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	٢	-
		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

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.
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.
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
5- For the purpose of developing their scientific research skills.

10. Evaluation methods

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

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	**Basic**	*					*					*	*
		project	**Basic**		*					*		*			
		English language	**Basic**		*					*		*			
The second/autmun		**Poultry Diseases**	**Basic**	*					*					*	*
		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	**After the end of the semester, the student will be able to know:** **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

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

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 with some diseases .

B3- The ability to link the imbalance occurring with some hormones in the body and its relationship to dystocia .

B4- Identifying the surgery, types of wounds, and their treatment

❖ Teaching and learning methods

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

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

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 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)

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

			udder	Veterinarian for examination purpose signs of health and	
		Methods of diagnosing parasites Internal and externa field and Laboratory	Animal parasites	illness and learn about the roads various medications to adn and vaccines	
		Identify the different types wounds and how to treat them	Surgery, types of wounds		
		Childbirth: tools used in Child maternal and newborn care	Childbirth and types of dystocia		

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)	**مبادئ و ممارسات الطب البيطري / William R. Jenkins**
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	**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	**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**

	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

21. Teaching and Learning Strategies

Strategy	• 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

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	**At the end of the semester, the student will fully familiar with the subject of poultry production** **• At the end of the semester, the student lea about the types of poultry, including chicke ducks, geese, quail, and turkeys, and the importance of each of them.** **• The student's knowledge of the importanc of poultry production for its main and secondary products** **• The student learns about the specificati that must be met or the conditions that m be met in poultry housing for the purpose creating a special project**

33.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 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 th 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 resear skills.

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3 practical	The importance the poultry industry in Iraq international companies producing breed of broiler chicke and egg chicken	Knowing the importance of th poultry industry with its various main and secondary productions + studying the breeds that produce meat an eggs and their importance on th country's econor	a lecture + laboratory	Exams, exams
2	2Theoretical 3 practical	Reproductive functions in poultry, egg formation, male	Knowing t importance reproduction a who is responsil	a lecture + laboratory	Exams, exams

		and female reproductive systems, hormones and their control ov egg formation	for t reproductive process in poult studying t female and m systems i det and accurately,a what are t factors affecti the production a formation of t egg.		
3	2Theoretical 3 practical	Physiological actions in the digestive system Poultry physiology / poultry anatomy to see the variou internal organs	Knowledge of t physiology of t digestive syst and how to bene from converti feed material i nutritional elements and th benefiting from to produce m and eggs dissecting poul and identifying internal organs	a lecture + laboratory	Exams, exams
4	2Theoretical 3 practical	Natural and artificial hatchi in chickens. The basic componen of hatching Maintenance poultry fiel their supplies, a the equipm used in them	Knowledge hatching, what a its natural a artificial typ what are the m important ba components of t hatching process maintenance poultry fields, a the importance maintenance a its impact production	a lecture + laboratory	Exams, exams

5	2Theoretical 3 practical	Chicken houses, elements that must be availab in selecting and designing the fie location, calculations of ventilation, cooling and lighting needs Types of feed and manhol their installati operation a maintenance, ventilation a cooling devic heating devices	Knowing t elements that mu be available in t locations poultry fields a studying the desi of poultry fie and what are t factors affecti poultry producti + knowing t types of feed and manholes us in poultry fie and their impa on production	a lecture + laboratory	Exams, exams
6	2Theoretical 3 practical	Various poultry equipment used poultry houses Nursery metho the m important da operations, nursery requirements a problems	Knowing many the equipme used in poult fields and th impact production learning abo daily operations poultry fiel what are t requirements th must be met poultry fields, a what are t problems faci breeders.	a lecture + laboratory	Exams, exams
7	2Theoretical 3 practical	Egg production, laying hen reari systems, factors affecting egg production, methods used to calculate egg	Knowing t importance eggs, how to ra laying he knowing t factors affecti egg production	a lecture + laboratory	Exams, exams

		production. Types hatcheries hatchery setup, operation, specificati s of t typical hatchery	knowing t hatcheries a their types, how operate them, a what are the m important specifications th must be availal in a typi hatchery		
8	2Theoretical 3 practical	Production of biological eggs o programmed eg with laying hens and turkeys Maintenance poultry fiel their supplies, a the equipme used in the refrigeration a heating devi for e production, da field operations	Learning abo egg production n only in chicke but also in oth poultry such turkeys, ducks, e + Knowing how maintain the fiel and what devi and equipme must be availal in the fields benefit from the and their impa on production.	a lecture + laboratory	Exams, exams
9	2Theoretical 3 practical	Quail egg production, economic importance, general rules followed in egg production Egg examination, external appearance, internal conte examination, optical examination, e	Knowing what quail is and economic importance knowing the te that are perform on eggs prepar for hatching a the conditions th must be met in t eggs, and the m important te that are perform are the opti examination	a lecture + laboratory	Exams, exams

		grading			
10	2Theoretical 3 practical	Meat productio broiler rearing systems, factors affecting meat production Meat producti and the difficult that prevent t development this indust sorting chicke for me production	The importance poultry meat, wh are the systems f raising broile what are t factors that aff meat production knowing t difficulties faci production	a lecture + laboratory	Exams, exams
11	2Theoretical 3 practical	Poultry slaughterhouse management an methods used in preparing and marketing meat chickens Operating a maintaining poultry slaughterhouses preparing chickens befo and af slaughter	Knowing wh slaughterhouses are, th importance poultry production, how use and mainta them, and t conditions th must be met slaughterhouse workers.	a lecture + laboratory	Exams, exams
12	2Theoretical 3 practical	Genetic improvement poultry, gene principles genetics, quantitative a qualitative trai selection metho	Knowing gene improvement general, wh genetic improvement is f poultry particular, a what are t desirable characteristics poultry that a	a lecture + laboratory	Exams, exams

