University of Mosul

College of Veterinary Medicine

Courses Description

University Name: University of Mosul

Faculty/Institute: College of Veterinary Medicine

Academic System: Semesters

Description Preparation Date: 1/9/2024

File Completion Date: 1/9/2024

Signature:

Head of Department Name:

Prof. Dr. Dhafer Mohammad Aziz

Date: 1/9/2024

Signature:

Scientific Associate Name:

Prof. Dr. Raad Abdul Ghani Bashir

Date: 1/9/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Prof. Dr. Ammar Mahmood Ahmed

Date: 1/9/2024

Signature:

Approval of the Dean

Prof. Dr. Dhafer Mohammad Aziz

Courses Description (Access the link to each course through the code of each course)				
Year/Level	Course Code	Course Name	Credit Hours	
			Theoretical	Practical
First Year First Semester **Polonga Process**	UOM1021	English language	2	-
	UOM1040	Democracy and Human rights	2	-
	VET1010	General Biology	3	2
	VET1020	Skeleton Anatomy	3	3
	VET1030	Animal Management	3	2
	VET1040	Biorisk Management	1	-
First Year Second Semester **Polonga Process**	UOM1010	Arabic language	2	-
	UOM1030	Computer	2	2
	VET1050	General Chemistry	2	2
	VET1060	Muscular Anatomy	3	3
	VET1070	Animal Husbandry	2	-
	VET1080	Poultry Management	1	2
Second Year First Semester	VEA2101	Anatomy - 1	2	2
	VEH2105	Animal Nutrition - 1	2	2
	VEP2104	Biochemistry - 1	3	2
	VEA2102	Histology - 1	2	3
	VEP2103	Physiology - 1	4	2
	VEH2106	Genetics	2	-
Second Year Second Semester	VEA2107	Anatomy - 2	2	2
	VEH2111	Animal Nutrition - 2	2	2
	VEP2110	Biochemistry - 2	3	2
	VEA2108	Histology - 2	2	3
	VEP2109	Physiology - 2	4	2
	VEH2113	Statistics	2	2
	VEA2112	Embryology	2	-
	VEA2114	Baath Party Crimes	2	-
Third Year First Semester	VEM3104	General Microbiology	3	2
	VED3100	General Pathology	3	3
	VEM3102	Helminthology	3	2
	VEM3115	Immunology	2	2
	VEP3101	Pharmacology - 1	3	2
	VEH3116	Toxicology	2	-
Third Year Second Semester	VEM3122	Protozoa and Arthropod	3	2
	VEM3124	Special Microbiology	3	2
	VED3120	Systemic Pathology	3	3
	VEP3121	Pharmacology - 2	3	2
	VEM3126	Virology	2	2
	VEC3127	Veterinary Clinic	-	2
Fourth Year First Semester	VED4119	Clinical Pathology - 1	1	2
	VED4113	Female Fertility	2	2
	VED4117	Infectious Diseases - 1	3	-
	VED4110	Internal Medicine - 1	3	-
	VED4111	Morbid Anatomy - 1	1	2
	VED4114	Poultry Diseases - 1	2	2
	VED4115	Surgery - 1	3	2
	VEC4112	Veterinary Clinic - 1	-	4

Fourth Year Second Semester	VED4127	Clinical Pathology - 2	1	2
	VED4126	Infectious Diseases - 2	3	-
	VED4128	Internal Medicine - 2	3	-
	VED4121	Morbid Anatomy - 2	1	2
	VED4124	Poultry Diseases - 2	2	2
	VED4125	Surgery - 2	3	2
	VEC4123	Veterinary Clinic - 2	-	4
	VED4122	Veterinary Obstetrics	2	2
	VED4107	Zoonotic Diseases	2	-
Fifth Year First Semester	VED5110	Fish Diseases	2	2
	VED5113	Internal Medicine - 1	3	-
	VEC5111	Male Fertility	1	2
	VEH5114	Meat Hygiene	2	2
	VEC5115	Surgery - 1	2	2
	VEC5112	Veterinary Clinic - 1	-	14
Fifth Year Second Semester	VED5120	Internal Medicine - 2	3	-
	VEH5121	Milk Hygiene	2	2
	VEC5117	Reproductive Biotechnology	1	2
	VEC5123	Surgery - 2	2	2
	VEC5118	Veterinary Clinic - 2	-	12
	VEC5119	Veterinary Ethics	1	-
	VED5122	Veterinary Forensic Medicine	1	-
	VEC5125	Research Projects	1	1
	VEC5109	Summer Clinic	-	15

Module Information
معلومات المادة الدراسية

Module Title	**General Biology**	**Module Delivery**	
Module Type	**Core**		☒ **Theory**
Module Code	**VET101**		☒ **Lecture**
ECTS Credits	**8**		☒ **Lab**
SWL (hr/sem)	**200**		☐ **Tutorial**
			☐ **Practical**
			☐ **Seminar**

Module Level	UGx11 1	**Semester of Delivery**	1
Administering Department	Microbiology	**College**	College of Veterinary Medicine
Module Leader	Prof.Dr.wasan Alobaidii	**e-mail**	wasenamkad@uomosul.edu.iq
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Prof.Dr.safwan albaroodi	**e-mail**	safwanyousif@uomosul.edu.iq
Peer Reviewer Name	Dr.Saba abdelraheem	**e-mail**	Sabaraheem@uomosul.edu.iq
Scientific Committee Approval Date	15/9/2024	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Important Concepts for Understanding origin of life 2. Structure of cell and function 3. This course deals with the basic Structure of tissues. 4. Main structure of prokaryotic and eukaryotic 5. To understand Mitosis and Meiosis 6. To understand the Nucleic acid types
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Distinguish between prokaryotic and eukaryotic. 2. Understand the differences between types of tissues. 3. Describe the basic structure of the cells. 4. Distinguish between different parasites. 5. Describe the microscope. 6. Define what is meant by genes and chromosomes. 7. Discuss types of nucleic acids. 8. Discuss the characters of bacteria and viruses.
Indicative Contents المحتويات الإرشادية	1-Laboratory Equipments 2-The Microscope 3-KingdomMonera/ Prokaryote/Bacteria 4-Kingdom Protista/ Eukaryote (unicellular)/ Mastigophora 5-Kingdom Animalia (multicellular) Invertebrates / Coelenterata / Hydra 6-Cell Division: Binary Fission, Mitosis and Meiosis 7-Types of tissues

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	teaching strategies have experienced a significant shift to meet individual student's needs and being more interactive and activity-based learning through collaboration techniques that would require participation and engagement of learners. Thus, many strategies evolved as an attempt to fulfil the objectives of the learning process, by shifting the focus from instructor-driven to learner-centered teaching strategies. Many universities/colleges do rely on the traditional textbook and memorization approach with poor students' engagement. Some attempts introduced some dynamical models for biological processes which would allow biology students to create their own models for structures. Thus, introducing simulations and modelling modules as teaching methods in biology ,Introduction of simulations and modelling is a significant transformation in biology education towards problem-based learning in undergraduate studies , Virtual tools were developed to simulate real biological characteristics on personal computers leading to better understanding of genetics concept by the students advances in science at large including technology,Advances in the field of associated techniques greatly contributed to the current knowledge on biology at systems, organs, cellular and molecular biology levels., ultimately modernizing teaching of cell biology , Further developments in the teaching mode involved the integration of multimedia technology in teaching. It was found that the introduction of multimedia technology in the teaching of biology significantly improved students' achievement , It is evident that the integration of multimedia technology and teaching has altered instructional strategies in educational institutions. Advances in computer applications and educational softwares significantly boosted the educational process. Interactive cloud computing models has been used to solve various biological problems. Such models further enriched the teaching contents and improved teaching effect

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	122	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	20% (10)	5 and 10	LO #1, #6 ,#8
	Assignments	2	6% (3)	4 and 7	LO #2, #4
	Projects / Lab.	2	10% (5)	Continuous	All
	Report	1	4% (1)	13	LO #5, #7
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction and definitions of terms
Week 2	Origin of life
Week 3	Characteristics of living organisms

Week 4	Kingdoms of living world
Week 5	Kingdom: Monera(prokaryotic)
Week 6	Kingdom: Protista(Eukaryotic)
Week 7	Phylum: Sarcomastigophora
Week 8	Subphylum:Vertebrata(Chordata) Class :Amphibia(frog)
Week 9	Living organisms
Week 10	Comparison between Prokaryotic and Eukaryotic cells
Week 11	Mitosis and Meiosis
Week 12	Types of living tissues
Week 13	General characters of bacteria and viruses
Week 14	Nucleic acid types and functions
Week 15	Genes and Chromosomes
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Laboratory Equipments
Week 2	The Microscope
Week 3	The Cell: Structure of cell & function
Week 4	KingdomMonera/ Prokaryote/Bacteria
Week 5	Kingdom Protista/ Eukaryote (unicellular)/ Mastigophora

Week 6	Kingdom Protista / Eukaryote(unicellular)/ Sarcodena , Ciliophora ,Sporozoa
Week 7	Kingdom Animalia (multicellular) Invertebrates / Coelenterata / *Hydra*
Week 8	Kingdom Animalia (multicellular) Invertebrates Nematoda/Ascaris , Ancylostoma
Week 9	Kingdom Animalia (multicellular) Invertebrates Trematoda/Fasciola,Schistosoma
Week 10	Kingdom Animalia (multicellular) Invertebrates Cestoda/Taenia
Week 11	Kingdom Animalia / vertebrates / Frog , Fish
Week 12	Cell Division: Binary Fission, Mitosis and Meiosis
Week 13	Types of tissues
Week 14	Bacterial staining
Week 15	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	**General biology ,2021**	Yes
Recommended Texts	Concepts of Biology	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Biorisk management**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**VET104**		
ECTS Credits	**3**		
SWL (hr/sem)	**75**		

Module Level	UGx11 1	**Semester of Delivery**	1
Administering Department	Microbiology	**College**	College of Veterinary Medicine
Module Leader	Assist.prof.Dr.Ihasn M Ahmed	**e-mail**	Ihsanahmad@uomosul.edu.iq
Module Leader's Acad. Title	Assist.Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Prof.Dr.Safwan albaroodi	**e-mail**	safwanyousif@uomosul.edu.iq
Peer Reviewer Name	Osama azaldeen	**e-mail**	Osama.abdulla@uomosul.edu.iq
Scientific Committee Approval Date	15/9/2024	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. Important Concepts for Understanding risk and biosafety. 2. Working with potentially infected animals. 3. This course deals with biological materials 4. Decontamination and waste disposal 5. To understand storage of chemicals. 6. To understand the first aid and emergency response in the laboratories.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Distinguish between biological materials 2. Understand the types of PPE. 3. Standard microbiological techniques. 4. Give a definition of Hazardous chemicals. 5. Distinguish between biosafety cabinet classes. 6. Describe first aid and emergency response in the laboratories.
Indicative Contents المحتويات الإرشادية	1- Laboratory safety symbols and hazard signs. 2- Biosafety cabinet classes :Design, Operation, ,use and misuse. 3- Standard Microbiology Techniques and Safety. 4- Safe use of (pipettes ,centrifuge , homogenizers , shakers , blenders , and sonicators ,ampoules containing infectious materials) . 5- Collection , handling and transport of diagnostic specimens. 6- Decontamination and waste disposal.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	traditional passive teaching methods may not improve laboratory practices and attitude toward biosafety and biosecurity.[6,7] Individuals working in laboratories need to understand the basic concepts of risk management to implement and adapt them to their always evolving environment. Adult education often requires a more interactive approach to be successful, by allowing a direct correlation with their current work environment. This fosters participants' engagement on issues related to the responsible conduct of science (RCS). One recognized educational method for working professionals is to implement active-learning pedagogical methods in the classroom. Developing human resources for biosafety management was achieved by formulating and implementing a series of training workshops to raise the awareness and knowledge of the biosafety and biosecurity rules among life science researchers and hospital employees working with hazardous microorganisms, samples, and genetically modified organisms. These workshops actively engage participants in the learning process, using group discussions, problem solving, case studies, role-playing, and structured learning groups. This enables all participants to promote the integration of new knowledge and best practices into their theoretical and conceptual frameworks as they learn together.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	18	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**75**		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	30% (15)	5,and 10	LO #2, and #4
	Assignments	2	4% (2)	4 and 7	LO #3 and #5
	Projects	1	3% (3)	11	LO #1
	Report	1	3% (3)	Continuous	All
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO - #6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

elivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction: Definitions & Concepts Risk, Hazard, Biorisk, Biosafety, andBiosecurity.
Week 2	Biological Materials (Bacteria, Viruses, Fungi, Parasites, Prions, Zoonotic pathogens, Toxins).
Week 3	Personal protective equipment (PPE). Types of PPE, Route of exposure to pathogens.
Week 4	Laboratory safety symbols and hazard signs.
Week 5	Risks groups and Biosafety Levels.
Week 6	Biosafety cabinet classes :Design, Operation, ,use and misuse.
Week 7	Standard Microbiology Techniques and Safety.
Week 8	Safe use of (pipettes ,centrifuge , homogenizers , shakers , blenders , and sonicators ,ampoules containing infectious materials) .
Week 9	Collection , handling and transport of diagnostic specimens.
Week 10	Decontamination and waste disposal.
Week 11	Working with potentially infected animals. General considerations.

Week 12	Hazardous chemicals (Routes of exposure, storage of chemicals, general rules regarding chemical incompatibilities.
Week 13	Toxic effects of chemicals, Explosive chemicals, Chemical spills , Compressed and liquefied gases).
Week 14	Preparedness and response to Chemical, Biological accidents: - In the Laboratories. - In the field.
Week 15	First aid and emergency response in the Laboratories.
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		Yes
Recommended Texts	The biological laboratory risk management handbook WHO-Biosafety-Manual	No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**General Chemistry**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory**	
Module Code	**VET105**			☐ **Lecture**	
ECTS Credits	6			☒ **Lab**	
SWL (hr/sem)	**150**			☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Level	UGx11 1		**Semester of Delivery**	2	
Administering Department	Physiology, Biochemistry and Pharmacology		**College**	Veterinary Medicine	
Module Leader	Elham M. Hachim		**e-mail**	elhelham91@uomosul.edu.iq	
Module Leader's Acad. Title	Assist. Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Yaareb J. Mousa		**e-mail**	yarub204@uomosul.edu.iq	
Peer Reviewer Name	Zaineb F. Saaed		**e-mail**	zainabfa1q@uomosul.edu.iq	
Scientific Committee Approval Date	1/9/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To understand atoms, molecules, and biomolecules. 2. To develop problem solving skills and understanding of principles of biochemistry. 3. The course deals with the basic concept of carbohydrates, lipids, proteins, enzymes, and vitamins. 4. This course includes biochemistry and biochemical reactions inside animal body.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Basics of biochemistry and its relationship to other basic and clinical sciences from the molecular and cellular levels to tissues, organs and various body systems. 2. Identify how animal body biomolecules integrate with each other. 3. List the main carbohydrates classification and importance to body. 4. Identify types of lipids and their functions. 5. Classify amino acids and proteins with their main function. 6. List the various biochemical tests that can be conduct. 7. Recognize the biochemical fluctuations associated with different disorders and diseases in animals.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: <u>Part A – Analytic and organic chemistry</u> • Atom

	• Types of bonds • Preparation of solutions • Molarity and molality • Aldehydes and ketones • Alcohols and carboxylic acids • Amines and amides [SSWL=6 hrs] <u>Part B - Carbohydrates</u> • Definition, Classification and Functions of Carbohydrates • Structure of Glucose • Isomerism • Mutarotation • Chemical Properties of Monosaccharides • Glycoside Formation • Derivatives of Monosaccharides • Disaccharides • Polysaccharides (Glycans) • Glycoproteins [SSWL=8 hrs] <u>Part C - Lipids</u> •Definition, Classification and Functions of Lipids • Fatty Acids • Essential Fatty Acids • Reactions of Lipids • Characterization of Fat • Triacylglycerols and Neutral Fat • Phospholipids • Glycolipids • Cholesterol • Lipoproteins • Eicosanoids • Micelles, Lipid Bilayer and Liposomes. [SSWL=6 hrs] <u>Part D – Amino acids and proteins</u>

