

Academic Program Description Form

University Name: Al-Furat Al-Awsat Technical University

Faculty/Institute: Al-Musaib Technical College

Scientific Department: Department of Animal Production Techniques

Academic or Professional Program Name: Bachelor of Animal Production Techniques

Final Certificate Name: Bachelor of Animal Production Techniques

Academic System: Courses

Description Preparation Date: August 30 th 2024

File Completion Date: September 30 th 2024

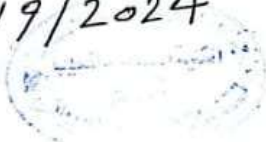
Signature:



Head of Department Name:

Asst. Prof. Dr. Kadhim Obaid Mutar

Date: 30/9/2024



Signature:



Scientific Associate Name:

Prof. Dr. Nabil Hameed Abdulmajeed

Date:

معاون المعهد للعلوم العلمية
والدراسات العليا

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The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Dr. Hayder Rahman Dawood

Date:

Signature:



Approval of the Dean

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1. Program Vision

The Department of Animal Production Techniques aspires to be a pioneering scientific edifice at the university in the field of achieving excellence in agricultural and educational research. To embody this vision, the department seeks to explore areas of scientific and cognitive development in agricultural and veterinary sciences and to keep them in line with international agricultural education standards to ensure quality and a high academic level, as well as to encourage research. It is essential to encourage the creative scientific research in order to supply all the needs of society with skillful graduates characterized by high readiness to work and excellence in the fields of livestock sciences.

2. Program Mission

The mission of Department of Animal Production Techniques is to provide a outstanding educational, intellectual and research environment suitable for a promising future in career of agricultural science engineering in Iraq.

This will be achieved by effectively contributing in preparation the graduates who are qualified with professional and academic knowledge along with capabilities and skills which are necessary to practice the profession of management and supervision in farm facilities and animal fields based on professional and ethical manners. This procedure is able to compete the job market, as well as encouraging scientific research through a high-quality program in accordance with international practices that contribute to activating community partnership, achieving food security, and activating the concept of sustainable development.

3. Program Objectives

The program aims to prepare a technical staffs who are able to of carrying out the tasks of animal production programs through their professional qualifications in managing and improving animal production (ruminants, poultry, and fish). This arises from preparing scientific employees who are characterized by keeping pace with scientific development in the field of animal production, which in turn contributes to the development of the agricultural sector.

4. Program Accreditation

Not

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5. Other external influences
Not

6. Program Structure				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	67	165		basic
College Requirements	67	165		basic
Department Requirements	67	165		basic
Summer Training	-----			2nd and 3th academic classes
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
1st academic year	ANPT1	Principles of Animal Production	30	45
2nd academic year	ANPT2	Ruminants Physiology	30	45
3th academic year	ANPT3	Poultry Hatcheries	30	45
4th academic year	ANPT4	Genital Diseases and Obstetrics	15	45

8. Expected learning outcomes of the program	
Knowledge	
1- Working in the rearing	- Consolidating the spirit of transparency and integrity in work

<p>barns of calves, sheep and goats.</p> <p>2- Working in poultry farms.</p> <p>3- Working in fields of fish propagation and breeding.</p> <p>4- Working in broiler breeders farms and poultry hatcheries.</p> <p>5- Working in research centers of small animal houses.</p> <p>6- Working in apiaries.</p>	<p>is required for profession of agriculture and animal management.</p> <p>- Guidance the student to the importance of the agricultural profession in practical life and improving animal production.</p>
<p>Skills</p>	
<p>1- Mastering the procedures of artificial insemination and genetic improvement of livestock.</p> <p>2- dissemination the animal health awareness among farmers and animal farmers.</p>	<p>Proficiency in working at public and private sectors.</p>
<p>1-Good performance of agricultural investment and livestock projects</p> <p>2-Enabling the student to acquire skills related to providing animal welfare</p> <p>3-Empowering the student with the scientific method of dealing with animals and feeding them</p>	<p>- Knowledge about the foundations of animal production, as well as the ability to manage of different types of productive animals.</p> <p>- Clarifying the principles and objectives of animal production</p> <p>- Knowledge about how to deal with agricultural animals, their behavior, and respecting their well-being.</p> <p>- Making feed mixtures, knowledge about procedures for drawing blood and milk samples, and performing artificial insemination approaches.</p>
<p>Ethics</p>	
<p>1- Preparing of qualified technical staff in the specialty of animal production.</p> <p>2- Identify the species of farm animals and their productive characteristics.</p>	<p>- Carrying out the analyzing of agricultural animal feeds</p> <p>- Documentation process of economic profits resulting from animal husbandry</p>
<p>1-Qualification the student about the importance of preserving livestock, biodiversity and the local environment.</p> <p>2-Documenting of management processes with maintained records</p>	<p>- Professional supervision of agricultural animal farms</p>

