presentation and lecture	the exam
Fifteenth	5	Test (20)	Hatching and hatchery management	Explanation, model presentation and lecture	the exam

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	Hatching and management of hatcheries of the Ministry of Higher Education and Scientific Research - University of Baghdad The International Information Network, the Internet
Main references (sources)	Hatching and management of hatcheries of the Ministry of Higher Education and Scientific Research - University of Baghdad The International Information Network, the Internet
Recommended books and references (scientific journals, reports....	guest Lectures from other country or University, internship , field studies, Iraqi academic scientific journals
Electronic References, Websites	-----

Course Description Form

1. Course Name:	
Poultry Products Technology	
2. Course Code:	
0021302	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Maad Abdulkareem Albaddy	Email: maadalbaddy@tu.edu.iq
Name: Mokhalad Oraibi Hasan	Email: mokhalad082@tu.edu.iq
8. Course Objectives	
<p>Course Objectives</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Poultry product technology studies everything related to the nutritional value of eggs and the chemical composition of poultry meat. <input type="checkbox"/> It includes knowledge of the female reproductive system in poultry. <input type="checkbox"/> The nutritional value of eggs <input type="checkbox"/> - The chemical composition of the white of the egg parts <input type="checkbox"/> Chemical composition of poultry meat <input type="checkbox"/> Types of slaughterhouses and study of the by-products of poultry slaughterhouses.
9. Teaching and Learning Strategies	

Strategy	
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	egg production	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Second	5	The nutritional value of eggs	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Third	5	Egg qualitative measurements	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Fourth	5	The chemistry of eggs and their products	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Fifth	5	Egg microbiology	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Sixth	5	Egg storage and marketing	Poultry Products Technology	Explanation, model presentation and lecture	the exam
seventh	5	Poultry meat production	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Eighth	5	Chemical and nutritional properties of poultry meat	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Ninth	5	Processes of preparing poultry meat for consumption	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Tenth	5	Poultry meat quality and preservation methods	Poultry Products Technology	Explanation, model presentation and lecture	the exam

Eleventh	5	Poultry meat storage	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Twelveth	5	Microbiology of poultry meat	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Thirteenth	5	The flavor and tenderness of poultry meat	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Fourteenth	5	Recognize the types of massaces	Poultry Products Technology	Explanation, model presentation and lecture	the exam
Fifteenth	5	Learn about table egg production projects	Poultry Products Technology	Explanation, model presentation and lecture	the exam

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	<p>1- Poultry production by Dr. Suhaib Abdul Razzaq, 1985, Ministry of Higher Education and Scientific Research - University of Baghdad</p> <p>2- Management of Broilers by Dr. Saad Abdul-Hussein Naji, 2006 College of Agriculture / University of Baghdad - Technical Bulletin of the Poultry Science Society</p> <p>3- Poultry Products Technology 1986 Dr. Hamdi Abdel Aziz Al Fayyad and Saad Abdel Hussein Naji</p>
Main references (sources)	<p>1- Poultry production by Dr. Suhaib Abdul Razzaq, 1985, Ministry of Higher Education and Scientific Research - University of Baghdad</p> <p>2- Management of Broilers by Dr. Saad Abdul-Hussein Naji, 2006 College of Agriculture / University of Baghdad - Technical Bulletin of the Poultry Science Society</p>
Recommended books and references (scientific journals, reports....	Iraqi academic scientific journals
Electronic References, Websites	The Internet

Course Description Form

1. Course Name:	
Reproductive physiology of farm animals	
2. Course Code:	
0021306	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Aslam Saud Alwan Email: aslam.alwan@tu.edu.iq Name: Ashraf Kamil Azeez Email: ashraf.kamil@tu.edu.iq	
8. Course Objectives	
Course Objectives	<input type="checkbox"/> Introducing the field practice student to the use of methods of standardizing estrus for sheep and cows, as well as artificial insemination techniques. <input type="checkbox"/> <input type="checkbox"/> The student's knowledge of the use of synthetic hormones and their impact on achieving the highest rates of animal reproductive performance. <input type="checkbox"/> Training students on how to make practical decisions in determining animal needs in a way that ensures proper production. <input type="checkbox"/>
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	Introducing the student to the male reproductive system	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Second	5	Introducing the student to the female reproductive system	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Third	5	Introduce students to reproductive hormones	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Fourth	5	Introducing the student to the stage of puberty about sexual animals	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Fifth	5	To know the stage of sexual maturity of animals	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Sixth	5	Identify the relationship of the breeding season during the year and its relationship to production	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
seventh	5	Introducing the student to the stages of sperm development in the testicle	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Eighth	5	Introducing the student to the growth of follicles and eggs in the ovaries	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Ninth	5	Introduce the student to the stages of the estrus cycle.	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Tenth	5	Introducing the student to the union of gametes in the fertilization process	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Eleventh	5	Introducing the student to the stages of pregnancy	Reproductive physiology of farm animals	Explanation, model presentation	the exam

				and lecture	
Twelveth	5	To get to know the student	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Thirteenth	5	The stage of pregnancy and beyond the inversion of the uterus after childbirth	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Fourteenth	5	Introduce the student to some diseases that affect reproductive performance	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam
Fifteenth	5	Introducing the student to the most important modern agricultural techniques	Reproductive physiology of farm animals	Explanation, model presentation and lecture	the exam

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	عدم وجود مصادر في الوصف المقرر يجب الاتصال باستاذ المادة . لملئ الجدول
Main references (sources)	
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Animal Physiology	
2. Course Code:	
0011301	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: abdulkhaliq Ahmed Farhan	Email: dr.abdulkhaliq45@tu.edu.iq
Name: Ashraf Kamil Azeez	Email: ashraf.kamil@tu.edu.iq
8. Course Objectives	
Course Objectives	<input type="checkbox"/> Animal physiology investigates how and studies the body's systems, starting from the cell, up to the various body systems, according to their complexity <input type="checkbox"/> <input type="checkbox"/> It includes how to conduct blood tests <input type="checkbox"/> Blood transfusion, preservation, and examinations <input type="checkbox"/> Learn how tissues work outside the body and know their electrical activity <input type="checkbox"/> Identify the types of food entering the digestive system and how to maintain internal stability <input type="checkbox"/> Recognize how the different organs of the body work by studying their details <input type="checkbox"/>
9. Teaching and Learning Strategies	

Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	To learn about cell physiology and structure	animal physiology	Explanation, model presentation and lecture	the exam
Second	5	To learn the physiology and structure of the digestive system	animal physiology	Explanation, model presentation and lecture	the exam
Third	5	To teach the student how enzymes are attached to the digestive system	animal physiology	Explanation, model presentation and lecture	the exam
Fourth	5	The student learns about blood and body fluids	animal physiology	Explanation, model presentation and lecture	the exam
Fifth	5	The student learns about the rotation device and its installation	animal physiology	Explanation, model presentation and lecture	the exam
Sixth	5	To learn the student on the urinary system and its structure	animal physiology	Explanation, model presentation and lecture	the exam
seventh	5	The student learns muscle physiology	animal physiology	Explanation, model presentation and lecture	the exam
Eighth	5	The student learns about the central nervous system	animal physiology	Explanation, model presentation and lecture	the exam
Ninth	5	The student learns about the autonomic nervous system	animal physiology	Explanation, model presentation and lecture	the exam
Tenth	5	To learn about the respiratory system	animal physiology	Explanation, model presentation and lecture	the exam
Eleventh	5	The student learns	animal physiology	Explanation,	the exam

		about the tissues of the body and its types		model presentation and lecture	
Twelveth	5	The student learns about metabolism and energy release	animal physiology	Explanation, model presentation and lecture	the exam
Thirteenth	5	The student learns about the lymphatic system and its functions	animal physiology	Explanation, model presentation and lecture	the exam
Fourteenth	5	To teach the student about the endocrine glands and the way hormones work	animal physiology	Explanation, model presentation and lecture	the exam
Fifteenth	5	The student learns about the hormones of the pituitary gland and other glands	animal physiology	Explanation, model presentation and lecture	the exam

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 Physiology, Al-Hasani, Zia Hassan and Al-Hiti, Sadiq Muhammad Amin. (1990). Higher Education Press, University of Baghdad.
Main references (sources)	1- The Internet, the Internet
Recommended books and references (scientific journals, reports....	<ol style="list-style-type: none"> 1- Veterinary Physiology (Mohy Al-Din, Khairallah and Yousef, Walid Hamad. (1987) Directorate of Dar Al-Kutub for Printing and Publishing - University of Mosul - Republic of Iraq. 2- Endocrine Physiology and Reproduction in Mammals and Birds "Mohieddin, Khair Al-Din and Youssef, Walid Hamid and Touhleh, Saad Hussein. (1990). Ministry of Higher Education and Scientific Research, House of Wisdom for Printing and Publishing, Mosul, Iraq. 3- The Internet
Electronic References, Websites	Iraqi academic scientific journals

Course Description Form

1. Course Name:	
Poultry Physiology	
2. Course Code:	
0021301	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Ahmed Taies Taha Email: dr.att@tu.edu.iq	
Name: Samah Maiser Raouf Email: samahmaiser@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"><input type="checkbox"/> It studies physiology and ways to benefit from it in order to reach the best production<input type="checkbox"/> It includes the anatomy of the vital organs in the bird's body<input type="checkbox"/> Determining the functions of organs and their vital importance<input type="checkbox"/> - Learn how to diagnose and identify the bird's body parts and vital functions <input type="checkbox"/> Learn how to collect blood from different bird species<input type="checkbox"/> Learn the methods of semen collection and artificial insemination in domestic birds
9. Teaching and Learning Strategies	

Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	General description of organ physiology	Poultry Physiology	Explanation, model presentation and lecture	the exam
Second	5	animal cell structure	Poultry Physiology	Explanation, model presentation and lecture	the exam
Third	5	blood and body fluids	Poultry Physiology	Explanation, model presentation and lecture	the exam
Fourth	5	Heart and circulatory system	Poultry Physiology	Explanation, model presentation and lecture	the exam
Fifth	5	Reproductive systems	Poultry Physiology	Explanation, model presentation and lecture	the exam
Sixth	5	Breeding in poultry	Poultry Physiology	Explanation, model presentation and lecture	the exam
seventh	5	Urinary system	Poultry Physiology	Explanation, model presentation and lecture	the exam
Eighth	5	Digestive system	Poultry Physiology	Explanation, model presentation and lecture	the exam
Ninth	5	Respiratory system	Poultry Physiology	Explanation, model presentation and lecture	the exam
Tenth	5	Nervous system	Poultry Physiology	Explanation, model presentation and lecture	the exam

Eleventh	5	Endocrine	Poultry Physiology	Explanation, model presentation and lecture	the exam
Twelveth	5	Lymphatic and immune system	Poultry Physiology	Explanation, model presentation and lecture	the exam
Thirteenth	5	thermoregulatory system	Poultry Physiology	Explanation, model presentation and lecture	the exam
Fourteenth	5	Hatching physiology and embryonic respiration	Poultry Physiology	Explanation, model presentation and lecture	the exam
Fifteenth	5	Stresses and their impact on the relative stability of the internal environment	Poultry Physiology	Explanation, model presentation and lecture	the exam

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	1- Avian Hematology. Al-Daraji,Hazim j (2008) Ministry of Higher Education and Scientific Research,Univ Of Baghdad,college of Agriculture. 2- Sturkie's Avian Physiology2015 ‘Colin G. Scanes Academic Press is an imprint of Elsevier
Main references (sources)	‘2015 Colin G. Sturkie’s Avian Physiology Scanes Academic Press is an imprint of Elsevier Avian Physiology .4 thd edn, 1986. Sturkie .P.D. Springer Verlag .New York.
Recommended books and references (scientific journals, reports....	Poultry Science journal British Poultry Science journal ROSS COM. GUIADE
Electronic References, Websites	poultry Science Avian hematology and cytology