	•General Nature of Amino Acids • Classification of Amino Acids • Modified or Nonstandard Amino Acids • Properties of Amino Acids • Biologically Important Peptides • Definition, Classification and Functions of Proteins • Structure of Proteins • Properties of Proteins [SSWL=10 hrs] **Total hrs = 30**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Encouraging the student's commitment to attendance and active participation in lectures and taking daily, semester and final theoretical and practical exams. Using educational and technological means, and the modern method in teaching the subject and referring to practical training examples. Discussion is used in lectures as an effective means of delivering the study material to students and keeping up with the latest methods, approaches and modern trends in the teaching process.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	4, 6, 8, 10	LO #1, #2, #3, #4
	Assignments	1	5% (5)	9	LO #5, #6, #7
	Projects / Lab.	1	5% (5)	Continuous	All
	Report	1	10% (10)	12	LO #1, #5 and #6
Summative assessment	**Midterm Exam**	1hr	10% (10)	10	LO #1-#5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Atom and Types of bonds
Week 2	Preparation of solutions, molarity and molality

Week 3	Aldehydes and ketones, Alcohols, carboxylic acids, amines and amides
Week 4	Classification and Functions of Carbohydrates
Week 5	Monosaccharides and Disaccharides
Week 6	Derivatives of Monosaccharides
Week 7	Polysaccharides
Week 8	Classification and Functions of Lipids
Week 9	Fatty Acids
Week 10	Lipoproteins
Week 11	General Nature of Amino Acids and Classification of Amino Acids
Week 12	Modified or Nonstandard Amino Acids
Week 13	Properties of Amino Acids and Biologically Important Peptides
Week 14	Definition, Classification of Proteins
Week 15	Functions and properties of proteins
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	General Instruction
Week 2	Preparation of solutions : solid substances
Week 3	Preparation of solutions : liquid substances
Week 4	Saponification
Week 5	Preparation of aspirin
Week 6	Qualitative analysis of carbohydrates: general test of carbohydrates
Week 7	Reducing properties of sugars

Week 8	Polysaccharide tests
Week 9	Qualitative analysis of proteins
Week 10	Specific color reactions of amino acids
Week 11	Emulsification
Week 12	Qualitative analysis of lipids
Week 13	Tests for fatty acids
Week 14	Tests for cholesterol
Week 15	Acid number
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	General, Organic, and Biochemistry. 9th Edition (2022) Katherine Denniston et al., McGraw Hill / Medical Publisher.	Yes
	Biochemistry by Pankaja Naik (Author), 6th edition (2022), Jaypee Brothers Medical Publishers Pvt Ltd.	Yes
Recommended Texts	Harper's Illustrated Biochemistry, 32nd Edition (2023) by Peter J. Kennelly (Author), Kathleen M. Botham (Author), Owen McGuinness (Author). McGraw Hill / Medical Publisher.	Yes
Websites	https://themedicalbiochemistrypage.org/	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A –** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 – 89	Above average with some errors
	C – Good	جيد	70 – 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 – 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 – 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Animal Management and behavior**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**VET1030**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	UGx11 1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Dhyaa Mohammad Taher Jwher		**e-mail**	diaataher@uomosul.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Ayman Hani Taha Suliman		**e-mail**	dr_vetayman@uomosul.edu.iq	
Peer Reviewer Name	aytham saady aldabbgh		**e-mail**	draytham@uomosul.edu.iq	
Scientific Committee Approval Date	15/9/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Developing and understanding the principles of field animal management from a veterinary perspective in a way that supports the practical side of the profession 2. The ability to manage the animal field in the healthiest ways 3. Ability to deal with different animals 4. ॥
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Knowing the behaviors of the equine family and ways of caring for and looking after them 2. The correct and typical methods for successful management in cow and buffalo pens through their behaviors and production 3. The correct and typical methods for successful management of sheep and goat breeding fields through their behaviors and production 4. Health management of camels and knowing their behaviors 5. The correct methods for the reproduction of different farm animals 6. Concepts about wild animals
Indicative Contents المحتويات الإرشادية	This course provides a description and specification of farm animals of all types and the different methods of raising them for productive purposes [SSWL= 1 hour] Psychological and behavioral characteristics of horses and their care and care of foals (young) [SSWL= 4 hours] Productive characteristics of cattle and their behavior and care of their newborns [SSWL= 6 hours] Characteristics of raising goats and their behavior and care [SSWL= 2 hours] Characteristics of raising sheep and their behavior and care [SSWL= 2 hours] Characteristics of raising buffaloes and their behavior and care [SSWL= 2 hours] Characteristics of raising camels and their behavior and care [SSWL= 3 hours] Methods of reproduction in different animals will be discussed and ways to maximize the benefit from reproduction and proper health management for them [SSWL= 4 hours] The course will also discuss one of the important aspects of wild animals and ways to preserve them as one of the components of environmental balance [SSWL= 4 hours] Total hrs = 90 = (Time table 3 hr x 15 weeks)- theoretical Total hrs = 30 = (Time table 2 hr x 15 weeks)- practical

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, dealing with different animals and knowing the basic rules for their management, As well as using devices and tools that assist in controlling animals. This will be achieved through classroom and practical lessons that will help students understand and apply.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	20% (20)	6 and 10	LO #1, #3, #5, and #6
	Assignments	2	5% (5)	4 and 12	LO #2 #4 and #5, #6
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	5% (5)	11	LO #2, #3, #4 and #6
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Description and identification of farm animals
Week 2	Equine behavior
Week 3	Equine and foal care
Week 4	Calf and cattle management
Week 5	Cattle production
Week 6	Cattle behavior
Week 7	Goat management
Week 8	Sheep management

Week 9	Buffaloes management
Week 10	Camel management
Week 11	Buffaloes and camel behavior
Week 12	Management of Animal reproduction 1
Week 13	Management of Animal reproduction 2
Week 14	Wild animals 1
Week 15	Wild animals 2
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Lab 1: External parts of Cattle
Week 2	Lab 2: External parts Equine
Week 3	Lab 3: Control and restrains of cattle
Week 4	Lab 4: Control and restrain of equine
Week 5	Lab 5: Age estimation in equine
Week 6	Lab 6: Age estimation in cows, sheep and goat
Week 7	Lab 7: Methods casting
Week 8	Lab 8: Signs of health
Week 9	Lab 9: Drug administration
Week 10	Lab 10: Milking
Week 11	Lab 11: Body score condition
Week 12	Lab 12: Animal Grooming
Week 13	Lab 13: Animal housing
Week 14	Lab 14: Animal examination
Week 15	Lab 15: Farm practices

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Animal Husbandry Regained / The Place of Farm Animals in Sustainable Agriculture	Yes
Recommended Texts	Animal management - Domestic animal behavior and welfare	yes

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Animal Husbandry**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**VET1070**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGx11 1		**Semester of Delivery**	2	
Administering Department	Dep. of Vet. Pub. Health		**College**	College of Vet. Med.	
Module Leader	Omer Hashem Sheet		**e-mail**	omar.sheet@uomosul.edu.iq	
Module Leader's Acad. Title	Assit. Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Prof. Dr. sufwan Albaroody		**e-mail**	Safwanyousif@uomosul.edu.iq	
Peer Reviewer Name	Assit. Prof. Ayman Abdullah Ali		**e-mail**	amoonizzz@uomosul.edu.iq	
Scientific Committee Approval Date	010/02/2025		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	5. Developing and understanding the principles of field Pet Animal Care from a veterinary perspective in a way that supports the practical side of the profession 6. The ability to manage the Pet Animal Care field in the healthiest ways 7. Ability to deal with different Pet Animal. 8. Pet bird feeding and breeding 9. Animal Communication and Behavior
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Explanation of scientific subjects through theoretical lectures. 2. Applications of pet animal care in laboratories. 3. Student prepares a scientific related reports with pet animal care 4. Student prepares a scientific related reports with animal husbandry 5. Teaching students about therapeutic methods 6. Animal control
Indicative Contents المحتويات الإرشادية	This course provides an English language tool for assessing animal behavior in interaction with humans and pets. The psychological and behavioral characteristics of various types of pets are presented. The course will include the advantages of raising pets, principles of health management, diseases that may affect them, and diseases that may be transmitted to humans, as it will address aspects of their causes and prevention. In this course, students will be taught the importance and benefits of raising pets [SSWL= 6 hours]. Also, how to deal with animals and ways to restrain, restrain and control them, along with the methods and means that help in their reproduction. We will focus in these aspects on cats and dogs [SSWL= 6 hours] As for the other aspect, it will address the methods of feeding them (dogs, cats and birds), housing them and estimating their ages [SSWL= 6 hours] Students will also be taught the best methods of vaccination [SSWL= 2 hours] Knowing the behaviors and methods of communicating with pets of all kinds [SSWL= 2 hours] The course will also address the management aspects of some laboratory animals such as guinea pigs and rabbits [SSWL= 6 hours] Finally, general care methods for pet birds [SSWL= 5 hours]. Total hrs = 30 = (Time table 2 hr x 15 weeks)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, dealing with different pet animal to deal with it the basic rules for their health care and management, As well as using devices and tools that assist in controlling animals. This will be achieved through classroom and lessons that will help students understand and apply it in the labor market.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	92	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2, #3 and #9, #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7, #8, #9
	Projects / Lab.				
	Report	1	20% (10)	13	LO #5, #8 and #10, #11
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #8
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	History and Breeds
Week 2	Animal health of pet animal
Week 3	Animal health of pet birds
Week 4	Animal Handling and methods of restrain
Week 5	Management of Reproduction in Dogs
Week 6	Management of Reproduction in Cats
Week 7	Pet feeding
Week 8	Pet bird feeding
Week 9	Housing
Week 10	Age estimation
Week 11	Vaccination
Week 12	Pet Communication and Behavior

Week 13	Guinea pig management
Week 14	Rabbits pet animals
Week 15	Pet bird general care

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Small Animal Care and Management 4th Edition	Yes
Recommended Texts	Veterinary Guide for Animal Owners: Caring for Cats, Dogs, Chickens, Sheep, Cattle, Rabbits and More, 2nd Edition	yes
Websites	https://www.audible.com/cat/Home-Garden/Pets-Animal-Care-Audiobooks/18573724011	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Poultry Management**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**VEH1080**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGx11 1		**Semester of Delivery**	2	
Administering Department	Dep. of Vet. Pub. Health		**College**	College of Vet. Med.	
Module Leader	Thamer Abdulazeez Ezzulddin		**e-mail**	thamer1961 @uomosul.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Yaman saad Fadel		**e-mail**	Ymansaadds@ uomosul.edu.iq	
Peer Reviewer Name	Ayman Hani Taha Suliman		**e-mail**	Dr_vetayman@uomosul.edu.iq	
Scientific Committee Approval Date	15/9/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	10. Developing and understanding the principles of field poultry management from a veterinary perspective in a way that supports the practical side of the profession 11. The ability to manage the poultry field in the healthiest ways 12. Ability to deal with different types of poultry
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Explanation of scientific subjects through theoretical lectures. 2. Training of students for practical applications in laboratories. **3.** Student prepare a scientific related reports.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Introduction to poultry science Advantages of Chicken farming, Principles of health management, poultry diseases Causes, Various aspects for prevention and control of poultry diseases. In this section, the student learns the importance and benefits of investing in the poultry sector, the risks involved, and how to avoid and control them. [SSWL=3 hrs] Types of disinfectants used in poultry farms, Poultry houses, types. Cleaning. Fumigation, Stress Management in Poultry. In this section, the student learns the types of fields used in poultry farming and the types of sterilizers used in cleaning, sterilization and fumigation. [SSWL=3 hrs] Hatching and hatchery management. In this section, the student learns how to select eggs suitable for hatching and operate and manage incubators. [SSWL=1 hr] Broiler chicken production, Layers chicken raising, Broiler breeder raising. In this section, the student learns how to raise different types of poultry breeds according to the nature of their production (meat or eggs). [SSWL=3 hrs] Vaccination and Preventive Medication, Routes of administration of vaccine, this section, the student learns the types of vaccines given to poultry, how to store them, and how to administer them.es. [SSWL=1 hr] Breeding turkey, ducks and geese. In this section, the student learns about raising ducks, geese, and turkeys, and the feeds used in feeding. [SSWL=1 hr] Feed materials, food additives and medicines, feed formulation, and drinking Water. In this section, the student learns about the crops used in nutrition and how to grind and mix them to form suitable feeds, as well as the specifications of drinking water, especially wells water. [SSWL=15 hrs] Total hrs = 15 = (Time table hr x 15 weeks)
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, dealing with different chicken and knowing the basic rules for their management, As well as using devices and tools that assist in Chicken reproduction. This will be achieved through classroom and practical lessons that will help students understand and apply.
Student Workload (SWL)	

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	77	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	20% (20)	5 and 10	LO #1, #2, and #3
	Assignments	1	5% (5)	2 and 12	LO #1 #2 and #3
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	5% (5)	13	LO #1, #2, and #3
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Poultry Industry in Iraq and Terminology
Week 2	Poultry Health Management
Week 3	Biology of the chickens
Week 4	Egg structure and Hygiene; Factors affecting egg production
Week 5	Artificial Hatching and Hatcheries
Week 6	Poultry houses Design
Week 7	Nutrition and Rations Formation
Week 8	Chick brooding
Week 9	Management of Breeder, Broiler and Layer chickens
Week 10	Poultry managements in hot climate `
Week 11	Management of Ostrich, turkey, duck and geese

Week 12	Biosecurity in poultry industry
Week 13	Vaccination Management
Week 14	Poultry waste management
Week 15	Introduction to poultry management diseases
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Lab 1: Classification of poultry
Week 2	Lab 2: Phenotypes of poultry
Week 3	Lab 3: Egg Storage – Disinfection and Fumigation
Week 4	Lab 4: Sexing and sex-linked traits
Week 5	Lab 5: Poultry Equipment's
Week 6	Lab 6: Feeding formulation and Calculations of feed components in rations
Week 7	Lab 7: Anatomy of avian digestive system
Week 8	Lab 8: Anatomy of avian respiratory system
Week 9	Lab 9: Anatomy of avian immune system Introduction to immunology
Week 10	Lab 10: Anatomy of avian circulatory system , reproductive system and urinary system
Week 11	Lab 11: Disinfection of poultry Houses and Hatcheries
Week 12	Lab 12: Vaccination programs
Week 13	Lab 13: Lighting and Systems for poultry
Week 14	Lab 14: Ventilation Systems for poultry
Week 15	Lab 15: Visiting of poultry farm

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Poultry Science / Poultry Nutrition and Management	Yes
Recommended Texts	Poultry Health - A Guide for Professionals	yes
Websites	https://www.routledge.com/Animal-Husbandry-Regained-The-Place-of-Farm-Animals-in-Sustainable-Agriculture/Webster/p/book/9781849714211	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
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	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer**			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM1030**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	UGx11 1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Iman Thannoon Sedeeq		**e-mail**	iman.sedeeq@uomosul.edu.iq	
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Rasha Jamal Aldeen Raghad mohammed Jasim		**e-mail**	Rashajamal84@uomosul.edu.iq Reghad.m.j81@uomosul.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date			**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	13. Utilize the computer for fundamental tasks 14. Identify and discuss the hardware components of the computer 15. Identify the basics of the operating system 16. Creating documents using word processor , creating presentations using powerpoint and creating and formatting worksheets using excel. 17. Conducting research on the internet. 18. Introduction to basics of electronic mail and cloud computing and services.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	4. The student will have the knowledge of using the computer for fundamental tasks. 5. The student knows how the computers work 6. The student will have the required knowledge and skills to use Ms-programs (Word, Powerpoint and Excel) to create documents, presentations, and worksheets 7. The student will be able to conduct research on the internet 8. The student will be able to write, send and receive an email 9. The student will have the basic knowledge of cloud computing and services
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. The course will provide the following: - Concepts of hardware and software and their components [SSWL= 3hour] - Concepts of operating system functions and usage SSWL= [2 hour] - Creating and formatting documents using word processor SSWL= [2 hour] - Creating and formatting presentations using powerpoint SSWL= [2 hour] - Creating and formatting worksheets using spreadsheet software SSWL= [2 hour] - How to conduct research on the internet SSWL= [2 hour] - Sending and receiving an electronic email SSWL= [1 hour] - Definition of cloud computing and services SSWL= [1 hour] Total hrs = 30= (Time table 1 hr x 15 weeks)- theoretical Total hrs = 60 = (Time table 2 hr x 15 weeks)- practical

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	1. Combination of theoretical lectures and practical applications of given concepts in those lectures. 2. Quizzes and homework.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	12	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**75**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	6 and 10	LO #1, #2, and #3
	Assignments	2	10% (10)	4 and 12	LO #3, #4
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	11	LO #5, #6
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction to computers: concepts of hardware and software
Week 2	Computer portions, I/O units and Memory types