9. Teaching and Learning Strategies

- 1- Lecture
- 2- Field training
- 3- Seminars
- 4- Methodological training
- 5- Applied and laboratory training

10. Evaluation methods

- 1- Oral exams
- 2- Pre-and post-tests
- 3- Semester exams
- 4- Final exams
- 5- Practical evaluation

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
PhD, (Prof)	Veterinary medicine	Reproductive physiology			✓	
PhD, (Prof)	Agricultural Sciences	Fish Nutrition			✓	
PhD, (Asst.Prof)	Agricultural Sciences	Poultry Production			✓	
PhD, (Asst.Prof)	Agricultural Sciences	Poultry Nutrition			✓	
PhD, (Asst.Prof)	Agricultural Sciences	Animal Breeding			✓	
PhD, (Asst.Prof)	Agricultural	Reproduction			✓	

	Sciences	Physiology				
PhD, (Asst.Prof)	Chemistry	Clinical Chemistry			✓	
PhD, (Asst.Prof)	Agricultural Sciences	Fish Diseases			✓	
PhD, (Asst.Prof)	Agricultural Sciences	Fish Nutrition			✓	
PhD, (Asst.Prof)	Agricultural Sciences	Poultry Nutrition			✓	
PhD, (Lecturer)	Agricultural Sciences	Animal Breeding			✓	
PhD, (Lecturer)	Agricultural Sciences	Animal Breeding			✓	
PhD, (Lecturer)	Agricultural Sciences	Poultry Physiology			✓	
PhD, (Lecturer)	Agricultural Sciences	Reproductive Physiology			✓	
MSc (Asst.Prof)	Veterinary Medicine	Animal Physiology			✓	
MSc (Asst.Prof)	Agricultural Sciences	Reproductive Physiology			✓	
MSc, (Lecturer)	Agricultural Sciences	Poultry Nutrition			✓	
MSc, (Lecturer)	Agricultural Sciences	Poultry Physiology			✓	
MSc, (Lecturer)	Biology	Animal Physiology			✓	
MSc, (Asst. Lecturer)	Agricultural Sciences	Poultry Physiology			✓	
MSc, (Asst. Lecturer)	Agricultural Sciences	Animal Nutrition			✓	
MSc (Asst. Lecturer)	Agricultural Sciences	Meat Science			✓	
MSc, (Asst. Lecturer)	Agricultural Sciences	Animal Nutrition			✓	

MSc, (Asst. Lecturer)	Veterinary medicine	Animal Diseases			✓	
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Professional Development

Mentoring new faculty members

The new faculty members are defined as members who are newly employed by the university and are within their first year of academic career . A faculty member in his second academic year is eligible to participate if he /she is nominated by the deanship and department.

Professional development of faculty members

- 1-Determining the department's needs for faculty members and their specializations is based on vision and goals of scientific department.
2. The existence of plans in training programs to develop the skills and abilities of faculty members.
3. The existence of databases related to the qualifications and experiences of faculty members.
4. The faculty member's contribution in areas is that serves the department according to field of specialization.
5. The quorum of a faculty member in the department is determined in accordance with the instructions.
6. The department works to provide the research requirements for teaching staffs.
7. Providing appropriate conditions and administrative and educational requirements within the department.
8. Enrichment the clear and detailed instructions that include using of modern teaching and learning methods within the department.
9. The department grants facilities to a faculty member to participate in conferences, development courses, and training workshops.

12. Acceptance Criterion

The central admission policy of students is obvious and specific which is announced by the department. Priority in admission of students is given to preparatory school graduates/scientific branch. However, graduates from the vocational schools (agricultural specialization) are accepted through a differentiation system according to the their academic average.

13. The most important sources of information about the program

Syllabus guide for Agricultural and Veterinary Specializations issued by the

Technical Education Foundation in 2011.

14. Program Development Plan

The Department of Animal Production Techniques works to develop the student's practical skills and increases his/her confidence in scientific abilities. The curricula are yearly updated at 20% by the subject lecturer , and periodic updating of curricula is agreed by the Deans' Committee.