Course Description Form

1. Course Name:	
computer	
2. Course Code:	
U021037	
3. Semester / Year:	
Second Semester	
4. Description Preparation Date:	
4/3/2024	
5. Available Attendance Forms:	
Mandatory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
35 / 1.5	
7. Course administrator's name (mention all, if more than one name)	
Name: Ahmed attallah dawood Email: Ahmedaldoury@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • The student's understanding of the material. 2. The ability to analyze and apply what you have learned practically on a Computer. 3. Presenting the material to the students in the computer laboratory and then applying it. 4. Direct questions and answers about previous material and brainstorming. 5. Showing educational films specific to the subject to consolidate the ability to learn. • •
9. Teaching and Learning Strategies	

Strategy	<p>. The method of explaining the material theoretically is by displaying the material on the smart screen in the form of diagrams and pictures, as well as displaying videos, to attract the student's attention and help him not feel bored.</p> <p>. The practical method is to apply what the student has learned on the computer and conduct quizzes and monthly exams.</p> <p>. Urging students to use the Internet, work as a team, and visit the library by asking them to prepare scientific reports on the topics given to them within the course.</p>
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Chapter One Operating Ex 2010, file and the main window	Excel 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
2	3	Main Window	Excel 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
3	3	Create Table	Excel 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
4	3	Create Series	Excel 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination

5	3	Create Function	Excel 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
6	3	Save Document	Excel 2010	Theoretical + Practical	Attendees, Quizzes, and Monthly examination
7	3	1st-month examination	Excel 2010	Theoretical + Practical	Attendees, Quizzes, and Monthly examination
8	3	Printing Settings	Excel 2010	Theoretical + Practical	Attendees, Quizzes, and Monthly examination
9	3	Data Management	Excel 2010	Theoretical + Practical	Attendees, Quizzes, and Monthly examination
10	3	Objects Management	Excel 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
11	3	Introduction and Interface PowerPoint	PowerPoint 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination

12	3	Preparing Slides Custom Animation	PowerPoint 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
13	3	Document slides prepare multiple project slides	PowerPoint 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
14	3	Interactive Show prepare photo album	PowerPoint 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination
15	3	2nd-month examination	PowerPoint 2010	Theoretical + Practical	Attendees, Quiz, and Monthly examination

11. Course evaluation

- The score for the second exam is (15) points.
- The degree of daily attendance and participation is (5) degrees.
- Report score (5) degrees.
- The final grade of the course is (40) marks.

12. Learning and Teaching Resources

Required textbooks(curricular books, if any	
Main references (sources)	
Recommended books and references (scientific journals, reports....	- Explanation of the PowerPoint 2010 program, the book is in Arabic, a complete explanation of the program in the English interface, with a practical exercise on creating presentations. Written by: Eng/ Muhammad Abu Al-Ala - http://download-internet-pdf-ebooks.com/12082-
Electronic References, Websites	https://www.dcc.vccs.edu/TLTR/Blackboard9 http://www.stanford.edu/services/network/

Course Description Form

1. Course Name:	
poultry management	
2. Course Code:	
0011405	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Tareq Khalaf Hasan Email: tariq.aljomaily@tu.edu.iq	
Name: Mokhalad Oraibi Hasan Email: mokhalad082@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none">• Poultry management and production studies how to manage chicks from the moment of hatching to the end of production.• It includes how to design and create poultry halls• Transferring chicks from the hatchery to the hall and managing them• Learn how to sterilize the production halls• Identifying the types of food used in feeding poultry and calculating its needs according to type, age and production status• Learn how to manage chicks and laying hens in hot and cold climates and know the optimum temperatures for breeding and lighting and ventilation systems
9. Teaching and Learning Strategies	

Strategy	1- Explanation and clarification 2- The method of the lecture 3- Student groups 4- Practical lessons in agricultural fields 5- Scientific trips to follow up on poultry feeding projects in Iraq
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	To familiarize the student with the concept of poultry project management	poultry management	Explanation, model presentation and lecture	the exam
Second	5	To familiarize the student with the requirements for establishing poultry houses	poultry management	Explanation, model presentation and lecture	the exam
Third	5	To familiarize the student with the environmental factors affecting poultry farming and production	poultry management	Explanation, model presentation and lecture	the exam
Fourth	5	The student knows how to prepare the hall to receive the chicks	poultry management	Explanation, model presentation and lecture	the exam
Fifth	5	To familiarize the student with the requirements and furniture of poultry halls	poultry management	Explanation, model presentation and lecture	the exam
Sixth	5	To familiarize the student with the components of natural and artificial hatching	poultry management	Explanation, model presentation and lecture	the exam
seventh	5	To familiarize the student with how to calculate the productive performance of broilers	poultry management	Explanation, model presentation and lecture	the exam
Eighth	5	That the student knows the management and breeding of broiler camels	poultry management	Explanation, model presentation and lecture	the exam
Ninth	5	To familiarize the student with the management and care	poultry management	Explanation, model presentation	the exam

		of laying hens		and lecture	
Tenth	5	To familiarize the student with how to manage laying hens during the productive period	poultry management	Explanation, model presentation and lecture	the exam
Eleventh	5	To familiarize the student with the management of mothers of meat and eggs	poultry management	Explanation, model presentation and lecture	the exam
Twelveth	5	To familiarize the student with the concept of lashing, its types, and the elements for its success	poultry management	Explanation, model presentation and lecture	the exam
Thirteenth	5	To familiarize the student with the health management of poultry birds	poultry management	Explanation, model presentation and lecture	the exam
Fourteenth	5	To familiarize the student with the biological and preventive security of poultry projects	poultry management	Explanation, model presentation and lecture	the exam
Fifteenth	5	To familiarize the student with the management of nutrition and the health of the digestive system of birds	poultry management	Explanation, model presentation and lecture	the exam