Week 3	Computer types and features
Week 4	Basics of operating system
Week 5	Operating system and graphical user interface
Week 6	Word processing :basics and formatting text
Week 7	Word processing: creating and managing tables
Week 8	Introduction to spreadsheet software
Week 9	Pivot table, data validation and data visualization
Week 10	Introduction to PowerPoint
Week 11	Advanced features in Powerpoint: hyperlinks and action buttons
Week 12	Computer network concepts
Week 13	Web browser software and engines and understanding URL
Week 14	Basics of electronic mail
Week 15	Cloud computing and services
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Lab1: Introduction to computers: concepts of hardware and software
Week 2	Lab2: Computer portions, I/O units and Memory types
Week 3	Lab3: Computer types and features
Week 4	Lab4: Basics of operating system
Week 5	Lab5: Operating system and graphical user interface
Week 6	Lab6: Word processing :basics and formatting text
Week 7	Lab7: Word processing: creating and managing tables
Week 8	Lab8: Introduction to spreadsheet software
Week 9	Lab9: Pivot table, data validation and data visualization
Week 10	Lab10: Introduction to PowerPoint
Week 11	Lab11: Advanced features in Powerpoint: hyperlinks and action buttons
Week 12	Lab12: Computer network concepts
Week 13	Lab13: Web browser software and engines and understanding URL
Week 14	Lab14: Basics of electronic mail
Week 15	Lab15: Cloud computing and services

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- Graham Brown, David Watson, "Cambridge IGCSE Information and communication Technology", 3rd Edition(2020) -	
Recommended Texts	Microsoft office 2019 step by step 1st Edition by Curits Frye and Joan Lambart	
Websites	Coursera.org, udemy.com	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Skeleton Anatomy**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**VET1020**				
ECTS Credits	**8**				
SWL (hr/sem)	**150**				
Module Level	UGx11 1		**Semester of Delivery**	1	
Administering Department	Anatomy		**College**	Veterinary medicine	
Module Leader	Adnan Ali Hasso		**e-mail**	adnanhasso69@uomosul.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Master	
Module Tutor	Thekra Fadel Saleh		**e-mail**	thekraaltaee@uomusol.edu .iq	
Peer Reviewer Name	Ali Ahmed Hasan		**e-mail**	ali.ahmad@uomosul.edu.iq	
Scientific Committee Approval Date	15/9/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Anatomical knowledge is the basis for reasoning and developing surgical techniques as well as for the analysis of medical imaging (radiography, CT, MRI, etc.). It is essential for students to be able to rely on normal examinations in order to build their clinical thought process. 2. Providing a scientific basis for knowing each organ of the body and determining its location and the organs adjacent to it, which helps in forming a complete idea for the student when conducting physical examinations of the animal in an attempt to explain a specific disease condition or diagnose and treat it. 3. Using anatomical information as an introduction to understanding other related sciences such as surgery, obstetrics, and disease diagnosis. 4. Teaching students how to benefit from studying the anatomy of different farm animals in veterinary application in advanced study stages and also after graduation in veterinary clinics and hospitals by linking anatomical facts with clinical science applications. 5. Acquiring scientific skills by reviewing various educational and scientific references and websites worldwide. 6. A descriptive study of the different parts of the animal's body and comparing them with other animals, identifying the most important individual and qualitative differences and determining their functions. 7. Knowing and understanding the relationship between anatomy and other closely related sciences such as physiology and how to benefit from this knowledge in other applied sciences. 8. Identify the normal parts of the animal and compare them later with pathological cases in clinical sciences and work on applying what has been learned to clinical pathological cases.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. The student will acquire the ability to identify the natural shape of each organ of the animal’s body. **2.** The student should be able to examine the anatomical structures of

	each organ of the animal's body. 3. The student's skill in identifying modern laboratory equipment used in preparing anatomical organs and how to fix and maintain them for the purpose of examination and study. 4. The ability of the newly graduated veterinarian to be familiar with the natural anatomical structures of different animals. 5. To be familiar with the use of laboratory and field equipment in making anatomical models of various animals. 6. The newly graduated veterinarian must be prepared to work in specialized veterinary centers and hospitals.
Indicative Contents المحتويات الإرشادية	**1-** Introduction to anatomy and osteology **6hrs** **2-** General description of the skull with comparative **5hrs** 3- General description of the shoulder girdle and bone of the thoracic limb with joints **7hrs** **4-** General description of the vertebral column and comparative. **5hrs** 5- General description of the pelvic girdle and bone of the pelvic limb with joints **7hrs** **Total hrs = 30**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to learning the students the safe animal examination methods that ensure the safety of the veterinarian firstly and ensure access to the correct diagnosis and treatment of case related to the reproductive system, while improving and expanding students' skills in practical application at the same time. This will be achieved through theoretical lectures, practical lessons and field visits to animal breeding farms.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	107	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (20)	6,8,10 & 12	LO #1, #3 and #4, #6
	Assignments	1	5% (5)	7	LO #2 and #5
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	2	5% (5)	13 & 14	LO #4 and #5
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
3--Week	Introduction to anatomy and osteology
2.5 -Week	General description of the skull with comparative
3.5- Week	General description of the shoulder girdle and bone of the thoracic limb with joints.
2.5- Week	General description of the vertebral column and comparative.
3.5- Week	General description of the pelvic girdle and bone of the pelvic limb with joints
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Skull comparative.
Week 2	Cervical and thoracic vertebrae in horse with comparative.
Week 3	Lumber, Sacral and coccygeal vertebrae in horse with comparative.
Week 4	Ribs and sternum in horse with comparative.
Week 5	Bones of shoulder girdle - scapula of horse with comparative anatomy.
Week 6	Humerus with comparative anatomy.
Week 7	Radius and ulna with comparative anatomy.

Week 8	Carpal and metacarpal bones in horse with comparative.
Week 9	Digit in horse with comparative.
Week 10	Bones of pelvic girdle - pelvic bone in horse with comparative.
Week 11	Femur and patella in horse with comparative.
Week 12	Tibia and fibula in horse with comparative.
Week 13	Tarsus, metatarsus and digit in horse with comparative.
Week 14	Arteries and nerves of the thoracic limb in sheep
Week 15	Review

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Konig H.E., Liebich H.G.. Veterinary Anatomy of Domestic Mammals, Textbook and Coloured Atlas, 3rd ed.Germany - 2007	Yes
Recommended Texts	3- Dyce K. M.,Sack W.O., Wensing C. J. G. T textbook Of Veterinary Anatomy. 4th ed. Saunders 2010	Yes
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Muscular Anatomy**			**Module Delivery**	
Module Type	**Core**			☒ **Theory**	
Module Code	**VET1060**			☐ **Lecture**	
ECTS Credits	**8**			☒ **Lab**	
SWL (hr/sem)	**150**			☐ **Tutorial**	
				☐ **Practical**	
				☐ **Seminar**	
Module Level	UGx11 1		**Semester of Delivery**	1	
Administering Department	Anatomy		**College**	Veterinary medicine	
Module Leader	Ammar Ghanim Alhaaik		**e-mail**	alhaaik_ag@uomosul.edu.iq	
Module Leader's Acad. Title	Assist.Professor		**Module Leader's Qualification**	PhD	
Module Tutor	Thekra Fadel Saleh		**e-mail**	thekraaltaee@uomusol.edu .iq	
Peer Reviewer Name	Ali Ahmed Hasan		**e-mail**	ali.ahmad@uomosul.edu.iq	
Scientific Committee Approval Date	15/9/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Anatomical knowledge is the basis for reasoning and developing surgical techniques as well as for the analysis of medical imaging (radiography, CT, MRI, etc.). It is essential for students to be able to rely on normal examinations in order to build their clinical thought process. 2. Providing a scientific basis for knowing each organ of the body and determining its location and the organs adjacent to it, which helps in forming a complete idea for the student when conducting physical examinations of the animal in an attempt to explain a specific disease condition or diagnose and treat it. 3. Using anatomical information as an introduction to understanding other related sciences such as surgery, obstetrics, and disease diagnosis. 4. Teaching students how to benefit from studying the anatomy of different farm animals in veterinary application in advanced study stages and also after graduation in veterinary clinics and hospitals by linking anatomical facts with clinical science applications. 5. Acquiring scientific skills by reviewing various educational and scientific references and websites worldwide. 6. A descriptive study of the different parts of the animal's body and comparing them with other animals, identifying the most important individual and qualitative differences and determining their functions. 7. Knowing and understanding the relationship between anatomy and other closely related sciences such as physiology and how to benefit from this knowledge in other applied sciences. 8. Identify the normal parts of the animal and compare them later with pathological cases in clinical sciences and work on applying what has been learned to clinical pathological cases.
Module Learning	1. The student will acquire the ability to identify the natural shape of each

Outcomes مخرجات التعلم للمادة الدراسية	organ of the animal's body. **2.** The student should be able to examine the anatomical structures of each organ of the animal's body. 3. The student's skill in identifying modern laboratory equipment used in preparing anatomical organs and how to fix and maintain them for the purpose of examination and study. 4. The ability of the newly graduated veterinarian to be familiar with the natural anatomical structures of different animals. 5. To be familiar with the use of laboratory and field equipment in making anatomical models of various animals. 6. The newly graduated veterinarian must be prepared to work in specialized veterinary centers and hospitals.
Indicative Contents المحتويات الإرشادية	**1-** Introduction to myology **9hrs** **2-** General description of head, neck and shoulder girdle muscles with name, origin and insertion. **8hrs** **3-** General description of thoracic limb muscles with name, origin and insertion. **10hrs** 4- General description of abdominal and sub- lumbar muscles with name, origin and insertion.. **8hrs** 5- General description of pelvic girdle muscles and pelvic limb muscles with name, origin and insertion.**10hrs** **Total hrs = 45**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to learning the students the safe animal examination methods that ensure the safety of the veterinarian firstly and ensure access to the correct diagnosis and treatment of case related to the reproductive system, while improving and expanding students' skills in practical application at the same time. This will be achieved through theoretical lectures, practical lessons and field visits to animal breeding farms.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	107	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	6,8,10 & 12	LO #1, #3 and #4, #6
	Assignments	1	5% (5)	7	LO #2 and #5
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	2	5% (5)	13 & 14	LO #4 and #5
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
3--Week	Introduction to myology
2.5 -Week	General description of head, neck and shoulder girdle muscles with name, origin and insertion.
3.5- Week	General description of thoracic limb muscles with name, origin and insertion
2.5- Week	General description of abdominal and sub- lumbar muscles with name, origin and insertion
3.5- Week	General description of pelvic girdle muscles and pelvic limb muscles with name, origin and insertion

Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Muscles of the head in sheep
Week 2	Muscles of the neck in sheep
Week 3	Muscles of the shoulder girdle in the sheep
Week 4	Muscles of the shoulder lateral group
Week 5	Muscles of the shoulder medial group
Week 6	Muscles of the arm and manus (extensors and flexors muscles)
Week 7	Muscles of the forearm and manus (extensors and flexors muscles)
Week 8	Arterial and nerve supply of the thoracic limb in sheep
Week 9	Muscle of respiratory system
Week 10	Muscles of the sub- lumbar region with the lateral muscles of hip and thigh in the sheep
Week 11	Muscles of the medial region of hip and thigh with cranial muscle of thigh in the sheep
Week 12	Flexor and extensor muscle of the pelvic limb
Week 13	Arterial and nerve supply of the pelvic limb in sheep
Week 14	Muscles of the abdominal wall
Week 15	Review .

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Konig H.E., Liebich H.G.. Veterinary Anatomy of Domestic Mammals, Textbook and Coloured Atlas, 3rd ed.Germany - 2007	Yes
Recommended Texts	3- Dyce K. M.,Sack W.O., Wensing C. J. G. T textbook Of Veterinary Anatomy. 4th ed. Saunders 2010	Yes
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Democracy and Human Rights**			**Module Delivery**	
Module Type	Basic			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM1040**				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1		**Semester of Delivery**	three	
Administering Department	Anatomy		**College**	Veterinary medicine	
Module Leader	Mahmood Awad Ali		**e-mail**		
Module Leader's Acad. Title	Assistant lecturer		**Module Leader's Qualification**	Master	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	15/9/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aim of studying the democracy and human rights topics is to: 1. **Understand** the concept of human rights and explore their sources, including international, regional, national, and religious sources. 2. **Define** administrative corruption, explore its types, and understand its detrimental effects on society. Study methods to combat administrative corruption and promote transparency, accountability, and good governance. 3. **Trace** the historical development and evolution of human rights, examining key milestones and movements that have shaped the modern understanding of human rights. 4. **Differentiate** between different categories of human rights, including civil and political rights, economic and social rights, and environmental, cultural, and developmental rights. 5. **Explore** legal, institutional, and societal guarantees to prevent human rights violations, including guarantees of human rights in Islam, national-level protections, and international safeguards. 6. **Comprehend** the concept of democracy, including its principles, values, and various forms of democratic governance such as direct, semi-direct, indirect, and digital democracy. Overall, studying these topics aims to develop a comprehensive understanding of human rights, democracy, and combating corruption, empowering individuals to actively promote and protect human rights and democratic values in society.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After these module aims, students should be able to: 1. Demonstrate a comprehensive understanding of the concept of human rights and their sources, including international, regional, national, and religious sources. 2. Identify and explain the fundamental characteristics of human rights, such as universality, indivisibility, interdependence, and inalienability. 3. Analyze the historical emergence and evolution of human rights, including key milestones and movements that have shaped their development. 4. Differentiate between different categories of human rights, including civil and political rights, economic and social rights, and environmental, cultural, and developmental rights. 5. Evaluate and apply legal, institutional, and societal guarantees to prevent human rights violations, considering guarantees in Islam, at the national level, and within the international framework. 6. Understand and discuss the concept of democracy, including its principles, values, and different forms of democratic governance. 7. Evaluate the Islamic stance on democracy and engage in critical analysis of the strengths and weaknesses of the democratic system. 8. Recognize and assess the impact of administrative corruption on society and propose methods to combat and prevent corruption in administrative systems. 9. Demonstrate critical thinking skills by analyzing and evaluating different

	perspectives on human rights, democracy, and corruption. 10. Apply acquired knowledge and skills to promote and protect human rights, democracy, and good governance in personal, professional, and civic contexts. Overall, students should have a solid understanding of democracy and human rights, democracy, and corruption issues, and be able to apply this knowledge to contribute to the advancement of human rights and democratic values in society.
Indicative Contents المحتويات الإرشادية	The indicative content includes: 1. Definition and sources of democracy and human rights (international, regional, national, religious). [3h] 2. Characteristics of democracy and human rights: universality, indivisibility, interdependence, inalienability. [3h] 3. Emergence and evolution of human rights: historical development, key milestones, influential movements. [3h] 4. Types of human rights: civil and political, economic and social, environmental, cultural, and developmental. [3h] 5. Guarantees to prevent human rights violations: legal, institutional, societal safeguards, Islamic guarantees, national and international levels. [3h] 6. Concept of democracy: principles, values, forms of governance (direct, semi-direct, indirect). [3h] 7. Islamic stance on democracy: compatibility, strengths, weaknesses. [3h] 8. Critique of the democratic system: analysis of strengths and weaknesses. [3h] 9. Administrative corruption: definition, types, societal impact. [3h] 10. Methods to combat administrative corruption. [3h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	When it comes to learning and teaching strategies for a human rights module, there are several approaches can be taken to enhance understanding and engagement. Here are some effective strategies: 1. Interactive Discussions: Encourage students to actively participate in discussions, debates, and group activities. This promotes critical thinking, allows for different perspectives to be shared, and fosters a deeper understanding of human rights issues. 2. Case Studies: Present real-life case studies that highlight human rights violations or achievements. Analyzing these cases helps students apply theoretical concepts to practical situations and develops their problem-solving skills.