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
1st academic year	ANPT1	Principles of Animal Production	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2nd academic year	ANPT2	Ruminants Physiology	Basic	√	√	√	√	√	√	√	√	√	√	√	√
3rd academic year	ANPT3	Poultry Hatcheries	Basic	√	√	√	√	√	√	√	√	√	√	√	√
4th academic year	ANPT4	Genital Diseases and Obstetrics	Basic	√	√	√	√	√	√	√	√	√	√	√	√

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

Course Description Form

1. Course Name: Principles of Animal Production					
2. Course Code: ANPT1					
3. Semester / Year: 2023-2024					
4. Description Preparation Date: March 2024					
5. Available Attendance Forms: weekly attendance					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75 hours (5 hours weekly x 15 weeks)/ 3 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Asst. lecturer. Rasha Ali Judi					
Email: Rasha.A@atu.edu.iq					
8. Course Objectives					
Course Objectives		1-Familiarizing the student with the species and characteristics of farm animals, and how to manage animal fields. 2-The student will be able to establish animal farms and barns and study the economic feasibility each of them.			
9. Teaching and Learning Strategies					
Strategy		Lecture, laboratory, summer training			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	5	Economics of animal production	the economic importance of animal production and its role in agriculture.	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
2	5	Economics of animal production	Livestock production in Iraq, its reality and possibilities and problems; and how to promote livestock in Iraq	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
3	5	Production of beef and milk cows	Origin of cows, location in the animal kingdom international breeds of cows, Iraqi cows	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
4	5	Sheep and goat production	The origin of sheep, international and local breeds of sheep and goats	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
5	5	cattle production	The origin of the buffalo, international and local breeds of buffalo, general, physiological and reproductive characteristics, types of buffalo and its meat and milk production	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
6	5	Animal breeding	Factors affecting productive efficiency cows and sheep (genetic and environmental factors)	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
7	5	Poultry Production	Economic importance of poultry industry	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
8	5	Importance of poultry	Types of layer and meat type chicken breeds and	Giving lectures and field observations	Oral exams, discussions

			dual-purpose chickens		, direct questions and short test
9	5	management of Poultry production projects	Poultry industry projects (hatcheries, poultry farms, broiler breeders foundation farms)	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
10	5	poultry rearing	principles of poultry rearing	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
11	5	Poultry slaughterhouse management	Design of poultry slaughterhouses	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
12	5	poultry products Technology	The productive importance of turkeys and waterfowl breeds	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
13	5	fish production	Fish, their types, classification and locations	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
14	5	fish production	The external appearance and biological measurements of fish	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
15	5	fish physiology	fish environment	Giving lectures and field observations	Oral exams, discussions , direct questions and short test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily

preparation, daily oral, monthly, or written exams, reports etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1-Hamdi Abdel Aziz Al-Fayad and Saad Abdel AlHussein Naji. 2011 Poultry products Technology, Baghdad University Press, Iraq . (in Arabic) 2- Zuhair Fakhri Al-Jalili and Jalal Elia Al-Qass. 1987.Sheep and goat production. Baghdad University press, Iraq. (in Arabic) 3- Muhammad Riyad Abbas. 1990. Dairy cattle cattl production. . Mosul University Press, Iraq . (in Arabic) 4-Abdel Hamid Muhammad Abdel Hamid.1994. Scientific foundations of fish production and care. Zagazig University Press, Egypt.. (in Arabic)
Recommended books and references (scientific journals, reports...)	1-Animal Science Journal 2-Journal of Animal Science
Electronic References, Websites	1-Google scholar 2- researchGate

Course Description Form

1. Course Name: Ruminants Physiology					
2. Course Code: ANPT2					
3. Semester / Year: 2023-2024					
4. Description Preparation Date: March 2024					
5. Available Attendance Forms: weekly attendance					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75 hours (5 hours weekly x 15 weeks)/ 3 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Fawzia Jamil Hassan Email: fowzeia.jameel@atu.edu.iq					
8. Course Objectives					
Course Objectives	1-Familiarizing the student with the importance of the general functions of the various animal body systems , types of glands and glands functions. 2- The student will be able to deal with these animal body systems by scientific and practical manner.				
9. Teaching and Learning Strategies					
Strategy	Lecture, laboratory, summer training				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Basics of animal cell functioning	Introduction to physiology, cell, physiology of cell contents	Giving lectures and field observations	Oral exams, discussions , direct questions and short test