			improved preserved.		
13	2Theoretical 3 practical	Turkey chicken types and breeding metho Disposal a utilization poultry product	Getting to kn many poult including turke geese, ducks, a quail, and metho of raising them knowing t importance of t products fr poultry a benefiting grea from them.	a lecture + laboratory	Exams, exams
14	2Theoretical 3 practical	Breeding and production of ostriches Economic calculations poultry projec cost and pro calculations	Identifying the ostrich bird, its breeding and its economic importance + Every product project must kn its econon feasibility, and t same applies to..	a lecture + laboratory	Exams, exams
15	2Theoretical 3 practical	The most important types ornamental chickens and methods of raisi them A visit to one the typical fields	Knowing t distinctive types poultry, includi ornamental chickens th amateurs want raise, and breedi methods + studer visiting poult fields and getti to know t contents of t 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 poult production The author is Dr. Ali Mahmo Al-Kassar**
Main references (sources)	**Poultry production book Author: Saad Abdul Hussein N 1985**
Recommended books and references (scient journals, reports...)	**Organic nutritional needs of poultry Written by Prof. Dr. Ali Mahmo Al-Kassar and Prof. Dr. Nihad A Nadawi Prof. Dr. Abdullah Abis Prof. I Nabil Muhammad Naji Prof. I Haier Razzes M.M. Saif Al-Kassar**
Electronic References, Websites	**animals of Agricultu 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	**• At the end of the semester, the student will have mastered the foundatio of nutritional science in farm animals, which include cows, sheep, goats, buffalo, and camels, and the ability to conduct laboratory analyzes of foo**

	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 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**

45. Teaching and Learning Strategies

Strategy	**1 - Students understand how to obtain scientific sources from the library as well as fro 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 i 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.**

46. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	1Theoretical 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	1Theoretical 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	1Theoretical 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 + aboratoryL	‹Examinations Quiz
the fourth	1Theoretical 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	1Theoretical 3 practical	Meat cutting (minced meat, sausage and hamburger making)	Protein estimation	A lecture + Laboratory	‹Examinations Quiz
Seventh	1Theoretical 3 practical	Use of agricultural (plant and animal) and industrial waste in animal feed	Protein estimation	A lecture + Laboratory	‹Examinations Quiz
Eighth	1lTheoretica 3 practical	Using hay and silage in animal feed	Fat estimation	A lecture + Laboratory	‹Examinations Quiz
ninth	1Theoretical 3 practical	Basic rules in forming relationships	Energy estimation	A lecture + Laboratory	‹Examinations Quiz
The tenth	1ticalTheore 3 practical	Balancing relationships and forming relationships	Fiber estimation	A lecture + Laboratory	‹Examinations Quiz
Eleventh	1Theoretical 3 practical	Food poisoning	Fiber estimation	A lecture + Laboratory	‹Examinations Quiz
Twelveth	1icalTheoret 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	1Theoretical 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	1Theoretical 3 practical	Nutritional scales	Computational applications on nutritional standards	A lecture + Laboratory	‹Examinations Quiz
Fifteenth	1Theoretical 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	**• 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 o tractors and agricultural machinery**

	• 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 t are used. • The student learns about many of the equipment and machines used in animal fiel such as scrapers, through which ruminant waste is disposed of.

57.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 between reliable and non-reliable sources.** **2 - Using illustrative means during the lecture, such as poi 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 th 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 ski**

58. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3 practical	The importance agricultural mechanization See the types of pullers and lear about their part	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 par and types of systems	Identify the type of agricultural pullers + Knowledge of t main engine pa and types systems agricultural tractors	a lecture + laboratory	Exams, exams
3	2Theoretical 3 practical	Function of mai tow parts Parts of cooling systems and air systems	The function of t parts of the agricultural pull and all its components + Identify t parts cooling systems f agricultura machinery in additi to systems	a lecture + laboratory	Exams, exams
4	2Theoretical 3 practical	Quaterna and binar thermal cycles Parts of t lubricatio system	Knowledge of thermal cycles of their four- and binary types + Identify t parts of t lubrication system	a lecture + laboratory	Exams, exams
5	2Theoretical 3 practical	Fuel system / diesel, gasoline f the engine	Fuel system diesel and gasoli + learning to dr	a lecture + laboratory	Exams, exams

		Tug movement and t driving device	a tug		
6	2Theoretical 3 practical	Air, exhaust, cooling and lubrication syste Electrica systems f tug parts	Knowledge of the a exhaust, cooling a lubrication system important for the bet functioning of agricultura machinery	a lecture + laboratory	Exams, exams
7	2Theoretical 3 practical	Electrical systen for diesel and gasoline engines The separator, its par and the ge shift devic	Identify t electrical system diesel and gasoli engines	a lecture + laboratory	Exams, exams
8	2Theoretical 3 practical	Hydraulic devic Practical traini on tug driving	Identify the hydraulic device and its types+ How to dr agricultura machinery	a lecture + laboratory	Exams, exams
9	2Theoretical 3 practical	Tug structure, movement and steering group Attaching tools to t tug	Learn about t external structu of the tug, steering grou and how to conn it	a lecture + laboratory	Exams, exams
10	2Theoretical 3 practical	Sustaining the tu Identify the pa	Identifying sustainability a its importar	a lecture + laboratory	Exams, exams