	3. Research Projects: Assign research projects on specific human rights topics or issues. This encourages independent learning, critical analysis, and the development of research skills. 4. Collaborative Learning: Foster collaboration among students through group projects or assignments. This encourages teamwork, peer learning, and the exchange of diverse perspectives. 5. Assessment Variety: Use a variety of assessment methods, including essays, presentations, debates, and quizzes, to assess students' understanding of human rights concepts and their ability to apply them to real-world situations.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5, 10	LO #2, 4, 6 and 8
	Assignments	2	15% (15)	3, 5, 8, 11, 13	LO # 1, 3, 7, 6, 9 and 10
	Projects / Lab.				
	Report	1	10% (10)	13	LO # 2,4,5,7,9and 10

Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	محاضرة تعريفية
Week 2	حقوق الانسان في الحضارات القديمة
Week 3	حقوق الانسان في الحضارات القديمة
Week 4	مفهوم وخصائص حقوق الانسان
Week 5	مفهوم وخصائص حقوق الانسان
Week 6	الاعلان العالمي لحقوق الانسان
Week 7	الاعلان العالمي لحقوق الانسان
Week 8	نظرة تاريخية في نشوء الفكر الديمقراطي
Week 9	نظرة تاريخية في نشوء الفكر الديمقراطي
Week 10	مفهوم الديمقراطية
Week 11	صور الديمقراطية
Week 12	صور الديمقراطية
Week 13	الاسلام والديمقراطية
Week 14	الديمقراطية والمواطنة وانظمة الحكم
Week 15	الديمقراطية والمواطنة وانظمة الحكم
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	

Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	ضمانات حقوق الانسان وحمايتها وفقا للقانون الدولي والتشريع الوطني/ نبيل عبد الرحمن ناصر الدين	No
Recommended Texts	الديمقراطية وحقوق الانسان / د. امير عبد العزيز	No
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM102**				
ECTS Credits	2				
SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Anatomy		**College**	Veterinary medicine	
Module Leader	Anwar Abdulwahab		**e-mail**	anwar.a.j@uomosul.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Master degree	
Module Tutor			**e-mail**		
Peer Reviewer Name	Mohammed Ghasan		**e-mail**		
Scientific Committee Approval Date	1-9-2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	• Teaching Basic English grammar to connect words to form a meaningful sentence with the help of some general rules applied. To keep students understanding English Grammar better, we will try to break the sentence and stress the words which will help them gain the meaning of the sentences. • Objective comprehension develops critical reading and thinking skills of the learners. It mainly cultivates and nurtures the love of reading and learning of the students. The main learning outcome of reading comprehension is to gather relevant information regarding English texts. The main objective of reading comprehension is to activate and reinforce the writing, grammar, vocabulary, and punctuation skills of the students. • The main objective can be summarized as teaching students the most important English terms that help students in their academic levels. • These terms are medical and give the student confidence to use them in several lessons and fields.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. This course seeks to develop the students' abilities in grammar, oral skills, reading, writing and study skills 2. Students will heighten their awareness of correct usage of English grammar in writing and speaking. 3. Students will improve their speaking ability in English both in terms of fluency and comprehensibility. 4. Students will give oral presentations and receive feedback on their performance. 5. Students will increase their reading speed and comprehension of academic articles. 6. Students will improve their reading fluency skills through extensive reading. 7. Students will define veterinary medical terms associated with movement, the Integumentary, skeletal, muscular, nervous, special senses, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. 8. Learn to comprehend combinations of roots, suffixes and prefixes in common medical applications. 9. Interpret and apply identified general veterinary medical abbreviations.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. • Intermediate level teaching or upper intermediate English level. In this section, you can improve students' grammar with our clear and simple grammar lessons. [SSWL=12 hr.] • Teaching reading and writing to help students explore different ways of developing reading and writing skills. [SSWL=6 hr.] • The English language contains an enormous and ever-growing number of words. Enhancing students' vocabulary by learning new words can seem overwhelming, but if the students know the common prefixes and suffixes of English, they will understand many more words. [SSWL=4 hr.]

	• Mastering common prefixes and suffixes is like learning code. Once you crack the code, you can not only spell words more correctly but also recognize and perhaps even define unfamiliar words. [SSWL=2 hr.] • A combining vowel sometimes is used to make the medical term easier to pronounce. O is the most used as a combining vowel. [SSWL=2 hr.] • Additionally, a lot of veterinary medical terms related to the Body Planes, Body cavities, and Cell organelles are taught in the classroom. [SSWL=2 hr.] • Many of the terms used to describe Science of Study and tissue types are included in the syllabus. [SSWL=2 hr.] Total hrs. = SSWL - (Exam hrs.) = 33 - 3 = 30 hrs. (Timetable hrs. x 15 weeks)

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	• Integrating technology into the classroom can make learning more engaging and accessible. Tools like interactive whiteboards, educational apps, and online resources are modern learning approaches. • Provide multiple opportunities for pronunciation of the terms. • Opportunities for students to collaborate with each other Include open-ended questions in the lessons. • Discussion is used in lectures as an effective way of delivering the study material to students.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**50**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	25% (25)	2, 5, 8, 10 and 14	LO #1, #3, #5, #7, #8, and #9
	Assignments	2	10% (10)	6 and 12	LO #2 #4 and #7, #8
	Projects / Lab	N/A	N/A	N/A	N/A
	Report	1	5% (5)	13	LO #2, #3, 4#, #6, #8 and #9
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Nouns and Definite and Indefinite Articles
Week 2	Verbs and Adjective
Week 3	Present simple and past simple tenses
Week 4	Future simple and Future Continuous Tenses
Week 5	Plurals
Week 6	Punctuation and Prepositions
Week 7	Reading and Writing Skill Builders
Week 8	How to write essays--a step-by-step guide for all levels
Week 9	Reading practice
Week 10	Medical Veterinary Terminology—General Introduction
Week 11	Prefixes, Combining Vowel, and Suffixes
Week 12	Terms Used to describe Direction and Position Terms Used to describe Body Planes
Week 13	Terms Used to describe Science of Study Terms Used to describe Body Cavities
Week 14	Terms Used to describe Cell Parts Organelles of the cell
Week 15	Terms Used to describe Tissue Types
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	English Grammar for ESL Learners English for Everyone_ English Grammar Guide. Reading and Writing Skill Builders	Available online
Recommended Texts	Daily Warm-Ups. Prefixes, Suffixes, & Roots. Level II	Available online
Websites	All books will be provided electronically for each student.	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**General Arabic**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**VET105**				
ECTS Credits	6				
SWL (hr/sem)	**150**				
Module Level	UGx11 1		**Semester of Delivery**	2	
Administering Department	Physiology, Biochemistry and Pharmacology		**College**	Veterinary Medicine	
Module Leader	rafea abdul ghani yahya		**e-mail**	rafea.a.y@uomosul.edu.iq	
Module Leader's Acad. Title	assistant professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name	rafea abdul ghani yahya		**e-mail**		
Scientific Committee Approval Date	15/9/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Introducing students to the Arabic language 2. Training students on grammar 3. Learning correct pronunciation rules and correcting language errors

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Know the rules of Arabic grammar. 2. Identify how words are parsed in sentences. 3. Identify the types of speech in Arabic. 5. Classify the main parts of speech.
Indicative Contents المحتويات الإرشادية	The instructional content includes: Parts of Speech in Arabic Number Rules Writing the Open and Closed Taa **Total hrs = 30**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Encouraging the student's commitment to attendance and active participation in lectures and taking daily, semester and final theoretical and practical exams. Using educational and technological means, and the modern method in teaching the subject and referring to practical training examples. Discussion is used in lectures as an effective means of delivering the study material to students and keeping up with the latest methods, approaches and modern trends in the teaching process.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	4, 6, 8, 10	LO #1, #2, #3, #4
	Assignments	1	5% (5)	9	LO #5, #6, #7
	Projects / Lab.	1	5% (5)	Continuous	All
	Report	1	10% (10)	12	LO #1, #5 and #6
Summative	**Midterm Exam**	1hr	10% (10)	10	LO #1-#5

assessment	**Final Exam**	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	The importance of the Arabic language
Week 2	Parts of speech/noun and its signs
Week 3	Action and its signs
Week 4	The letter and its signs
Week 5	Original diacritical marks
Week 6	Subordinate diacritical marks/nominative
Week 7	Subordinate diacritical marks/accusative
Week 8	Subordinate diacritical marks/prepositions
Week 9	Subordinate diacritical marks/Jazm
Week 10	Writing numbers in Arabic
Week 11	The Prophetic Hamziyah Poem
Week 12	Open taa and closed taa
Week 13	The difference between the letters Dhad and Tha in Arabic
Week 14	Grammatical errors/say and don't say
Week 15	punctuation marks

Week

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	General Arabic for non-specialty departments	Yes
	Basic rules of the Arabic language	Yes
Recommended Texts	.	Yes
Websites	https://learning.aljazeera.net/ar/generallanguage	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group	**A** – Excellent	امتياز	90 - 100	Outstanding Performance

(50 - 100)	**B -** Very Good	جيد جدا	80 – 89	Above average with some errors
	C – Good	جيد	70 – 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 – 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 – 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Course Description Form

1. Course Name:

Biochemistry – 1

2. Course Code:

VEP2104

3. Semester / Year:

First Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Prof. Dr. Nashaat Ghalib Mustafa
Email: nashaat74@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1.Introducing the student to the basic principles of biochemistry** **2. Introducing the student to the basics of the chemical components the cell and the organism's body** **3. Study of proteins, carbohydrates, lipids, and nucleic acids** **4. Identify the metabolic processes within the body**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	1- The main objective is to teach students the basics	Cell Biochemistry	Theoretical lectures	Written Exam
2-4	9		Enzymes		
5-7	9		Vitamins		
8-9	6		Bioenergetic		

10-12	9	of advanced cellular biochemistry and its relationship to other sciences from the molecular and cellular levels in various body systems. 2- Classify water soluble and lipid soluble vitamins 3- Recognize enzymes and their mechanism of action.	Carbohydrate metabolism		
13-15	9		Protein and Amino acids metabolism		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	1- Classify hormones with their chemical nature. 2-Identify the mechanism of action and function of hormones	General instruction and qualitative tests of carbohydrates	Practical work in laboratory	Practical Exam
3	2		Testing of unknown carbohydrates		
4	2		Glycogen		
5	2		General reactions of proteins		
6	2		Fibrous proteins		
7	2		Glyoproteins		
8	2		Albumin and globulins		
9	2		Phosphoproteins		
10	2		Enzymes: digested activity of salivary amylase		
11	2		Effect of (pH) on the activity of salivary amylase		
12	2		Effect of temperature on the activity of salivary amylase		
13	2		Urine analysis: physical properties of normal urine		
14	2		Normal constituents of urine		
15	2		Abnormal constituents of urine		

11. Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Harpers Illustrated Review of Biochemistry
Main references (sources)	Essential of Biochemistry Pankaja
Recommended books and references (scientific journals, reports...)	https://themedicalbiochemistrypage.org/
Electronic References, Websites	https://www.biochemistry.org/

Course Description Form

1. Course Name:

Biochemistry - 2

2. Course Code:

VEP2110

3. Semester / Year:

Second Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Prof. Dr. Nashaat Ghalib Mustafa
Email: nashaat74@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1.Introducing the student to the basic principles of biochemistry** **2. Introducing the student to the basics of the chemical components the cell and the organism's body** **3. Study of proteins, carbohydrates, lipids, and nucleic acids** **4. Identify the metabolic processes within the body**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	1 –The main objective is to teach students the	Plasma proteins	Theoretical lectures	Written Exam
3-6	12		Lipid metabolism		
7-8	6		Nucleotids and nucleic acids		

9-10	6	basics of advanced cellular biochemistry and its relationship to other sciences from the molecular and cellular levels in various body systems. 2- Classify water soluble and lipid soluble vitamins 3- Recognize enzymes and their mechanism of action	Protein synthesis		
11-14	12		Hormones		
15	3		Free radical and antioxidants		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1- Classify hormones with their chemical nature. 2-Identify the mechanism of action and function of hormones	Photometric Analysis of Biochemical Molecules	Practical work in laboratory	Practical Exam
2	2		Photometric Analysis of Biochemical Molecules		
3	2		Determination of Serum Total Protei		
4	2		Determination of Serum Total Protein Using Standard Curve		
5	2		Determination of Serum Inorganic Phosphate		
6	2		Determination of Serum Calcium		
7	2		Determination of Serum Total Cholesterol		
8	2		Determination of Serum Total Lipids		
9	2		Determination of Serum Creatinine		
10	2		Determination of Serum Uric Acid		
11	2		Determination of Serum Bilirubin		
12	2		Enzymatic Method for Determination of Glucose		
13	2		Determination of Serum Amylase Activity		
14	2		Determination of Serum urea		
15	2		Determination of serum transaminase		

11. Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Harpers Illustrated Review Biochemistry
Main references (sources)	Essential of Biochemistry Pankaja
Recommended books and references (scientific journals, reports...)	https://themedicalbiochemistrypage.or
Electronic References, Websites	https://www.biochemistry.org/

Course Description Form

1. Course Name:

Physiology - 1

2. Course Code:

VEP2103

3. Semester / Year:

First Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	4	4
Practical	2	1
Total	**6**	**5**

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

Name: Prof. Dr. Fadwa khalid tawfiq
Email: fadwaameen@uomosul.edu.iq

8. Course Objectives

Course Objectives	1. Introduce the student to the basic principles of physiology. 2. Introduce the student to the basics of the systemic components of the and the organism's body. 3. Study the systems of the organism's body. 4. Identify the various physiological processes within the organism's body.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	1-Recognize the basic structure and function of major physiological systems in various animal species. 2-Describe the	Introduction to physiology and cell membrane	Theoretical lectures	Written Exam
2	4		Nerve cell physiology		
3	4		Muscle cell physiology		
4	4		The autonomic nervous system physiology		

5-6	8	mechanisms of homeostasis and the role of feedback loops in animals. 3-Explain the physiological processes involved in cell communication and cell physiology.	Blood composition and physiology		
7	4		Lymph composition and function		
8	4		Cerebrospinal fluid composition and function		
9-10	8		Cardiovascular system physiology		
11-12	8		Respiration system physiology		
13-15	12		Digestive system physiology		
- Practical Subjects:					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1-2	4	1- Interpret physiological data from veterinary studies and relate it to theoretical knowledge. 2- Demonstrate an understanding of experimental approaches in veterinary physiology. 3-Discuss the physiological adaptations of animals to different environmental challenges.	Introduction, Frog sciatic nerve and gastrocnemius muscle preparation	Practical work in laboratory	Practical Exam
3	2		Simple muscle twitch and effect of temperature on muscle contraction		
4	2		Effect of prolonged and strength stimulation on muscle contraction		
5	2		Effect of repeat stimulation on muscle contraction		
6	2		Frog`s heart		
7	2		Extra systole and compensatory pause and Stannius ligatures		
8	2		Blood pressure in man and effect of exercise		
9	2		Venous flow, venous pressure, reactive hyperemia, cold pressor test		
10	2		RBC		
11	2		WBC		
12	2		Hb		
13	2		ESR		
14	2		PCV estimation		
15	2		Wintrobe erythrocyte index		

11. Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	32	48	80
Practical	8	12	20
Total	**40**	**60**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Klein, T. B. G. (2012). Cunningham's Textbook of Veterinary Physiology-E-Book: Cunningham's Textbook of Veterinary Physiology-E-Book. Elsevier Health Sciences. Reece, W. O., Erickson, H. H., Goff, J. P., & Uemura, E. E. (Eds.). (2015). Dukes' physiology of domestic animals. John Wiley & Son
Main references (sources)	Colin, G.C .(2015) . Sturkie , s Avian Physiology . 6th ed . New York. Heideberge.Barlin . Springer .Verlag.
Recommended books and references (scientific journals, reports…)	https://teachmephysiology.com/
Electronic References, Websites	https://physoc.onlinelibrary.wiley.com/journal/14697793/

Course Description Form

1. Course Name:

Physiology – 2

2. Course Code:

VEP2109

3. Semester / Year:

Second Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	4	4
Practical	2	1
Total	**6**	**5**

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

Name: Prof. Dr. Fadwa khalid tawfiq
Email: fadwaameen@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1. Introduce the student to the basic principles of physiology.** **2. Introduce the student to the basics of the systemic components of the cell a the organism's body.** **3. Study the systems of the organism's body.** **4. Identify the various physiological processes within the organism's body.**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	12	1-Recognize the basic structure and function of major physiological systems in various animal species. 2-Describe the mechanisms of	Kidney and Urinary System	Theoretical lectures	Written Exam
4-7	16		Endocrine System		
8-10	12		Male Reproductive System		
11-13	12		Female Reproductive System		
14-15	8		Central Nervous System		

		homeostasis and the role of feedback loops in animals. 3-Explain th physiological processe involved in cel communication and cel physiology.			