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	<p>1- Poultry production by Dr. Suhaib Abdul Razzaq, 1985, Ministry of Higher Education and Scientific Research - University of Baghdad</p> <p>2- Management of Broilers by Dr. Saad Abdul-Hussein Naji, 2006 College of Agriculture / University of Baghdad - Technical Bulletin of the Poultry Science Society</p> <p>3- Management of laying hens, authored by Dr. Saad Abdul-Hussein Naji, 2007 College of Agriculture - University of Baghdad - Technical Bulletin of the Poultry Science Society</p> <p>4- Management of Broiler Mothers Written by Dr. Saad Abdul-Hussein Naji, 2008 College of Agriculture - University of Baghdad - Technical Bulletin of the Poultry Science Society</p> <p>5 - Ahmed, Iyad Shehab and others. 2021. Management and production of poultry. University of Kufa</p>
Main references (sources)	<p>1- Poultry production by Dr. Suhaib Abdul Razzaq, 1985, Ministry of Higher Education and Scientific Research - University of Baghdad</p> <p>2- Al-Zajji, Reda Jawad and Ismail Khalil Ibrahim 1981. Hatching and hatchery management. First edition, University of Baghdad.</p> <p>3- Al-Yassin, Ali Abdul-Khaleq and Muhammad Hassan Abdul-Abbas. 2010. Poultry Feeding, University of Baghdad</p> <p>4- Management of Broilers by Dr. Saad Abdul-Hussein Naji, 2006 College of Agriculture / University of Baghdad - Technical Bulletin of the Poultry Science Society</p> <p>5- Management of laying hens, authored by Dr. Saad Abdul-Hussein Naji, 2007 College of Agriculture - University of Baghdad - Technical Bulletin of the Poultry Science Society</p> <p>6- Management of Broiler Mothers by Dr. Saad Abdul-Hussein Naji, 2008 College of Agriculture - University of Baghdad - Technical Bulletin of the Poultry Science Society</p> <p>7- Guide to Biosecurity in Poultry Breeding in the Middle East and North Africa</p>
Recommended books and references (<p>Iraqi academic scientific journals</p> <p>The sources are Naji, Saad Abdel Hussein, Hanna, Aziz Kabru. 1999 . Broiler Breeding Guide, Arab Food</p>

<p>scientific journals, reports....</p>	<p>Organization Broiler Breeding Guide, Hyalin Company, https://www.hyline.com/userdocs/pages/BRN_COM_ARB.pdf Broiler Breeding Guide, Aviagen Inc., http://en.aviagen.com/brands/ross/products/ros Le Mans Guide to Layering Broilers, http://www.ltz.de/en/downloads/management</p>
<p>Electronic References, Websites</p>	<ol style="list-style-type: none"> 1- Sending students, especially the first ones, to their scientific departments outside Iraq, especially in developed countries, to develop skills, each according to his desire and according to the specializations in the scientific department 2- Cooperation between Iraqi universities and international universities by sending teachers to international universities. 3- Developing the idea of the visiting professor to provide the young universities with expertise and the latest scientific findings in the agricultural fields. 4- Cooperation between Iraqi universities and private universities through discussing postgraduate students. 5- The interaction of the university and college with the community through the departments of agriculture and veterinary and identifying problems and finding solutions to them.

نموذج وصف المقرر

1. اسم المقرر	
لغة إنكليزية 4	
2. رمز المقرر	
U021046	
3. الفصل / السنة	
فصلي	
4. تاريخ إعداد هذا الوصف	
2024/3/5	
5. أشكال الحضور المتاحة	
اسبوعي	
6. عدد الساعات الدراسية (الكلي) / عدد الوحدات (الكلي)	
1/15	
7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)	
الاسم: أ.د. عقيل عبد شليح الأيمل: akeelabd78@tu.edu.iq	
8. اهداف المقرر	
اهداف المادة الدراسية	<ul style="list-style-type: none">● تمكين الطالب من اكتساب مهارات اللغة الانكليزية الاساسية● تمكين الطالب من توظيف اللغة الانكليزية لاغراض التواصل والدراسة الاكاديمية والبحثية.● تمكين الطالب من اكتساب الكفاءة اللغوية الضرورية للجانب الاكاديمي الحالي و المهني المستقبلي● تمكين الطالب من الاستفادة من المصادر الاجنبية من خلال تنمية مهارة الترجمة لديه
9. استراتيجيات التعليم والتعلم	
الاستراتيجية	<ol style="list-style-type: none">1- الشرح والتوضيح2- طريقة المحاضرة3- المجاميع الطلابية

الأسبوع	المادة النظرية	المادة العلمية	طريقة التدريس	طريقة التقييم
1	The Sentence		المحاضرة	طريقة التقييم
2	Classification of English Sentence		المحاضرة	الإمتحان
3	Qualities of a good sentence Unity and Coherence		المحاضرة	الإمتحان
4	Inconsistency		المحاضرة	الإمتحان
5		Practicing writing and correcting various types of sentences	المحاضرة	الإمتحان
6	The Paragraph The qualities of a good paragraph		المحاضرة	الإمتحان
7	Arrangement of sentences		المحاضرة	الإمتحان
8	Transition between sentences		المحاضرة	الإمتحان
9		Practicing Paragraph Writing	المحاضرة	الإمتحان
10		Practicing Paragraph Writing	المحاضرة	الإمتحان
11	Punctuation End punctuation marks		المحاضرة	الإمتحان
12	Non-End punctuation marks		المحاضرة	الإمتحان
13	Enclosing punctuation marks		المحاضرة	الإمتحان
14	Mechanics of writing		المحاضرة	الإمتحان
15		Practicing the use of punctuation marks and mechanics	المحاضرة	الإمتحان
16	Paraphrasing		المحاضرة	الإمتحان
17		Practicing paraphrasing	المحاضرة	الإمتحان
18	Precis writing		المحاضرة	الإمتحان
19		Practicing précis writing	المحاضرة	الإمتحان
20	Planning and writing a complete composition		المحاضرة	الإمتحان
21		Practicing planning and writing a complete composition	المحاضرة	الإمتحان
22		Practicing	المحاضرة	الإمتحان

		planning and writing a complete composition		
الإمتحان	المحاضرة		Letter Writing	23
الإمتحان	المحاضرة	Practicing letter writing		24
الإمتحان	المحاضرة		Figure of speech Figurative language	25
الإمتحان	المحاضرة		Figure of speech based on resemblance	26
الإمتحان	المحاضرة		Figure of speech based on contrast or surprise	27
الإمتحان	المحاضرة		Figure of speech based on association	28
الإمتحان	المحاضرة		Using library and dictionaries	29
الإمتحان	المحاضرة	practicing		30
الإمتحان	المحاضرة	practicing		31
الإمتحان	المحاضرة	practicing		32

11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير... الخ

12. مصادر التعلم والتدريس

لا يوجد	الكتب المقررة المطلوبة (المنهجية أن وجدت)
لا يوجد	الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية, التقارير...)

