

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



Academic Program and Course Description

**Al-Furat Al-Awsat Technical University/ Technical
Institute/Kufa/ Department of Animal production
techniques**

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: Al-Furat Al-Awsat Technical University

Faculty/Institute: Technical Institute/Kufa

Scientific Department: Animal production techniques

Academic or Professional Program Name: Technical Diploma

Final Certificate Name: Technical diploma in animal production

Academic System: Semester

Description Preparation Date: 2024

File Completion Date: 29/3/2024

Signature:

Head of Department Name:

Haki A. Alfatlawe

Date: 29 /4/2024

Signature:

Scientific Associate Name:

Nadia Abul-Hadi

Date: 29 / 4 /2024


The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: Khoulood M-Abd Ali

Signature:


Approval of the Dean

1. Program Vision

Excellence in performance and achieving leadership in high technical learning to meet the requirements of stake holders.

2. Program Mission

Qualifying human scientifically, practically, and technically to meet the requirements of stakeholders by relying on experienced and professional competencies in applying advanced curricula, keeping pace with science, and striving to achieve leadership in providing services at a level that achieves quality standards and interaction with society.

3. Program Objectives

- 1. Providing the student with technical skills in raising and managing productive field animals (cows, sheep, goats), poultry, and fish, which are the basis for sustaining work in government institutions and the private sector.**
- 2. Preparing staff that will keep pace with scientific development in the field of animal production.**
- 3- Enabling the student to link the lesson information to the environment surrounding him.
Provide the student with information that makes him think and develop his ideas.**
- 4. Encouraging the student to present his information in seminars, seminars, and scientific debates, which enhances the student's self-confidence and makes him qualified to participate in scientific conferences and events.**
- 5. Raising the reality and performance of the teaching staff in the department by attracting specialists and developing the efficiency of the current teaching staff.**
- 6. Providing the requirements for conducting scientific and graduation research to contribute to developing the reality and performance of the department**
- 7. Raising the performance and standard of work in the department's laboratories and fields.**
- 8. Finding ways to bring various types of farm animals into the country so that the student can know these types and ways to deal with them.**
- 9. Establishing a small pioneer food industry laboratory to benefit from field products in preliminary research and studies.**
- 10. Establishing a private fish farm to expand the scope of research and development of this important tributary.**

4. Program Accreditation

Does the program have program accreditation? And from which agency?
Standards for accreditation of specialized programs and the Association of Arab Universities

5. Other external influences

Is there a sponsor for the program? Ministry of Higher Education and Scientific Research

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
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
The first/autumn		Veterinary Principle	٢	٣
		Dairy Cattle Production	١	٣
		Sheep & Goat Production	١	٣
		Poultry Production	١	٣
		Feed & Feeding	١	٣
		Agriculture Machin & Equipment	١	٢
		Computer App.	١	٢

		Human rights	۲	-
		English language		
The first / spring		Animal Health		
		Meat Cattle Production		
		Fish Production		
		Poultry Nutrition		
		Animal Production Machinery		
		General Chemistry		
		Computer App.		
		Democracy		
		English language		
	The second autumn		Animal Physiology	
		Animal Diseases		
		Animal Nutrition		
		Meat maintains & Processing		
		Animal Breeding		
		Computer App. / 2		
		project		
		English language		
The second spring		Poultry Diseases		
		Hatching Technology		
		Dairy product		
		Fish Breeding		
		Reproductive Physiology & artificial insemination		
		Forage Crops		
		Animal production Economics		
		Computer App. / 2		
		project		

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies
<p>1- Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish reliable sources from non-reliable ones.</p> <p>2- Using illustrative means during the lecture, such as a point power presentation using a projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3- Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4- Giving students homework for the current topic and asking them to research the topic of the next lecture</p> <p>5- For the purpose of developing their scientific research skills.</p>

10. Evaluation methods
<p>1- The student is evaluated by dividing the grade between daily, monthly and oral exams, participation in lectures, in addition to the final exam.</p> <p>2- Practical tests to regulate the extent to which the student benefits from basic sciences through practical applications</p> <p>3- Conducting weekly and monthly exams</p> <p>4- Giving homework and making reports</p> <p>5- Encouraging daily attendance and allocating grades for attendance, participation, and daily tests</p>

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 Production			1	
Assistant Professor	Veterinary Medicine	Parasites			1	
Assistant Professor	Veterinary Medicine	Animal Physiology			1	
lecturer	Animal Production	Reproductive Physiology			1	
Assistant Lecturer	Animal Production	Animal Nutrition			1	
Assistant Lecturer	Animal Production	Poultry Nutrition			1	
Assistant Lecturer	Animal Production	Poultry Physiology			1	

Professional Development

Mentoring new faculty members

- ❖ **Involving new teachers in intensive courses in modern teaching methods.**
- ❖ **Directing them to conduct scientific research and publish in reputable scientific journals, whether local or international**
- ❖ **Continuous presence with the teaching staff in theoretical and practical lectures in order to encourage them to practice teaching and training processes and solve the problems they face in an educational manner.**
- ❖ **Conducting seminars, workshops, and meetings to inform them of the regulations, instructions, and laws followed in the Ministry of Higher Education related to their civil rights,**
- ❖ **5- obligations, and duties toward the educational institution at the institution and department level.**

Professional development of faculty members

- 1- Involving teaching staff in courses, seminars and workshops within their agricultural and veterinary specialization within the university and in other reputable universities inside and outside Iraq.**
- 2- Facilitating difficulties and providing continuous support in preparing the requirements for scientific research**
- 3- Forming research work teams within the department to solve the problems facing the agricultural and veterinary departments in other state departments**

12. Acceptance Criterion

Central admission through the Ministry (scientific + vocational)

1- Professional (agricultural)

2- Scientific (applied and biological)

13. The most important sources of information about the program

Relevant scientific books and research published in reputable journals -
Department library - - College library - - University library - Purchase from
book fairs - approved internet sites

14. Program Development Plan

1- Updating the curricula to suit the development and discoveries in the field of various animal production techniques and striving to write methodological books for the various scientific specializations in the department after obtaining the necessary approvals. They will be circulated to all institutions and universities of the Ministry of Education, in addition to writing books and programs for the practical side.

2- Translating the necessary and modern teaching curricula from English to Arabic while preserving foreign terminology in the translated curricula.

3- Updating theoretical and practical lectures with each new semester to keep pace with scientific developments.

4- Sending teaching staff and students, especially the top ones in their scientific departments, outside Iraq, especially in developed countries, to develop skills and for study purposes, whether primary or postgraduate study.

5- Exchanging experience between local, regional and international universities through the idea of a mutual visiting professor.

Program Skills Outline

				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
The first/spring		Veterinary Principle	Basic		*					*		*			
		Dairy Cattle Production	Basic	*					*					*	
		Sheep & Goat Production	Basic		*					*		*			
		Poultry Production	Basic	*					*					*	*
		Feed & Feeding	Basic			*		*			*		*		
		Agriculture Machine & Equipment	Basic		*						*			*	
		Computer App.	Basic	*				*			*		*		
		Human rights	Basic		*						*		*	*	
		English language	Basic	*						*				*	*
The first/autmun		Animal Health	Basic		*					*		*	*		
		Meat Cattle	Basic	*					*					*	*

		Production												
		Fish Production	Basic	*			*			*		*	*	*
		Poultry Nutrition	Basic		*					*		*		
		Animal Production Machinery	Basic	*					*				*	*
		General Chemistry	Basic		*					*		*		
		Computer App.	Basic		*					*		*		
		Democracy	Basic	*					*				*	*
		English language	Basic		*					*		*	*	
The second /spring		Animal Physiology	Basic	*					*				*	*
		Animal Diseases	Basic			*					*		*	
		Animal Nutrition	Basic	*					*				*	*
		Meat maintains &Processing	Basic											
		Animal Breeding	Basic		*					*		*		
		Computer App. / 2 project	Basic	*					*				*	*
		English language	Basic		*					*		*		
		Poultry Diseases	Basic	*					*				*	*
The second/autmun		Hatching Technology	Basic	*					*				*	*
		Dairy product	Basic		*					*		*		
		Fish Breeding	Basic	*					*				*	*
		Reproductive Physiology & artificial insemination	Basic	*					*				*	*

	Forage Crops	Basic		*					*		*			
	Animal production Economics	Basic	*					*					*	*
	Computer App. / 2	Basic		*					*		*			
	Veterinary Principle	Basic	*					*					*	*
	Dairy Cattle Production	Basic		*					*		*			

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

First Stage

Autumn Semester

Course Description Form

1- Course Name	
Veterinary Principle	
2- Course Code	
/	
3- Semester/Year	
Autumn Semester (first) / Academic Year 2023 - 2024	
4- Date of preparation of this description	
20 / 2 / 2024	
5- Available Attendance Forms	
Theoretical lectures in the classroom and practical lectures in the laboratory and field	
6- Number of credit hours (total) / number of units (total)	
5 hours (2 theoretical + 3 practical) / 5 units	
7- Course administrator's name (if more than one name) with e-mail	
Shatha Atta Abeed e. mail : kin.sht@atu.edu.iq	
8- Course Objectives	
Course Objectives	<p>After the end of the semester, the student will be able to know:</p> <ul style="list-style-type: none"> ✚ The internal body systems of the animal and the animal's body's resistance to diseases and types of pathogens such as bacteria and parasites. ✚ The study of diseases that affect animals (classification, methods of transmission, etc.). ✚ Types of veterinary medicines . ✚ Prevention and control of infectious diseases . ✚ Hormones (types of sex hormones) . ✚ Surgery, types of wounds, and others.
9- Outputs of the required program and methods of teaching and evaluation	

A- Cognitive objectives
<ol style="list-style-type: none"> 1. Knowledge and understanding of the parts and details of the anatomical structure of the animal body. 2. Clarifying the basic concepts of pathogens, disease prevention, and treatment use . 3. Identify the clinical importance of some diseases that affect farm animals
B- Skills objectives of the program
<p>B1- The ability to think about treating health problems affecting farm animals .</p> <p>B2- Skills to link the anatomy and physiology of the animal's body with some diseases .</p> <p>B3- The ability to link the imbalance occurring with some hormones in the body and its relationship to dystocia .</p> <p>B4- Identifying the surgery, types of wounds, and their treatment</p>
❖ Teaching and learning methods
<ol style="list-style-type: none"> 1- Using the method of discussion and deriving the answer in the practical lecture when teaching the theoretical side of it . 2- Using the display or screen to display scientific pictures or films to attract the student's attention to interact with the lecture. 3- Use blackboard and colored pencils to clarify certain schemes and terms. 4- Using models and illustrations and conducting practical experiments in practical training. 5- Guiding students on some resources on websites to benefit from them to develop capabilities .
❖ Assessment methods
<ol style="list-style-type: none"> 1- Conducting sudden and rapid tests in an attempt to evaluate and evaluate the previous lecture. 2- Demanding the preparation of reports on the resistance of ticks and scabies on animals and in animal pens from modern sources and seminars for topics related to the curriculum to encourage scientific research . 3- Conducting tests, oral, and practical.
C- Thinking skills
<p>C1-The ability to make decisions by identifying different body parts, which contributes to practicing veterinary techniques in a scientific and accurate manner .</p> <p>C2- Enabling students to think logically about the anatomical and physiological structure of the animal's body and make practical use of it in the practice of veterinary medicine .</p> <p>C3- Developing the student's ability to dialogue and discussion .</p>
❖ Teaching and learning methods
Blackboard, models, presentations using the screen or data show, illustrations, seminars,
❖ Assessment methods
Daily Exams, Oral Exams, Semester Exams, Practical Experience Training
D- General and qualifying skills transferred (other skills related to characterization and personal development)
<ol style="list-style-type: none"> 1- Follow up the scientific development by contacting universities via the Internet . 2- Developing the student's ability to deal with information via the Internet . 3- Developing the student's ability to dialogue and discussion .

10. Course Structure

weeks	hours	Required Learning Outcomes	Unit Name OR Subject Name	Learning Method	Evaluation method
((First + 2 nd . + 3 rd .))	<p>Two hours</p> <p>For the Theoretical lesson</p> <p>+</p> <p>three Hours</p> <p>For the Practical lesson</p>	Identify the body's systems for various farm animals and its functions	Internal body systems	<p>Generally performed Next: A lesson,</p> <p>Theoretical is: Giving a lecture Theoretical with the use of Discussion style And derive the answer from students use the offer on the screen to view photos or movies scientific to attract the attention of student to interact with the lecture</p> <p>+</p> <p>As for the, Practical lesson is done :</p> <p>Use Models and pictures explanations in practical training</p> <p>Make some practical experiments for a purpose examination of blood samples and stool and urine</p> <p>Make scientific visits to barns of animals and the Faculty of Medicine</p>	As for the lessons, Theory: 1. Daily exams 2. Oral exams monthly exams and quarterly
Fourth		Identify the different types of bacteria	Bacteria, their types and characteristics		<p>1- Training is done on statues</p> <p>2. Prompt to set up reports & seminars from recent sources related to the curriculum</p>
Fifth		Identify the different types of anemia and its causes	Types and causes of Anemia		
Sixth		Identify the different types For immunity against various Infectious	Immunity and resistance		
Seven		Identify the different types of diseases and how they are transmitted between herd members	Diseases classification and methods of Its transmission		
Eight		Learn about different methods Which are used for various diagnoses diseases affecting animals farm	Diagnoses of the diseases		
Nine		Identify the different types vet medicines and methods of administering med veterinary and vaccines	Medicine and types of vet medicines		
Ten		How to prevent and control infectious diseases	Prevention and control of Infectious diseases		
Eleven		Different types of mastitis and its causes	Mastitis types of inflammation of the		
Twelve					
Thirteen					
((Fourteen + Fifteen))					

		<p>Methods of diagnosing parasites Internal and external field and Laboratory</p> <p>Identify the different types wounds and how to treat them</p> <p>Childbirth: tools used in Child maternal and newborn care</p>	<p>udder</p> <p>Animal parasites</p> <p>Surgery, types of wounds</p> <p>Childbirth and types of dystocia</p>	<p>Veterinarian for examination purpose signs of health and illness and learn about the roads various medications to administer and vaccines</p>	
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11-Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation and oral and monthly exams editorial and reports etc

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	<p>مبادئ و ممارسات الطب البيطري / William R. Jenkins</p>
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

13- Course Development Plan

- 1- Updating the curricula to suit the development and recent discoveries in the field of specialization.
- 2- Translating English teaching curricula into Arabic while preserving foreign terms in the translated curricula.
- 3- Updating lectures annually.
- 4- Exchange of experience between universities through the idea of the visiting professor exchanged.