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1- Interpret physiological data from veterinary studies and relate it to theoretical knowledge. 2- Demonstrate an understanding of experimental approaches in veterinary physiology. 3-Discuss the physiological adaptations of animals to different environmental challenges.	Blood groups and coagulation time.	Practical work in laboratory	Practical Exam
2	2		Measurements of respiratory volume-spirometry		
3	2		Measurement of pulmonary ventilation and respiratory movements		
4	2		Salivary digestion		
5	2		Nervous system		
6	2		Eye reflexes		
7	2		Response time		
8	2		Sensory physiology		
9	2		Taste		
10	2		Vision		
11	2		Hearing		
12	2		Estrous cycle in rat		
13	2		Evaluation of seminal quality		
14	2		Concentration of spermatozoa		
15	2		Ovariectomy in rat		

11. Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	32	48	80
Practical	8	12	20
Total	**40**	**60**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Klein, T. B. G. (2012). Cunningham's Textbook of Veterinary Physiology-E-Book: Cunningham's Textbook of Veterinary Physiology-E-Book. Elsevier Health Sciences. Reece, W. O., Erickson, H. H., Goff, J. P., & Uemura, E. E. (Eds.). (2015). Dukes' physiology of domestic animals. John Wiley & Sons
Main references (sources)	Colin, G.C .(2015) . Sturkie , s Avian Physiology . 6th ed . New York. Heideberge.Barlin . Springer .Verlag.
Recommended books and references (scientific journals, reports…)	https://teachmephysiology.com/
Electronic References, Websites	https://physoc.onlinelibrary.wiley.com/journal/14697793/

Course Description Form

1. Course Name:

Anatomy – 1

2. Course Code:

VEA2101

3. Semester / Year:

First Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Saffana Khuder Mahmood
Email: saffanhjeber@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The student should acquire the ability to identify the normal tissue of each organ of the animal's body. • Enable the veterinarian to have a deeper understanding to make the best well- informed decisions for their pets. • Compassion, empathy, patience, attention to detail, problem-solving skills, flexibility, a strong work ethic, and interpersonal skills.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1-Provide a scientific basis to know the structure of each organ of the body and determine its location and adjacent organs, which helps in the formation of a complete idea of the student when conducting physical examinations of the animal in an attempt to interpret a specific disease condition or diagnose and treat it. 2- Employing anatomical information as an input to understand other related sciences such as surgery, obstetrics, diagnosis of diseases and operations. 3-Teaching students how to benefit from the study of anatomy of different farm animals in veterinary application in the advanced academic stages and also after graduation in veterinary clinics, by linking anatomical facts with the applications of clinical sciences.	Digestive System-General description	Theoretical lectures	Written Exam
2	2		Mouth cavity, Salivary glands		
3	2		Pharynx		
4	2		Muscles of mastication.		
5	2		Classification of stomach		
6	2		Parts of the intestine		
7	2		Liver and its ligaments		
8	2		Gallbladder and the variations in farm animals		
9	2		Pancreas and its variations		
10	2		Peritoneum its reflexation in the abdominal cavity		
11	2		Respiratory System-Introduction		
12	2		Nose, nasal cavity, nasopharynx		
13	2		Paranasal sinuses		
14	2		Larynx, Trachea		
15	2		Lungs, Thoracic cavity		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1- Knowing and understanding the relationship between anatomy and other closely related sciences such as physiology and how to benefit. 7- Identifying the normal parts of the animal and comparing them later with pathological cases in clinical sciences. Working on applying what has been learned to clinical pathological cases. 2-Descriptive study of the different parts of the animal's body and comparing them with the rest of the animals, and knowing the most important individual and qualitative differences and determining their functions.	General description of the skull	Practical work in laboratory	Practical Exam
2	2		Cranial cavity, hyoid bone, mandible		
3-4	4		Skull comparative, Cervical vertebrae comparative		
5	2		Dissection of oral cavity with its contents		
6	2		Dissection of pharynx		
7	2		Viscera: esophagus. Stomach (comparative)		
8	2		Viscera: small and large intestine (comparative)		
9	2		Viscera: liver and its ligaments (comparative)		
10-11	4		Dissection of paranasal sinuses, nasal cavity (comparative)		
12	2		Larynx, blood and nerve supply to the larynx		
13	2		Trachea, pleura, pulmonary ligament, lung comparative, trachea, bronchial tree.		
14-15	4		Dissection of thorax, thoracic fascia, muscles of thoracic wall		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Pasquini and Spurgeon. Anatomy Of Domestic Animals, Systemic and regional approach, 5th ed.. Sudz Pub 1989
Main references (sources)	Konig H.E., Liebich H.G.. Veterinary Anatomy of Domestic Mammals, Textbook and Coloured Atlas, 3rd ed.Germany 2007
Recommended books and references (scientific journals, reports...)	Dyce K. M.,Sack W.O., Wensing C. J. G. T textbook Of Veterinary Anatomy. 4th ed. Saunders 2010
Electronic References, Websites	Konig H.E., Liebich H.G.. Veterinary Anatomy of Domestic Mammals, Textbook and Coloured Atlas, 3rd ed.Germany 2007

Course Description Form

1. Course Name:

Anatomy - 2

2. Course Code:

VEA2107

3. Semester / Year:

Second Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Saffana Khuder Mahmood
Email: saffanhjeber@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The student should acquire the ability to identify the normal tissue of each organ of the animal's body. • Enable the veterinarian to have a deeper understanding to make the best well- informed decisions for their pets. • Compassion, empathy, patience, attention to detail, problem-solving skills, flexibility, a strong work ethic, and interpersonal skills. •

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1-Provide a scientific basis to know the structure of each organ of the body and determine its location and adjacent organs, which helps in the formation of a complete idea of the student when conducting physical examinations of the animal in an attempt to interpret a specific disease condition or diagnose and treat it. 2- Employing anatomical information as an input to understand other related sciences such as surgery, obstetrics, diagnosis of diseases and operations. 3-Teaching students how to benefit from the study of anatomy of different farm animals in veterinary application in the advanced academic stages and also after graduation in veterinary clinics, by linking anatomical facts with the applications of clinical sciences.	Lymphatic System: Introduction	Theoretical lectures	Written Exam
2	2		Lymph vascular system. lymphatic tissue		
3	2		Lymph vessels, lymph capillaries		
4	2		Lymphatic tissue structures, solitary lymph nodules		
5	2		Tonsils, lymph nodes, lymph center		
6	2		Lymph trunks and ducts, thymus, spleen		
7-8	4		Nervous System		
9-10	4		Development of the brain		
11	2		Central nervous system		
12	2		Autonomic nervous system		
13	2		Cardio Vascular System		
14	2		Heart and pericardium		
15	2		Blood supply of the limb		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1- Knowing and understanding the relationship between anatomy and other closely related sciences such as physiology and how to benefit. 7- Identifying the normal parts of the animal and comparing them later with pathological cases in clinical sciences. Working on applying what has been learned to clinical pathological cases. 2-Descriptive study of the different parts of the animal's body and comparing them with the rest of the animals, and knowing the most important individual and qualitative differences and determining their functions.	Superficial dissection of face region	Practical work in laboratory	Practical Exam
2	2		Deep dissection of face region		
3	2		The brain, cranial and spinal meninges		
4-5	4		Dissection of neck region		
6	2		Nerves in thoracic cavity		
7	2		Pericardium, cranial and caudal venae cavae		
8-9	4		Circulatory system		
10-11	4		Aortic arch, common brachiocephalic		
12-13	4		Lymph centers in abdominal cavity, spleen4		
14-15	4		Abdominal aorta with its branches		

11.Course Evaluation

Course Exam	Final Exam	Sum

Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Pasquini and Spurgeon. Anatomy Of Domestic Animals, Systemic and regional approach, 5th ed.. Sudz Pub 1989
Main references (sources)	Konig H.E., Liebich H.G.. Veterinary Anatomy of Domestic Mammals, Textbook and Coloured Atlas, 3rd ed.Germany 2007
Recommended books and references (scientific journals, reports...)	Dyce K. M.,Sack W.O., Wensing C. J. G. T textbook Of Veterinary Anatomy. 4th ed. Saunders 2010
Electronic References, Websites	Konig H.E., Liebich H.G.. Veterinary Anatomy of Domestic Mammals, Textbook and Coloured Atlas, 3rd ed.Germany 2007

Course Description Form

1. Course Name:

Histology - 1

2. Course Code:

VEA2102

3. Semester / Year:

First Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	3	1.5
Total	**5**	**3.5**

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

Name: Ammar Ghanim Momammad
Email: alhaaik_ag@uomosul.edu.iq

8. Course Objectives

Course Objectives	1. Use light microscope and identify different types of tissues of the body. 2. Understand the relation between structure of tissue and function. 3. The student learned about routine and special stains of histology. 4. provides the foundation for understanding pathology.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	• The results of the learning process will focus on teaching everything related to histology and expanding the cognitive horizons of this science in different animal species, as this subject is an important basis for understanding and studying general pathology in the later stage and distinguishing normal tissues from those infected with various tissue pathological lesions.	Cytology	Theoretical lectures	Written Exam
3-4	4		Blood and Myeloid Tissue		
5-6	4		Nervous Tissue		
7-8	4		Cartilage and Bone		
9-10	4		Cardiovascular System		
11-12	4		Lymphatic System		
13-14	4		Respiratory System		
15	2		Skin		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	1- Examination of all different body tissues using a light microscope 2- Preparation of tissue sections and blood smears 3-Teach students the microscopic structure of all body tissues in different animals. 4- Teach students how to use histology as a basis for studying general pathology.	Laboratory Guiding	Practical work in laboratory	Practical Exam
2	3		Cytology		
3	3		Epithelial Tissues		
4	3		Connective Tissues		
5	3		Muscular tissue		
6	3		Bone and Cartilages		
7	3		Nervous tissue		
8	3		Blood cells		
9	3		Bone marrow		
10	3		Lymph system		
11	3		Cardiovascular system		
12	3		Respiratory system		
13	3		Skin		
14	3		Review		
15	3		Examination		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	23	34	57
Practical	17	26	43
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Aughey, E., and Frye, F. L. (2001). Comparative veterinary histology with clinical correlates. CRC Press.
Main references (sources)	Eurell JA & Frappier BL (2013). Dellmann's textbook of veterinary histology, John Wiley & Sons.

Recommended books and references (scientific journals, reports...)	Dellmann's textbook of veterinary histology / [edited by] Jo Ann Eurell, Brian L. Frappier. —6th ed-2006.
Electronic References, Websites	Bancroft JD, Suvarna K, Christopher L. Tissue processing. UK: Elsevier Sciences; 2019. 73-83 p

Course Description Form

1. Course Name:

Histology - 2

2. Course Code:

VEA2108

3. Semester / Year:

Second Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	3	1.5
Total	**5**	**3.5**

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

Name: Ammar Ghanim Momammad
Email: alhaaik_ag@uomosul.edu.iq

8. Course Objectives

Course Objectives	**5. Use light microscope and identify different types of tissues of the body.** **6. Understand the relation between structure of tissue and function.** **7. The student learned about routine and special stains of histology. provides the foundation for understanding pathology**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	6	• The results of the learning process will focus on teaching everything related to histology and expanding the cognitive horizons of this science in different animal species, as this subject is an important basis for understanding and studying general pathology in the later stage and distinguishing normal tissues from those infected with various tissue pathological lesions.	Digestive System	Theoretical lectures	Written Exam
4-6	6		Urinary System		
7-8	4		Endocrine System		
9-11	6		Male Reproductive System		
12-14	6		Female Reproductive System		
15	2		Sensory Organs		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	1- Examination of all different body tissues using a light microscope 2- Preparation of tissue sections and blood smears 3-Teach students the microscopic structure of all body tissues in different animals. 4- Teach students how to use histology as a basis for studying general pathology.	Tongue structure, lingual papillae	Practical work in laboratory	Practical Exam
2	3		Salivary glands		
3	3		Fundic gland region of stomach rumen, reticulum, omasum		
4	3		Small intestine		
5	3		Liver, gallbladder, pancreas		
6-7	6		Endocrine glands		
8-9	6		Adrenal gland, hyroid gland, parathyroid gland		
10	3		Urinary system		
11	3		Male genital system		
12	3		Female genital system		
13	3		Eye: cornea, retina		
14	3		Ear: cochlea, corti organ		
15	3		Mammary gland		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	23	34	57
Practical	17	26	43
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Aughey, E., and Frye, F. L. (2001). Comparative veterinary histology with clinical correlates. CRC Press.
Main references (sources)	Eurell JA & Frappier BL (2013). Dellmann's textbook of veterinary histology, John Wiley & Sons.
Recommended books and references (scientific journals, reports...)	Dellmann's textbook of veterinary histology / [edited by] Jo Ann Eurell, Brian L. Frappier. —6th ed-2006.
Electronic References, Websites	Bancroft JD, Suvarna K, Christopher L. Tissue processing. UK: Elsevier Sciences; 2019. 73-83 p

Course Description Form

1. Course Name:

Animal Nutrition - 1

2. Course Code:

VEH2105

3. Semester / Year:

First Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Muntaha Ghazi Hasan
Email: mghassan99@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **To clarify the principles of Animal nutrition and feedstuffs feeding to animals** • **To Explain the mechanism of digestion , absorption and metabolism of feed components** • **To Explain how to prepare a ration for livestock animals**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Important terms in animal nutrition	Introduction and importance of nutrition of farm animals	Theoretical lectures	Written Exam
3-4	4		The animal and its food		
5	2	Types of anima feedstuffs	Water and its functions, regulation and comparative use		
6-7	4		Energy Metabolism		
8-9	4	Requirement for feeds and water to farm animals	Carbohydrate Metabolism		
10	2		Protein and nucleic acids Metabolism		
11	2		Lipid metabolism		
12	2	Carbohydrates and proteins metabolism	Evaluation of proteins		
13	2	Energy importance to livestock	Expressing energy values of feeds		
14-15	4		Ration formulation		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Instructions to work in animal nutrition laboratory	How to use nutrition laboratory	Practical work in laboratory	Practical Exam
3-4	4		What is the feedstuffs approximat analysis		
5-6	4		How to make the samples and prepare it to use		
7-8	4	Approximate feed analysis	Determination of moisture in feed suffs, green roughages, milk, meat		
9-10	4	Evaluation of animal feedstuffs and quality	Determination of ash		
11-12	4		Determination of silica		
13-14	4		How to make standard solution		
15	2		Determination of crude protein.		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Animal nutrition McDonald et al., seventh edition 2010
Main references (sources)	Principles of animal nutrition Wu, 2018
Recommended books and references (scientific journals, reports...)	Animal nutrition handbook Chiba ,2009
Electronic References, Websites	www.library Genesis

Course Description Form

1. Course Name:

Animal Nutrition - 2

2. Course Code:

VEH2111

3. Semester / Year:

Second Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Muntaha Ghazi Hasan
Email: mghassan99uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Clarify the importance of essential elements to farm animals** • **Clarify the importance of vitamins to farm animals** • **To clarify the digestion trials and energy in animal feeding**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The importance of essential elements in animal feeding The deficiency signs of essential elements to farm animals The importance of vitamins in animal feeding The main effects of vitamins deficiency affecting feeding The digestibility trials direct and indirect	The importance of minerals in animal nutrition	Theoretical lectures	Written Exam
2	2		Functions of essential elements		
3	2		Calcium and phosphorus		
4	2		Magnesium and sulfur		
5	2		Iron and cobalt		
6	2		Copper and Iodine		
7	2		Selenium and zinc		
8	2		Importance of vitamins in animal nutrition		
9	2		Classifications and characteristics of vitamins		
10	2		Fat soluble vitamins A and D		
11	2		Fat soluble vitamins E and K		
12	2		Water soluble vitamins B1,B2, B3		
13	2		Water soluble vitamins B6,B12		
14	2		Direct Digestion trial		
15	2		Indirect digestion trial		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Approximate feed analysis to animal feedstuffs How to estimate and calculate the energy sources to animals Digestibility coefficient in digestion trials	Determination of ether extract	Practical work in laboratory	Practical Exam
3-4	4		Determination N.F.E by chemical method and calculated method		
5-6	4		Determination of crude fiber		
7-8	4		Determination of gross energy by chemical method		
9-10	4		Determination of gross energy by calculated method		
11-12	4		Determination of gross energy by bomb calorimeter		
13-15	6		The digestion trials: How to make standard ration for farm animals		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Animal nutrition McDonald et al., seventh edition 2010
Main references (sources)	Principles of animal nutrition Wu, 2018
Recommended books and references (scientific journals, reports...)	Animal nutrition handbook Chiba ,2009
Electronic References, Websites	www.library Genesis

Course Description Form

1. Course Name:

Statistics

2. Course Code:

VEH2113

3. Semester / Year:

Second Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Iman thanoon sedeeq
Email: imansedeeq@uomosul.edu.iq