Course Description Form

1. Course Name:					
Avian disease					
2. Course Code:					
0021401					
3. Semester / Year:					
Semester					
4. Description Preparation Date:					
5 - 3 - 2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75/3					
7. Course administrator's name (mention all, if more than one name)					
Name: Akeel Abd Al Mjbel		Email: Akeelabd78@tu.edu.iq			
Name: Muna Khalid khudhair		Email: mona_2017@tu.edu.iq			
8. Course Objectives					
Course Objectives			<input type="checkbox"/> <input type="checkbox"/> The student will be familiar with the concept of poultry diseases and the most important accompanying anatomical signs.		
9. Teaching and Learning Strategies					
Strategy		1-Explanation and clarification. 2- Lecture method. 3- Practical lessons in the field. 4- Scientific trips to follow up on animal production projects			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	The student learns the nature of illness and physical balance.	Avian disease	Explanation, model presentation and lecture	the exam
Second	5	The student will learn the classification of diseases.	Avian disease	Explanation, model presentation and lecture	the exam

Third	5	The student gets to know the types of pathogens (bacteria and viruses).	Avian disease	Explanation, model presentation and lecture	the exam
Fourth	5	The student will be familiar with the types of pathogens (mycoplasma, clostridial, and protozoa).	Avian disease	Explanation, model presentation and lecture	the exam
Fifth	5	The student gets to know the immune system of poultry.	Avian disease	Explanation, model presentation and lecture	the exam
Sixth	5	The student gets to know the ways and causes of infection transmission.	Avian disease	Explanation, model presentation and lecture	the exam
seventh	5	The student gets to know a general overview of how vaccines work.	Avian disease	Explanation, model presentation and lecture	the exam
Eighth	5	The student gets to know the most important infectious diseases caused by viruses, their symptoms in poultry, and methods of prevention.	Avian disease	Explanation, model presentation and lecture	the exam
Ninth	5	The student will be familiar with the most important bacterial infectious diseases, their symptoms, and methods of preventing them	Avian disease	Explanation, model presentation and lecture	the exam
Tenth	5	The student will be familiar with the most important mycoplasma diseases, their	Avian disease	Explanation, model presentation and lecture	the exam

		symptoms, and ways to prevent them.			
Eleventh	5	The student will be familiar with the most important clostridial diseases, symptoms and methods of prevention	Avian disease	Explanation, model presentation and lecture	the exam
Twelveth	5	The student gets to know the most important infectious diseases caused by internal parasites and their symptoms.	Avian disease	Explanation, model presentation and lecture	the exam
Thirteenth	5	The student gets to know the most important diseases caused by external parasites and their symptoms.	Avian disease	Explanation, model presentation and lecture	the exam
Fourteenth	5	The student will learn to choose the appropriate vaccination program.	Avian disease	Explanation, model presentation and lecture	the exam
Fifteenth	5	The student will be familiar with preventive security procedures in the fields.	Avian disease	Explanation, model presentation and lecture	the exam

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	AL Shikly Ammar 1990.Avian Disease. Mosul University. Ministry of Higher Education and scientific Resarch1990.
Main references (sources)	Poultry and Avian Diseases.2014. A.J. Chaves Hernández
Recommended books and references (scientific journals, reports....	Andreasen C.B. Staphylococcosis. In: Swayne D.E., editor. <i>Diseases of Poultry</i> . John Wiley and Sons, Inc; Iowa, IA: 2013.
Electronic References, Websites	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7152037/

Course Description Form

1. Course Name:	
Production of sheep and goats	
2. Course Code:	
0011403	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Afraah Mustafa Mohammad Email: afrah_mustafa@tu.edu.iq Name: Ashraf Kamil Azeez Email: ashraf.kamil@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • Research The production of sheep and goats and the importance of sheep and goats and their classification <input type="checkbox"/> <input type="checkbox"/> Methods of breeding, breeding, and feeding <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Meat production patterns <input type="checkbox"/> <input type="checkbox"/> Production of milk, wool, and hair <input type="checkbox"/> <input type="checkbox"/> Some field operations for sheep and goats
9. Teaching and Learning Strategies	
Strategy	1- Explanation and clarification 2- The method of the lecture 3- Student groups 4- Practical lessons in the field 5- The self-learning method

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	The student should know the importance of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Second	5	The student should get acquainted with the types and varieties of sheep and goats in the Arab and international world	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Third	5	The student should be acquainted with the methods of raising sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Fourth	5	The student should get acquainted with the nutrition of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Fifth	5	The student should recognize reproduction in sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Sixth	5	The student should get acquainted with the improvement of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
seventh	5	The student should get acquainted with the production of milk in sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Eighth	5	The student should be acquainted with the production of wool in sheep	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Ninth	5	The student should get acquainted with the production of	Production of sheep and goats	Explanation, model presentation and lecture	the exam

		hair in goats			
Tenth	5	The student should be introduced to the secondary products of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Eleventh	5	The student should get to know Construction of barns and dwellings for sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Twelveth	5	The student should be acquainted with the field operations of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Thirteenth	5	The student should be acquainted with modern techniques for the production of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Fourteenth	5	The student should be acquainted with grazing in the production of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam
Fifteenth	5	The student should be acquainted with the intensive production of sheep and goats	Production of sheep and goats	Explanation, model presentation and lecture	the exam