2	5	Endocrine physiology	Endocrine glands (pituitary gland, thyroid gland, pancreas gland, sex glands)	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
3	5	Endocrine physiology	Endocrine glands (pituitary gland, thyroid gland, pancreas gland, sex glands)	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
4	5	Mechanism of the circulatory system	heart, cardiovascular system and its contents, heart function, regulation of heart function, blood pressure	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
5	5	Mechanism of the circulatory system	heart, cardiovascular system and its contents, heart function, regulation of heart function, blood pressure	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
6	5	Mechanism of the respiratory system	The mechanism of the lungs, the size of the lungs, regulating breathing	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
7	5	Mechanism of the respiratory system	The mechanism of the lungs, the size of the lungs, regulating breathing	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
8	5	The physiology of digestion and nutrition	The digestive system, kinetics of the digestive tract, the motility of the stomach, the intestine, the secretions of the digestive system	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
9	5	The physiology of digestion and nutrition	The digestive system, kinetics of the digestive tract, the motility of the stomach, the intestine, the secretions of the digestive system	Giving lectures and field observations	Oral exams, discussions, direct questions and short test

10	5	Neuron physiology	Nervous system, electrical signals in the nervous system	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
11	5	The muscular system and its mechanism	contraction and energy balance in the muscles, the effect of exercise and age on muscles	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
12	5	Components of urinary system and excretion nitrogenous waste	Kidneys, kinetics of water in the kidney, renal blood flow	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
13	5	Components of urinary system and excretion nitrogenous waste	Kidneys, kinetics of water in the kidney, renal blood flow	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
14	5	Understanding components physiology of the male reproductive system of agricultural animals	The male and female reproductive systems, spermatogenesis and oogenesis	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
15	5	Understanding components physiology of the male reproductive system of agricultural animals	The male and female reproductive systems, spermatogenesis and oogenesis	Giving lectures and field observations	Oral exams, discussions, direct questions and short test

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

Main references (sources)

1-Dhia Hassan Al-Hassani and Sadiq Muhammad Amin Al-Hittite. 1990. Animal physiology. Univers Baghdad Press, Iraq. (in Arabic)
2- Natiq Mahmoud Hamoud Al-Akkam and Khair Al-Din Mohieddin. 1984. Animal Physiology. Mos

	University Press. Iraq.(in Arabic) 3-Guyton, A. C. & Hall, J. E. (1997). Text book of medical physiology. 6th. ed. Saunders company. London.)
Recommended books and references (scientific journals, reports...)	1-Animal Science Journal 2-Journal of Animal Science
Electronic References, Websites	1-Google scholar 2- researchGate

Course Description Form

1. Course Name: Poultry Hatcheries					
2. Course Code: ANPT3					
3. Semester / Year: 2023-2024					
4. Description Preparation Date: March 2024					
5. Available Attendance Forms: weekly attendance					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours (4 hours weekly x 15 weeks)/ 2 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Asst.Prof.Dr. Karrar Imad Abdulsahib Al-Shammari					
Email: Karrar.Al-Shammari@atu.edu.iq					
8. Course Objectives					
Course Objectives		1-Familiarizing the student with the importance of the natural or artificial hatching of eggs, the components of the hatcheries, and the special conditions for hatchery operating. 2- The student will be able to manage the hatcheries and marketing the eggs and chicks by scientific manner that achieves the highest productivity.			
9. Teaching and Learning Strategies					
Strategy		Lecture, laboratory, summer training			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	4	Historical introduction into hatching egg incubation	Hatching concept , methods of incubation , Types of Hatches.	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
2	4	Parts of commercial poultry hatchery	Design and building the hatchery , tools and equipments.	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
3	4	Management the incubation conditions of hatching eggs inside hatchery	Adjustment the temperature inside hatchery .	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
4	4	Characteristics optimal hatching eggs	Selection of hatching eggs (size,shell,shape, and color)	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
5	4	Mangement of hatching eggs during the storage	Care and storage of hatching eggs before incubation .	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
6	4	Tracking and understanding the daily events of embryonic development of avian species	Embryonic development of chicks .	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
7	4	Tracking and understanding the daily events of embryonic development of avian species	Embryonic development of chicks .	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
8	4	Importance of temperature, humidity , turning and ventilation to fulfill the hatching process	Essential factors for incubation of eggs in hatchery .	Giving lectures and field observations	Oral exams, discussions , direct questions and

					short test
9	4	Importance of temperature, humidity, turning and ventilation to fulfill the hatch process	Essential factors for incubation of eggs in hatchery .	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
10	4	Importance of extraembryonic membranes in avian embryonic development	Extra embryonic membranes and its function, critical period, mortality during incubation.	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
11	4	Genetic and non-genetic factors influence hatchability and fertility of hatching eggs	Factors affecting fertility and hatchability.	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
12	4	malpositioning hatched eggs and influence on internal and external chick quality and chick deformity	Hatching problem, abnormal position of embryo .	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
13	4	Effect of maternal nutrition on chick development	Nutrition and incubation performance, embryonic nutrition	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
14	4	Student assignments about writing scientific reports visiting a commercial hatchery	Discussion of student reports on hatching eggs .	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
15	4	Student assignments about writing scientific reports visiting a commercial hatchery	Discussion of student reports on hatching eggs .	Giving lectures and field observations	Oral exams, discussions, direct questions and short test