8. Course Objectives

Course Objectives	The study of applied statistics includes data collection, management, analysis, interpretation, and drawing conclusions. This course helps develop critical thinking and problem-solving skills in data analysis and empirical research.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Knowledge of statistical terms and definitions	Definition statistics and statistical symbols	Theoretical lectures	Written Exam
3	2	Knowledge of Descriptive statistics	Descriptive study of the data		
4	2	Knowledge of central tendency measures	Mediate measures (concentration)		
5	2	Knowledge of Dispersion measurements	Dispersion and differences measurements		
6	2	Knowledge of Simple regression and correlation	Simple regression and correlation		
7-8	4	Knowledge of Principles of probability	Principles of probability		
9	2	Knowledge of Discrete probability distributions	Discrete probability distributions		
10-11	4	Knowledge of Continuous probability distributions	Continuous probability distributions		
12	2	Knowledge of Hypotheses Testes	Hypotheses Testes		
13	2	Knowledge of Z test	Z test		
14	2	Knowledge of t test	t test		
15	2	Knowledge of X2 test	X2 test		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Knowledge of statistical terms and definitions	Definition statistics and statistical symbols	Practical work in laboratory	Practical Exam
3	2	Knowledge of Descriptive statistics	Descriptive study of the data		
4	2	Knowledge of central tendency measures	Mediate measures (concentration)		
5	2	Knowledge of Dispersion measurements	Dispersion and differences measurements		
6	2	Knowledge of Simple regression and correlation	Simple regression and correlation		
7-8	4	Knowledge of Principles of probability	Principles of probability		
9	2	Knowledge of Discrete probability distributions	Discrete probability distributions		
10-11	4	Knowledge of Continuous probability distributions	Continuous probability distributions		
12	2	Knowledge of Hypotheses Testes	Hypotheses Testes		
13	2	Knowledge of Z test	Z test		
14	2	Knowledge of t test	t test		
15	2	Knowledge of X2 test	X2 test		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67

Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1. Applied Statistics in Agricultural, Biological, and Environmental Sciences Editor(s):Barry Glaz, Kathleen M. Yeater First published:23 August 2018 Print ISBN:9780891183594 |Online ISBN:9780891183600
Main references (sources)	Statistics for Veterinary and Animal Scien ,Aviva Petrie and Paul Watson, Blackv publishing, second edition, 2006
Recommended books and references (scientific journals, reports...)	2. Applied Statistics in Agricultural, Biological, and Environmental Sciences Editor(s):Barry Glaz, Kathleen M. Yeater First published:23 August 2018 Print ISBN:9780891183594 |Onl ISBN:9780891183600
Electronic References, Websites	Khan academy, Udemy

Course Description Form

1. Course Name:

Embryology

2. Course Code:

VEA2112

3. Semester / Year:

Second Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2023

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	2	2
Total	**2**	**2**

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

Name: Naziha Sultan Ahmad
Email: nazvet1969@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The main objective can be summarized as teaching students the basics of embryology • How male and female gametes develop, how fertilization and the formation of the fertilized egg take place, and the stages of division that the fertilized egg goes through until it reaches the uterus. • It also covers how the embryo implants in the uterine lining and the development of various bodily systems in field animals. This enables students to utilize this information in their future work, whether in hospitals, clinics, or even veterinary clinics.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Teaching embryology and expanding knowledge of this science in various animal species. Teaching students how to utilize embryology lectures to understand related subjects such as anatomy and histology. The information acquired can be applied to studying topics related to fertility and infertility, determining pregnancy duration and duration, diseases affecting pregnant animals and fetuses, congenital malformation	Introduction to embryology	Theoretical lectures	Written Exam
2	1		phase of Fertilization		
3	1		phase of cleavage, Implantation process		
4	1		Formation of fatal membranes		
5	1		Phase of Gastrulation and notochord formation		
6	1		Mesoderm differentiation and neurulation process		
7	1		Development of cardiovascular system		
8	1		Development of nervous system		
9	1		Development of brachial arches and pharyngeal pouches		
10	1		Development of digestive system		
11	1		Development of urinary system		
12	1		Development of genital system		
13	1		Development of respiratory system		
14	1		Development of skeletal system		
15	1		Development of lymphatic system		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Poul Hyttel, Fred Sinowatz, Morten Vejlsted, Keith Betteridge. Essential Of Domestic Animal Embryology. Toronto 2010
Main references (sources)	Thomas F. Fletcher and Alvin F. Weber. Veterinary Developmental Anatomy. Veterinary Embryology Class Notes. 2012
Recommended books and references (scientific journals, reports...)	Poul Hyttel, Fred Sinowatz, Morten Vejlsted, Keith Betteridge. Essential Of Domestic Animal Embryology. Toronto 2010
Electronic References, Websites	Veterinary Developmental Anatomy Veterinary Embryology: 2009 Thomas F. Fletcher; Alvin F. Weber

Course Description Form

11.Course Name:

Genetics

1. Course Code:

VEH2106

2. Semester / Year:

First Semester / Second Year

3. Description Preparation Date:

22 / 3 / 2025

4. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours /week	Units
Theoretical	2	2
Total	**30**	**2**

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

Name: Thames Abdulazeez Ezzulddin
Email: thamer1961@uomosul.edu.iq

7. Course Objectives

Course Objectives	• **Study the basics of genetics** • **Study of the DNA ,cell life cycle and cell divisions** • **Animal genetics and animal improvement**

8. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Student prepare a scientific related reports.

9. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Learn the basics of genetics, DNA, its components, and cell divisions.	Development of Genetics and its theories	Theoretical lectures	Written Exam
2-3	4		Cell and chromosome behaviors		
4	2		Mundelein Laws and its modification		
5-6	4		cell life cycle and cell divisions		
7	2	Study of genes, sex-linked inheritance, and animal improvement	The interaction between genes		
8	2		Multiple alleles and alleles false		

9-10	2		Assigned sex and genetics associated with it		
11-12	4		Link, transit and genetic maps		
13	2		Chromosomal mutations		
14	2		Chemical basis and engineering of heredity		
15	2		Quantitative genetics and animal improvement		

10.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

11.Learning and Teaching Resources

Required textbook (curricular books, if any)	Genetic Improvement of Farmed Animals
Main reference (sources)	Population Genetics Basic Principles
Recommended book and references	Cytogenetic Abnormalities
Electronic references, websites	WWW.Labrary Genesis

Course Description Form

1. Course Name:

Baath regime crimes

2. Course Code:

VMM24F5741

3. Semester / Year:

First Semester / Second Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	2	2
Total	**2**	**2**

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

Name: Mahmood Awad Ali
Email: mahmood.awaad@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The learner should understand what a crime is and its types. • The learner should be able to explain and clarify the crimes committed by the Ba'ath regime in Iraq. • The learner should be familiar with international and local laws criminalizing the actions of the Ba'ath regime in Iraq. • The learner should understand the extent of the crimes committed by the Ba'ath regime in Iraq by highlighting these crimes. • The learner should be able to provide examples of these crimes and the locations where they occurred. • The learner should understand the psychological and social effects of the crimes committed by the Ba'ath regime on the personality of the Iraqi citizen. • The learner should understand the environmental effects of the crimes committed by the Ba'ath regime on the Iraqi environment. • The learner should identify the graves left behind by the former Ba'ath regime, identifying their location and time of occurrence.

9. Teaching and Learning Strategies	
Strategy	• Interactive lecture • Brainstorming • Dialogue and discussion • Self-learning

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1A: Understands the concept of crime and its definitions. B1: Possesses the practical and intellectual knowledge and concepts that help him understand the meaning of crimes and their types. 1D: Participates with community members and works to raise their awareness of the danger of crime to society.	The concept of crimes and their types	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm 1, Final Exam
2	2	A2: Identify the most prominent cases that the court dealt with against symbols of the defunct Baath regime. A3: Identify the rulings that the court issued against the convicts. E1: Contributes to knowing the texts of the Iraqi laws under which the rulings were issued against the convicts.	Crimes of the Ba'ath regime as documented by the Iraqi Criminal Court Law of 2005	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm 1, Final Exam
3	2	A4: Identify the negative effects of	militarization of society	Interactive lecture,	Midterm 1, Final Exam

		militarizing society. C1: Document the methods used to militarize society.		brainstorming, dialogue and discussion, self-learning	
4	2	D2: Writes a report on the political assassinations of religious scholars. A5: Recalls the most prominent religious scholars who were persecuted and arrested because of their opposition to the Baath regime.	The Ba'ath regime's stance on religion and its violations of Iraqi laws	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Test Semester 1, Final Exam, Report
5	2	C2: Lists the most prominent political violations committed by the former Ba'ath regime. C3: Works to raise awareness among members of society about the political and military violations of the former Ba'ath regime and their negative impact on Iraqi society.	Some decisions on political and military violations of the defunct Baath regime	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Test Semester 1, Final Exam, Report
6	2	D3: Shows the locations of secret prisons and private detention centers where opponents of the Baath regime were imprisoned.	Baath regime prisons and detention centers in Iraq	Interactive lecture, brainstorming, dialogue and discussion, self-learning	short test, final test
7	2	A6: Identify the most prominent environmental violations committed by the Baath regime in Iraq.	Environmental crimes of the Baath regime	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm 2, Final Exam
8	2	C4: Illustrates the most prominent areas exposed to war and radioactive	1. War pollution, radioactivity, and landmine explosions 2. Destruction of cities and	Interactive lecture, brainstorming, dialogue and	Midterm 2, Final Exam

		contamination, such as the cities of Halabja and Basrah. A7: Explains the scorched earth policy followed by the Baath regime against villages and cities that rejected the defunct Baath regime.	villages (scorched earth policy)	discussion, self-learning	
9	2	4D: Shows the draining of the marshes in southern Iraq during the 1991 Sha'ban uprising. 5C: Shows the clearing of orchards, palm trees, trees, and crops.	Draining the marshes in southern Iraq and destroying orchards, palm trees, trees and crops	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm 2, Final Exam
10	2	C6: Lists the mass graves committed by the Ba'ath regime in Iraq.	Mass grave crimes	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm 2
11	2	A8: Explains the events of 1963 and the killings that accompanied them against the regime of Abdul Karim Qasim and their relationship to the mass graves.	The events of 1963 and their relationship to mass graves	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final Exam
12	2	A9: Classification of mass graves during the Iran-Iraq War. C7: Presents the events of the Anfal massacre of 1987-1988 and its relationship to mass graves.	1: The events of 1979 to 1988 and their relationship to mass graves 2: The events of 1987 to 1988 and their relationship to mass graves	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final Exam
13	2	C8: Documents the events of the 1991 Shaaban uprising	The events of the 1991 popular uprising and its relationship to mass	Interactive lecture, brainstorming,	Final Exam

		and the mass graves committed by the Baath regime after its suppression against its participants.	graves	dialogue and discussion, self-learning	
14	2	A10: Lists mass graves by date from 1863 until the fall of the Baath regime in 2003.	Chronological classification of mass graves and genocide in Iraq, 1963 to 2003	Interactive lecture, brainstorming, dialogue and discussion, self-learning	short test, final test
15	2	C9: Name the locations and numbers of mass graves committed by the Ba'ath regime against the Kurds in 1983. C10: Describe the most important events of the Anfal massacre of 1987-1988 and the university cemeteries that accompanied it. A11: Explain the most important mass graves committed by the Ba'ath regime against participants in the 1991 Sha'ban uprising.	1: Mass Graves Against the Kurds 1983 2: The Anfal Massacre 1987-1988 3: Graves of the Popular Uprising in Iraq 1991	Interactive lecture, brainstorming, dialogue and discussion, self-learning	short test, final test

11. Course Evaluation

Number	Assessment Methods	Assessment Date (Week)	Grade	Relative weight %
1	Report 1	Week 4	5	5
2	Report 2	Week 5	5	5
3	Quiz 1	Week 6	5	5
4	Quiz 2	Week 8	5	5
5	Semester Test 1	Week 10	10	10
6	Semester Test 2	Week 14	10	10
7	Final Test	Final Exams	60	60
Total			%100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Crimes of the Ba'ath Regime in Iraq, 2023

Course Description Form

1. Course Name:

General Microbiology

2. Course Code:

VEM3104

3. Semester / Year:

First Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Mahmmad ali hamad
Email: mahmah1073@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Understanding bacteria in terms of their presence in the environment and their nutritional requirements for growth and reproduction • Methods of transmission of bacteria and the diseases they cause • Treatments and resistance to antibiotics and environmental factors

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Demonstrate knowledge of microorganisms that apply to a wide variety of animal species (including wildlife, production and companion animals Demonstrate laboratory skills in handling microorganisms	Introduction and History of Microbiology	Theoretical lectures	Written Exam
2	3		Bacterial Cell Structure		
3-4	6		Bacterial Classification		
5	3		Bacterial Nutrition and Growth		
6	3		Sterilization and Disinfection		
7-8	6		Antibiotics and Chemotherapeutic Agents		
9	3		Bacterial Genetics		
10	3		Bacterial Virulence		
11	3		Normal Flora and Probiotics		
12-13	6		Rickettsia and Chlamydia		
14-15	6		Mycoplasma		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Explain how bright-field microscopy works and why specimens must be stained. □ Explain how phase-contrast microscopy works and why specimens do not need to be stained. □ Decide on the correct type of microscopy and sample preparation for a given situation. □ Explain how magnification and resolution are controlled in a microscope. □ State the advantages and disadvantages of using bright-field, phase-contrast, dark-field, fluorescence, confocal scanning laser, transmission	General Laboratory Instructions	Practical work in laboratory	Practical Exam
2	2		Microscopes		
3	2		Sterilization and Disinfection		
4	2		Culture Media for Bacterial Growth		
5	2		Bacterial Nutrition and Growth		
6	2		Colony Morphology		
7	2		Pure Culture Techniques		
8	2		Bacterial Motility		
9	2		Bacterial Morphology		
10	2		Bacterial Staining Techniques		
11	2		Bacterial Count		
12	2		Antibiotics Tests		
13	2		Biochemical Tests		
14-15	4		Mycology		

		electron, and scanning electron microscopy for a given situation			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Veterinary Microbiology Hardcover – Octob 11, 2022 by D. Scott McVey (Editor), Melissa Kennec (Editor), M. M. Chengappa
Main references (sources)	Animal microbiology (jiahne)
Recommended books and references (scientific journals, reports...)	Veterinary Microbiology, 4th Edition Share Icon D. Scott McVey (Editor), Melissa Kennedy (Editor), M. M. Chengappa (Editor), Rebecc Wilkes (
Electronic References, Websites	https://classification.nlm.nih.gov/schedules/C

Course Description Form

1. Course Name:

Helminthology

2. Course Code:

VEM3102

3. Semester / Year:

First Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name:Prof.Dr.Manal hammadi hasan
Email: manalhimmadi@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Parasitology course provides an overview of the animals parasites and their diseases • Topics include the basic concept of helminthes parasite classes • Special emphasis is placed on topics that related to animals health such as host-pathogen interactions and laboratory diagnostic methods

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	(i) demonstrate detailed knowledge and understanding of the biology, life cycles, pathogenesis, diagnosis of parasitic infections in animalss and their relevance for animals health and strategies for control; (ii) demonstrate detailed knowledge and understanding of the biology and strategies for control of the vectors and intermediate hosts of animals parasites; (iii) carry out practical laboratory identification o the various parasite stages both free and in tissues and diagnose infections; (iv) demonstrate specialised skills acquired through taking Modules on: advanced diagnostic, molecular, immunological genetic, chemotherapeutic ecological and/or control aspects of the subject; (v) demonstrate the ability to design a laboratory or field based research project, apply relevant research skills, critically analyse and interpret data, and work with minimal supervision; (vi) prepare a written report including a critical literature review o relevant scientific publications; and show competence in communicating scientific information and findings	Introduction & Definitions of Terms Effects of parasites on their hosts	Theoretical lectures	Written Exam
2	3		Transmission of parasite		
3-4	6		Nemathelminthes /Families: Ascardidae Oxyuridae,		
5-6	6		Hetrakidae Subuluridae, Rhabditidae Strongyloididae,		
7-8	6		Ancylostomatidae, Trichostrongylidae Dictyocaulidae		
9-10	6		Metastrongyloidae Spiruridae, Fillariidae, Trichinellidae		
11-12	6		Phylum: Trematoda / Families: Fasciolidae, Dicrocoelidae,		
13-14	6		Phylum: Platyhelminthes / Families: Taeniidae,		
15	3		Davaineidae, Dipylidiidae, Hymenolepididae, Mesocestoidae,		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	(i) demonstrate detailed knowledge and understanding of the	Laboratory diagnosis of parasitism	Practical work in laboratory	Practical Exam
2	2		Parascaris equorum, Toxocara canis,		
3	2		Strongylidae copulatory bursa,		

		biology, life cycles, pathogenesis, diagnosis of parasitic infections in animalss and their relevance for animals health and strategies for control; (ii) demonstrate detailed knowledge and understanding of the biology and strategies for control of the vectors and intermediate hosts of animals parasites; (iii) carry out practical laboratory identification of the various parasite stages both free and in tissues and diagnose infections; (iv) demonstrate specialised skills acquired through taking Modules on: advanced diagnostic, molecular, immunological, genetic, chemotherapeutic, ecological and/or control aspects of the subject; (v) demonstrate the ability to design a laboratory or field based research project, apply relevant research skills, critically analyse and interpret data, and work with minimal supervision; (vi) prepare a written report including a critical literature review of relevant scientific publications; and show competence in communicating scientific information and findings	Strongylus vulgaris		
4-5	4		Haemonchus contortus, Ostertagia, Dictyocalus filarial		
6	2		Habronema, Thelazia, Setaria		
7	2		Fasciola hepatica, Fasciola gigantica		
8	2		Dicrocoelium dendriticum		
9	2		Schistoma		
10	2		Moniezia expansa		
11-12	4		Raillietina		
13-14	4		Taenia spp		
15	2		Echinococcus granulosus, protoscolex of Hydatid cyst		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Textbook of Veterinary Parasitology** (Mandal,2025)
Main references (sources)	**Veterinary Helminthology Paperback** by R. K. Reinecke