		of sustainability	with agricultu tractors a various livesto production machines		
11	2Theoretical 3 practical	Smoothing equipment Types of plo and learni about t equipment used	Learn abo smoothing equipment know t types plows a how to u them	a lecture + laboratory	Exams, exams
12	2Theoretical 3 practical	Planning and canal cutting equipment Types protective equipmen	How the stud gets to know t equipment f planning a cutting channels and the types equipment	a lecture + laboratory	Exams, exams
13	2Theoretical 3 practical	Cleaning equipment for ruminant fields Types of fi cleaning equipment	Knowing the different types of equipment and how they operate Modern tactic its worki mechanism	a lecture + laboratory	Exams, exams
14	2Theoretical 3 practical	Control equipment Watch the use pullers in t fields (Information Network	Learn about t types of p control equipme + watch many cl to learn how th work agricultural field	a lecture + laboratory	Exams, exams
15	2Theoretical 3 practical	Reaping and harvesting equipment Discussing t practical less	Identifying t types of harvesti and harvesti equipment + scientific discussion f	a lecture + laboratory	Exams, exams

		and benefiti from the field specialization	students regardi the curriculu items for t subject of tracte and agricultu 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)	**- 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** **Number of pages of the book: 250 pages** **Source: https://www.ag lib.site/2020/07/blog-post_56.html**
Main references (sources)	**Comprehensive agricultu library**
Recommended books and references (scient journals, reports...)	**Agricultural tractors A.D. Mahmoud Ali Muhammad Mr. Dr. Ibrah Muhammad Omar**
Electronic References, Websites	**animals of Agricultural scienc AOAS**

First Stage
Spring Semester

Course Description Form :

9- Course Name
Animal Hygiene OR 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	**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** **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**

A- Cognitive objectives
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 .

9- Outline of the required program and methods of teaching and evaluation

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 2nd.	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

3rd. Fourth Fifth Sixth Seven Eight Nine Ten Eleven Twelve Thirteen Fourteen Fifteen	**Theoretical lesson** + **three Hours For the Practical lesson**	Health importance For air, sun light Inside the barns Definition of ventilation and its importance Inside the barns Identify water sources Learn about the conditions Health Duty Availability in drinking water The importance of water in the transport of pathogens Infectious diseases and toxins Chemical Learn about the different ways Which are used for water purification Identify important materials	The health importance of speed air, sun and light . Ventilation, air exchange and air volume . Water, Water Sources: Water rain, surface water, seas and groundwater Health Conditions due availability in drinking Water. Watering of animals The role of water in the transport of pathogenic diseases, microbes pathogenic, parasites, chemical toxins . 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 .	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 + 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	exams 2. Oral exams monthly exams and quarterly + As for the lessons, Practices: 1- Training is done on Statues 2. Prompt to set up reports & seminars from recent sources related to the curriculum

		that are used in the construction of sheds animals **How to behave litter Liquid and solid of barns** **Drainage methods For Liquid and solid waste From barns** **General specifications of sheds milk cattle** **General specifications of the premises,** **General specifications of Theaters** **Calf pens system** **Sheep pens, cattle pens Fattening and sheep pens**	**Waste and fluid disposal From barns, dung warehouse liquid, drain pipes and traps .** **Healthy ways to get rid of Droppings in barns** **General specifications of sheds milk cattle .** **General specifications of the premises, Types (mobile and fixed)** **General specifications of theaters** **Calf pens, environment, s Calf pens .** **Sheep pens, cattle pens Fattening and sheep pens**		

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	**• At the end of the semester, the student will have complete knowledge of poultry feed** **• At the end of the semester, the student lear 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	**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 poi 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 th 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 ski**

70. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1Theoretical 3 practical	The concept nutrition: t basic nutrie that birds ne and th functions	Knowing what nutrition is and what are the bas nutritional elements that bir need to carry ou all vital activities	a lecture + laboratory	Exams, Exams
2	1Theoretical 3 practical	Energy concept, main sources of energy, digestio and absorption	Knowing wh energy is, wh feed materi provide the bo	a lecture + laboratory	Exams, Exams

		fats and carbohydrates, relationship between energy and feed density	with energy, a how they a digested a absorbed by t body		
3	1Theoretical 3 practical	The nature of fe materials used i feeding poultry, their specifications, u and classificatio of feed material	Identify the m important fe materials used feeding poult the specificatic of these materia and how to u them	a lecture + laboratory	Exams, Exams
4	1Theoretical 3 practical	Factors affecti energy nee symptoms energy deficier and excess poultry die energy needs broilers a laying hens duri different l stages.	It is necessary know the facte affecting t energy needs chickens, and increase in t energy has effect, and a la of energy also h an effect, so the must be a balar between ener and protein.	a lecture + laboratory	Exams, Exams
5	1Theoretical 3 practical	Poultry needs protein and essential amino acids Practicalexampl , poultry ener needs a calculating r basic ener calculating nutritional protein needs f broilers a laying he	The Knowing wh protein is, wh protein is made whattheprotein needs of poult as well as t energy needs laying hens a broilers calculating t daily energy a protein needs poultry	a lecture + laboratory	Exams, exams

		applied examp for calculati chickens' da protein needs			
6	1Theoretical 3 practical	Symptoms protein deficien and excess poultry die factors affecti the protein nee of poultry	Knowing t importance protein, t symptoms excess feed and effect, in additi to prot deficiency and effect on poult and what are t factors affecti the need of prot in poultry.	a lecture + laboratory	Exams, exams
7	1Theoretical 3 practical	Calculations the digestive ra of protein, t biological value protein, the r value of prot and t relationship between them a the digestive rat	Learn about t importance protein, digestibility ra and its net value	a lecture + laboratory	Exams, exams
8	1Theoretical 3 practical	Nutritional requirements f vitamins a inorganic elements, facte affecting the and nutritio and non-fo additives poultry diets.	It is necessary recognize t importance of t nutrients includ in the compone of the fe provided to bir and to know t essential eleme from the nc essential ones.	a lecture + laboratory	Exams, exams
9	1Theoretical 3 practical	Ostrich nutriti and diets a	Learn abo ostriches and t	a lecture + laboratory	Exams, exams