Course Description Form

1. Course Name:					
Dairy cattle production					
2. Course Code:					
3. Semester / Year:					
Spring semester/2024					
4. Description Preparation Date:					
/ 2 / 2024					
5. Available Attendance Forms:					
Attendance in classrooms and scientific laboratories in the department					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours (15 theoretical hours + 45 practical hours) Number of units (total) / 4					
7. Course administrator's name (mention all, if more than one name)					
Name: Duaa Mohammed Ali Jawad Email: dd.ooaa@yahoo.com					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> 1- That the student recognizes the economic importance of animal products 2- For the student to recognize the types of cows, buffaloes, and dairy sheep and their classification 3- For the student to become familiar with field operations for farm dairy animals 4- For the student to become familiar with the types of records on the farm 5- Introducing the student to methods of caring for farm animals and their needs 			
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> 1- Explanation and clarification 2- Electronic and in-person lecture method 3- Student groups 4- Practical lessons in the institute's animal fields 5- Scientific trips to fields in the region 6- Self-learning method 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	1Theoretical 3 practical	International dairy cattle breeds	Identify the components of the field of milk production, mechanical milking devices, and manual milking tools	A lecture + Laboratory	Examinations Quiz

the second	1Theoretical 3 practical	Arafa cattle and their milk production	Identify the breeds that produce milk in the field	A lecture + Laboratory	nsExaminatio Quiz
the third	1Theoretical 3 practical	Care and feeding of dairy cattle	Identifying milk production records in the field/identifying the characteristics of livestock	A lecture + Laboratory	Examinations Quiz
the fourth	1Theoretical 3 practical	Installation and physiology of the udder	Livestock housing, isolation rooms, birth rooms, stores, fodder	A lecture + Laboratory	Examinations Quiz
Fifth	1Theoretical 3 practical	Factors affecting the increase and decrease in the level of milk production	Field operations/cleaning, feeding, production and their impact on milk production	A lecture + Laboratory	Examinations Quiz
sixth	1Theoretical 3 practical	International and Iraqi buffalo	Seasonal operations/numbering, drying	A lecture + Laboratory	ionsExaminat Quiz
Seventh	1Theoretical 3 practical	Milk production in buffalo	Dairy cattle arbitration (tables)	A lecture + Laboratory	Examinations Quiz
Eighth	1Theoretical 3 practical	Goats and sheep and their milk production	Performing mechanical milking	lecture A + Laboratory	Examinations Quiz
ninth	1Theoretical 3 practical	Camels and their milk production	Performing the manual milking process and comparing it to mechanical milking	A lecture + Laboratory	Examinations Quiz
The tenth	1Theoretical 3 practical	Factors affecting battery components during production life	Breastfeeding and its types	A lecture + Laboratory	Examinations Quiz
Eleventh	1Theoretical 3 practical	Hormones and their effect on milk production	Milk substitutes and the importance of colostrum	A lecture + Laboratory	Examinations Quiz
Twelveth	1Theoretical 3 practical	Genetic improvement/selection methods for dairy cattle	The development of milk breeds (information network)	A lecture + Laboratory	Examinations Quiz
Thirteenth	1oreticalThe 3 practical	Establishing dairy cattle farms	Visit a milk production station (scientific visit)	A lecture + Laboratory	Examinations Quiz

Fourteenth	1Theoretical 3 practical	Storing and producing healthy and good milk	Visit the milk collection center (scientific visit)	A lecture + Laboratory	Examinations Quiz
Fifteenth	1Theoretical 3 practical	Protecting milk from contamination	Preparing and discussing visit reports to the milk production station and the Ministry of Milk Collection Center	lecture A + Laboratory	Examinations Quiz

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Milk cattle production d. Spokesman Hamid Al-Qudsi
Main references (sources)	Recent research and studies
Recommended books and references (scientific journals, reports...)	Animal Science Journal
Electronic References, Websites	Google Scholar

Course Description Form

13. Course Name:	
Sheep & goat production	
14. Course Code:	
15. Semester / Year:	
Spring semester/2024	
16. Description Preparation Date:	
/ 2 / 2024	
17. Available Attendance Forms:	
Attendance in classrooms and scientific laboratories in the department	
18. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours (15 theoretical hours + 45 practical hours) Number of units (total) / 4	
19. Course administrator's name (mention all, if more than one name)	
Name: Humamh hussien ahmed Email: .humamh@atu.edu.iq	
20. Course Objectives	
Course Objectives	. Introducing students to fish farming and its various sections, types and branches. . Introducing students to the types of breeding fish, the characteristics

	<p>of each, and how to benefit from them.</p> <ul style="list-style-type: none"> . Introducing and familiarizing students with the appropriate environment for growing and raising fish and methods of feeding them. . Introducing students to different breeding methods for breeding fish . Introducing students to how to benefit from fish wealth and increase its production using the correct scientific methods. . Introducing students to design and planning skills for establishing fish farms according to the scientific and practical foundations of this science
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21. Teaching and Learning Strategies

Strategy	<ul style="list-style-type: none"> • Developing students' cognitive skills by understanding information and concepts. • Developing students' intellectual skills. • Develop personal skills and assume responsibility. • Developing skills in dealing with the information network, the Internet and computer • Developing students' communication skills with each other on the one hand and with the community and the professor on the other hand • The ability to deal with sources of information by searching for new information in fish science. • . The ability to link theoretical lectures with practical applications. • Identifying scientific terms related to ichthyology using the English language, which gives students new linguistic skills
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22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	1Theoretical 3 practical	Scientific foundations of sheep classification	Breeds of sheep found in the field, Iraqi sheep breeds	A lecture + Laboratory	Examinations Quiz
the second	1Theoretical 3 practical	Breeds of sheep for meat, milk and wool	Field operations for sheep/numbering, neutering, cutting the tail, removing the horns	A lecture + Laboratory	Examinations Quiz
the third	1Theoretical 3 practical	Reproduction and fertilization in sheep, reproductive systems	Seasonal field operations/mulching, wool shearing	A lecture + Laboratory	Examinations Quiz
the fourth	1icalTheoret 3 practical	Sexual maturity, breeding season, methods of controlling the	Daily field operations/providing feed and water, cleaning, holding	A lecture + Laboratory	Examinations Quiz

		timing of molting	and handling animals		
Fifth	1Theoretical 3 practical	Pregnancy and birth period, caring for ewes before and after birth	Establishing the herd, choosing the breed, herd size, and when to buy sheep	A lecture + Laboratory	Examinations Quiz
sixth	1Theoretical 3 practical	Growth and development in sheep	Sheep pens and supplies, types of pens	A lecture + Laboratory	Examinations Quiz
Seventh	1Theoretical 3 practical	Milk production in sheep and factors affecting milk production	Breastfeeding and newborn care, newborn weight, preparing feeders and drinkers	lecture A + Laboratory	Examinations Quiz
Eighth	1Theoretical 3 practical	Properties and features of wool, morphological anatomy	The death of lambs, the causes of death	A lecture + Laboratory	Examinations Quiz
ninth	1Theoretical 3 practical	Stages of wool fiber growth, wool gradation	Estimating age in sheep, types of teeth	A lecture + Laboratory	Examinations Quiz
The tenth	1Theoretical 3 practical	Origin and classification of goats, location in the animal kingdom	Field records, types of records	tureA lec + Laboratory	Examinations Quiz
Eleventh	1Theoretical 3 practical	Goat breeds in the world	Milking process, types of milking, manual, mechanical	A lecture + Laboratory	Examinations Quiz
Twelveth	1Theoretical 3 practical	Goat reproduction, sexual puberty, sexual maturity	Phenotypic characteristics of goat breeds	A lecture + Laboratory	Examinations Quiz
Thirteenth	1Theoretical 3 practical	Milk, hair and skin production in goats	Identify the types of hair in goats	A lecture + Laboratory	nsExaminatio Quiz
Fourteenth	1Theoretical 3 practical	Genetic improvement in sheep and goats	The process of shearing wool and hair	A lecture + Laboratory	Examinations Quiz
Fifteenth	1Theoretical 3 practical	Fattening lambs and goats, managing fattening fields for sheep lambs and goats	A scientific trip to one of the typical fields	A lecture + Laboratory	Examinations Quiz

23. 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

24. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Sheep and goat production book
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

25.Course Name: / Poultry production	
26.Course Code:	
27.Semester / Year: Fall and spring semester/2024	
28.Description Preparation Date:2024\3\2	
29.Available Attendance Forms: Attendance in classrooms and scientific laboratories in the department	
30.Number of Credit Hours (Total) / Number of Units (Total) 60 hours (15 theoretical hours + 45 practical hours) Number of units (total) /	
31.Course administrator's name (mention all, if more than one name)	
Name :Batool Abad Albany shaker Email: batoul.shaker@atu.edu.iq	
32.Course Objectives	
Course Objectives	<p>At the end of the semester, the student will fully familiar with the subject of poultry production</p> <ul style="list-style-type: none"> • At the end of the semester, the student learn about the types of poultry, including chickens, ducks, geese, quail, and turkeys, and the importance of each of them. • The student's knowledge of the importance of poultry production for its main and secondary products • The student learns about the specifications that must be met or the conditions that must be met in poultry housing for the purpose of creating a special project

33. Teaching and Learning Strategies

Strategy	<p>1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as point power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture for the purpose of developing their scientific research skills.</p>
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34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical 3 practical	The importance of the poultry industry in Iraq with its various international companies producing broiler chickens and egg chickens	Knowing the importance of the poultry industry with its various main and secondary productions + studying the breeds that produce meat and eggs and their importance on the country's economy	a lecture + laboratory	Exams, exams
2	2 Theoretical 3 practical	Reproductive functions in poultry, egg formation, male	Knowing the importance of reproduction and who is responsible	a lecture + laboratory	Exams, exams

		and female reproductive systems, hormones and their control over egg formation	for reproductive process in poultry studying female and male systems in detail and accurately, and what are the factors affecting the production and formation of egg.		
3	2 Theoretical 3 practical	Physiological actions in the digestive system of Poultry physiology / poultry anatomy to see the various internal organs	Knowledge of the physiology of the digestive system and how to benefit from converting feed material into nutritional elements and then benefiting from them to produce meat and eggs dissecting poultry and identifying internal organs	a lecture + laboratory	Exams, exams
4	2 Theoretical 3 practical	Natural and artificial hatching in chickens. The basic components of hatching Maintenance of poultry fields their supplies, and the equipment used in them	Knowledge of hatching, what are its natural and artificial types what are the most important basic components of the hatching process maintenance of poultry fields, and the importance of maintenance and its impact on production	a lecture + laboratory	Exams, exams

5	2Theoretical 3 practical	Chicken houses, elements that must be available in selecting and designing the field location, calculations of ventilation, cooling and lighting needs Types of feeders and manholes their installation operation and maintenance, ventilation and cooling devices heating devices	Knowing elements that must be available in poultry fields and studying the design of poultry fields and what are the factors affecting poultry production + knowing types of feeders and manholes used in poultry fields and their impact on production	1 a lecture + laboratory	Exams, exams
6	2Theoretical 3 practical	Various poultry equipment used in poultry houses Nursery methods the most important daily operations, nursery requirements and problems	Knowing many types of equipment used in poultry fields and their impact on production learning about daily operations in poultry fields what are the requirements that must be met in poultry fields, and what are the problems facing breeders.	1 a lecture + laboratory	Exams, exams
7	2Theoretical 3 practical	Egg production, laying hen rearing systems, factors affecting egg production, methods used to calculate egg	Knowing importance of eggs, how to raise laying hens knowing the factors affecting egg production	1 a lecture + laboratory	Exams, exams

		<p>production.</p> <p>Types hatcheries hatchery setup, operation, specifications of typical hatchery</p>	<p>knowing hatcheries and their types, how they operate them, and what are the most important specifications that must be available in a typical hatchery</p>		
8	2 Theoretical 3 practical	<p>Production of biological eggs of programmed eggs with laying hens and turkeys</p> <p>Maintenance of poultry field their supplies, and the equipment used in the refrigeration and heating devices for production, and field operations</p>	<p>Learning about egg production not only in chickens but also in other poultry such as turkeys, ducks, etc.</p> <p>+ Knowing how to maintain the field and what devices and equipment must be available in the fields and their impact on production.</p>	a lecture + laboratory	Exams, exams
9	2 Theoretical 3 practical	<p>Quail egg production, economic importance, general rules followed in egg production</p> <p>Egg examination, external appearance, internal content examination, optical examination, etc.</p>	<p>Knowing what quail is and economic importance</p> <p>knowing the techniques that are performed on eggs prepared for hatching and the conditions that must be met in the eggs, and the most important techniques that are performed are the optical examination</p>	a lecture + laboratory	Exams, exams

		grading			
10	2 Theoretical 3 practical	Meat production broiler rearing systems, factors affecting meat production Meat production and the difficulties that prevent development this industry sorting chickens for meat production	The importance of poultry meat, what are the systems for raising broilers what are the factors that affect meat production knowing the difficulties facing production	a lecture + laboratory	Exams, exams
11	2 Theoretical 3 practical	Poultry slaughterhouse management and methods used in preparing and marketing meat chickens Operating and maintaining poultry slaughterhouses preparing chickens before and after slaughter	Knowing what slaughterhouses are, their importance in poultry production, how to use and maintain them, and the conditions that must be met in slaughterhouse workers.	a lecture + laboratory	Exams, exams
12	2 Theoretical 3 practical	Genetic improvement in poultry, general principles of genetics, quantitative and qualitative traits selection methods	Knowing general genetic improvement in poultry particular, what are the desirable characteristics of poultry that are	a lecture + laboratory	Exams, exams

			improved preserved.		
13	2Theoretical 3 practical	Turkey chicken types and breeding methods Disposal and utilization of poultry products	Getting to know many poultry including turkeys, geese, ducks, and quail, and methods of raising them knowing the importance of their products from poultry and benefiting greatly from them.	a lecture + laboratory	Exams, exams
14	2Theoretical 3 practical	Breeding and production of ostriches Economic calculations of poultry projects cost and profit calculations	Identifying the ostrich bird, its breeding and its economic importance + Every product of project must know its economic feasibility, and the same applies to..	a lecture + laboratory	Exams, exams
15	2Theoretical 3 practical	The most important types of ornamental chickens and methods of raising them A visit to one of the typical fields	Knowing the distinctive types of poultry, including ornamental chickens that amateurs want to raise, and breeding methods + student visiting poultry fields and getting to know the contents of the fields in general	a lecture + laboratory	Exams, exams
35.					
Course Evaluation					
36. 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.					