Recommended books and references (scientific journals, reports...)	Veterinary parasitology ,Richard wall
Electronic References, Websites	https://www.eolss.net/sample-chapters/c10/e5-15a-26.pdf

Course Description Form

1. Course Name:

Immunology

2. Course Code:

VEM3115

3. Semester / Year:

First Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Prof.Dr. Fanar Ablahad Isihak
Email: fanar1976@uomosul.edu.iq

8. Course Objectives

Course Objectives	• provide students with a foundation in immunological processes • provide students with knowledge on how the immune system works building on their previous knowledge from biochemistry, genetics, cell biology and microbiology • able to clearly state the role of the immune system

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Outline the development and maturation process of immune competent cells. - Understand the basic mechanisms for how the immune system becomes activated and responds to stimuli e.g. infections or tissue damage. Have knowledge about the basic principles for defenses and fight against infections.	Principle of immunity and immune response (specific and nonspecific)	Theoretical lectures	Written Exam
2-3	4		Immunoglobulin: Structure, variation, Function and synthesis		
4-5	4		Immunology of T and B cells		
6	2		Complement: Nature, Function and pathways		
7	2		Cell mediated immunity, antigen recognition by T cells		
8	2		Immunological tolerance		
9-10	4		Hypersensitivity, Mechanisms		
11	2		Auto-immunity		
12	2		Transplantation		
13	2		Principle of immune genetics		
14	2		Immunoanaphylaxis reaction		
15	2		Immunity of infection		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Outline the development and maturation process of immune competent cells. - Understand the basic mechanisms for how the immune system becomes activated and responds to stimuli e.g. infections or tissue damage. Have knowledge about the basic principles for defenses and fight against infections	Introduction to immunology labs	Practical work in laboratory	Practical Exam
2	2		Lab animals		
3-4	4		Preservation of antigens and antibodies		
5	2		Separation of immunoglobulin		
6	2		Complement test		
7	2		Precipitation test		
8	2		Agglutination test		
9	2		Neutralization test		
10-11	4		Separation of lymphocytes from blood and lymph nodes		
12-13	4		Preparation of antigens		
14	2		Leukocytes		
15	2		Phagocytosis		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks	veterinary Immunology 10th Edition by Ian R. Tizard BVMS PhD ACVM (Hons) DSc (Hons)

(curricular book if any)	
Main references (sources)	Basic immunology
Recommended books and references (scientific journals, reports...)	**veterinary Immunology 10th Edition** by Ian R. Tizard BVMS PhD ACVM (Hons) DSc (Hons)
Electronic References, Websites	https://www.routledge.com/Days-Veterinary-Immunology-Principles-and-Practice/Catchpole-HogenEsch/p/book/9781032317168?srsltid=AfmBOorRdSYiYuNlamZkoiVK8XIWe_tiX0KYUt7tH_qJ4bTu5S93r

Course Description Form

1. Course Name:

Protozoa and Arthropoda

2. Course Code:

VEM3122

3. Semester / Year:

Second Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name:Wasan amjad Ahmed
Email:wasenamkad@uomosul.edu.iq

8. Course Objectives

Course Objectives	• understand the taxonomic position of protozoa • understand the general characteristics of animals belonging to protozoa • understand the body organization of phylum from protozoa

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	Upon successful completion of this Learning Outcome Guide, you will be able to discuss and demonstrate knowledge of the Phylum Arthropoda, which includes the Class Insecta and Arachnida.	Phylum: Sarcomastigophora	Theoretical lectures	Written Exam
3-4	6		Families: Trypanosomatidae, Trichomonadae,		
5-6	6		Plasmodiidae, Babesiidae,		
7-8	6		Theileriidae , Monocercomonadidae,		
9	3		Eimeriidae, Sarcocystidae, Cryptosporidiidae.		
10	3		Phylum: Arthropoda		
11	3		Families: Ioxdidae, Argasidae, Sarcoptidae, Psoroptidae,		
12	3		Tabanidae, Culicidae, Psychodidae		
13	3		Simuliidae, Oestridae, Calliphoridae		
14	3		Anthomyidae, Cimicidae, Haematopinidae		
15	3		Linognathidae, Superfamilies, Ischnocera, Amblycera		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Upon successful completion of this Learning Outcome Guide, you will be able to discuss and demonstrate knowledge of the Phylum Arthropoda, which includes the Class Insecta and Arachnida	Trypanosoma brucei, T.equiperdium, T.evansi, T.cruzi, Leishmania (Amastigete), Trichomonas vaginalis, Entamoeba histolytica(trophozoite)	Practical work in laboratory	Practical Exam
3-4	4		Eimeria (life cycle), Sarcocystis, Toxoplasma gondii, Cryptosporidiun		
5-6	4		Plasmodium gallinaceum, Babesia canis, B. motasi		
7-8	4		Theileria, Anaplasma, Hard ticks, Hyalomma, Rhipicephalus, Boophilus, larva, Soft tick		
9-10	4		Demodex folliculorum, Dermanyssus gallinae, Psorptes, Sarcoptes		
11-12	4		Menacanthus straminus, Haematopinus suis, Ctenocephalides canis, Xenopsylla cheopis, Cimex lectularis		
13-14	4		Anopheles, Culex, (male + female) pupa and larva, Simulium adult and Larva		
15	2		Oesteridae, Oestrus ovis, Hypoderma bovis, Gastrophilus intestinalis		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricul books, if any)	helminths-arthropods-and-protozoa-of-domesticated-animals-7 edition
Main references (sources)	Textbook of Veterinary Parasitology 2024th Edition by S. C. Mandal
Recommended books and references (scientific journals, reports...)	helminths-arthropods-and-protozoa-of-domesticated-animals-7 edition
Electronic References, Websites	https://onlinelibrary.wiley.com/doi/book/10.1002/9781119073

Course Description Form

1. Course Name:

Special Microbiology

2. Course Code:

VEM3124

3. Semester / Year:

Second Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Mahmmad ali hamad
Email: mahmah1073@uomosul.edu.iq

8. Course Objectives

Course Objectives	• To provide a basic knowledge of the bacteria and its involvement in animals health and disease • To provide a basic knowledge of the fungi and its involvement in animals health and disease • To provide a basic knowledge of the culture and growth of bacteria **and fungi**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Describe the range and diversity of bacteria, fungi, , in various ecosystems and in animal hosts and their biotic interactions. -: Analyze scientific information, for sustaining evidence-based arguments on microbiological hypotheses, to solve scientific problems. : Implement modern microbiological techniques and practices to conduct experiments and use computational, quantitative	Staphylococcus	Theoretical lectures	Written Exam
2	3		Streptococcus		
3	3		Corynebacterium, Listeria		
4	3		Bacillus		
5-6	6		Clostridium		
7	3		Actinomyces and Nocardia		
8	3		Actionbacillus, Pasteurella		
9	3		Haemophillus, Moraxella and bordetlla		
10	3		Pseudomonas (Burkholderia)		
11	3		Leptospira, Campylobacter		
12	3		Brucella		
13-14	6		Spharophorus, Enterbacteriacae		
15	3		Mycobacterium		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Describe the range and diversity of bacteria, fungi, , in various ecosystems and in animal hosts and their biotic interactions. -: Analyze scientific information, for sustaining evidence-based arguments on microbiological hypotheses, to solve scientific	Staphylococcus	Practical work in laboratory	Practical Exam
2	2		Streptococcus		
3-4	4		Corynebacterium		
5	2		Rhodococcus, Listeria		
6	2		Bacillus		
7-8	4		Clostridium and Anaerobic Condition		
9	2		Mycobacterium		
10	2		Pasteurella		
11	2		Pseudomonas (Burkholderia)		
12	2		Leptospira		
13	2		Brucella		
14-15	4		Enterbacteriacae		

		problems. : Implement modern microbiological techniques and practices to conduct experiments and use computational, quantitative			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Veterinary Microbiology Hardcover – Octob 11, 2022 by D. Scott McVey (Editor), Melissa Kennec (Editor), M. M. Chengappa
Main references (sources)	Animal microbiology (jiahne)
Recommended books and references (scientific journals, reports...)	Veterinary Microbiology, 4th Edition Share Icon D. Scott McVey (Editor), Melissa Kennedy (Editor), M. M. Chengappa (Editor), Rebecc Wilkes (
Electronic References, Websites	https://classification.nlm.nih.gov/schedules/C

Course Description Form

1. Course Name:

Virology

2. Course Code:

VEM3126

3. Semester / Year:

Second Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name:safwan yousif albaroodi
Email:safwanyousif@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Review the history and principles of virology • List the general properties of viruses • Write the different types of viruses families

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	To understand the relationships between pathogenic viruses and their hosts. - To understand the mechanisms, modes of transmission and outcomes of viral diseases. - To learn the methods of diagnosis, managements, control and prevention of animal viral diseases.	Introduction and Discovering of Viruses	Theoretical lectures	Written Exam
2	2		Morphology and Chemistry of Viruses		
3	2		Virus Classification and Taxonomy		
4	2		Virus Multiplication and Propagation (replication)		
5	2		Viral genetics and Interaction Between Viruses		
6	2		Interferon and Viral Interference		
7	2		Viral Vaccines and Antiviral Drugs		
8	2		Effect of Physical and Chemical Agents on Viruses		
9	2		Laboratory Diagnosis of Viral Infection		
10	2		Picornavirus and Caliciviridae		
11	2		Orthomyxoviridae		
12	2		Paramyxoviridae and Retroviridae		
13	2		Reoviridae, Birnaviridae, Rhabdoviridiae and Bornaviridae		
14	2		Poxviridae, Herpesviridae		
15	2		Adenoviridae, Parvoviridae, Papovaviridae and Papillomaviridae		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	- To learn the methods of cultivation and propagation diagnosis,serological and molecular test managements, control and prevention of animal viral diseases	Collection and Preservation of Viral Samples	Practical work in laboratory	Practical Exam
2-3	4		Isolation and Preservation of Viruses		
4-5	4		Propagation of Viruses in Egg Embryo		
6-8	6		Propagation of Viruses in Tissue Culture		
9	2		Haemagglutination Test of ND Virus		
10	2		Haemagglutination Inhibition Test of ND Virus		
11	2		Neutralization Test for ND Virus		
12-13	4		Methods of Virus Titration		
14	2		Physical Character of Viruses		
15	2		Chemical Character of Viruses		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67

Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Veterinary Virology, 3rd Edition by Frederick Murphy, E. Gibbs, Marian Horzinek, Michael Studdert
Main references (sources)	**TEXTBOOK OF VETERINARY VIROLOGY Paperback – January 1, 2009** by S.N.SHARMA
Recommended books and references (scientific journals, reports...)	Veterinary Virology, 3rd Edition by Frederick Murphy, E. Gibbs, Marian Horzinek, Michael Studdert
Electronic References, Websites	https://ictv.global/

Course Description Form

1. Course Name:

Toxicology

2. Course Code:

VEH3116

3. Semester / Year:

First Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	2	2
Total	**2**	**2**

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

Name: Professor Dr. Banan Khalid Abdulrahman Albaggou
Email: banan1971@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**- Graduating students who have a good scientific base on the basics of toxicology. 2- Consolidating scientific information about everything related to toxic substances, the possibility of dealing with them, the mechanism of their action, and methods for diagnosing and treating these cases correctly in the future after graduation.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1-Familiarity with Concepts and terminology of toxicology, Toxicokinetics and Toxicodynemics. 2- The students have an experience in diagnosing poisoning cases and prescribing appropriate antidotes	Concepts and terminology of toxicology	Theoretical lectures	Written Exam
2	2		Toxicokinetics		
3	2		Antidotes and general treatment of poisoning		
4	2		Diagnostic aspects of toxicology		
5-6	4		Insecticides		
7	2		Herbicides		
8	2		Toxic metals		
9	2		Mycotoxins		
10	2		Feed-associated toxicants		
11	2		House-hold & industrial products		
12	2		Toxic plants		

13	2	for each .	Bio toxins		
14	2	3- Students have sufficien experience to know the safety of medicines through calculation ED_{50},LD_{50} & TI.	Environmental pollution with toxicants		
15	2		Pharmaceuticals poisoning		

11. Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Textbook, Snha M.,2001. Veterinary toxicology.
Main references (sources)	Textbook, Plumlee, K. 2004. Clinical Veterinary Toxicology, Mosby Publishers, St Louis, MO..
Recommended books and references (scientific journals, reports…)	Reddy GH, Evans T., Rottingham G. and Casteel S.2005. Veterinary toxicology.
Electronic References, Websites	https://www.niehs.nih.gov/health/topics/science/toxicology

Course Description Form

1. Course Name:

Pharmacology - 1

2. Course Code:

VEP3101

3. Semester / Year:

First Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Prof. Dr. Ghada Abdel Moneim Fares
Email: gadafaris@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1- Graduating students familiar with the basics of pharmacology…..** **2- They have experience in prescribing the drug and knowing its side effects And drug interactions…** **3-Able to supervise pharmacies and veterinary clinics**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	1-Familiarity with the basics of pharmacology.	Introduction to the Pharmacology	Theoretical lectures	Written Exam
2	3		Drug kinetic		

3-4	6	2-Studying the functions of the body's organs and the mechanism of action of various medications on them. 3-The student's scientific knowledge of how to calculate doses and prescribe medication accurately.	Drug dynamic		
5	3		Drug metabolism		
6-8	9		Mechanism of action of drug		
9-10	6		Side effects of drug		
11-12	6		Autonomic nervous system drugs		
13-15	9		Central nervous system drugs		
- Practical Subjects:					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	1- Skill in dealing with animals and methods of administering medications to them. 2- Knowing the interactions between medications, the side effects of each medication, and how to deal with them.	General principles and definition	Practical work in laboratory	Practical Exam
2	2		Drug form		
3	2		Metrology		
4-5	4		Dose calculation and dilution		
6	2		Lab animal technique, handling		
7	2		Effect of ionization on absorption		
8	2		Analysis of alanine		
9	2		Effect of rout of administration		
10	2		Effect of autonomic drugs on isolated rabbit duodenum		
11-12	4		Effect of drugs on eye		
13-14	4		Effect of autonomic drug & hormones on isolated uterus from animals		
15	2		Diuretics		

11. Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1. Textbook of veterinary pharmacology

Main references (sources)	1. Hand book of veterinary pharmacology. 2. Veterinary pharmacology & therapeutics
Recommended books and references (scientific journals, reports…)	https://www.nichd.nih.gov/health/topics/pharma/more_information/resources
Electronic References, Websites	https://in2med.co.uk/pharmacology/

Course Description Form

1. Course Name:

Pharmacology - 2

2. Course Code:

VEP3121

3. Semester / Year:

Second Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Prof. Dr. Ghada Abdel Moneim Fares
Email: gadafaris@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1- Graduating students familiar with the basics of pharmacology…..** **2- They have experience in prescribing the drug and knowing its side effects And drug interactions…** **3-Able to supervise pharmacies and veterinary clinics**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	9	1-Familiarity with the basics of pharmacology. 2-Studying the functions of the body's organs and the mechanism of action of various medications on them.	Antibacterial drugs	Theoretical lectures	Written Exam
4	3		Antifungal drugs		
5	3		Antiviral drugs		
6	3		Antineoplastic drugs		
7-8	6		Antinematodal, Anticestodal and Antiprotozoan		
9	3		Dermatopharmacology,		