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	<p>1-COBB Hatchery Management Guide. 2013. COBB company.</p> <p>2-Reeman, B. M.and M. A. Vince. 1974. Development of the Avian Embryo. Halsted Press, a Division of John Wiley & Son, Inc., New York</p> <p>3-Bellairs, R. and M. Osmond. 2014. The Atlas of Chick Development. Third Edition. Elsevier press. The Boulevard, Langford Lane, Kidlington, .Oxford, OX5 1GB, UK</p>
Recommended books and references (scientific journals, reports...)	<p>1-Animal Science Journal</p> <p>2-Journal of Animal Science</p> <p>3-Poultry Science Journal</p>
Electronic References, Websites	<p>1-Google scholar</p> <p>2- researchGate</p>

Course Description Form

1. Course Name: Genital Diseases and Obstetrics					
2. Course Code: ANPT4					
3. Semester / Year: 2023-2024					
4. Description Preparation Date: March 2024					
5. Available Attendance Forms: weekly attendance					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75 hours (5 hours weekly x 15 weeks)/ 3 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Asst.Prof.Dr. Makki Khalaf Hussein					
Email: dr.makkikhalaf@atu.edu.iq					
8. Course Objectives					
Course Objectives		1-Familiarizing the student with the pregnancy importance, pregnancy period, the most important diseases associated with pregnancy and embryos, as well as the of abortion incidence. 2- The student will be able to deal with dystocia cases and treatment of various genital diseases.			
9. Teaching and Learning Strategies					
Strategy		Lecture, laboratory, summer training			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	5	Definition of genital diseases and anatomy and mechanism of the female reproductive system	Introduction in genital diseases and the physiology of female reproductive system	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
2	5	Definition of the most important infectious zoonosis	Infectious genital diseases	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
3	5	Definition of brucellosis, its cause, epidemiology, and methods of treating in animals	Brucellosis (Malta fever)	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
4	5	Definition of vaginitis, its causes, epidemiology, methods of treating it in animals	Vaginitis and other diseases affecting the female reproductive system	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
5	5	Understanding the mechanism of reproductive hormones, their balance in the blood and their effect on animal fertility	Hormonal disorder that leads to infertility	Failure of the estrus cycle anestrus	Oral exams, discussions, direct questions and short test
6	5	Definition of the estrus cycle and its stages	Failure of the estrus cycle or anestrus	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
7	5	Nutrition and genetics and their relationship to animal fertility	Nutritional and genetic causes of infertility	Giving lectures and field observations	Oral exams, discussions, direct questions and short test
8	5	causes of infertility in animals	Pathological causes of infertility that affect ovaries	Giving lectures and field observations	Oral exams, discussions, direct questions and

					short test
9	5	causes of the recurrence of estrus and its treatment	Recurrence of oestrus in cows and problems breeding and management	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
10	5	Causes of infertility in sheep and anatomy of the reproductive system of sheep	reproductive physiology sheep and sheep infertility and its anatomical causes	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
11	5	The most important diseases affect the female reproductive system of sheep.	The causes, changes, pathological lesions that affect the reproductive system of sheep	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
12	5	Fundamentals theriogenology , animal delivery, anatomy of the animal embryo	Introduction theriogenology neonatal anatomy	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
13	5	Signs of labor before birth	Birth and signs of birth	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
14	5	Physiological mechanics of animal delivery and effect of sex hormones on it	Time to intervene in natural delivery	Giving lectures and field observations	Oral exams, discussions , direct questions and short test
15	5	The causes that lead to dystocia and how animals give birth during dystocia	Dystocia and its causes	Giving lectures and field observations	Oral exams, discussions , direct questions and short test

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Ismail Kazem Ajam. 1990. The reproductive physiology and artificial insemination. Baghdad University Press. Baghdad.(in Arabic)
Recommended books and references (scientific journals, reports...)	1-Animal Reproduction Science Journal 2-Journal of Animal Science
Electronic References, Websites	1-Google scholar 2- researchGate