Learning and Teaching Resources	-
Required textbooks (curricular books, if any)	Book of principles of poultry production The author is Dr. Ali Mahmood Al-Kassar
Main references (sources)	Poultry production book Author: Saad Abdul Hussein Naji 1985
Recommended books and references (scientific journals, reports...)	Organic nutritional needs of poultry Written by Prof. Dr. Ali Mahmood Al-Kassar and Prof. Dr. Nihad Al-Nadawi Prof. Dr. Abdullah Abis Prof. Dr. Nabil Muhammad Naji Prof. Dr. Haier Razzes M.M. Saif Al-Kassar
Electronic References, Websites	animals of Agricultural sciences, AOAS

Course Description Form

37. Course Name:	
Feed and Feeding	
38. Course Code:	
39. Semester / Year:	
Autumn semester /2024	
40. Description Preparation Date:	
/ 2 / 2024	
41. Available Attendance Forms:	
Attendance in classrooms and scientific laboratories in the department	
42. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours (15 theoretical hours + 45 practical hours) Number of units (total) / 4	
43. Course administrator's name (mention all, if more than one name)	
Name: Humamh hussien ahmed Email: .humamh@atu.edu.iq	
44. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • At the end of the semester, the student will have mastered the foundation of nutritional science in farm animals, which include cows, sheep, goats, buffalo, and camels, and the ability to conduct laboratory analyzes of food

	<p>methods of performing them, and high technology in order to reach the most accurate results as well.</p> <ul style="list-style-type: none"> • At the end of the semester, the student learns about the parts and components of the digestive system, its anatomy, how it works, and learns about the glands that digest fodder materials and what the physiological process of digestion is for ruminants. • The student's knowledge of the classification of feed materials and the latest methods and techniques used in modern nutrition
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45. Teaching and Learning Strategies

Strategy	<p>1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as point power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture</p> <p style="text-align: center;">For the purpose of developing their scientific research skills.</p>
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46. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	1 Theoretical 3 practical	Definition of nutrition, the importance of nutrition for animals	Identify laboratory equipment and methods for taking samples from various feed materials	A lecture + Laboratory	Examinations Quiz
the second	1 Theoretical 3 practical	Composition of feed materials (water, carbohydrates, fats, proteins, vitamins, mineral salts)	Anatomy of the digestive system of ruminants	lecture A + Laboratory	Examinations Quiz
the third	1 Theoretical 3 practical	Digestion and absorption of nutritional compounds in ruminants and monogastric animals	Anatomy of the digestive system of monogastric animals (poultry and rabbits)	A lecture + laboratoryL	Examinations Quiz
the fourth	1 Theoretical 3 practical	Classification and specifications of different feed materials	Conducting solution dilution operations (molar and molar concentration)	A lecture + Laboratory	Examinations Quiz
Fifth	1reticalTheo	Food and non-food	Estimation of	A lecture	Examinations

	3 practical	supplements added to diets	moisture in concentrated and coarse feed (green)	+ Laboratory	Quiz
sixth	1 Theoretical 3 practical	Meat cutting (minced meat, sausage and hamburger making)	Protein estimation	A lecture + Laboratory	Examinations Quiz
Seventh	1 Theoretical 3 practical	Use of agricultural (plant and animal) and industrial waste in animal feed	Protein estimation	A lecture + Laboratory	Examinations Quiz
Eighth	1 Theoretical 3 practical	Using hay and silage in animal feed	Fat estimation	A lecture + Laboratory	Examinations Quiz
ninth	1 Theoretical 3 practical	Basic rules in forming relationships	Energy estimation	A lecture + Laboratory	Examinations Quiz
The tenth	1 Theoretical 3 practical	Balancing relationships and forming relationships	Fiber estimation	A lecture + Laboratory	Examinations Quiz
Eleventh	1 Theoretical 3 practical	Food poisoning	Fiber estimation	A lecture + Laboratory	Examinations Quiz
Twelveth	1 Theoretical 3 practical	Studying the animal's need for energy and its fate in the animal's body	Determination of silica in feed materials and methods of adulteration of feed	A lecture + Laboratory	Examinations Quiz
Thirteenth	1 Theoretical 3 practical	Nutritional standards and methods for measuring the nutritional value of feed materials	Mathematical applications on food balances	A lecture + Laboratory	Examinations Quiz
Fourteenth	1 Theoretical 3 practical	Nutritional scales	Computational applications on nutritional standards	A lecture + Laboratory	Examinations Quiz
Fifteenth	1 Theoretical 3 practical	Some important nutritional terms (weight gain, digestibility coefficient, conversion efficiency, nutritional ratio)	Visit one of the feed factories	A lecture + Laboratory	Examinations Quiz

47. 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	
48. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1- Animal food and nutrition book / author MacDonald 2- Animal nutrition book
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

49.Course Name: Pullers and agricultural machinery	
50.Course Code:	
51.Semester / Year: Fall and spring semester/2024	
52.Description Preparation Date:2024\3\2	
53.Available Attendance Forms: Attendance in classrooms and scientific laboratories in the department	
54.Number of Credit Hours (Total) / Number of Units (Total)\ 45 hours (15 theoretical hours + 30 practical hours) Number of units (total) / 3	
55.Course administrator's name (mention all, if more than one name)	
Name :Batool Abad Albany shaker Email: batoul.shaker@atu.edu.iq	
56.Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • At the end of the semester, the student will have complete knowledge of the subject of tractors and agricultural machinery. • The student learns about the importance of tractors and agricultural machinery

	<ul style="list-style-type: none"> • The student’s knowledge of the types of agricultural tractors and their need • The student learns about the parts and components of agricultural machinery • The student learns about safety procedure when using agricultural tractors • The student’s knowledge of the equipment used to combat agricultural pests and how they are used. • The student learns about many of the equipment and machines used in animal fields such as scrapers, through which ruminant waste is disposed of.
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57. Teaching and Learning Strategies

Strategy	<p>1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture</p> <p>For the purpose of developing their scientific research skills</p>
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58. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical 3 practical	The importance of agricultural mechanization See the types of pullers and learn about their parts	Recognizing the importance of agricultural mechanization of various types + See the types of	a lecture + laboratory	Exams, exams

			pullers and learn about their different parts		
2	2Theoretical 3 practical	Types of pullers Main engine parts and types of systems	Identify the type of agricultural pullers + Knowledge of main engine parts and types of agricultural tractors	a lecture + laboratory	Exams, exams
3	2Theoretical 3 practical	Function of main parts Parts of cooling systems and air systems	The function of the parts of the agricultural puller and all its components + Identify parts of cooling systems of agricultural machinery in addition to systems	a lecture + laboratory	Exams, exams
4	2Theoretical 3 practical	Quaternary and binary thermal cycles Parts of the lubrication system	Knowledge of thermal cycles of their four- and binary types + Identify parts of the lubrication system	a lecture + laboratory	Exams, exams
5	2Theoretical 3 practical	Fuel system / diesel, gasoline of the engine	Fuel system of diesel and gasoline + learning to draw	a lecture + laboratory	Exams, exams

		Tug movement and driving device	a tug		
6	2Theoretical 3 practical	Air, exhaust, cooling and lubrication systems Electrical systems of tug parts	Knowledge of the exhaust, cooling and lubrication system important for the better functioning of agricultural machinery	a lecture + laboratory	Exams, exams
7	2Theoretical 3 practical	Electrical system for diesel and gasoline engines The separator, its parts and the gear shift device	Identify electrical system diesel and gasoline engines	a lecture + laboratory	Exams, exams
8	2Theoretical 3 practical	Hydraulic device Practical training on tug driving	Identify the hydraulic device and its types+ How to drive agricultural machinery	a lecture + laboratory	Exams, exams
9	2Theoretical 3 practical	Tug structure, movement and steering group Attaching tools to tug	Learn about external structure of the tug, steering group and how to connect it	a lecture + laboratory	Exams, exams
10	2Theoretical 3 practical	Sustaining the tug Identify the parts	Identifying sustainability and its importance	a lecture + laboratory	Exams, exams

		of sustainability	with agricultural tractors and various livestock production machines		
11	2Theoretical 3 practical	Smoothing equipment Types of plows and learning about equipment used	Learn about smoothing equipment know types of plows and how to use them	a lecture + laboratory	Exams, exams
12	2Theoretical 3 practical	Planning and canal cutting equipment Types of protective equipment	How the student gets to know equipment planning and cutting channels and the types of equipment	a lecture + laboratory	Exams, exams
13	2Theoretical 3 practical	Cleaning equipment for ruminant fields Types of field cleaning equipment	Knowing the different types of equipment and how they operate Modern tactics and its working mechanism	a lecture + laboratory	Exams, exams
14	2Theoretical 3 practical	Control equipment Watch the use of pullers in fields (Information Network)	Learn about types of pullers control equipment + watch many clips to learn how they work agricultural field	a lecture + laboratory	Exams, exams
15	2Theoretical 3 practical	Reaping and harvesting equipment Discussing practical lessons	Identifying types of harvesting and harvesting equipment + scientific discussion	a lecture + laboratory	Exams, exams

	and benefit from the field specialization	students regarding the curriculum items for the subject of tractors and agricultural machinery.		
59.				
Course Evaluation				
60. 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				
Learning and Teaching Resources				
Required textbooks (curricular books, if any)		<p>- Book: Agricultural mechanization Prepared by: Professor Dr Mubarak Muhammad Mustaf Faculty of Agriculture - Ain Shams University Dr.. Essam Ahmed Al-Sahar Emeritus professor of agricultural engineering Faculty of Agriculture - Ain Shams University</p> <p>Number of pages of the book: 250 pages Source: https://www.aglib.site/2020/07/blog-post_56.html</p>		
Main references (sources)		Comprehensive agricultural library		
Recommended books and references (scientific journals, reports...)		Agricultural tractors A.D. Mahmoud Ali Muhammad Mr. Dr. Ibrahim Muhammad Omar		
Electronic References, Websites		animals of Agricultural science AOAS		

First Stage

Spring Semester

Course Description Form :

9- Course Name	
Animal Hygiene <u>OR</u> Animal Health	
10- Course Code	
/	
11- Semester/Year	
Spring Semester (Second) / Academic Year 2023 - 2024	
12- Date of preparation of this description	
20 / 2 / 2024	
13- Available Attendance Forms	
Theoretical lectures in the classroom and practical lectures in the laboratory and field	
14- Number of credit hours (total) / number of units (total)	
5 hours (2 theoretical + 3 practical) / 5 units	
15- Course administrator's name (if more than one name) with e-mail	
Shatha Atta Abeed e. mail : kin.sht@atu.edu.iq	
16- Course Objectives	
Course Objectives	<p>A - General Objectives: The student is given a general idea of: Health conditions to be met in the air, drinking water, environmental conditions in animal pens</p> <p>B - Special Objectives: The student gets acquainted with: the health importance of air components, air pollutants , dust infection, ventilation, the role of water in the transfer of pathogens, types of sheds drainage waste and liquids from barns</p>
A- Course Objectives required program and methods of teaching and evaluation	
1. Identify the clinical importance of the role of air and water in the transmission of pathogens .	
2. Knowledge and understanding. For the health conditions that must be met in drinking water and watering animals .	
3. Clarify the basic concepts of healthy ways to dispose of waste in barns .	

B- Skills objectives of the program

- B1- Ability to think about methods of measuring microbial contamination in air and water .
- B2- Skills of linking the estimation of gas (CO2) as evidence of air pollution in barns .
- B3- The ability to know the general specifications of the sheds: light, ventilation, roof, entrance, door openings .
- B4- Identify the methods of using pesticides, immersion and baths and the dangers of immersion .

❖ Teaching and learning methods

- 5- Using the method of discussion and deriving the answer in the practical lecture when teaching the theoretical side of it .
- 6- Using the display or screen to display scientific pictures or films to attract the student's attention to interact with the lecture.
- 7- Use blackboard and colored pencils to clarify certain schemes and terms.
- 8- Using models and illustrations and conducting practical experiments in practical training.
- 5- Guiding students on some resources on websites to benefit from them to develop capabilities .

❖ Assessment methods

- 3- Conducting sudden and rapid tests in an attempt to evaluate and evaluate the previous lecture.
- 4- Demanding the preparation of reports on the resistance of ticks and scabies on animals and in animal pens from modern sources and seminars for topics related to the curriculum to encourage scientific research .
- 3- Conducting tests, oral, and practical.

C- Thinking skills

- C1- The ability to make a decision in the examination of water to judge its purity: local examination of the water source, how to take samples from Tap, wells, surface water .
- C2- Enabling students to think logically Drinking water purification (natural and artificial purification) .
- C3- Developing the student's ability to dialogue and discussion .

❖ Teaching and learning methods

Blackboard, models, presentations using the screen or data show, illustrations, seminars,

❖ Assessment methods

Daily Exams, Oral Exams, Semester Exams, Practical Experience Training

D- General and qualifying skills transferred (other skills related to characterization and personal development)

- 4- Follow up the scientific development by contacting universities via the Internet .
- 5- Developing the student's ability to deal with information via the Internet .
- 6- Developing the student's ability to dialogue and discussion .

10. Course Structure

weeks	hours	Required Learning Outcomes	Unit Name OR Subject Name	Learning Method	Evaluation method
First 2 nd .	Two hours For the	Recognize the components of air Natural pollutants and pollutants that Happening inside residences Animals	Air, health importance For air comp pollutants air inside resid animals and their health importance	Generally performed Next: A lesson,	As for the lessons, Theory: 1. Daily

3 rd .	Theoretical lesson			Theoretical is: Giving a lecture Theoretical with the use of Discussion style And derive the answer from Students use the offer on the screen to view photos or movies scientific to attract the attention of student to interact with the lecture	exams 2. Oral exams monthly exams and quarterly
Fourth		Health importance For air, sun light Inside the barns	The health importance of speed air, sun and light .		
Fifth	+	Definition of ventilation and its importance Inside the barns	Ventilation, air exchange and air volume .		+
Sixth					
Seven	three Hours For the Practical lesson	Identify water sources	Water, Water Sources: Water rain, surface water, seas and groundwater		As for the lessons, Practices: 1- Training is done on Statues
Eight		Learn about the conditions Health Duty Availability in drinking water	Health Conditions due availability in drinking Water. Watering of animals		2. Prompt to set up reports & seminars from recent sources related to the curriculum
Nine				As for the, Practical lesson is done: use models and images caption in hands conduct each other practical experiments for the purpose of water Inspection & assurance from its purity, check air & other conduct visits scientific to sheds animals	
Ten		The importance of water in the transport of pathogens Infectious diseases and toxins Chemical	The role of water in the transport of pathogenic diseases, microbes pathogenic, parasites, chemical toxins .		
Eleven					
Twelve					
Thirteen					
Fourteen					
Fifteen		Learn about the different ways Which are used for water purification	Purification of drinking water, purpose including natural and synthetic purification of water, add Chlorine and minor powder and potassium permanganate .		
			Animal pens, location building, construction, ro Thermal insulation .		
		Identify important materials			

	<p>that are used in the construction of sheds animals</p> <p>How to behave litter Liquid and solid of barns</p> <p>Drainage methods For Liquid and solid waste From barns</p> <p>General specifications of sheds milk cattle</p> <p>General specifications of the premises,</p> <p>General specifications of Theaters</p> <p>Calf pens system</p> <p>Sheep pens, cattle pens Fattening and sheep pens</p>	<p>Waste and fluid disposal From barns, dung warehouse liquid, drain pipes and traps .</p> <p>Healthy ways to get rid of Droppings in barns</p> <p>General specifications of sheds milk cattle .</p> <p>General specifications of the premises, Types (mobile and fixed)</p> <p>General specifications of theaters</p> <p>Calf pens, environment, s Calf pens .</p> <p>Sheep pens, cattle pens Fattening and sheep pens</p>		
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11-Course Evaluation	
Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation and oral and monthly exams editorial and reports etc	
12-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, re	
Electronic References, Websites	

13- Course Development Plan
3- Updating the curricula to suit the development and recent discoveries in the field of specialization.

4- Translating English teaching curricula into Arabic while preserving foreign terms in the translated curricula.

3-Updating lectures annually.

4- Exchange of experience between universities through the idea of the visiting professor exchanged.