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	Basics of sheep and goat production and breeding Dr. Jalal Elia AlQos. Dr. Zuhair Fakhri Al-Jalili Dr. Daib Ishaq Aziz
Main references (sources)	1- Production of sheep and goats Dr. Zuhair Fakhri Al-Jalili. Dr. Jalal Elia AlQos. 2 - Production of sheep and wool Dr. Najib Tawfiq Ghazal Dr. Muzaffar Nafi Al-Sayegh
Recommended books and references (scientific journals, reports....	Iraqi Academic Scientific Journals
Electronic References, Websites	Animal Science Journal

Course Description Form

1. Course Name:	
Meat production	
2. Course Code:	
0011404	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Mahfooth Khaleel Abdullah Email: mafo@tu.edu.iq	
Name: Maysaloon Wail Ibraheem Email: maysaloon2019@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • The student takes an idea about the reality of red meat production and consumption and learns how to capitalize on the production efficiency of meat animals as well as the composition of recipes for meat carcass □ . also be aware of the rate of filtration and factors that affect it, and study the growth and development of the meat animals and knowing about slaughters, slaughter, study the animal transportation and animal marketing
9. Teaching and Learning Strategies	
Strategy	1- Explanation and clarification 2- The method of the lecture 3- Student groups 4- Practical lessons in agricultural fields 5- Scientific trips to follow up on poultry feeding projects in Iraq

10. Course Structure

Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation
		Outcomes			method
First	5	Resource of red meat	Meat production	Explanation, model presentation and lecture	the exam
Second	5	Economic Importance of red meat	Meat production	Explanation, model presentation and lecture	the exam
Third	5	Introduction of meat in Iraq and Arab homeland	Meat production	Explanation, model presentation and lecture	the exam
Fourth	5	Meanings of meat production	Meat production	Explanation, model presentation and lecture	the exam
Fifth	5	Biological axis of meat and how to express it	Meat production	Explanation, model presentation and lecture	the exam
Sixth	5	Styles of Red meat production and factors effect it	Meat production	Explanation, model presentation and lecture	the exam
seventh	5	Growth and development of meat animal	Meat production	Explanation, model presentation and lecture	the exam
Eighth	5	Factors affecting on growth and development	Meat production	Explanation, model presentation and lecture	the exam
Ninth	5	Exam	Meat production	Explanation, model presentation and lecture	the exam
Tenth	5	Efficiency of meat production	Meat production	Explanation, model presentation and lecture	the exam
Eleventh	5	Optimal investment for meat production efficiency	Meat production	Explanation, model presentation and lecture	the exam
Twelveth	5	Carcass	Meat production	Explanation,	the exam

		composition, dressing percentage factors affecting		model presentation and lecture	
Thirteenth	5	Carcass and animal transporting and marketing	Meat production	Explanation, model presentation and lecture	the exam
Fourteenth	5	Marketing	Meat production	Explanation, model presentation and lecture	the exam
Fifteenth	5	exam	Meat production	Explanation, model presentation and lecture	the exam

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	Main : Abdulkareem; Fouad Abdullatif. meat production. Book
Main references (sources)	Tahir; Muharib Abdulhameed .(1983). Priciples of meat science.
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	

Course Description Form

1. Course Name:	
dairy cattle production	
2. Course Code:	
0021403	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Emad Ghaib Abdelrahman	Email: Dr.emadghaib@tu.edu.iq
Name: Falah hasan salih	Email: Falahhasan1984@tu.edu.iq
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> <input type="checkbox"/> <input type="checkbox"/> The student gets to know the concept of dairy cattle production <input type="checkbox"/> He learns to classify cows on the basis of breed and purpose n production <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> That the student keeps pace with the management of milk cows in the modern era and the difference in management programs between the past and the present <ul style="list-style-type: none"> <input type="checkbox"/> The student should know the requirements for producing dairy cattle <input type="checkbox"/> <input type="checkbox"/> The student learns how to set up barns for cows according to the appropriate geographical area for breeding, such as temperature, humidity, lighting and ventilation

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9. Teaching and Learning Strategies

Strategy	1- Explanation and clarification 2- The method of the lecture 3- Student groups 4- Practical lessons in agricultural fields 5- Scientific trips to follow up on poultry feeding projects in Iraq
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	Required learning outcomes	dairy cattle production	Explanation, model presentation and lecture	the exam
Second	5	The economic importance of dairy cattle	dairy cattle production	Explanation, model presentation and lecture	the exam
Third	5	Methods of studying and feeding livestock	dairy cattle production	Explanation, model presentation and lecture	the exam
Fourth	5	Feeding baby calves	dairy cattle production	Explanation, model presentation and lecture	the exam
Fifth	5	Breastfeeding methods	dairy cattle production	Explanation, model presentation and lecture	the exam
Sixth	5	Breeding growing wheels	dairy cattle production	Explanation, model presentation and lecture	the exam
seventh	5	Milk production and manufacture of its components	dairy cattle production	Explanation, model presentation and lecture	the exam
Eighth	5	Physiology and installation of the udder	dairy cattle production	Explanation, model presentation and lecture	the exam
Ninth	5	Hormones affecting the growth and	dairy cattle	Explanation, model	the exam

		development of the udder	production	presentation and lecture	
Tenth	5	Milk production, management and sterilization of milk production	dairy cattle production	Explanation, model presentation and lecture	the exam
Eleventh	5	Factors affecting the production of fat in milk	dairy cattle production	Explanation, model presentation and lecture	the exam
Twelfth	5	Factors affecting milk production	dairy cattle production	Explanation, model presentation and lecture	the exam
Thirteenth	5	Fetal development and maturation in dairy cattle	dairy cattle production	Explanation, model presentation and lecture	the exam
Fourteenth	5	Factors affecting fertility in cows and bulls	dairy cattle production	Explanation, model presentation and lecture	the exam
Fifteenth	5	Breeding and caring for buffaloes and fertility index	dairy cattle production	Explanation, model presentation and lecture	the exam