		different feedi methods	different metho of raising a feeding them		
10	1Theoretical 3 practical	The relationsh of nutrition to t quality of the eg the quality of t shell, the qual of the egg whi the nutritio value of the eg the quality a color of the yo nutrition, size a production eggs.	Eggs are of ve great importan and due to t importance, it necessaryknow t relationship nutrition to t quality of the e produced by t chickens that e these diets, a also the effect the diet on the s and production eggs.	a lecture + laboratory	Exams, exams
11	1Theoretical 3 practical	Food rationing f poultry, metho used in fe rationing, for of feed provid to poultry	Knowledge of fo rationing, metho of using it, t forms of fe provided, and t effect of feed fo on the palatabil of the feed.	a lecture + laboratory	Exams, exams
12	1Theoretical 3 practical	Feeding and feeding of turke chickens, nutritional requirements during the breeding period Calculating t feed needs poultry	Identifying t turkey bird, what it is called Turkish, and wh types of diets a used during rearing period calculating t fodder needs of t poultry	a lecture + laboratory	Exams, exams
13	1Theoretical 3 practical	Traditional fodder used poultry diets (fe alternatives).	Knowing the fe used for poult its preferred typ for poultry, a	a lecture + laboratory	Exams, exams

			the degree of acceptance a palatability. It necessary to fi alternatives to fe that are cheap a available in t area where t poultry is raised.		
14	1Theoretical 3 practical	Practical examples calculating t cost of feed f birds	Knowing t methods calculating the cost feed for kinds raised bir whether th are chicke ducks, gee turkeys a other poultry.	a lecture + laboratory	Exams, exams
15	1Theoretical 3 practical	Diseases and ba habits resulting from nutritional deficiency Identifying t symptoms nutritional deficiency in bi and how to tr them, evaluati the quality of t feed and freedom fr toxins and fun and means storing it	Knowing the m important disea that spread poultry resulti from nutritio deficiency a treating th through healt nutrition + It necessary to kn the quality of t feed and absence 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 (scient journals, reports...)	**Poultry feed** **Author: Doha Al-Sadiq**
Electronic References, Websites	**anmals of Agricultural scienc** **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.ooaa@yahoo.com**	
80. 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 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	**• 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**

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**	**ʻExaminations 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**	**ʻExaminations 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, O2 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 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	**After the end of the semester, the student will be able to know:** - **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 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 + As for the, Practical lesson is done: use models and images caption in hands conduct each other practical experiments for the purpose Count white blood cells and red specific animal blood types in the pract	As for the lessons, Theory: 1. Daily exams 2. Oral exams monthly exams and quarterly + As for the lessons, Practices: 1- Training is done on Statues 2. Prompt to set up reports & seminars from recent sources related to the
2nd.	+	Identify parts The external body of animals farm	External parts of a body Animal and poultry and their importance Some parts		
3rd.	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		
Fourth		Identify the components of the Respiratory and urinary tract with their functions in ruminants	Anatomy of respiratory system and urinary system for ruminants		
Fifth		Skeletal anatomy , muscles and nervous system & their functions in ruminants	Anatomy of bones and muscles The nervous system of ruminants		

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 C 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		**How to control different the body's functions with hormones & nervous system**	**Nervous and hormonal control on the activities of the different animal body**		
Thirteen		**Learn about taking blood samples with its preservation and examinations that performed on it**	**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**		
Fourteen		**Identify the types of factions of blood in animals and numbers white and red blood cells**	**Determine the blood type of the animal, Calculating the number of blood cells (red and white)**		
Fifteen		**How are samples used? Blood to diagnose the diseases**	**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**		

			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/ ٢ / 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	• **At the end of the semester, the stud will have mastered the foundation animal pathology in farm anim which include cows, sheep, go buffalo, and camels, and the ability condu examinations ,knowledg diseases that affect animals different ages.** • **At the end of the semester, the stud learns about treating sick anin using internationally known scient and health methods** • **The student's knowledge of history of animal pathology, development, and early control diseases.....**

105. Teaching and Learning Strategies	
Strategy	**1 -Teach students how to obtain scientific resources from the library as well as from the Internet** **Early onset of diseases.** **How to distinguish between reliable and non-reliable sources.** **2 - Using illustrative means during the lecture, such as a pow**

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

106. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first **The second** **The third** **The four** **The fife** **The seven**	**1-theo** **3 practi**	**The disease defined as how spreads. A control it.** **Signs of disease general that app on field animals** **The m important symptoms animals. Definit of diagnosis a treatment diseases of digestive, respiratory a urinary system** **Diseases affect calves: Salmonellosis intestinal poisoning. Dysentery Calves** **Identification a laboratory diagnosis** **Diagnosis a treatment septicemia a**	**Understand t concept of disea Se** **On the digest system a identifying effects of diseases** **How to diagnose a treat diseases of digestive, respirat and urinary syste** **Learn about m fever and symptoms a diseases result from**	**Lecture And Lab** **=** **=** **=** **=** **=**	

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

The fifteen				**=**

107. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, 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	**At the end of the semester, the student will have a complete understanding of animal fe material** **• 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 fertilizat stages and feeding pregnant animals during pregnancy** **• The student learns about feeding lambs during the fattening stage** **• The student learns about the most import diseases to which animals are exposed throu excessive or deficient nutrition and how t are treated**

117. 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 between reliable and non-reliable sources.** **2 - Using illustrative means during the lecture, such as poi 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 th 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 ski

118. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 2 practical	The digest system ruminants (par 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 accessor to the digestive system and their functions Anatomy the digesti systems of farm animals	Knowledge of the glands accessory the digestive system and their importance In additi to dissecti the digest system animals a introducin students to	a lecture + laboratory	Exams, exams
3	2Theoretical 2 practical	Digestion and absorption of nutritional compounds of th feed material (simple and complex carbohydrates, proteins, lipids)	Learn how food digested and absorbed And knowing t nature of t substances resulting fr metabolic processes	a lecture + laboratory	Exams, exams

		and substances resulting from metabolic processes			
4	2Theoretical 2 practical	Conduct experiment digestion a opening of t rumen a duodenum	Knowing how t digestion proc takes place ruminants, wh performing t rumen a duodenal openi for ruminants	a lecture + laboratory	Exams, exams
5	2Theoretical 2 practical	Microorganisms in the digestive system of ruminants (type functions) Examinat n materials inside t digestive system, rumen a duodenun	Knowledge of t microorganisms the digest system ruminants, th functions a importance	a lecture + laboratory	Exams, exams
6	2Theoretical 3 practical	The use nitrogenous protein substan in feedi ruminants (typ feeding metho poisoning)	Knowing t importance nitrogenous substances feeding ruminar and the exposu of the animal poisoning and h to deal with it	a lecture + laboratory	Exams, exams
7	2Theoretical 3 practical	Mineral salts a their importar in feedi ruminants (typ functions, sourc	Identify mine salts and th importance feeding ruminar their impact on t animals'	a lecture + laboratory	Exams, exams

			production of m and meat, and t sources of th mineral salts f animals to obta the best results.		
8	2Theoretical 3 practical	Reproduction a fertility in m animals	Knowing wh reproduction a fertility are a what factors aff them in fa animals	a lecture + laboratory	Exams, exams
9	2Theoretical 3 practical	Calculating t nutritional nee of dairy cows a newborns, composing di and calculati their componen	Find out what ar the nutritional needs of dairy cows How th relationshi are form and according their componen	a lecture + laboratory	Exams, exams
10	2Theoretical 3 practical	Nutrition of b cattle and buff (nutritional nee for differe purposes) a nutritional nee of fatteni animals (types fattening a methods)	Knowing the necessary needs for growth and production To obtain the b results in terms fattening and m production	a lecture + laboratory	Exams, exams
11	2Theoretical 3 practical	Nutrition of she and go (nutritional nee for differe purposes, stag of fem nutrition, stag	Knowing the importance of nutrition for she and goats to perform various vital processes In addition	a lecture + laboratory	Exams, exams

		of nutrition f newborns, m nutrition)	paying attenti and calculating t nutritional nee of pregnant fem sheep and go and feeding th young		
12	2Theoretical 3 practical	Nutritional nee of animals f growth purpo (growth, development) Factors affecti growth from nutritional standpoint	Studying t nutritional nee of animals benefit from t nutrients includ in th composition and know the facte affecting growth	a lecture + laboratory	Exams, exams
13	2Theoretical 2 practical	Nutritional nee of breedi animals, the eff of nutritio needs reproduction a fertilization animals (ener protein, fa mineral salts a vitamins)	Knowing t nutritional nee necessary to ca out the fertilizati and reproducti process and t importance of t process on t economy of t producing count	a lecture + laboratory	Exams, exams
14	2Theoretical 2 practical	Water and importance nutrition	Know t importance water and impact on t animal kingdom	a lecture + laboratory	Exams, exams
15	2Theoretical 2 practical	Some metabo and nutritio diseases th affect rumina animals (bloati bloating, m fever, eclamps mineral s	Knowing t most common diseases th affect ruminants how to d with the	a lecture + laboratory	Exams, exams

		deficiency, vitamin deficien	and findi 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 fee industry** **Author: Muhammad Ali Mal Al-Rubaie**
Main references (sources)	**Animal nutrition** **Author: Dr. Abdel Han Mohamed Abdel Hamid**
Recommended books and references (scient journals, reports...)	**Animal nutrition** **Author: Dr. Abdel Han Mohamed Abdel Hamid**
Electronic References, Websites	**animals of Agricultural scienc 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.ooaa@yahoo.com**	
128. Course Objectives	
Course Objectives	**1- Students gain knowledge of the nature of meat from an academic and professional perspective**

	2-Understanding the nature of the work of food factories and slaughterhouses from a technological and health perspective at the global and local levels **3-Learn the types and methods of preservation and manufacturing of son meat products** **4- Developing their awareness regarding food industries, their importanc types and stages of examination** **-5-Knowledge of manufacturing, food preservation, balanced nutrition ar their relationship to humans.** **6-Identifier of the chemical composition of meat** **7- Knowledge of food spoilage and spoilage** **8-The student knows how to benefit from manufacturing secondary products** **9-Distinguish between meat processing methods and preservation methoc** **10-Knowledge of modern technology for slaughterhouses**

129. Teaching and Learning Strategies

Strategy	**1 - Teach students how to obtain scientific resources from the library as well as from t 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 i 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.**