Course Description Form

61.Course Name: Poultry feed	
62.Course Code:	
63.Semester / Year: /Fall and spring semester/2024	
64.Description Preparation Date:2024\3\2	
65.Available Attendance Forms: Attendance in classrooms and scientific laboratories in the department	
66.Number of Credit Hours (Total) / Number of Units (Total)\ 60 hours (30 theoretical hours + 30 practical hours) Number of units (total) / 4	
67.Course administrator's name (mention all, if more than one name)	
Name :Batool Abad Albany shaker Email: batoul.shaker@atu.edu.iq	
68.Course Objectives	
Course Objectives	<ul style="list-style-type: none">• At the end of the semester, the student will have complete knowledge of poultry feed• At the end of the semester, the student learn about the components of feed for different types of poultry, including broiler chickens, layers, turkeys, ducks, quail, and others.• The student's knowledge of the energy and protein needs of poultry and how to balance them to carry out all vital activities.• The student's knowledge of nutritio

deficiency diseases in poultry and how they treated by balancing the nutrients included the composition of the diet

69. Teaching and Learning Strategies

Strategy	<p>1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture For the purpose of developing their scientific research skills</p>
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70. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1Theoretical 3 practical	The concept of nutrition: basic nutrients that birds need and their functions	Knowing what nutrition is and what are the basic nutritional elements that birds need to carry out all vital activities	a lecture + laboratory	Exams, Exams
2	1Theoretical 3 practical	Energy concept, main sources of energy, digestion and absorption	Knowing what energy is, what feed materials provide the bo	a lecture + laboratory	Exams, Exams

		fats and carbohydrates, relationship between energy and feed density	with energy, and how they are digested and absorbed by the body		
3	1 Theoretical 3 practical	The nature of feed materials used in feeding poultry, their specifications, uses and classification of feed materials	Identify the most important feed materials used in feeding poultry, the specifications of these materials and how to use them	a lecture + laboratory	Exams, Exams
4	1 Theoretical 3 practical	Factors affecting energy needs, symptoms of energy deficiency and excess in poultry, and energy needs of broilers and laying hens during different stages.	It is necessary to know the factors affecting energy needs of chickens, and the increase in their energy needs has an effect, and a lack of energy also has an effect, so there must be a balance between energy and protein.	a lecture + laboratory	Exams, Exams
5	1 Theoretical 3 practical	Poultry needs for protein and essential amino acids. Practical examples: poultry energy needs and calculating basic energy needs, calculating nutritional protein needs for broilers and laying hens	The Knowing what protein is, what protein is made of, what the protein needs of poultry are as well as their energy needs, laying hens and broilers, calculating their daily energy and protein needs for poultry	a lecture + laboratory	Exams, exams

		applied example for calculation of chickens' daily protein needs			
6	1 Theoretical 3 practical	Symptoms of protein deficiency and excess in poultry diet and factors affecting the protein needs of poultry	Knowing the importance of protein, its symptoms of excess feed and its effect, in addition to the effect of protein deficiency and its effect on poultry and what are the factors affecting the need of protein in poultry.	a lecture + laboratory	Exams, exams
7	1 Theoretical 3 practical	Calculations of the digestive rate of protein, its biological value, the relationship between them and the digestive rate	Learn about the importance of protein, its digestibility rate and its net value	a lecture + laboratory	Exams, exams
8	1 Theoretical 3 practical	Nutritional requirements of vitamins and inorganic elements, factors affecting the nutrition and non-feeding additives in poultry diets.	It is necessary to recognize the importance of nutrients included in the composition of the feed provided to birds and to know the essential elements from the non-essential ones.	a lecture + laboratory	Exams, exams
9	1 Theoretical 3 practical	Ostrich nutrition and diets	Learn about ostriches and their	a lecture + laboratory	Exams, exams

		different feeding methods	different methods of raising and feeding them		
10	1 Theoretical 3 practical	The relationship of nutrition to the quality of the egg, the quality of the shell, the quality of the egg white, the nutritional value of the egg, the quality and color of the yolk, nutrition, size and production eggs.	Eggs are of great importance and due to their importance, it is necessary to know the relationship of nutrition to the quality of the egg produced by chickens that on these diets, and also the effect of the diet on the size and production of eggs.	a lecture + laboratory	Exams, exams
11	1 Theoretical 3 practical	Food rationing for poultry, methods used in feed rationing, forms of feed provided to poultry	Knowledge of food rationing, methods of using it, forms of feed provided, and the effect of feed rationing on the palatability of the feed.	a lecture + laboratory	Exams, exams
12	1 Theoretical 3 practical	Feeding and nutrition of turkeys, chickens, nutritional requirements during the breeding period, Calculating feed needs of poultry	Identifying a turkey bird, what it is called, Turkish, and what types of diets are used during the rearing period, calculating the fodder needs of poultry	a lecture + laboratory	Exams, exams
13	1 Theoretical 3 practical	Traditional fodder used for poultry diets (feed alternatives).	Knowing the feed used for poultry, its preferred type for poultry, and	a lecture + laboratory	Exams, exams

			the degree of acceptance and palatability. It is necessary to find alternatives to feeds that are cheap and available in the area where poultry is raised.		
14	1Theoretical 3 practical	Practical examples calculating cost of feed for birds	Knowing the methods calculating the cost of feed for kinds raised birds whether they are chickens, ducks, geese, turkeys and other poultry.	a lecture + laboratory	Exams, exams
15	1Theoretical 3 practical	Diseases and bad habits resulting from nutritional deficiency Identifying symptoms nutritional deficiency in birds and how to treat them, evaluating the quality of feed and freedom from toxins and fungi and means storing it	Knowing the most important diseases that spread in poultry resulting from nutritional deficiency and treating them through health nutrition + It is necessary to know the quality of feed and absence of pathogens	a lecture + laboratory	Exams, exams
71.					
Course Evaluation					

72. 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.	
Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Poultry nutrition basics Author: Ismail Khalil Ibrahim
Main references (sources)	Poultry feed Author: Ali Mahmoud Kassar
Recommended books and references (scientific journals, reports...)	Poultry feed Author: Doha Al-Sadiq
Electronic References, Websites	animals of Agricultural science AOAS

Course Description Form

73. Course Name:	
Fish production	
74. Course Code:	
75. Semester / Year:	
Spring semester/2024	
76. Description Preparation Date:	
/ 2 / 2024	
77. Available Attendance Forms:	
Attendance in classrooms and scientific laboratories in the department	
78. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours (15 theoretical hours + 45 practical hours) Number of units (total) / 4	
79. Course administrator's name (mention all, if more than one name)	
Name: Duaa Mohammed Ali Jawad Email: dd.oaaa@yahoo.com	
80. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> . Introducing students to fish farming and its various sections, types and branches. . Introducing students to the types of breeding fish, the characteristics of each, and how to benefit from them. . Introducing and familiarizing students with the appropriate environment for growing and raising fish and methods of feeding them. . Introducing students to different breeding methods for breeding fish . Introducing students to how to benefit from fish wealth and increase its production using the correct scientific methods. . Introducing students to design and planning skills for establishing

fish farms according to the scientific and practical foundations of this science

81. Teaching and Learning Strategies

Strategy	<ul style="list-style-type: none"> • Developing students' cognitive skills by understanding information and concepts. • Developing students' intellectual skills. • Develop personal skills and assume responsibility. • Developing skills in dealing with the information network, the Internet and computer • Developing students' communication skills with each other on the one hand and with the community and the professor on the other hand • The ability to deal with sources of information by searching for new information in fish science. • . The ability to link theoretical lectures with practical applications. • Identifying scientific terms related to ichthyology using the English language, which gives students new linguistic skills
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82. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	1Theoretical 3 practical	Introduction to productionFish,Flag of interests, fish, fish of features of fish	Study of external appearanceFor the fish,Body parts	A lecture + Laboratory	Examinations Quiz
the second	1Theoretical 3 practical	The external appearance of the fish, body shape, body openings, scales, and fins	Study of fins, scales, lateral line, longitudinal line, standard length, type of fin	A lecture + Laboratory	Examinations Quiz

the third	1Theoretical 3 practical	Internal structures of fish, respiratory, digestive, reproductive, circulatory, sense organs and urinary system.	Fish anatomy, learning about the digestive system, respiratory system, and reproductive system	A lecture + Laboratory	Examinations Quiz
the fourth	1Theoretical 3 practical	Secretion and osmotic regulation of fish, nervous system	Identify laboratory equipment and how it works (PH measuring device, O ₂ measuring device) and others	A lecture + Laboratory	Examinations Quiz
Fifth	1Theoretical 3 practical	Classification of fish (length measurements, weight measurements, methods used in classifying fish)	Collecting samples of river and stream water and measuring (dissolved oxygen, PH, salinity, transparency, and degree of salinity)	A lecture + Laboratory	Examinations Quiz
sixth	1Theoretical 3 practical	Types of ornamental fish and methods of reproduction	Collecting and examining phytoplankton and animal organisms, examining samples of plankton from different aquatic environments	A lecture + Laboratory	Examinations Quiz
Seventh	1Theoretical 3 practical	Methods for estimating age in fish, the relationship between length and weight in fish	Multiplication herbs, their types, and uses	A lecture + Laboratory	Examinations Quiz
Eighth	1Theoretical 3 practical	Reproduction - Reproduction strategies	Examining and	A lecture +	Examinations Quiz

		- Factors affecting reproduction (internal and external) Reproduction systems Sexual differentiation and sex differences	measuring fertility (absolute, relative), proportionality function	Laboratory	
ninth	1Theoretical 3 practical	Aquatic environment, physicochemical factors affecting the growth and life of fish	Scientific films about the aquatic environment	A lecture + Laboratory	Examinations Quiz
The tenth	1Theoretical 3 practical	Fish migration (breeding migration, feeding migration, wintering migration)	Identifying Iraqi fish and applying some methods used in classifying fish	A lecture + Laboratory	Examinations Quiz
Eleventh	1Theoretical 3 practical	Phytoplankton and zooplankton, the food pyramid (production stage, consumption stage, death stage, preparation stage)	Making maps of water bodies in Iraq	A lecture + Laboratory	Examinations Quiz
Twelveth	1Theoretical 3 practical	Fertility (absolute, relative) is a function of reproduction	Identify the types of fishing methods (nets, traps, rods)	A lecture + Laboratory	Examinations Quiz
Thirteenth	1Theoretical 3 practical	Pollution, its types, sources, and impact on aquatic organisms	A visit to one of the fish farms, to see its components	A lecture + Laboratory	Examinations Quiz
Fourteenth	1Theoretical 3 practical	Water resources in Iraq, rivers, lakes, marshes and seas	Visit one of the water bodies and study ways to improve it	A lecture + Laboratory	Examinations Quiz
Fifteenth	1Theoretical 3 practical	Fish pond production farms, components - management	Study the external appearance of the fish, body parts	A lecture + Laboratory	Examinations Quiz

83. 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

84. Learning and Teaching Resources

Required textbooks (curricular books, if any)

- 1- Basics of Ichthyology - Dar Al-Hekma
- 2- Fish life
- 3- Fish farming. Abdel Bari Muhammad

	Mahmoud 4-Biology of Fish (١٩٨٢). Q. Bone, N.B. Marshall print Edition in the United States of America
Main references (sources)	Recent research and studies
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Google Scholar

Second Stage

Autumn Semester

Course Description Form

85.Course Name:	
Animal Anatomy & physiology	
86.Course Code:	
/	
87.Semester / Year:	
Autumn Semester (first) / Academic Year 2023 - 2024	
88.Description Preparation Date:	
20 / 2 / 2024	
89.Available Attendance Forms:	
Theoretical lectures in the classroom and practical lectures in the laboratory	
90.Number of Credit Hours (Total) / Number of Units (Total)	
5 hours (2 theoretical + 3 practical) / 5 units	
91.Course administrator's name (mention all, if more than one name)	
Name: Shatha Atta Abeed Email: kin.sht@atu.edu.iq	
92.Course Objectives	
Course Objectives	<p>After the end of the semester, the student will be able to know:</p> <ul style="list-style-type: none"> + The anatomical structure of the bodies of different farm animals + Animal body composition: muscle tissue, connective tissue, adipose tissue, bones + Functions of different body systems + Endocrine glands, their types, hormonal secretions, and functions in various farm animals + Nervous and hormonal control of various animal body activities + How to take samples of blood, methods of preserving them, and the treatments that are performed on them before conducting laboratory tests, types of red and white blood cells and the function of each type, along with determining

blood type of the animal.

✚ Diagnosing diseases through blood tests and identifying blood contamination.

93. Teaching and Learning Strategies

A- Cognitive objectives:

1. Clarifying the basic concepts of pathogens, disease prevention, and treatment use .
2. Knowledge and understanding of the parts and details of the anatomical structure of the animal's body.
3. Identify the clinical importance of some diseases that affect farm animals

B- Skills objectives of the program:

- B1- The ability to think about treating health problems affecting farm animals .
- B2- Skills to link the anatomy and physiology of the animal's body to some diseases .
- B3- The ability to link the imbalance occurring with some hormones in the body and its relationship to dystocia .
- B4- Identifying surgery, types of wounds, and their treatment

❖ Teaching and learning methods

- 1- Using the method of discussion and eliciting the answer in giving the practical lecture when teaching the theoretical aspect .
- 2- Use the display or screen to display pictures or scientific films to attract the student's attention to interact with the lecture.
- 3- Use the blackboard and colored pens to illustrate certain diagrams and terms.
- 4- Using models and illustrations in practical training.
- 5- Guiding students on some resources on websites to benefit from them to develop capabilities

❖ Evaluation methods

- 1- Conducting surprise and quick tests in an attempt to evaluate and evaluate the previous lecture.
- 2- Demanding the preparation of reports on animal body systems and the diseases that affect them from modern sources and seminars on topics related to the curriculum to encourage scientific research.
- 3- Conducting oral and practical tests.

C- Thinking skills

- C1- The ability to make decisions by identifying different body parts, which contributes to practicing veterinary techniques in a scientific and accurate manner .
- C2- Enabling students to think logically about the anatomical and physiological structure of the animal's body and make practical use of it in the practice of veterinary medicine .
- C3- Developing the student's ability to dialogue and discuss

❖ Teaching and learning methods

Blackboard, models, demonstrations using the screen or data show, illustrations, seminars .