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	Dairy cattle production. Department of Livestock, College of Agriculture. Baghdad University . 340 pages. Written by Prof. Dr. Natiq Hamid Al-Qudsi and Gil Victor Elia
Main references (sources)	Iraqi academic scientific journals
Recommended books and references (scientific journals, reports....	Dairy Sci. J.
Electronic References, Websites	-----

Course Description Form

1. Course Name:	
Poultry breeding	
2. Course Code:	
0011402	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: samawal sadi abdullah Email: samawalsadi@tu.edu.iq Name: Haitham rajab manhee Email: Haithamalkaisi85@tu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> Teaching and training students on the genetic principles of breeding and improvement programs for domestic birds Teaching students on traditional methods and modern trends used in improving poultry Teaching students how to use genetic engineering in raising and improving poultry
9. Teaching and Learning Strategies	
Strategy	1- Explanation and clarification 2- The method of the lecture 3- Student groups 4- Practical lessons in the field 5- The self-learning method

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	The origin of chickens, the development of the science of breeding and improving poultry birds, the formation of breeds, factors affecting the replication of genes.	Poultry breeding	Explanation, model presentation and lecture	the exam
Second	5	General principles of heredity, chromosomes in birds, sex determination, sex-linked inheritance, self-naturalization.	Poultry breeding	Explanation, model presentation and lecture	the exam
Third	5	Definition of qualitative traits, inheritance of feather distribution, inheritance of feather length, inheritance of feather texture, inheritance of feather color, inheritance of skin color, inheritance of comb shape.	Poultry breeding	Explanation, model presentation and lecture	the exam
Fourth	5	Definition of quantitative traits, heritability, genetic variance, phenotypic variance, overlap between environment and heredity, similarity between relatives, calculating the degree of kinship.	Poultry breeding	Explanation, model presentation and lecture	the exam
Fifth	5	Estimation of genetic parameters, genetic equivalent, its importance and methods of estimating it, genetic correlation, its importance and methods for its estimation.	Poultry breeding	Explanation, model presentation and lecture	the exam
Sixth	5	Genetic selection, selection for qualitative and quantitative traits, types of selection, methods of selection, electoral yield, intensity of selection, response accompanying selection.	Poultry breeding	Explanation, model presentation and lecture	the exam

seventh	5	Mating systems, internal breeding, estimation of the internal breeding coefficient, the change in the internal watering factor of the herd, the harmful effects of internal breeding.	Poultry breeding	Explanation, model presentation and lecture	the exam
Eighth	5	External education, its types, general and specific harmonic ability, hybrid strength.	Poultry breeding	Explanation, model presentation and lecture	the exam
Ninth	5	Breeding and improving chickens for meat production, breeding and improvement programs used for broiler production, target traits for selection in pure lines of breeding, problems associated with selection to increase growth rate.	Poultry breeding	Explanation, model presentation and lecture	the exam
Tenth	5	Breeding and improving chickens for egg production, targeted traits by selection to increase egg production.	Poultry breeding	Explanation, model presentation and lecture	the exam
Eleventh	5	Genetic diseases, their description and method of inheritance in chickens.	Poultry breeding	Explanation, model presentation and lecture	the exam
Twelveth	5	Inheritance of semen and fertility traits in roosters and their effect on productive traits.	Poultry breeding	Explanation, model presentation and lecture	the exam
Thirteenth	5	Conservation of genetic resources in domestic birds	Poultry breeding	Explanation, model presentation and lecture	the exam
Fourteenth	5	Genetic engineering and its applications in poultry	Poultry breeding	Explanation, model presentation and lecture	the exam
Fifteenth	5	Genetic markers, their types and use as aids in selection.	Poultry breeding	Explanation, model presentation and lecture	the exam

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	<p>1- Diab, Raad Saadoun (1988) Poultry Breeding and Improvement. Higher Education Press.</p> <p>2- Hussein, Talal Hamid and Nahil Muhammad Ali (1990) Poultry Breeding and Improvement, Dar Al-Hikma for Printing and Publishing.</p>
Main references (sources)	<p>Iraqi academic scientific journals</p> <p>Animal sciences</p> <p>International Information Network the Internet</p>
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Poultry Nutrition	
2. Course Code:	
0011401	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Maad Abdulkareem Albaddy Email: maadalbaddy@tu.edu.iq Name: Muna Khalid khudhair Email: mona_2017@tu.edu.iq	
8. Course Objectives	
Course Objectives	1- Poultry nutrition studies how to feed chicks from the moment of hatching to the end of production 2- It includes how the digestive system of poultry works 3- Components of poultry diets and their sources. 4- Learn how to manufacture poultry feed. 5- Identifying the types of food used in feeding poultry and calculating its needs according to type, age and production status 6- The use of modern technologies in the manufacture of poultry feed.
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation
		Outcomes			
First	5	Essential nutrients	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Second	5	Digestion and absorption	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Third	5	Energy and Poultry needs	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Fourth	5	Protein (Protein classification, Protein biological Value)	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Fifth	5	Factors affecting poultry needs for protein and amino acid	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Sixth	5	Mineral elements (their importance, functions and distribution in the birds body)	Poultry Nutrition	Explanation, model presentation and lecture	the exam
seventh	5	The content of the egg of minerals, major minerals and trace minerals	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Eighth	5	Vitamins	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Ninth	5	Birds need water	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Tenth	5	Non – traditional feed materials in Poultry feed	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Eleventh	5	Formation of forage rations	Poultry Nutrition	Explanation, model	the exam

				presentation and lecture	
Twelveth	5	Formation of forage rations	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Thirteenth	5	Getting to Know the feed mills	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Fourteenth	5	Modern technology in the manufacture of suspensions	Poultry Nutrition	Explanation, model presentation and lecture	the exam
Fifteenth	5	Poultry Feed Management	Poultry Nutrition	Explanation, model presentation and lecture	the exam

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	
1- Required prescribed books	Poultry feed 2010 d. Ali Abdel-Khaleq Al-Yasin and d. Muhammad Hassan Abd al-Abbas
2 main references (sources)	1- Poultry production by Dr. Suhaib Abdul Razzaq, 1985, Ministry of Education and Higher Education - University of Baghdad 2- Scientific nutrition of poultry 1981 d. Atallah Saeed
Recommended books and references (scientific journals, reports, education guides)	Iraqi academic scientific journals poultry Science