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	1Theoretical 3 practical	Methods of preserving meat	Preservation by smoking: Smoking a sample of meat	A lecture + Laboratory	‹Examinations Quiz
sixth	1Theoretical 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	1Theoretical 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	1Theoretical 3 practical	Spoilage and spoilage of meat	Preserving meat by freezing	A lecture + Laboratory	‹Examinations Quiz
ninth	1Theoretical 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	1Theoretical 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	1Theoretical 3 practical	Fish evaluation. Nutritional value of fish, ways to preserve fish	Sausage and hamburger industry	A lecture + Laboratory	‹Examinations Quiz
Twelveth	1Theoretical 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	1Theoretical 3 practical	Study of the chemical composition of broiler chickens, turkeys, quail, laying hens, and eggs	Fishmeal industry	A lecture + Laboratory	‹Examinations Quiz
Fourteenth	1Theoretical 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	1Theoretical 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 mea 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, wh include cows, sheep, goats, buffalo, and camels, and the ability conduct genetic tests, breeding, methods of performing them, and h technology in order to reach the most accurate results.** **• At the end of the semester, the student learns about the parts components of the male and female reproductive system, its anato how it works, the endocrine glands, hormones, the estrus cycle, and h the process of fertilization, pregnancy, childbirth, newborn care, milk production takes place.** **• The student's knowledge of the history of reproductive science, history of artificial insemination, and its importance in gen improvement of farm animals for the purpose of increasing product and the ability to perform artificial insemination technology, as wel the rest of the reproductive techniques related to genetic improvemen**				
141. Teaching and Learning Strategies					
Strategy	**1- Students understand how to obtain scientific sources from the library as well 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**	**laboratory**	**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 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 + laboratory**	**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 + laboratory**	**Exams + Quiz**

Eleventh	**2 Theoretical 3 practical**	**How fertilizati occurs, wheth inside the bo or outside t body, and t changes af 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	Laboratory	Quizzes	Final Exam
As (35%)	As (15%)	As (10%)	(40%)

144. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Animal Breeding and Improvement (2003)**

	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: Poultary 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	• **At the end of the semester, the student** have a basic understanding of pou diseases in farm animals, which incl broiler chickens, laying hens, ducks, various domestic birds, and the ability conduct tests to find out the diseases t affect poultry animals of different ages. • **At the end of the semester, the stud** learns about treating sick animals us internationally known scientific and hea methods • **The student's knowledge of the history** development of poultry pathology, ea control of diseases that affect them, preventing thei
153. Teaching and Learning Strategies	
Strategy	**1 -Teach students how to obtain scientific resources from the library as well as from the Internet** **Early onset of diseases.** **How to distinguish between reliable and non-reliable sources.** **2 - Using illustrative means during the lecture, such as a power po presentation using a projector, and providing students with mo**

	educational videos, which increases Their understanding of the topics. – 3-Asking students questions from time to time for the purpose of th 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-theovy 3 practice**	**Classification poultry disea according to t pathogen a addressing the m important nutritio deficiency diseases a methods of preventi them, especia**	**Identification and fi diagnosis in breeding ha of some diseases th affect poultry, includi diarrhea and cholera**		**Lectu e And Lab .**
The second	**=**		**Bacterial diseases such diarrhea, paratypho and fowl cholera**		**=**
The third	**=**	**diseases that cau vitamin deficiency.**			**=**
The four	**=**	**Diagnosis a treatment of t following diseas infectious avian f mycoplasma, CR Escherichia coli, a how to limit th spread. Chick influenza disease loo**	**Identifying the disea Mycoplasma, Escherich and infectious col Autopsy of infect poultry**		**=**
The fife	**=**	**Field identification poultry infected w viral diseases such chicken influenza**	**Field diagnosis of fun diseases and how to tr and control them**		**=**

		Historical types ovi strains that		
The seven	=	cause the disea clinical signs of t disease in poultry a humans, the danger the disease to huma and methods prevention.	Fungal diseases, how diagnose them, treat the and control methods	=
				=
				=
The eight	=	Identify the m important disea caused by inter parasites and th methods of spre such as coccidiosis a	Identification a laboratory diagnosis internal parasites th infect poultry and th treatment	=
The nine	=	tapeworms		=
		An introduction to t		
The ten	=	most importa diseases caused metabolism within t body of chickens, su as gout, and how treat them	ts diagnosis is like mi and lice. The m important metabo diseases and how diagnose, treat, and lir their spread (go herniated tendon, fa liver, cage paralysi	=
			dentify in the field t most important proble	=
		Identify and carry o	that result fr	
The eleve	=	disinfection in the fi and learn h important it is	mismanagement, such gout	=
		controlling disea transmission	Diseases resulting fr breeding errors, th	
n			causes, and limiting th	=

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

155. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, 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	**• 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 natu and artificial hatching** **• The student learns about the elements of hatching, which are humidity, ventilation, temperature, and stirring, and because of th great importance for hatching.** **• The student's knowledge of the contents of the egg and the changes that occur to it duri the process of embryo formation inside it** **• Knowing the developments that occur in th egg every day of hatching** **• Knowing the characteristics of the flock fr which the eggs are taken for hatching and it great importance for hatching.** **• Know the specifications of hatching eggs** **• The student learns how to treat hatched chicks**

165. 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 between reliable and non-reliable sources.** **2 - Using illustrative means during the lecture, such as poi 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 th 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 ski

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 hatchi industry and t history of development	Learn about the history and development of t hatching industr 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 fo hatching, treatment of egg in the mothers' fields and durin transportation Natural and artificial hatchin methods	Knowing t conditions for eg prepared f hatching and h to deal with eg prepared f hatching knowing t differences between natu and artific hatching method	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 abo hatching machi and t specifications these machines		
4	1Theoretical 3 practical	The basic components of t hatching proces The mechanis of operati of t cooling, humidity, ventilatio and stirri system inside t hatching machines	Knowing what a the necessa elements for t hatching proce such temperature, humidity, stirri and ventilation	a lecture + laboratory	Exams, exams
5	1Theoretical 3 practical	Stages of embry development in eggs Conditions th must be met eggs prepared f hatching	Knowing t stages of embr development fr the egg to t hatching stage a what conditio must be met complete t hatching process	a lecture + laboratory	Exams, exams
6	1Theoretical 3 practical	Examination eggs, periods embryo lo hatching mechanics, abnormal conditions of t embryo	Knowing t necessary tests be performed eggs before t hatching proce including opti examination, addition	a lecture + laboratory	Exams, exams