❖ Evaluation methods

Daily exams, oral exams, semester exams, training on models

D- General and qualifying transferable skills (other skills related to characterization and personal development)

- 1- Follow up on scientific development by contacting universities via the Internet .
- 2- Developing the student's ability to deal with information via the Internet .
- 3- Developing the student's ability to dialogue and discuss

94. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	Two hours For the Theoretical lesson	Understand the meaning of the term Physiology	Introduction physiology, definition the animal's physiology	Generally performed Next: As for the lesson, Theoretical is: Giving a lecture Theoretical with the use of	As for the lessons, Theory: 1. Daily exams
2 nd .	+	Identify parts The external body of animals farm	External parts of a body Animal and poultry and their importance Some parts	Discussion style And derive the answer from Students use the offer on the screen to view photos or movies scientific	2. Oral exams monthly exams and quarterly
3 rd .	three Hours For the Practical lesson	Identify the components of the digestive system and circulation with their functions in ruminants	Anatomy of the digestive system and circulation of the ruminants	to attract the attention of student to interact with the lecture	+
Fourth		Identify the components of the Respiratory and urinary tract with their functions in ruminants	Anatomy of respiratory system and urinary system for ruminants	+ As for the, Practical lesson is done: use models and images caption in hands conduct each other practical experiments	As for the lessons, Practices: 1- Training is done on Statues 2. Prompt to set up reports & seminars
Fifth		Skeletal anatomy , muscles and nervous system & their functions in ruminants	Anatomy of bones and muscles The nervous system of ruminants	for the purpose Count white blood cells and red specific animal blood types in the pract	from recent sources related to the

Sixth		Identify the components of the digestive system and circulation with their functions in poultry	Anatomy of the digestive system And circulation for poultry	laboratory make scientific visits to one Faculties veterinary medicine (veterinary hospital Nearby to components of the animal body and different blood tests	curriculum
Seven		Identify the components of the respiratory and urinary tract with their functions in poultry	Anatomy of respiratory system and urinary system of poultry		
Eight		Skeletal anatomy , muscles and nervous system with their functions in poultry	Anatomy of bones and muscles and nervous system of poultry		
Nine		Identify different tissues In the animal's body	Animal body structure: Muscle tissue, tissue association, adipose tissue, Bones		
Ten		Learn about different Types of endocrine glands in ruminant	Endocrine glands and their types in the ruminants		
Eleven		Learn about different types of hormones and their functions in ruminants	Endocrine secretions And its types in ruminants		

Twelve		<p>How to control different the body's functions with hormones & nervous system</p>	<p>Nervous and hormonal control on the activities of the different animal body</p>		
Thirteen		<p>Learn about taking blood samples with its preservation and examinations that performed on it</p>	<p>How to take blood samples and methods save them and transactions takes place them before conducting laboratory tests , types of blood cells and the function of each type</p>		
Fourteen		<p>Identify the types of factions of blood in animals and numbers white and red blood cells</p>	<p>Determine the blood type of the animal, Calculating the number of blood cells (red and white)</p>		
Fifteen		<p>How are samples used? Blood to diagnose the diseases</p>	<p>Diagnosing of the diseases through Blood tests and infection detection Blood + a visit to one Veterinary colleges nearby To view the components of a body animal and</p>		

		blood tests		
95.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				
96.Learning and Teaching Resources				
Required textbooks (curricular books, if any)				
Main references (sources)		Anatomy & physiology of domestic animals - 1 2 - مبادئ تشريح الحيوان 3- أساسيات علم وظائف الأعضاء / Edinburgh, Green		
Recommended books and references (scientific journals, reports...)				
Electronic References, Websites				

13. Course Development Plan

- 1- Updating the curricula to suit the development and recent discoveries in the field of specialization.
- 2- Translating English teaching curricula into Arabic while preserving foreign terms in the translated curricula.
- 3- Updating lectures annually.
- 4- Exchange of experience between universities through the idea of the visiting professor exchanged.

Course Description Form

97. Course Name: Animal diseases	
98. Course Code:	
99. Semester / Year: Autumn semester 2024	
100. Description Preparation Date: 29/ ٧ / 2024	
101. Available Attendance Forms: Glass rooms and Laboratories of the department	
102. Number of Credit Hours (Total) / Number of Units (Total)	
Theory = 15 hour 45 h our practices.....total 60 hour 4 unite	
103. Course administrator's name (mention all, if more than one name)	
Name: Dr. Haki A. Alfatlawe Email: kin.hkee@atu.edu.iq	
104. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • At the end of the semester, the student will have mastered the foundation animal pathology in farm animals which include cows, sheep, goats, buffalo, and camels, and the ability to conduct examinations, knowledge of diseases that affect animals at different ages. • At the end of the semester, the student learns about treating sick animals using internationally known scientific and health methods • The student's knowledge of history of animal pathology, development, and early control of diseases.....
105. Teaching and Learning Strategies	
Strategy	<p>1 -Teach students how to obtain scientific resources from the library as well as from the Internet</p> <p>Early onset of diseases.</p> <p>How to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as a power</p>

point presentation using a projector, and providing students with mock educational videos, which increases their understanding of the topics. 3- Asking students questions from time to time for the purpose of their participation in the lesson and opening the door.

106. Course Structure

Week	Hou rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	1-theo 3 practic	The disease defined as how spreads. A control it.	Understand concept of disease	Lecture And Lab	
The second		Signs of disease general that appear on field animals	On the digestive system identifying effects of diseases	=	
The third		The important symptoms animals. Definition of diagnosis and treatment diseases of digestive, respiratory and urinary system	How to diagnose and treat diseases of digestive, respiratory and urinary system	=	
The four				=	
The five		Diseases affecting calves: Salmonellosis intestinal poisoning. Dysentery Calves		=	
The seven		Identification laboratory diagnosis diagnosis treatment septicemia	Learn about fever and symptoms diseases result from	=	

The eight		hoof rot. Tong stiffness.		=
The nine		Salmonellosis. Intestinal poison And its treatment And research sclerosis diseases Tongue, hoof and rot	Field diagnosis a identification Accidental anth tetanus. Soft kidne a lecture	= = =
The ten		Diagnosis treatment mastitis, its caus symptoms, cont and treatment	Identification, diagnosis treatment On accident anthrax tetanus And the soft kidne	= =
The eleven		Field identificat of diseases t cause miscarria piriformis, a brucellosis. Wh causes miscarria	diagnosis treatment in the fi	=
The Twelve		Definition tuberculosis	Field and how treat ataxia, Jo disease	=
The thirteen				= =
The fourteen				=

The fifteen				=
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107. 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	
108. Learning and Teaching Resources	
Required textbooks (curricular books, if any) farm animals Animal diseases	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

109.	Course Name: Animal feeding
110.	Course Code:
111.	Semester / Year: Fall and spring semester/2024
112.	Description Preparation Date: 2024\3\2
113.	Available Attendance Forms: Attendance in classrooms and

scientific laboratories in the department	
114. Number of Credit Hours (Total) / Number of Units (Total) 60 hours (30 theoretical hours + 30 practical hours) Number of units (total) / 4	
115. Course administrator's name (mention all, if more than one name)	
Name :Batool Abad Albany shaker Email: batoul.shaker@atu.edu.iq	
116. Course Objectives	
Course Objectives	<p>At the end of the semester, the student will have a complete understanding of animal feed material</p> <ul style="list-style-type: none"> • The student learns about the differences in the digestive system between poultry and ruminants • The student's knowledge of the needs that must be met by feeding different types of animals • The student learns about the nutritional needs during the reproductive and fertilization stages and feeding pregnant animals during pregnancy • The student learns about feeding lambs during the fattening stage • The student learns about the most important diseases to which animals are exposed through excessive or deficient nutrition and how they are treated
117. Teaching and Learning Strategies	
Strategy	<p>1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and</p>

asking them to research the topic of the next lecture
For the purpose of developing their scientific research skills

118. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 2 practical	The digestive system ruminants (part functions, development the system)	Identify the digestive system ruminants, in addition to knowing its parts and functions	a lecture + laboratory	Exams, exams
2	2Theoretical 2 practical	Glands accessory to the digestive system and their functions Anatomy the digestive systems of farm animals	Knowledge of the glands accessory to the digestive system and their importance In addition to dissecting the digestive system animals and introducing students to	a lecture + laboratory	Exams, exams
3	2Theoretical 2 practical	Digestion and absorption of nutritional compounds of the feed material (simple and complex carbohydrates, proteins, lipids)	Learn how food is digested and absorbed And knowing the nature of the substances resulting from metabolic processes	a lecture + laboratory	Exams, exams

		and substances resulting from metabolic processes			
4	2Theoretical 2 practical	Conduct experiment digestion and opening of rumen and duodenum	Knowing how digestion process takes place in ruminants, while performing rumen and duodenal opening for ruminants	a lecture + laboratory	Exams, exams
5	2Theoretical 2 practical	Microorganisms in the digestive system of ruminants (types and functions) Examination of materials inside digestive system, rumen and duodenum	Knowledge of types of microorganisms in the digestive system of ruminants, their functions and importance	a lecture + laboratory	Exams, exams
6	2Theoretical 3 practical	The use of nitrogenous protein substances in feeding ruminants (types and feeding methods and poisoning)	Knowing importance of nitrogenous substances in feeding ruminants and the exposure of the animal to poisoning and how to deal with it	a lecture + laboratory	Exams, exams
7	2Theoretical 3 practical	Mineral salts and their importance in feeding ruminants (types and functions, sources)	Identify mineral salts and their importance in feeding ruminants and their impact on the animals'	a lecture + laboratory	Exams, exams

			production of milk and meat, and the sources of the mineral salts for animals to obtain the best results.		
8	2Theoretical 3 practical	Reproduction and fertility in mammals	Knowing what factors affect reproduction and fertility are affected in farm animals	a lecture + laboratory	Exams, exams
9	2Theoretical 3 practical	Calculating the nutritional needs of dairy cows and newborns, composing diets and calculating their components	Find out what are the nutritional needs of dairy cows How the relationships are formed and according to their components	a lecture + laboratory	Exams, exams
10	2Theoretical 3 practical	Nutrition of beef cattle and buffalo (nutritional needs for different purposes) and nutritional needs of fattening animals (types of fattening and methods)	Knowing the necessary needs for growth and production To obtain the best results in terms of fattening and milk production	a lecture + laboratory	Exams, exams
11	2Theoretical 3 practical	Nutrition of sheep and goats (nutritional needs for different purposes, stages of female nutrition, stages	Knowing the importance of nutrition for sheep and goats to perform various vital processes In addition	a lecture + laboratory	Exams, exams

		of nutrition of newborns, milk (nutrition)	paying attention and calculating the nutritional needs of pregnant females, sheep and goats and feeding the young		
12	2Theoretical 3 practical	Nutritional needs of animals for growth purposes (growth, development) Factors affecting growth from nutritional standpoint	Studying nutritional needs of animals benefit from the nutrients included in the composition and know the factors affecting growth	a lecture + laboratory	Exams, exams
13	2Theoretical 2 practical	Nutritional needs of breeding animals, the effect of nutritional needs reproduction and fertilization animals (energy, protein, fat, mineral salts and vitamins)	Knowing nutritional needs necessary to carry out the fertilization and reproduction process and the importance of the process on the economy of the producing countries	a lecture + laboratory	Exams, exams
14	2Theoretical 2 practical	Water and importance nutrition	Know importance water and impact on the animal kingdom	a lecture + laboratory	Exams, exams
15	2Theoretical 2 practical	Some metabolic and nutritional diseases that affect ruminant animals (bloating, milk fever, eclampsia, mineral salts)	Knowing the most common diseases that affect ruminants, how to deal with them	a lecture + laboratory	Exams, exams

		deficiency, vitamin deficiency	and find solutions reduce the		
119.					
Course Evaluation					
120. 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					
Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Farm animal nutrition and feed industry Author: Muhammad Ali Mal Al-Rubaie		
Main references (sources)			Animal nutrition Author: Dr. Abdel Han Mohamed Abdel Hamid		
Recommended books and references (scientific journals, reports...)			Animal nutrition Author: Dr. Abdel Han Mohamed Abdel Hamid		
Electronic References, Websites			animals of Agricultural science AOAS		

Course Description Form

121. Course Name:	
Meat maintains & processing	
122. Course Code:	
123. Semester / Year:	
Autumn semester /2024	
124. Description Preparation Date:	
/ 2 / 2024	
125. Available Attendance Forms:	
Attendance in classrooms and scientific laboratories in the department	
126. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours (15 theoretical hours + 45 practical hours) Number of units (total) / 4	
127. Course administrator's name (mention all, if more than one name)	
Name: Duaa Mohammed Ali Jawad Email: dd.oaaa@yahoo.com	
128. Course Objectives	
Course Objectives	1- Students gain knowledge of the nature of meat from an academic and professional perspective

	<p>2-Understanding the nature of the work of food factories and slaughterhouses from a technological and health perspective at the global and local levels</p> <p>3-Learn the types and methods of preservation and manufacturing of some meat products</p> <p>4- Developing their awareness regarding food industries, their importance and stages of examination</p> <p>5-Knowledge of manufacturing, food preservation, balanced nutrition and their relationship to humans.</p> <p>6-Identifier of the chemical composition of meat</p> <p>7- Knowledge of food spoilage and spoilage</p> <p>8-The student knows how to benefit from manufacturing secondary products</p> <p>9-Distinguish between meat processing methods and preservation methods</p> <p>10-Knowledge of modern technology for slaughterhouses</p>
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129. Teaching and Learning Strategies	
Strategy	<p>1 - Teach students how to obtain scientific resources from the library as well as from the Internet.</p> <p>2 - Using illustrative means during the lecture, such as point power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture</p> <p>For the purpose of developing their scientific research skills.</p>

130. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	1Theoretical 3 practical	the importance economic of Meat	Solutions and concentration measurement	A lecture + Laboratory	Examinations Quiz
the second	1Theoretical 3 practical	the parts Animal body and chemical compositions of meat	Analysis of the main components of meat	A lecture + Laboratory	Examinations Quiz
the third	1Theoretical 3 practical	Preparation before slaughter and its importance, different methods of slaughter	The effect of different chemicals on the color of meat	A lecture + Laboratory	Examinations Quiz
the fourth	1Theoretical	Meat palatability	Preserving meat	lecture A	Examinations

	3 practical	factors: percentage of marinade in meat	by salting, preparing solutions and tools, and performing the meat preservation process	+ Laboratory	Quiz
Fifth	1 Theoretical 3 practical	Methods of preserving meat	Preservation by smoking: Smoking a sample of meat	A lecture + Laboratory	Examinations Quiz
sixth	1 Theoretical 3 practical	Meat cutting (minced meat, sausage and hamburger making)	Preserving meat by canning. Samples of meat suitable for canning	A lecture + Laboratory	Examinations Quiz
Seventh	1 Theoretical 3 practical	Methods cook of meat (dry, wet). The importance of the meat cooking process	Preserving meat by drying	A lecture + Laboratory	Examinations Quiz
Eighth	1 Theoretical 3 practical	Spoilage and spoilage of meat	Preserving meat by freezing	A lecture + Laboratory	Examinations Quiz
ninth	1 Theoretical 3 practical	Massacres: their importance: their design	Microbial examination of meat and methods for isolating bacteria from meat	A lecture + Laboratory	Examinations Quiz
The tenth	1 Theoretical 3 practical	Manufacturing of meat by-products and ways to benefit from them	The effect of pH on the actual water-holding capacity of meat	A lecture + Laboratory	Examinations Quiz
Eleventh	1 Theoretical 3 practical	Fish evaluation. Nutritional value of fish, ways to preserve fish	Sausage and hamburger industry	A lecture + Laboratory	Examinations Quiz
Twelveth	1 Theoretical 3 practical	Chemical composition of fish, checking freshness, decomposition and arsenication, percentages of protein content in fish according to its types. Fat, water, spoilage and	Methods of cooking meat	A lecture + Laboratory	Examinations Quiz

		spoilage of fish meat and how to control them			
Thirteenth	1 Theoretical 3 practical	Study of the chemical composition of broiler chickens, turkeys, quail, laying hens, and eggs	Fishmeal industry	A lecture + Laboratory	Examinations Quiz
Fourteenth	1 Theoretical 3 practical	Modern and new technology for poultry slaughterhouses, preparing turkeys, and quail. Meat chickens and how to market them	Sensory and chemical tests to enhance meat quality	A lecture + Laboratory	Examinations Quiz
Fifteenth	1 Theoretical 3 practical	Meat contamination during various stages of production	A scientific visit to a meat slaughterhouse	A lecture + Laboratory	Examinations Quiz

131. 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

132. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Comprehensive practical guide book on meat processing and preservation, 2012 Meat Chemistry 2012 Book: Meat and Fish Technology, 1992
Main references (sources)	Meat inspection and health, 1990 Meat production and preservation, 1985
Recommended books and references (scientific journals, reports...)	Recent research and studies
Electronic References, Websites	Google Scholar

Course Description Form

133. Course Name:
Animal Breeding and Management
134. Course Code:
135. Semester / Year:
spring semester/2024
136. Description Preparation Date:

29/2/2024

137. Available Attendance Forms:

Attendance in classrooms and scientific laboratories in the department

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

75 hours (30 theoretical hours + 45 practical hours) Number of units (total) / 5

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

Name: Dr.Safaa Sabbar Atiyah

Email: Safaa Sabbar.iku@atu.edu.iq

140. Course Objectives

Course Objectives

- At the end of the semester, the student will have mastered foundations of breeding and improvement in farm animals, which include cows, sheep, goats, buffalo, and camels, and the ability to conduct genetic tests, breeding, methods of performing them, and biotechnology in order to reach the most accurate results.
- At the end of the semester, the student learns about the parts and components of the male and female reproductive system, its anatomy, how it works, the endocrine glands, hormones, the estrus cycle, and the process of fertilization, pregnancy, childbirth, newborn care, and milk production takes place.
- The student's knowledge of the history of reproductive science, history of artificial insemination, and its importance in genetic improvement of farm animals for the purpose of increasing production and the ability to perform artificial insemination technology, as well as the rest of the reproductive techniques related to genetic improvement.