Course Description Form

1. Course Name:					
molecular biology					
2. Course Code:					
0021402					
3. Semester / Year:					
Semester					
4. Description Preparation Date:					
5 - 3 - 2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75/3					
7. Course administrator's name (mention all, if more than one name)					
Name: Ahmed Khalid Ahmed			Email: AHMEDKHALID76700@tu.edu.iq		
Name: Sohaib Mahmood abd			Email: sohaibmahmood1983@tu.ed u.iq		
8. Course Objectives					
Course Objectives			<ul style="list-style-type: none"> • 		
9. Teaching and Learning Strategies					
Strategy					
10. Course Structure					
Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation
		Outcomes			method
First	5	Instructions and guidelines that must be followed in the molecular biology laboratory.	molecular biology	Explanation, model presentation and lecture	the exam
Second	5	Instructions and guidelines that must be	molecular biology	Explanation, model	the exam

		followed in the molecular biology laboratory		presentation and lecture	
Third	5	Principles of DNA extraction	molecular biology	Explanation, model presentation and lecture	the exam
Fourth	5	DNA extraction	molecular biology	Explanation, model presentation and lecture	the exam
Fifth	5	Mechanism of electrophoresis and separation of products.	molecular biology	Explanation, model presentation and lecture	the exam
Sixth	5	Fundamentals of polymer and colloid chemistry.	molecular biology	Explanation, model presentation and lecture	the exam
seventh	5	Ex vivo PCR reactions	molecular biology	Explanation, model presentation and lecture	the exam
Eighth	5	Uses of the PCR device	molecular biology	Explanation, model presentation and lecture	the exam
Ninth	5	Basics of PCR reactions.	molecular biology	Explanation, model presentation and lecture	the exam
Tenth	5	Materials used in PCR.	molecular biology	Explanation, model presentation and lecture	the exam
Eleventh	5	Types and modifications of PCR reactions	molecular biology	Explanation, model presentation and lecture	the exam
Twelveth	5	Types of PCR	molecular biology	Explanation, model presentation and lecture	the exam
Thirteenth	5	The beginnings, factors and circumstances surrounding them.	molecular biology	Explanation, model presentation and lecture	the exam
Fourteenth	5	RT_PCR device	molecular biology	Explanation, model presentation	the exam

				and lecture	
Fifteenth	5	Methods of preserving genetic material	molecular biology	Explanation, model presentation and lecture	the exam

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	
Main references (sources)	
Recommended books and references (scientific journals, reports....	
Electronic References, Websites	

Course Description Form

1. Course Name:	
meat science	
2. Course Code:	
0021404	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
5 - 3 - 2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Mahfoodh Khaleel Abdullah Email: mafo@tu.edu.iq	
Name: Ahmed Ramadan Muhammed Email: ahmed.ramadhan@tu.edu.iq	
8. Course Objectives	
Course Objectives	<input type="checkbox"/> <input type="checkbox"/> That the student knows the sources of red meat production <input type="checkbox"/> <input type="checkbox"/> To be able to understand the economic and nutritional importance of red meat production <input type="checkbox"/> To be able to know how to exploit the productive efficiency of a meat animal. <input type="checkbox"/> To get acquainted with the netting ratio and identify the factors affecting it. He should be familiar with the methods used for transporting and marketing animals and carcasses
9. Teaching and Learning Strategies	
Strategy	1- Explanation and clarification 2- The method of the lecture 3- Student groups 4- Practical lessons in agricultural fields 5- Scientific trips to follow up on poultry feeding projects in Iraq

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	Introduce the student to the sources of red meat production and its specifications	meat science	Explanation, model presentation and lecture	the exam
Second	5	Introduce the student to the economic and nutritional importance of red meat production	meat science	Explanation, model presentation and lecture	the exam
Third	5	Introducing the student to the reality of red meat production and consumption in Iraq, the Arab world and the world	meat science	Explanation, model presentation and lecture	the exam
Fourth	5	Introduce the student to the concepts of meat production	meat science	Explanation, model presentation and lecture	the exam
Fifth	5	Introduce the student to the biological axes of meat production and how to express them	meat science	Explanation, model presentation and lecture	the exam
Sixth	5	Introduce the student to red meat production patterns and the factors affecting them	meat science	Explanation, model presentation and lecture	the exam
seventh	5	Introduce the student to the growth and development of a meat animal	meat science	Explanation, model presentation and lecture	the exam
Eighth	5	Familiarize	meat science	Explanation,	the exam

		students with the factors affecting growth and development		model presentation and lecture	
Ninth	5	first semester exam	meat science	Explanation, model presentation and lecture	the exam
Tenth	5	Introduce the student to the efficiency of meat production	meat science	Explanation, model presentation and lecture	the exam
Eleventh	5	Introduce the student to the optimal investment in the efficiency of meat production	meat science	Explanation, model presentation and lecture	the exam
Twelfth	5	Introducing the student to the composition of carcasses, the percentage of dressing and the factors affecting them	meat science	Explanation, model presentation and lecture	the exam
Thirteenth	5	Introduce the student to the transportation and marketing of animals and carcasses	meat science	Explanation, model presentation and lecture	the exam
Fourteenth	5	Introduce the student to the marketing category	meat science	Explanation, model presentation and lecture	the exam
Fifteenth	5	second semester exam	meat science	Explanation, model presentation and lecture	the exam

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	Production and marketing of beef cattle Dr. Atallah Saeed, Hatem Hassoun, Muhammad Taha Alwan
Main references (sources)	1- Meat cattle production, Dr. Fouad Abdel Latif Abdel Karim 2-The basics of meat science, translated by Dr. Muhareb Abdel Hamid Taher 1983 3- Meat Science, Dr. Muhareb Abdel Hamid Taher 1990 world wide web
Recommended books and references (scientific journals, reports....	Iraqi academic scientific journals
Electronic References, Websites	Electronic references, websites