			knowing t abnormal conditions of t 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 f hatching	Identifying t most importa characteristics fertility in chicke prepared f hatching and wh are the factors th affect the hatchi process and wh placing eggs in e dishes. Knowi the appropria direction for t egg prepared f hatching and h long is t appropriate peri to complete t hatching process	a lecture + laboratory	Exams, exams
8	2Theoretical 3 practical	Reasons for t low hatchabil rate and facte affecting t fertilization ra in eggs prepar for hatching	Knowing t reasons that le to a decrease in t hatchability rate poultry and wh are the facte affecting t percentage hatchlings prepared f hatching	a lecture + laboratory	Exams, exams
9	1Theoretical 3 practical	Daily stages embryonic development	Knowing the da embryonic developments th occur in the eg every day of t	a lecture + laboratory	Exams, exams

			hatching proc for a period of days for chicke and the peri varies according the type of bi prepared f hatching.		
10	1Theoretical 3 practical	Quail egg production, economic importance, scientific foundations followed In egg productic Daily stages embryonic development	Learn about cr cultivation methods, fe manufacturing methods, a manufacturing conditions that a available in t article	a lecture + laboratory	Exams, exams
11	1Theoretical 3 practical	Hatching and quality control i the poultry industry Embryonic membranes a stages of embr destruction during hatching	Knowing the typ of embryonic membranes of th egg prepared for hatching The stages which embryos a destroyed and h they a treated	a lecture + laboratory	Exams, exams
12	1Theoretical 3 practical	The m important commercial eg producing bree standard ra and schedules feed consumpti during the e production	Knowing the m important commercial bree that produce eg of econon importance to t producing count	a lecture + laboratory	Exams, exams

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

		process	What are the m important mode technologies in t 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 Agricultu horticulture, forestry, fishe nutrition		
Main references (sources)			Hatching and modern poultry management Dr. Muhammad Al-Hajami Dr. Muhammad Al-Jalawi		
Recommended books and references (scient journals, reports...)			Hatching in poultry The author is Dr. Tariq An Obaid		
Electronic References, Websites			animals of Agricultural scienc 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 t 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 i 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	1Theoretical 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	**• At the end of the semester, the student will have knowledge of fish farming** **• The student's knowledge of the importanc fish wealth and its impact on the economy o countries** **• The student learns broad methods of fish farming** **• The student learns about the types of fish t are most widespread in the world and most desired by consumers** **• The student learns about fishing methods a completely avoids overfishing** **• The student learns about fish farming and the specifications of the water available for f** **• The student learns about the analyzes of th water used for fish, such as the percentage o oxygen, transparency, and others** **• The student learns about maintaining po for raising fish.**

189. 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 between reliable and non-reliable sources.** **2 - Using illustrative means during the lecture, such as poi 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 th 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 ski**

190. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1Theoretical 3 practical	Introduction to fish farming, its economic importance and the reasons for i rapid development Fish farms and their various pa	A historical overview of fish farming and its economic importance Fish farms are divided accordin to the types foun in the area	a lecture + laboratory	Exams, exams
2	1Theoretical 3 practical	Types of fish farms, types of breeding, types ponds How to create a fish tank and its various parts	Fish farms are divided accordin to the type of fis their importance and their ability reproduce How are fish por created and th specifications	a lecture + laboratory	Exams, exams
3	1Theoretical 3 practical	Types and specifications of farmed fish (car and its types, tilapia) Breeding fish in the world, the Arab world and Iraq	Identifying t types of fi especially the m common type the world becau it possesses ma desirable characteristics over other types.	a lecture + laboratory	Exams, exams
4	1Theoretical 3 practical	Fish farming water (physicochemica specifications,	Identify water characteristics a their effect on fis How are wa	a lecture + laboratory	Exams, exams

		quantity) Equipment us in the laborato a device f measuring P dissolved C transparency, microscope a how to use examining a po water sample.	specifications determined through ma tests, includi transparency, C and pH		
5	1Theoretical 3 practical	Preparing t ponds to receiv new me maintaining t pond par cleaning, maintenance, sterilization, fertilizing, addi water.	Knowing how prepare ponds receive a new m of fish, how maintain f ponds, a sterilization a fertilization procedures.	a lecture + laboratory	Exams, exams
6	1Theoretical 3 practical	Fish hatcheries, parts, brood holding ponds Methods improving cultu water and treati unsuitable specifications f culture	Identifying f hatcheries a their various pa + methods f improving cultu water suitable f fish farming a methods f treating them	a lecture + laboratory	Exams, exams
7	1Theoretical 3 practical	Fish farming, closed systems and cages (their advantages and objectives) Breeding cag types of cag parts, ca manufacturing, materials used	Identifying methods of raisi fish and t advantages a disadvantages each method knowing t materials used making fish cag and studying t	a lecture + laboratory	Exams, exams

		industry, places put the cages	best places to pla cages		
8	1Theoretical 3 practical	Reproduction in ponds, natural reproduction, artificial reproduction Mothers' specifications, hormones us pituitary gla extraction, hormone injections	Identify the process of reproduction in fish ponds, artificial propagation, and characteristics o mothers What is availal for use reproduction a how to inj hormones	a lecture + laboratory	Exams, exams
9	1Theoretical 3 practical	Planning for the production of fingerlings Mothers' specifications, hormones us pituitary gla extraction, hormone injections	How to plan the production of fingerlings and t specifications of the mothers fron which they are taken How to inj mothers increase production	a lecture + laboratory	Exams, exams
10	1Theoretical 3 practical	Fish nutrition (requirements o protein, carbohydrates, fats, salts, minerals, and vitamins) Fish food a nutrition, fe storage, place a time of providi feed, amount food, number feeding tim	Identify the most important feed materials that ar important in feeding fish and the need for then The types of fe their stora locations, and t specifications th must be availal in the stora areas	a lecture + laboratory	Exams, exams