141. Teaching and Learning Strategies

Strategy

- 1- Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish reliable sources from non-reliable sources.
 - 2 - Using illustrative means during the lecture, such as point power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.
 - 3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.
 - 4 - Giving students homework for the current topic and asking them to research the topic of the next lecture
- For the purpose of developing their scientific research skills.

142. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First week	2 Theoretical	The economic importance of artificial insemination in farm	The importance of artificial insemination and its relationship to genetic	Lecture + laboratory	Exams + Quiz

	3 practical	animals. And its relationship to genetic improvement	improvement + Anatomy and physiology of the male reproductive system, cross-section of the testicle		
Second	2 Theoretical 3 practical	The role of hormones and endocrine glands in influencing the initiation and termination of reproduction.	Identifying the endocrine glands related to the reproductive process and the hormones they secrete and defining the reproductive process, the hormone, the endocrine gland + the physiology of the male reproductive system, the work of the testicles, the stages of sperm formation, the work of the epididymis, penis, and scrotum.	Lecture + laboratory	Exams + Quiz
Third	2 Theoretical 3 practical	Definition of puberty and sexual maturity, the difference between them, and the influence of environmental factors	Puberty and sexual maturity and the factors affecting them (genetic, environmental) + anatomy of the female reproductive system, ovaries, uterus, vagina, external genital opening, cross-section of the ovary	Lecture + laboratory	Exams + Quiz
Fourth	2 Theoretical 3 practical	Knowing the function of the female reproductive system and how its different parts work	Physiology of the female reproductive system, its anatomy, the work of each of its organs + anatomy of the female reproductive system, ovaries, uterus, vagina, external genital opening, cross-section of the ovary	Lecture + laboratory	Exams + Quiz
Fifth	2 Theoretical 3 practical	Definition of the reproductive cycle for different farm animals, the differences between them, and the types of wombs	The estrus cycle and its stages, the estrus period, the stages of the estrus cycle and the factors affecting it + the physiology of the female reproductive system, the function of the ovaries, the formation of eggs, the work of the female reproductive system	Lecture + laboratory	Exams + Quiz
Sixth	2	The process of	Ovarian function, egg	Lecture +	Exams +

	Theoretical 3 practical	formation of female gametes, their transmission, and different methods of collecting semen	formation, egg transfer, factors affecting them + Semen collection method: The goal of semen collection, treatment of the bull during the collection process, different collection methods, artificial vagina, electrical stimulation	laborator y	Quiz
Seventh	2 Theoretical 3 practical	The role of ovarian hormones in causing the estrus cycle, fertilization, and pregnancy	Hormonal work of the ovaries, ovarian hormones related to reproduction, chemical composition + semen tests, primary tests, secondary tests.	Lecture + laborator y	Exams + Quiz
Eighth	2 Theoretical 3 practical	Identify the function of the male reproductive system, its various parts, and the individual differences between them	Physiology of the male reproductive system, parts of the male reproductive system, testicles + dilution and preservation of semen, the most important diluents, preparation methods.	Lecture + laborator y	Exams + Quiz
Ninth	2 Theoretical 3 practical	Defining the male reproductive cell, what its parts are, how to produce it, and fertilization. Knowing the methods of preserving gametes and embryos by freezing.	The male reproductive cell (sperm), the male sperm, its external appearance, physiological characteristics, its function + freezing and thawing semen, methods of freezing, freezing temperature, goals of freezing, thawing	Lecture + laborator y	Exams + Quiz
Tenth	2 Theoretical 3 practical	Defining reproductive efficiency in males and its role in increasing birth production and male fertility. Knowing the different methods of artificial insemination	Reproductive efficiency of males and females, reproductive efficiency of cows, reproductive efficiency of bulls, methods of examining organs, fertility, sterility, reproductive diseases + methods of inseminating females, the process of insemination, tools used for insemination, warnings (disadvantages) and advantages.	Lecture + laborator y	Exams + Quiz

Eleventh	2 Theoretical 3 practical	How fertilization occurs, whether inside the body or outside body, and changes after fertilization	Fertilization and pregnancy, the journey of the sperm into the female reproductive system, implantation, pregnancy, changes that occur in the female reproductive system during pregnancy + reproductive efficiency in bulls and cows	Lecture + laboratory	Exams + Quiz
Twelfth	2 Theoretical 3 practical	Knowledge of pregnancy hormones, namely progesterone, chorionic hormone, and others, in maintaining and stabilizing pregnancy	Pregnancy hormones (mother and fetus), pregnancy diagnosis (idea and benefits) + pregnancy diagnosis and definition, warnings, requirements, scientific idea	Lecture + laboratory	Exams + Quiz
Thirteen	2 Theoretical 3 practical	How does childbirth occur naturally or artificially, its various stages, and treatment of placental retention	Births and their stages, childbirth, stages of childbirth, natural childbirth, dystocia, retained placenta, uterine inversion + modern tactics in reproductive physiology, modern ideas in the field of increasing the number of births, hormones used, embryo culture tactics, external fertilization, producing twins	Lecture + laboratory	Exams + Quiz
Fourteen	2 Theoretical 3 practical	Know the components of the male and female reproductive system of poultry and the function of each part	Anatomy and physiology of the reproductive system of a hen and a rooster. Identifying the reproductive systems of a hen and a rooster	Lecture + laboratory	Exams + Quiz
Fifteen	2 Theoretical 3 practical	How to collect semen from a rooster, treat it, and dilute it for insemination	Collecting semen from roosters and identifying the characteristics of bird semen	Lecture + laboratory	Exams + Quiz

Final semester exam

143. Course Evaluation

Term Tests As (35%)	Laboratory As (15%)	Quizzes As (10%)	Final Exam (40%)
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144. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Animal Breeding and Improvement (2003)
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	written by Dr. Salah Jalal and Hassan Karam
Main references (sources)	1- 1- Book of Reproduction in Mammals, Part One: Written by Auset and Short, translated by Ahmed Al-Hamidi/ Faisal Abu Tarbush, King Saud University Press. 2- External Fertilization Book Translated by: Dr. Ibrahim Barakat / Dr. Saleh Qandil / Dr. Ahmed Al-Humaidi, King Saud University Publishing House
Recommended books and references (scientific journals, reports...)	Bourdon, R. Under standing animal Breeding (2000)
Electronic References, Websites	Understanding Animal Breeding, 2nd edn (1999). Richard Bourdon. Prentice-Hall, Upper Saddle River, New Jersey 2) Falconer and MacKey (1996). Introduction to quantitative Genetics, Fourth edition, Longman Group Ltd., Burnt Mill, Harlow, Essex. 3) Mrode, R. A. (1996). Linear models for the prediction of animal breeding values. CAB International, Wallingfrd, UK. Theriogenolog Small Ruminant Research

Second Stage

Spring Semester

Course Description Form

145.	Course Name: Poultry diseases	
146.	Course Code:	
147.	Semester / Year: spring semester 2024	
148.	Description Preparation Date: 29/ ٢ / 2024	
149.	Available Attendance Forms: Glass rooms and Laboratories of the department	
150.	Number of Credit Hours (Total) / Number of Units (Total)	
	Theory = 30 hour 45 h our practices.....total 75 hour 5 unites	
151.	Course administrator's name (mention all, if more than one name)	
	Name: Dr. Haki A. Alfatlawe Email: kin.hkee@atu.edu.iq	
152.	Course Objectives	
Course Objectives		<ul style="list-style-type: none"> • At the end of the semester, the student have a basic understanding of poultry diseases in farm animals, which include broiler chickens, laying hens, ducks, and various domestic birds, and the ability to conduct tests to find out the diseases that affect poultry animals of different ages. • At the end of the semester, the student learns about treating sick animals using internationally known scientific and health methods • The student's knowledge of the history and development of poultry pathology, early control of diseases that affect them, and preventing them
153.	Teaching and Learning Strategies	
Strategy		<p>1 -Teach students how to obtain scientific resources from the library as well as from the Internet</p> <p>Early onset of diseases.</p> <p>How to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as a power point presentation using a projector, and providing students with mo</p>

educational videos, which increases
 Their understanding of the topics. –
 3-Asking students questions from time to time for the purpose of the
 participation in the lesson and opening the door.

154. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	2-theory 3 practice	Classification of poultry diseases according to the pathogen and addressing the most important nutritional deficiency diseases and methods of preventing them, especially diseases that cause vitamin deficiency.	Identification and field diagnosis in breeding houses of some diseases that affect poultry, including diarrhea and cholera		Lecture And Lab.
The second	=		Bacterial diseases such as diarrhea, paratyphoid and fowl cholera		=
The third	=				=
The fourth	=	Diagnosis and treatment of the following diseases: infectious avian influenza, mycoplasma, CR, Escherichia coli, and how to limit their spread. Chick influenza disease localization	Identifying the diseases: Mycoplasma, Escherichia coli and infectious coliforms. Autopsy of infected poultry		=
The fifth	=	Field identification of poultry infected with viral diseases such as chicken influenza	Field diagnosis of fungal diseases and how to treat and control them		=

The seven	=	Historical types of avian influenza strains that cause the disease. Clinical signs of the disease in poultry and humans, the danger of the disease to humans and methods of prevention.	Fungal diseases, how to diagnose them, treatment and control methods	=
The eight	=	Identify the most important diseases caused by internal parasites and the methods of spread such as coccidiosis and tapeworms	Identification and laboratory diagnosis of internal parasites that infect poultry and their treatment	=
The nine	=			=
The ten	=	An introduction to the most important diseases caused by metabolism within the body of chickens, such as gout, and how to treat them	Its diagnosis is like mites and lice. The most important metabolic diseases and how to diagnose, treat, and limit their spread (goiter, herniated tendon, fatty liver, cage paralysis)	=
The eleven	=	Identify and carry out disinfection in the field and learn how important it is in controlling disease transmission	Diseases resulting from breeding errors, their causes, and limiting them	=

<p>The Twelv</p>	<p>=</p>	<p>Disinfection a spread (predati disinfectants used tendency poultry fields and h to choose disinfectant</p> <p>Preventive progra used in poultry to lin the types of programs f the spread of diseas using vaccines in the fi how to administer t and conduct th vaccines used, and t practically in the poul timing administering medications</p>	<p>=</p>
<p>The thirtee</p>	<p>=</p>	<p>The most importa medications used in poul methods of administeri them to limit the spread diseases, and how to a them</p>	<p>Identify the medicatio used in treatment a how to calculate them a add them to the diet water.</p>
<p>The fourtee</p>	<p>=</p>	<p>Diagnosis, treatment a prevention methods for t following diseases: vi hepatitis, encephali hemorrhagic enteritis.</p>	<p>Identification and fi diagnosis of importa diseases such as vi hepatitis, encephalitis, a hemorrhagic enteritis.</p>
<p>The fifteen</p>	<p>=</p>	<p>visit to poultry fields outs the institute and fi inspection of administrat and preventive work</p>	<p>visit to poultry fie outside the institute a field inspection administrative a preventive work</p>

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155. 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	
156. Learning and Teaching Resources	
Required textbooks (curricular books, if any) poultry diseases 4 th edition ,	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites ; -- Pubmed(NCBI data base) - Science direct Google scholar	

Course Description Form

157. Course Name: Hatchery techniques
158. Course Code:
159. Semester / Year: Fall and spring semester/2024
160. Description Preparation Date:2024\3\2
161. Available Attendance Forms: Attendance in classrooms and scientific laboratories in the department
162. Number of Credit Hours (Total) / Number of Units (Total) 60 hours (15 theoretical hours + 45 practical hours) Number of units

(total) / 4	
163. Course administrator's name (mention all, if more than one name)	
Name :Batool Abad Albany shaker Email: batoul.shaker@atu.edu.iq	
164. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • At the end of the semester, the student will have mastered the subject of hatchery techniques • The student learns about hatcheries, their contents, and their economic importance • The student learns about the types of natural and artificial hatching • The student learns about the elements of hatching, which are humidity, ventilation, temperature, and stirring, and because of their great importance for hatching. • The student's knowledge of the contents of the egg and the changes that occur to it during the process of embryo formation inside it • Knowing the developments that occur in the egg every day of hatching • Knowing the characteristics of the flock from which the eggs are taken for hatching and its great importance for hatching. • Know the specifications of hatching eggs • The student learns how to treat hatched chicks
165. Teaching and Learning Strategies	
Strategy	<ol style="list-style-type: none"> 1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources. 2 - Using illustrative means during the lecture, such as power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics. 3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion. 4 - Giving students homework for the current topic and

asking them to research the topic of the next lecture
For the purpose of developing their scientific research skills

166. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1Theoretical 3 practical	History of the development of the hatching industry and its methods The hatching industry and its history of development	Learn about the history and development of the hatching industry in the world and the methods used for hatching	a lecture + laboratory	Exams, exams
2	1Theoretical 3 practical	Conditions that must be met in eggs prepared for hatching, treatment of eggs in the mothers' fields and during transportation Natural and artificial hatching methods	Knowing conditions for eggs prepared for hatching and how to deal with eggs prepared for hatching knowing differences between natural and artificial hatching methods	a lecture + laboratory	Exams, exams
3	1Theoretical 3 practical	Poultry industry in Iraq Hatching machines and	Learn about the latest developments in the poultry	a lecture + laboratory	Exams, exams

		specifications of the typical hatchery	industry in Iraq and the world + Learn about hatching machines and specifications these machines		
4	1 Theoretical 3 practical	The basic components of the hatching process The mechanism of operation of cooling, humidity, ventilation and stirring system inside hatching machines	Knowing what the necessary elements for the hatching process such temperature, humidity, stirring and ventilation	a lecture + laboratory	Exams, exams
5	1 Theoretical 3 practical	Stages of embryo development in eggs Conditions that must be met for eggs prepared for hatching	Knowing the stages of embryo development from the egg to the hatching stage and what conditions must be met for complete hatching process	a lecture + laboratory	Exams, exams
6	1 Theoretical 3 practical	Examination of eggs, periods of embryo development, hatching mechanics, abnormal conditions of embryo	Knowing the necessary tests to be performed on eggs before hatching process including optical examination, addition	a lecture + laboratory	Exams, exams

			knowing abnormal conditions of embryo up hatching.		
7	1Theoretical 3 practical	Fertility characteristic of chickens and factors affecting Conditions a direction of layi hatching eggs a the duration storage of eg prepared hatching	Identifying most important characteristics fertility in chicken prepared hatching and what are the factors that affect the hatching process and what placing eggs in dishes. Knowing the appropriate direction for egg prepared hatching and how long is appropriate period to complete hatching process	a lecture + laboratory	Exams, exams
8	2Theoretical 3 practical	Reasons for low hatchability rate and factors affecting fertilization rate in eggs prepared for hatching	Knowing reasons that lead to a decrease in hatchability rate poultry and what are the factors affecting percentage hatchlings prepared hatching	a lecture + laboratory	Exams, exams
9	1Theoretical 3 practical	Daily stages embryonic development	Knowing the daily embryonic developments that occur in the egg every day of	a lecture + laboratory	Exams, exams

			hatching process for a period of days for chicken and the period varies according to the type of bird prepared for hatching.		
10	1 Theoretical 3 practical	Quail egg production, economic importance, scientific foundations followed In egg production Daily stages of embryonic development	Learn about cultivation methods, feeding methods, and manufacturing conditions that are available in the article	a lecture + laboratory	Exams, exams
11	1 Theoretical 3 practical	Hatching and quality control in the poultry industry Embryonic membranes and stages of embryonic destruction during hatching	Knowing the types of embryonic membranes of the egg prepared for hatching The stages at which embryos are destroyed and how they are treated	a lecture + laboratory	Exams, exams
12	1 Theoretical 3 practical	The most important commercial egg-producing breeds, standard rates and schedules of feed consumption during the production	Knowing the most important commercial breeds that produce eggs of economic importance to the producing countries	a lecture + laboratory	Exams, exams

		<p>period, w statistics a schedules for tal egg producti and hatchin functions a symptoms nutrient deficiency in t growth embryos.</p>			
13	1Theoretical 3 practical	<p>Non-nutritive fe additives and their effect on eg hatching. Reasons f the l hatching rate due modern hatching technique</p>	<p>Knowing t importance of nutrients included the compositio of the d for the poultry prepared t hatching</p>	a lecture + laboratory	Exams, exams
14	1Theoretical 3 practical	<p>Artificial hatchi of poultry, especially turke and ducks Fertilization, factors affecti the rate fertilization eggs prepared f hatching</p>	<p>Identify artificial hatchi of including turke and ducks, a what factors aff the fertilizati process</p>	a lecture + laboratory	Exams, exams
15	1Theoretical 3 practical	<p>Treatment of hatched chicks, marketing of chicks Modern techniques in t artificial hatchi</p>	<p>Knowing how to deal with hatche chicks and providing appropriate conditions for them</p>	a lecture + laboratory	Exams, exams

		process	What are the most important modern technologies in the hatching process		
167.					
Course Evaluation					
168. 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					
Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Authors' hatchery techniques book Abdul Hussein Naji Al-Tamim Yasser Jamal Jameel Jassim Al-Gharawi Qasim Manati Agriculture, horticulture, forestry, fishery and nutrition		
Main references (sources)			Hatching and modern poultry management Dr. Muhammad Al-Hajami Dr. Muhammad Al-Jalawi		
Recommended books and references (scientific journals, reports...)			Hatching in poultry The author is Dr. Tariq Anwar Obaid		
Electronic References, Websites			animals of Agricultural science AOAS		

Course Description Form

169. Course Name:					
Diary production					
170. Course Code:					
171. Semester / Year:					
Spring semester/2024					
172. Description Preparation Date:					
/ 2 / 2024					
173. Available Attendance Forms:					
Attendance in classrooms and scientific laboratories in the department					
174. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours (15 theoretical hours + 45 practical hours) Number of units (total) / 4					
175. Course administrator's name (mention all, if more than one name)					
Name: Duaa Mohammed Ali Jawad Email: dd.ooaa@yahoo.com					
176. Course Objectives					
Course Objectives		. Teaching students the means of using the various main types of cheese and fermented milk manufacturing techniques and the means of applying them in factories to prepare students for management and work in production halls and quality control laboratories in dairy factories and defining cheese and its nutritional and economic value as well as the composition of milk and the factors affecting correct production and the quality of cheese and fermented milk.			
177. Teaching and Learning Strategies					
Strategy		1 - Teach students how to obtain scientific resources from the library as well as from the Internet. 2 - Using illustrative means during the lecture, such as point power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics. 3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion. 4 - Giving students homework for the current topic and asking them to research the topic of the next lecture For the purpose of developing their scientific research skills.			
178. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

The first	1Theoretical 3 practical	Definition of milk and the importance of its production, including the importance of milk as food for humans, the nutritional value of milk, milk production in the world, milk production in the Arab world, milk production in Iraq	Good milk, clean milk, sensory checks	A lecture + Laboratory	Examinations Quiz
the second	1Theoretical 3 practical	Milk components include water, fatty substances, and non-fatty substances	Sample/definition, types, milk sample and its differences from other samples	A lecture + Laboratory	Examinations Quiz
the third	1Theoretical 3 practical	Milk components include protein, enzymes, salts and minerals	Examination of milk sediments, examination of moisture and solids in milk and its products	A lecture + Laboratory	Examinations Quiz
the fourth	1Theoretical 3 practical	Milk components include carbohydrates, lactose, and vitamins	Estimating the percentage of fat using the Babcock and Kerber method and using modern devices	A lecture + Laboratory	Examinations Quiz
Fifth	1Theoretical 3 practical	Milk contamination and diseases transmitted through milk to humans	Reductive tests (methylene blue, resazurin)	A lecture + Laboratory	Examinations Quiz
sixth	1Theoretical 3 practical	The spoilage of milk and its products, methods of contamination, and its impact on consumers	Estimating acidity in milk / titration methods, pH device, boiling, lye leaves	A lecture + Laboratory	Examinations Quiz
Seventh	1Theoretical 3 practical	Milk collection centers, their location, the transactions that take	Estimating milk density, methods of milk	A lecture + Laboratory	Examinations Quiz

		place on milk in the milk collection centers, including sensory checks, filtering, weighing, preserving the milk from changes, and transportation.	adulteration and how to detect it		
Eighth	1Theoretical 3 practical	The transactions that take place on milk in factories include receiving the milk, filtering it, taking samples, filtering it, adjusting the fat percentage, pasteurization, and sterilization.	Fermented dairy industry/regular dairy	A lecture + Laboratory	Examinations Quiz
ninth	1Theoretical 3 practical	Manufacture of sterilized milk using various methods, manufacture of grafted milk	Fermented dairy industry (therapeutic dairy, grafted dairy)	A lecture + Laboratory	Examinations Quiz
The tenth	1Theoretical 3 practical	Cheese, its economic importance, nutritional value of cheese, classification of cheese	Soft cheese manufacturing	A lecture + Laboratory	Examinations Quiz
Eleventh	1Theoretical 3 practical	Fermenters, their importance, nutritional value, and microbes used in their manufacture	Halloumi cheese industry	A lecture + Laboratory	Examinations Quiz
Twelveth	1Theoretical 3 practical	Cream/its definition, economic importance, methods of obtaining mechanical (local) cream	Manufacture of cooked cheese	A lecture + Laboratory	Examinations Quiz
Thirteenth	1Theoretical 3 practical	Butter, its definition, economic importance, methods of obtaining (local) mechanical butter (churn)	Cream industry, butter industry, free fat industry	A lecture + Laboratory	Examinations Quiz
Fourteenth	1Theoretical 3 practical	Dairy ice cream, its definition, economic and nutritional importance, ways to obtain milk and non-	Manufacture of yogurt and ice cream, types of mixtures	A lecture + Laboratory	Examinations Quiz

		dairy ice cream, and comparison between them.			
Fifteenth	1 Theoretical 3 practical	Washing, cleaning and sterilizing materials used in laboratories and dairy processing plants	Preservatives and additives to milk and its products	A lecture + Laboratory	Examinations Quiz

179. 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

180. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Cheese and fermented milk production, Lot Abdel Muttalib 1983 Principles of Dairy Processing, 1993
Main references (sources)	Dairy Chemistry, 1969
Recommended books and references (scientific journals, reports...)	Recent research and studies
Electronic References, Websites	Google Scholar

Course Description Form

181.	Course Name: Fish farming
182.	Course Code:
183.	Semester / Year: Fall and spring semester/2024
184.	Description Preparation Date: 2024\3\2
185.	Available Attendance Forms: Attendance in classrooms and scientific laboratories in the department
186.	Number of Credit Hours (Total) / Number of Units (Total) 60 hours (15 theoretical hours + 45 practical hours) Number of units (total) / 4

187. Course administrator's name (mention all, if more than one name)	
Name :Batool Abad Albany shaker Email: batoul.shaker@atu.edu.iq	
188. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • At the end of the semester, the student will have knowledge of fish farming • The student's knowledge of the importance of fish wealth and its impact on the economy of countries • The student learns broad methods of fish farming • The student learns about the types of fish that are most widespread in the world and most desired by consumers • The student learns about fishing methods that completely avoid overfishing • The student learns about fish farming and the specifications of the water available for fish • The student learns about the analysis of the water used for fish, such as the percentage of oxygen, transparency, and others • The student learns about maintaining ponds for raising fish.
189. Teaching and Learning Strategies	
Strategy	<p>1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture</p> <p>For the purpose of developing their scientific research skills</p>

190. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1 Theoretical 3 practical	Introduction to fish farming, its economic importance and the reasons for its rapid development Fish farms and their various parts	A historical overview of fish farming and its economic importance Fish farms are divided according to the types found in the area	a lecture + laboratory	Exams, exams
2	1 Theoretical 3 practical	Types of fish farms, types of breeding, types of ponds How to create a fish tank and its various parts	Fish farms are divided according to the type of fish and their importance and their ability to reproduce How are fish ponds created and their specifications	a lecture + laboratory	Exams, exams
3	1 Theoretical 3 practical	Types and specifications of farmed fish (carp and its types, tilapia) Breeding fish in the world, the Arab world and Iraq	Identifying types of farmed fish especially the most common type in the world because it possesses many desirable characteristics over other types.	a lecture + laboratory	Exams, exams
4	1 Theoretical 3 practical	Fish farming water (physicochemical specifications,	Identify water characteristics and their effect on fish How are water	a lecture + laboratory	Exams, exams

		quantity) Equipment used in the laboratory a device for measuring P dissolved C transparency, microscope and how to use examining a pond water sample.	specifications determined through various tests, including transparency, C and pH		
5	1Theoretical 3 practical	Preparing ponds to receive new maintaining pond cleaning, maintenance, sterilization, fertilizing, adding water.	Knowing how to prepare ponds to receive a new method of fish, how to maintain ponds, sterilization and fertilization procedures.	a lecture + laboratory	Exams, exams
6	1Theoretical 3 practical	Fish hatcheries, parts, brood holding ponds Methods of improving culture water and treating unsuitable specifications for culture	Identifying hatcheries and their various parts + methods of improving culture water suitable for fish farming and methods of treating them	a lecture + laboratory	Exams, exams
7	1Theoretical 3 practical	Fish farming, closed systems and cages (their advantages and objectives) Breeding cage types of cage parts, cage manufacturing, materials used	Identifying methods of raising fish and their advantages and disadvantages each method knowing materials used in making fish cages and studying	a lecture + laboratory	Exams, exams

		industry, places put the cages	best places to place cages		
8	1 Theoretical 3 practical	Reproduction in ponds, natural reproduction, artificial reproduction Mothers' specifications, hormones used pituitary gland extraction, hormone injections	Identify the process of reproduction in fish ponds, artificial propagation, and characteristics of mothers What is available for use reproduction and how to inject hormones	a lecture + laboratory	Exams, exams
9	1 Theoretical 3 practical	Planning for the production of fingerlings Mothers' specifications, hormones used pituitary gland extraction, hormone injections	How to plan the production of fingerlings and the specifications of the mothers from which they are taken How to inject mothers increase production	a lecture + laboratory	Exams, exams
10	1 Theoretical 3 practical	Fish nutrition (requirements of protein, carbohydrates, fats, salts, minerals, and vitamins) Fish food and nutrition, feeding storage, place and time of providing feed, amount of food, number of feeding times	Identify the most important feed materials that are important in feeding fish and the need for them The types of feeds their storage locations, and their specifications that must be available in the storage areas	a lecture + laboratory	Exams, exams

		factors affecting the amount of food			
11	1 Theoretical 3 practical	Fish farm planning, intensive farming Preparing diets how to calculate the components of complementary foods	Learn how to plan fish farms and intensive farming How to prepare diets for fish needed	a lecture + laboratory	Exams, exams
12	1 Theoretical 3 practical	Division of fish farm ponds, broodstock ponds, hatchery, and incubation Means used for catching fish	Knowing how to divide fish ponds including mother ponds, fingerling ponds, and caviar ponds + And learn about different methods of catching fish in the correct way and stay away from illegal, overfishing methods	a lecture + laboratory	Exams, exams
13	1 Theoretical 3 practical	Fish diseases (definition of the disease and factors of its occurrence - signs of the disease in ponds - types of diseases) Examining fish to identify internal and external	Identify the most common fish diseases in the region, treatment methods, and how to deal with them during the treatment period	a lecture + laboratory	Exams, exams

		parasitic infections using microscope			
14	1Theoretical 3 practical	Parasites, bacterial species, viral species, fungal diseases, diseases resulting from infection with parasites. Diagnosing bacterial, fungal and viral diseases and how to treat and prevent them	Knowing the most important pathogens that cause major diseases to fish and how they threaten the livelihood of fish	a lecture + laboratory	Exams, exams
15	1Theoretical 3 practical	Methods of fish preservation, preserving their flavour, preserving and marketing live fish Visit to one of the fish farms and learn about the administrative and preventive work	Knowing the most important methods of fishing and how to maintain the correct and healthy fish preservation + A field visit to the locations of fish ponds and learning about the latest developments in fish farming	a lecture + laboratory	Exams, exams

191.

Course Evaluation

192. 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.

Learning and Teaching Resources

Required textbooks (curricular books, if any)

A book on the basics of fish breeding and production
Author: Mahfouz Huss
Muhammad Ali Al-Salman

Main references (sources)

Fish farming in ponds and other inland waters
Author: William Edwards

	Meehan
Recommended books and references (scientific journals, reports...)	ps://edumag.uomustansiriyah.u.iq/indx.php/mjse/article/view/90
Electronic References, Websites	animals of Agricultural science AOAS

Course Description Form

193. Course Name:	
Reproduction Physiology and Artificial Insemination	
194. Course Code:	
195. Semester / Year:	
spring semester/2024	
196. Description Preparation Date:	
29/2/2024	
197. Available Attendance Forms:	
Attendance in classrooms and scientific laboratories in the department	
198. Number of Credit Hours (Total) / Number of Units (Total)	
75 hours (30 theoretical hours + 45 practical hours) Number of units (total)	
199. Course administrator's name (mention all, if more than one name)	
Name: Dr.Safaa Sbbar Atiyah	
Email: Safaa Sabbar.iku@atu.edu.iq	
200. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • At the end of the semester, the student will have mastered foundations of reproductive science in farm animals, which include cows, sheep, goats, buffalo, and camels, and the ability to conduct reproductive tests, methods of performing them, and high technology in order to reach the most accurate results as well. • At the end of the semester, the student learns about the parts and components of the male and female reproductive system, its anatomy, how it works, the endocrine glands, hormones, the estrus cycle, and how the process of fertilization, pregnancy, milk production takes place. The student's knowledge of the history of reproductive science, history of artificial insemination, and its importance in genetic improvement of farm animals for the purpose of increasing productivity.

and the ability to perform artificial insemination technology, as well as other assisted reproduction techniques, such as gamete freezing, external fertilization, ICSI, egg collection, and male semen analysis.