		factors affecti the amount food			
11	1Theoretical 3 practical	Fish farm planning, intensive farmin Preparing die how to calcula the components complementary foods	Learn how to pla fish farms and intensive farming How to prepa diets for fish needed	a lecture + laboratory	Exams, exams
12	1Theoretical 3 practical	Division of fish farm ponds, broodstock pon hatchery, and incubation Means used catching fish	Knowing how to divide fish ponds including mothe ponds, fingerling ponds, and cavia ponds + And lea about t different methods catching f in t correct wa and st away fr illegal, overfishing methods	a lecture + laboratory	Exams, exams
13	1Theoretical 3 practical	Fish diseases (definition of th disease and factors of its occurrence - sig of the disease in ponds - types of diseases) Examining fish identify inter and exter	Identify the m common f diseases in t region, treatm methods, and h to deal with th during t treatment period	a lecture + laboratory	Exams, exams

		parasitic infections using microscope			
14	1Theoretical 3 practical	Parasites, bacterial species viral species, fungal diseases, diseases resultin from infection with parasites. Diagnosing bacterial, fun and viral disea and how to tr and prevent the	Knowing the m important pathogens th cause ma diseases to f wealth a threaten the liv of fish	a lecture + laboratory	Exams, exams
15	1Theoretical 3 practical	Methods of fishi methods, preserving their flavour, preserving and marketing live fish Visit to one of t fish farms a learn about t administrative and prevent work	Knowing the mo important metho of fishing and ho to maintain the correct and healthy fish preservation + A field visit to t locations of f ponds and learni about the lat developments 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 oth inland waters Author: William Edwa**

	Meehan
Recommended books and references (scient journals, reports...)	ps://edumag.uomustansiriyah. u.iq/indx.php/mjse/article/view 90
Electronic References, Websites	animals of Agricultural scienc 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	**• At the end of the semester, the student will have mastered foundations of reproductive science in farm animals, which incl cows, sheep, goats, buffalo, and camels, and the ability to cond reproductive tests, methods of performing them, and high technolog order to reach the most accurate results as well.** **• At the end of the semester, the student learns about the parts components of the male and female reproductive system, its anato how it works, the endocrine glands, hormones, the estrus cycle, and h 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 gen improvement of farm animals for the purpose of increasing producti**

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

201. Teaching and Learning Strategies

Strategy	**1- Students understand how to obtain scientific sources from the library as well 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.**

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**	**laboratory**	**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 + laboratory**	**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 + 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,**	**Lecture + laboratory**	**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 cropes	
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	**• 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 o livestock development and its relationship t feed production** **• The student's knowledge of the importanc field crops** **• The student learns about the methods of growing fodder crops and their importance** **• The student learns about the most importa differences between the grass family and the leguminous family** **• The student learns about the importance o water resources and their relationship to fee production** **• The student's knowledge of natural pla and their importance in animal nutrition**
213. 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 between reliable and non-reliable sources.** **2 - Using illustrative means during the lecture, such as poi 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 th 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 ski**

214. Course Structure

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

	2 practical	growing fodder crops Botanical description of je and clover	different method of growing fodde crops Learn about t description cultivation of th fodder crops	laboratory	Exams
4	1Theoretical 2 practical	Production of yellow corn and its exploitation a a fodder crop Cultivation fodder crops (j alfalfa, barl soybeans)	The corn crop, it economic importance, and cultivation seaso Identifying important cro such as jet, alfal and soybeans	a lecture + laboratory	Exams, Exams
5	1Theoretical 2 practical	Cultivation and production of soybeans Silage and manufacturing stages	Methods cultivation a production soybean crops a how to bene from them Kasailig	a lecture + laboratory	Exams, exams
6	1Theoretical 2 practical	Aldrees production The m important differences between t leguminous a leguminous families	Hay productio the econon importance farm animals, a the most importa differences between the cer and legumino families	a lecture + laboratory	Exams, exams
7	1Theoretical 2 practical	Concentrated fe materials, grain and factors affecting them Botanical description yellow corn a field follow-up	Identify concentrated fe materials and th importance feeding fa 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 c 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 f students	the nutritio value of this plan		
14	1Theoretical 2 practical	Views about natural pasture (information network) Watch mode scientific fil about crop far (Information Network)	Identify the typ of pastures fou in the geographi area and wat scientific fil about those plan	a lecture + laboratory	Exams, exams
15	1Theoretical 2 practical	Water resource pasture animal care Watch scientific films abo feed manufactu ng (Informat n Networ	The importance water resources and how to bene from them The importanc of fodd and metho of preservi it	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 Scienc
Recommended books and references (scient journals, reports...)	Forage crops book Author: Abdullah Mahmou 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 classroomsin 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	**• 1- For the student to become familiar with economics, types economic systems and laws, types of economics, and economic activit and linking them to agricultural and animal production.** **2- The student learns the basic principles of agricultural econom especially animal production, production factors, demand and sup for animal products, factors affecting them, elasticity and its types.** **3- . Proper employment of the factors of production, which are la capital, labor, organization or management, and the elements agricultural production** **4- The student should know the economic feasibility study for livest projects, types of markets, agricultural production functions, and h to achieve the highest ideal levels of production and exploitation natural human resources.**
225. Teaching and Learning Strategies	
Strategy	**1- Students understand how to obtain scientific sources from the library as well a 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 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 project management**	**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	