201. Teaching and Learning Strategies

Strategy	<p>1- Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as point power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture</p> <p>For the purpose of developing their scientific research skills.</p>
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202. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First week	2 Theoretical 3 practical	The economic importance of artificial insemination in farm animals. And its relationship to genetic improvement	The importance of artificial insemination and its relationship to genetic improvement +Anatomy and physiology of the male reproductive system, cross-section of the testicle	Lecture + laboratory	Exams + Quiz
Second	2 Theoretical 3 practical	The role of hormones and endocrine glands in influencing the initiation and termination of reproduction.	Identifying the endocrine glands related to the reproductive process and the hormones they secrete and defining the reproductive process, the hormone, the endocrine gland + the physiology of the male reproductive system, the work of the testicles, the stages of sperm formation, the work of the epididymis, penis, and scrotum.	Lecture + laboratory	Exams + Quiz
Third	2 Theoretical 3 practical	Definition of puberty and sexual maturity, the difference between them, and the influence of environmental factors	Puberty and sexual maturity and the factors affecting them (genetic, environmental) + anatomy of the female reproductive system, ovaries, uterus,	Lecture + laboratory	Exams + Quiz

			vagina, external genital opening, cross-section of the ovary		
Fourth	2 Theoretical 3 practical	Knowing the function of the female reproductive system and how its different parts work	Physiology of the female reproductive system, its anatomy, the work of each of its organs + anatomy of the female reproductive system, ovaries, uterus, vagina, external genital opening, cross-section of the ovary	Lecture + laboratory	Exams + Quiz
Fifth	2 Theoretical 3 practical	Definition of the reproductive cycle for different farm animals, the differences between them, and the types of wombs	The estrus cycle and its stages, the estrus period, the stages of the estrus cycle and the factors affecting it + the physiology of the female reproductive system, the function of the ovaries, the formation of eggs, the work of the female reproductive system	Lecture + laboratory	Exams + Quiz
Sixth	2 Theoretical 3 practical	The process of formation of female gametes, their transmission, and different methods of collecting semen	Ovarian function, egg formation, egg transfer, factors affecting them + Semen collection method: The goal of semen collection, treatment of the bull during the collection process, different collection methods, artificial vagina, electrical stimulation	Lecture + laboratory	Exams + Quiz
Seventh	2 Theoretical 3 practical	The role of ovarian hormones in causing the estrus cycle, fertilization, and pregnancy	Hormonal work of the ovaries, ovarian hormones related to reproduction, chemical composition + semen tests, primary tests, secondary tests.	Lecture + laboratory	Exams + Quiz
Eighth	2 Theoretical 3 practical	Identify the function of the male reproductive system, its various parts, and the individual differences between them	Physiology of the male reproductive system, parts of the male reproductive system, testicles + dilution and preservation of semen, the most important diluents, preparation methods.	Lecture + laboratory	Exams + Quiz
Ninth	2	Defining the male	The male reproductive cell	Lecture +	Exams +

	Theoretical 3 practical	reproductive cell, what its parts are, how to produce it, and fertilization. Knowing the methods of preserving gametes and embryos by freezing.	(sperm), the male sperm, its external appearance, physiological characteristics, its function + freezing and thawing semen, methods of freezing, freezing temperature, goals of freezing, thawing	laborator y	Quiz
Tenth	2 Theoretical 3 practical	Defining reproductive efficiency in males and its role in increasing birth production and male fertility. Knowing the different methods of artificial insemination	Reproductive efficiency of males and females, reproductive efficiency of cows, reproductive efficiency of bulls, methods of examining organs, fertility, sterility, reproductive diseases + methods of inseminating females, the process of insemination, tools used for insemination, warnings (disadvantages) and advantages.	Lecture + laborator y	Exams + Quiz
Eleventh	2 Theoretical 3 practical	How fertilization occurs, whether inside the body or outside the body, and the changes after fertilization	Fertilization and pregnancy, the journey of the sperm into the female reproductive system, implantation, pregnancy, changes that occur in the female reproductive system during pregnancy + reproductive efficiency in bulls and cows	Lecture + laborator y	Exams + Quiz
Twelfth	2 Theoretical 3 practical	Knowledge of pregnancy hormones, namely progesterone, chorionic hormone, and others, in maintaining and stabilizing pregnancy	Pregnancy hormones (mother and fetus), pregnancy diagnosis (idea and benefits) + pregnancy diagnosis and definition, warnings, requirements, scientific idea	Lecture + laborator y	Exams + Quiz
Thirteen	2 Theoretical 3 practical	How does childbirth occur naturally or artificially, its various stages, and treatment of placental retention	Births and their stages, childbirth, stages of childbirth, natural childbirth, dystocia, retained placenta, uterine inversion + modern tactics in reproductive physiology,	Lecture + laborator y	Exams + Quiz

			modern ideas in the field of increasing the number of births, hormones used, embryo culture tactics, external fertilization, producing twins		
Fourteen	2 Theoretical 3 practical	Know the components of the male and female reproductive system of poultry and the function of each part	Anatomy and physiology of the reproductive system of a hen and a rooster. Identifying the reproductive systems of a hen and a rooster	Lecture + laboratory	Exams + Quiz
Fifteen	2 Theoretical 3 practical	How to collect semen from a rooster, treat it, and dilute it for insemination	Collecting semen from roosters and identifying the characteristics of bird semen	Lecture + laboratory	Exams + Quiz
Final semester exam					
203. 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					
204. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			1- Book on the physiology of reproduction in farm animals, 2011 2- The book on artificial reproduction (Part One), written by Dr. Hussein Abdul Karim Al-Saadi, Baghdad University Press, 1987 AD.		
Main references (sources)			1- Book of Reproduction in Mammals, Part One, Gamete Formation and Fertilization: Written by Auset and Short, translated by Ahmed Al-Hamidi/ Faisal Abu Tarbush, King Saud University Press 2- External Fertilization Book Translated by: Dr. Ibrahim Barakat / Dr. Saleh Qandil / Dr. Ahmed Al-Humaidi, King Saud University Publishing House. 3- Applied Animal Endocrinology		
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites			Applied Animal Endocrinology Theriogenolog Small Ruminant Research		

Course Description Form

205.	Course Name: Forage crops	
206.	Course Code:	
207.	Semester / Year: Fall and spring semester/2024	
208.	Description Preparation Date:2024\3\2	
209.	Available Attendance Forms: Attendance in classrooms and scientific laboratories in the department	
210.	Number of Credit Hours (Total) / Number of Units (Total) 45 hours (15 theoretical hours + 30 practical hours) Number of units (total) / 3	
211.	Course administrator's name (mention all, if more than one name)	
	Name :Batool Abad Albany shaker Email: batoul.shaker@atu.edu.iq	
212.	Course Objectives	
	Course Objectives	<ul style="list-style-type: none"> • At the end of the semester, the student will have complete knowledge of the subject of fodder crops and pastures • The student learns about the importance of livestock development and its relationship to feed production • The student's knowledge of the importance of field crops • The student learns about the methods of growing fodder crops and their importance • The student learns about the most important differences between the grass family and the leguminous family • The student learns about the importance of water resources and their relationship to feed production • The student's knowledge of natural plants and their importance in animal nutrition
213.	Teaching and Learning Strategies	

Strategy	<p>1 - Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources.</p> <p>2 - Using illustrative means during the lecture, such as power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics.</p> <p>3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion.</p> <p>4 - Giving students homework for the current topic and asking them to research the topic of the next lecture for the purpose of developing their scientific research skills.</p>
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214. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1Theoretical 2practical	The importance of livestock development and its relationship to fodder production. Nutrients in plant feed materials	Recognizing the importance of livestock development and its relationship to feed production + The importance of nutrients in plant feed materials	a lecture + laboratory	Exams, Exams
2	1Theoretical 2 practical	Division of field crops according to economic importance. Properties of forage crops	Identify the types of field crops + Knowledge of properties of food and forage crops	a lecture + laboratory	Exams, exams
3	1Theoretical	Methods of	Learn about the	a lecture +	Exams,

	2 practical	growing fodder crops Botanical description of jet and clover	different methods of growing fodder crops Learn about the description and cultivation of the fodder crops	laboratory	Exams
4	1 Theoretical 2 practical	Production of yellow corn and its exploitation as a fodder crop Cultivation of fodder crops (jet, alfalfa, barley, soybeans)	The corn crop, its economic importance, and its cultivation season Identifying important crops such as jet, alfalfa and soybeans	a lecture + laboratory	Exams, Exams
5	1 Theoretical 2 practical	Cultivation and production of soybeans Silage and manufacturing stages	Methods of cultivation and production of soybean crops and how to benefit from them Kasailig	a lecture + laboratory	Exams, exams
6	1 Theoretical 2 practical	Hay production The most important differences between leguminous and non-leguminous families	Hay production and its economic importance for farm animals, and the most important differences between the cereals and leguminous families	a lecture + laboratory	Exams, exams
7	1 Theoretical 2 practical	Concentrated feed materials, grain and factors affecting them Botanical description of yellow corn and field follow-up	Identify concentrated feed materials and their importance for feeding farm animals	a lecture + laboratory	Exams, exams

8	1Theoretical 2 practical	Cultivation of je crop Botanical description soybeans	Jet and its economic importance Soybeans and th economic importance	a lecture + laboratory	Exams, exams
9	1Theoretical 2 practical	Cultivating clov and using it as green fodder Collect and d feed samples	The m important fi crops that a important feeding anim and used as gre or dried fodder	a lecture + laboratory	Exams, exams
10	1Theoretical 2 practical	Cultivation of t barley crop a its exploitation green fodder a hay producti center fodder, conditions a manufacturing methods	Learn about cr cultivation methods, fe manufacturing methods, a manufacturing conditions that a available in t article	a lecture + laboratory	Exams, exams
11	1Theoretical 2 practical	Silage productio Crop serv operations	Learn about sila its producti methods, and economic importance	a lecture + laboratory	Exams, exams
12	1Theoretical 2 practical	Pastures in Iraq Seed diagno and phenoty study	How does t student lea about the types pastures in Ir and th importance humans a animals a benefit from th fully	a lecture + laboratory	Exams, exams
13	1Theoretical 2 practical	Natural plant, nutritional valu	Knowing the typ of natural plants Iraq in addition	a lecture + laboratory	Exams, exams

		Seminar discussions of students	the nutritional value of this plan		
14	1 Theoretical 2 practical	Views about natural pastures (information network) Watch model scientific film about crop farming (Information Network)	Identify the types of pastures found in the geographical area and watch scientific film about those plants	a lecture + laboratory	Exams, exams
15	1 Theoretical 2 practical	Water resources pasture animal care Watch scientific films about feed manufacturing (Information Network)	The importance of water resources and how to benefit from them The importance of food and methods of preservation	a lecture + laboratory	Exams, exams

215.

Course Evaluation

216. 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

Learning and Teaching Resources

Required textbooks (curricular books, if any)

Book: Fodder crops and pastures
Author: Ramadan Al-Takriti
Publishing 1981

Main references (sources)

Journal of Agricultural Science

Recommended books and references (scientific journals, reports...)

Forage crops book
Author: Abdullah Mahmoud Saleh
Agricultural magazines

Electronic References, Websites

<https://search.mandumah.com>

Course Description Form

217. Course Name:	
Economics of animal production	
218. Course Code:	
219. Semester / Year:	
Fall semester/2024	
220. Description Preparation Date:	
29/2/2024	
221. Available Attendance Forms:	
Attendance in classrooms in the department	
222. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours theoretical only) Number of units / 2	
223. Course administrator's name (mention all, if more than one name)	
Name: Dr.Safaa Sbbar Atiyah	
Email: Safaa Sabbar.iku@atu.edu.iq	
224. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • 1- For the student to become familiar with economics, types economic systems and laws, types of economics, and economic activities and linking them to agricultural and animal production. 2- The student learns the basic principles of agricultural economics especially animal production, production factors, demand and supply for animal products, factors affecting them, elasticity and its types. 3- . Proper employment of the factors of production, which are land, capital, labor, organization or management, and the elements of agricultural production 4- The student should know the economic feasibility study for livestock projects, types of markets, agricultural production functions, and how to achieve the highest ideal levels of production and exploitation of natural human resources.
225. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> 1- Students understand how to obtain scientific sources from the library as well as from the Internet, and how to distinguish between reliable and non-reliable sources. 2 - Using illustrative means during the lecture, such as point power presentation using the projector, and providing students with mock educational videos to increase their understanding of the topics. 3 - Asking students questions from time to time for the purpose of their participation in the lesson and opening the door to discussion. 4 - Giving students homework for the current topic and asking them to research the topic of the next lecture

For the purpose of developing their scientific research skills.

226. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First week	2 Theoretical	The economic importance of artificial insemination in farm animals. And its relationship to genetic improvement	The importance of livestock in the Iraqi agricultural economy, the economic importance of animal products, the nutritional importance of animal products	Lecture + laboratory	Exams + Quiz
Second	2 Theoretical	Agricultural economics: general concept, emergence, relationship of agricultural economics to economics	Agricultural economics: general concept, emergence, relationship of agricultural economics to economics	Lecture + laboratory	Exams + Quiz
Third	2 Theoretical	Definition of demand and the influence of environmental factors	Demand for animal products, demand schedule, factors affecting demand, elasticity of demand for animal products, factors affecting elasticity of demand	Lecture + laboratory	Exams + Quiz
Fourth	2 Theoretical	Knowing the function of supply, Definition, and the influence of environmental factors	Supply of animal products, supply schedule, factors affecting supply, factors affecting elasticity of supply	Lecture + laboratory	Exams + Quiz
Fifth	2 Theoretical	different farm animals, the differences between them, and the types	Agricultural production: the concept of agricultural production, agricultural production factors, production functions, the law of diminishing returns.	Lecture + laboratory	Exams + Quiz
Sixth	2 Theoretical	The principle of the best level of production	The principle of the best level of production	Lecture + laboratory	Exams + Quiz
Seventh	2 Theoretical	The role of substitution or replacement in animal production projects	The principle of substitution or replacement	Lecture + laboratory	Exams + Quiz

Eighth	2 Theoretical	Knowing the function of supply, Definition, and the influence of environmental factors	Production costs	Lecture + laboratory	Exams + Quiz
Ninth	2 Theoretical		Marketing animal products	Lecture + laboratory	Exams + Quiz
Tenth	2 Theoretical	Defining reproductive efficiency in males and its role in increasing birth production and male fertility. Knowing the different methods of artificial insemination	Livestock management project	Lecture + laboratory	Exams + Quiz
Eleventh	2 Theoretical		Production patterns for animal production projects	Lecture + laboratory	Exams + Quiz
Twelfth	2 Theoretical 3 practical	Knowing the function of supply, Definition, and the influence of environmental factors	Agricultural records	Lecture + laboratory	Exams + Quiz
Thirteen	2 Theoretical		Planning animal production projects	Lecture + laboratory	Exams + Quiz
Fourteen	2 Theoretical		Foundations and methods for evaluating livestock projects	Lecture + laboratory	Exams + Quiz
Fifteen	2 Theoretical		Economic indicators and criteria for evaluating livestock production projects	Lecture + laboratory	Exams + Quiz

Final semester exam

227. 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

228. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Principles of Economics book, 2011
Main references (sources)	
Recommended books and references (scientific journals, reports...)	

Electronic References, Websites	
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