		3-The student's scientific knowledge of how to calculate doses and prescribe medication accurately.	Ectoparasiticides		
10	3		Antiseptics and Disinfectants		
11	3		Endocrine pharmacology		
12	3		Autocoids and anti-inflammatory		
13	3		Metabolic therapy		
14	3		Growth promoter		
15	3		Herbal medicine		
- Practical Subjects:					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	1-Skill in dealing with animals and methods of administering medications to them. 2-Knowing the interactions between medications, the side effects of each medication, and how to deal with them.	Nature and source of drugs	Practical work in laboratory	Practical Exam
2	2		Writing of prescription		
3	2		Pharmaceutical preparation for farm animals and poultry		
4	2		Despising of drugs lotion and solution		
5	2		Despising of drugs ointment and cream		
6	2		Despising of drugs antacid and laminate		
7	2		Analgesic		
8	2		Log dose response relationships (ED50 , LD50, TI)		
9	2		Sensitivity test of antibiotic		
10	2		Organophosphate poisoning in rats or mice		
11-12	4		Determination of blood cholinesterase activity		
13-14	4		Cyanide poisoning		
15	2		Aspirin toxicity (comparison with acetaminophen)		

11. Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1. Textbook of veterinary pharmacology
Main references (sources)	1. Hand book of veterinary pharmacology. 2. Veterinary pharmacology & therapeutics
Recommended books and references (scientific journals, reports...)	https://www.nichd.nih.gov/health/topics/pharma/more_information/ resources

Electronic References, Websites	https://in2med.co.uk/pharmacology/

Course Description Form

1. Course Name:

General Pathology

2. Course Code:

VED3100

3. Semester / Year:

First Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	3	3
Practical	3	1.5
Total	**6**	**4.5**

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

Name: Assist.Prof.Dr.Mohammad Ghassan saeed
Email: mgsaeed@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Explain how diseases originate and develop. • Understand cellular responses to injury (e.g., adaptation, necrosis, apoptosis). • Describe mechanisms of inflammation, healing, and repair.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	• Identify histological and gross changes in tissues and organs. • Correlate clinical signs and symptoms with pathological changes. • Cover general features of neoplasia, infections, immune disorders, and hemodynamic dysfunctions (e.g., thrombosis, embolism)	Introduction	Theoretical lectures	Written Exam
2	3		Degenerative changes and Necrosis		
3	3		Acute Cellular Degeneration		
4	3		Gout Degeneration and Gangrenous necrosis		
5	3		Disturbance of Pigmentation		
6	3		Disturbance of growth		
7-8	6		Disturbance of Circulation		
9-10	6		Inflammation		
11	3		Healing and repair		
12-13	6		Inmmunopathology		
14-15	6		Tumors		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	• Gain basic knowledge of pathology lab methods (e.g., histopathology, cytology, immunohistochemistry). • Understand how lab results contribute to clinical diagnosis and management. • Apply pathological concepts to clinical scenarios. • Develop differential diagnoses based on pathological findings.	Solutions and fluids used in fixation and preservation of tissue samples used as preservative samples	Practical work in laboratory	Practical Exam
3-4	6		Methods of processing and preparation of tissue for microscopically examination		
5-6	6		Methods of embedding and preparation of tissue blocks		
7-8	6		Methods of cryostat for frozen sections		
9-10	6		Methods of reaction and special tissue stains		
11-12	6		Frozen section microtome for pathological detection of fat and enzymes		
13-15	9		Practical training in examination and diagnosis of many pathological conditions as histological section		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67

Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**. Jubb, Kennedy, and Palmer's Pathology of Domestic Animals** • **Authors**: Maxie, M.G. (Ed.) • **Editions**: 6th Edition (latest)
Main references (sources)	**Robbins and Cotran Pathologic Basis of Disease** • **Authors**: Kumar, Abbas, Aster
Recommended books and references (scientific journals, reports...)	**Veterinary Pathology (Journal)** • **Publisher**: American College of Veterinary Pathologists (ACVP)
Electronic References, Websites	https://journals.sagepub.com/home/vet

Course Description Form

1. Course Name:
Systemic Pathology

2. Course Code:
VED3120

3. Semester / Year:
cond Semester / Third Year

4. Description Preparation Date:
1 / 9 / 2023

5. Available Attendance Forms:
• Theoretical lectures. • Practical work in laboratory.

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

	Credit Hours	Units
eoretical	3	3
ıctical	3	1.5
tal	**6**	**4.5**

7. Course administrator's name (mention all, if more than one name)
me: Prof.Dr.Hanna Khalil Ismail ıail: Hanakhaleel@uomosul.edu.iq

8. Course Objectives	
ırse Objectives	• . Understand the Pathology of Each Organ System • To study the structural and functional changes in specific organ systems (e.g., respiratory, cardiovascular, digestive). • Correlate Clinical Signs with Pathological Lesions • To link clinical symptoms with gross and microscopic lesions for accurate diagnosis.

9. Teaching and Learning Strategies	
ıtegy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	dentify Species-Specific Disease Patterns To recognize how diseases vary among different animal species Develop Diagnostic and Interpretative Skills To train in interpreting gross, histopathologic, and cytologic findings.	Diseases of Respiratory system/ Upper respiratory tract/ Lung/ Pleura	Theoretical lectures	Written Exam
3-4	6		Diseases of Cardiovascular system		
5	3		Diseases of haemopoetic and lymphatic tissues		
6-8	9		Diseases of digestive system		
9	3		Disease of urinary system		
10	3		Disease of Male and Female genital system		
11	3		Diseases of Muscol- Skeletal system		
12	3		Diseases of Nervous system		
13	3		Disease of Endocrine		
14	3		Diseases of skin and accessory		
15	3		Diseases of eye and special organ		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	Understand the Pathogenesis of Systemic Diseases To explain how diseases develop and progress in different body systems. To equip students with knowledge required for veterinary practice and laboratory diagnosis. Apply Pathological Knowledge to Real Cases	Histopathological of upper respiratory tract	Practical work in laboratory	Practical Exam
3-4	6		istological section endocarditis and yocarditis		
5-6	6		Pathological affections of aorta		
7-8	6		Pathological affection of digestive system		
9-10	6		Gastroenteritis, parasitic affection of stomach, intestinal obstruction, coccidiosis		
11	3		Liver necrosis, liver cirrhosis, abscess, parasitic infection of liver		
12-13	6		Microscopic slides of metritis and salphangitis, mastitis and urinary tract		
14	3		Microscopic slides of bone infection, and cartridge, joints, osteomalaysia		
15	3		Microscopic slides from general diseases cases.		

11.Course Evaluation

	Course Exam	Final Exam	Sum
eoretical	27	40	67
ıctical	13	20	33
tal	**40**	**60**	**100**

12.Learning and Teaching Resources	
quired textbooks (curricular books, if any)	**. Jubb, Kennedy, and Palmer's Pathology of Domestic Animals** • **Authors**: Maxie, M.G. (Ed.) • **Editions**: 6th Edition (latest)
in references (sources)	**Robbins and Cotran Pathologic Basis of Disease** • **Authors**: Kumar, Abbas, Aster
Recommended books and references (scientific journals, reports...)	**Veterinary Pathology (Journal)** • **Publisher**: American College of Veterinary Pathologists (ACVP)
ctronic References, Websites	ps://journals.sagepub.com/home/vet

Course Description Form

1. Course Name:

Veterinary Clinic

2. Course Code:

VEC3127

3. Semester / Year:

Second Semester / Third Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Practical classes utilizing live animals.
- Practice in the University Veterinary Clinic.

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

	Credit Hours	Units
Practical	2	1
Total	**2**	**1**

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

Name: Osamah Muwafaq Al Iraqi
Email: osamamuwafag@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**- understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals. 4- A field visit to different farms of animals and learning about the different breeding systems, the most important problems facing animal husbandry, vaccination programs

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Practical classes utilizing live animals. • Practice in the University Veterinary Clinic. • Student prepare a scientific related reports.

10. Course Structure

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	. Animal Handling and Safety • Demonstrate safe and humane handling of common domestic animals (dogs, cats, rabbits, etc.). • Apply restraint techniques appropriate for physical examinations and minor procedures • Recognize signs of stress or aggression in animals and respond appropriately. 2. Clinical Procedures and Support • Assist in routine veterinary procedures (vaccinations, wound care, sample collection). • Understand and follow protocols for infection control and aseptic technique. • Perform basic first aid and emergency stabilization under supervision. 3. Veterinary Terminology and Communication • Understand and accurately use common veterinary medical terminology. • Communicate effectively with veterinarians, clients,	Introduction	Practical classes utilizing live animals	Written Exam
2	2		Inspection, Palpation, Percussion and Auscultation		
3	2		Examination of Body Temperature		
4	2		Examination of Arterial Pulse		
5	2		Examination of Respiration		
6	2		Examination of Lymph nod		
7	2		Examination of Mucous membranes		
8	2		Examination of Respiratory System		
9	2		Examination of Cardiovascular System: Heart, Jugular vein		
10	2		Examination of Digestive System: Rumen, Liver, Pain reflex		
11	2		Examination of Urinary System		
12	2		Examination of Skin		
13	2		Examination of Reproductive System (Udder + Genital System)		
14	2		Route of Administration of Drugs		
15	2		Allergic Tests (Diagnostic Tests) and Revising		

		and team members. • Record patient history and clinical findings clearly and accurately. 4. Animal Health and Wellness • Understand the basics of animal anatomy, physiology, and nutrition. • Recognize common signs of illness, injury, and zoonotic diseases. • Support routine health maintenance (vaccination schedules, deworming, flea/tick control). 5. Diagnostic Support • Assist in sample collection (blood, urine, feces) and simple diagnostic tests (e.g., fecal flotation, urinalysis).			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Practical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs an goats. Vet. Med., 11th ed. W.B. Saunders, New York 2- Coles, E. H. (1986). Veterinary Clinical Pathology, W. B. Saunders Co, Philadelphia, London, Toronto.
Main references (sources)	1- Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs an goats. Vet. Med., 11th ed. W.B. Saunders, New York 2- Coles, E. H. (1986). Veterinary Clinical Pathology, W. B. Saunders Co, Philadelphia, London, Toronto.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Practice and Diagnosis
Electronic References, Websites	www. Google.com: Principles of Veterinary Clinic

Course Description Form

1. Course Name:

Clinical Pathology – 1

2. Course Code:

VED4119

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	1	1
Practical	2	1
Total	**3**	**2**

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

Name: Eman Dahamm Hadi
Email: aymanalmwly3@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Developing and understanding pathological diagnoses • becoming familiar with classical and modern laboratory methods in diagnosing various diseases that affect different animals • supports the practical side of the profession and achieves the ability to deal with pathological cases and diagnose them clinically and laboratory

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	2	Direction of clinical laboratories is best provided a well-trained physician who combines the knowledge of clinical medicine with a broad understanding of laboratory and information technology and the principles of laboratory management	Introduction (terminology and concepts)	Theoretical lectures	Written Exam
3-4	2		Clinical haematology (leukocytes and erythrocytes)		
5	1		Bone marrow examination		
6	1		Platelets function abnormalities & diagnosis of bleeding disorders		
7	1		Clinical biochemistry, Basic principles, total portion,		
8	1		Ketones, urea, enzymology, mineral levels.		
9	1		Metabolic profile testing and S.1. unit.		
10-11	2		Liver function test		
12-13	2		Kidney function test		
14	1		Water electrolytes and acid - base imbalance		
15	1		Disturbances of adrenal, pituitary, thyroid and parathyroid glands		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1- Understand the Principles of Clinical Pathology o Explain the physiological basis for laboratory tests and pathophysiological changes in disease. 2- Describe Laboratory Techniques and Tests o Understand the methods used in hematology, clinical chemistry, urinalysis, cytology, and other diagnostic procedures. 3- Recognize Normal vs. Abnormal Results o Identify reference ranges and differentiate between normal and pathological findings across species. 4- Interpret Laboratory Data in a Clinical Context o Correlate laboratory data with clinical signs, disease processes, and case history.	Collection of different samples.	Practical work in laboratory	Practical Exam
2	2		Erythrocytes count		
3	2		Reticulocytes count		
4	2		Packed cell volume and Hb determination		
5	2		Leukocytes parameters (TLC)		
6	2		Leukocytes parameters (DLC)		
7	2		ESR determination		
8	2		Platelets function abnormalities		
9	2		Bleeding and clotting time		
10	2		Blood smear examination		
11	2		Lymph smear examination		
12-13	4		Clinical biochemistry, Total protein, Ketones and urea.		
14	2		Enzymology and mineral levels.		
15	2		Urine examination (physical, chemical and microscopic)		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	20	30	50
Practical	20	30	50
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook the diseases of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W.B. Saunders, New York
Main references (sources)	Coles, E. H. (1986). Veterinary Clinical Pathology, W. B. Saunders Co, Philadelphia, London, Toronto.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Pathology A Case-Based Approach
Electronic References, Websites	www.google.comveterinary clinical pathology practice,

Course Description Form

1. Course Name:

Clinical Pathology - 2

2. Course Code:

VED4127

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	1	1
Practical	2	1
Total	**3**	**2**

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

Name: Eman Dahamm Hadi
Email: aymanalmwly3@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Developing and understanding pathological diagnoses • becoming familiar with classical and modern laboratory methods in diagnosing various diseases that affect different animals • supports the practical side of the profession and achieves the ability to deal with pathological cases and diagnose them clinically and laboratory

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. ourse Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	3	Direction of clinical laboratories is best	Clinical parasitology	Theoretical lectures	Written Exam
4	1		Rumen fluid examination		

5-6	2	provided a well-trained physician who combines the knowledge of clinical medicine with a broad understanding of laboratory and information technology and the principles of laboratory management	Clinical microbiology		
7-8	2		Milk Examination		
9	1		Antimicrobial sensitivity test		
10-12	3		Clinical immunology		
13	1		Transudate and exudate		
14-15	2		Water electrolytes and acid - base imbalance		
1-3	3		Clinical parasitology		
4	1		Rumen fluid examination		
5-6	2		Clinical microbiology		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	1- Understand the Principles of Clinical Pathology o Explain the physiological basis for laboratory tests and pathophysiological changes in disease. 2- Describe Laboratory Techniques and Tests o Understand the methods used in hematology, clinical chemistry, urinalysis, cytology, and other diagnostic procedures. 3- Recognize Normal vs. Abnormal Results o Identify reference ranges and differentiate between normal and pathological findings across species. 4- Interpret Laboratory Data in a Clinical Context o Correlate laboratory data with clinical signs, disease processes, and case history.	Fecal examination	Practical work in laboratory	Practical Exam
3	2		Skin scraping examination		
4-5	4		Clinical microbiology		
6-7	4		Milk Examination (physical and chemical)		
8	2		Milk Examination (Bacterial)		
9-10	4		Antimicrobial sensitivity test		
11	2		Rumen fluid examination		
12-13	4		Serological test		
14-15	4		Tests of detection of toxic substances.		
1-2	4		Fecal examination		
3	2		Skin scraping examination		
4-5	4		Clinical microbiology		
6-7	4		Milk Examination (physical and chemical)		
8	2		Milk Examination (Bacterial)		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	20	30	50
Practical	20	30	50
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Constable, P.D.; Hinchcliff, K.W.; Done, S.H. Grunberg, W. (2017). Veterinary Medicine: A textbook the diseases of cattle, horses, sheep, pigs and goats. Med., 11th ed. W.B. Saunders, New York
Main references (sources)	Coles, E. H. (1986). Veterinary Clinical Pathology, W Saunders Co, Philadelphia, London, Toronto.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Pathology A Case-Based Approach
Electronic References, Websites	www.google.comveterinary clinical pathology practice,

Course Description Form

1. Course Name:

Infectious Diseases - 1

2. Course Code:

VED4117

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	3	3
Total	**3**	**3**

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

Name: Khder J. Hussain
Email: khderhussain@uomosul.edu.iq

8. Course Objectives

Course Objectives	1- Develop and understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	1- Identifies various causes of animal diseases, animal epidemics and how they can be diagnosed; including common and life-threatening diseases of animals 2- Describe the etiology, source, reservoir and mode of transmission of bacterial, parasitic and viral diseases of animal species (cattle, sheep, goats, equine and small animals) and describe the diagnostic methodology 3-Understand the Nature and Classification of Infectious Agents o Describe the biology and classification of bacteria, viruses, fungi, protozoa, and helminths relevant to veterinary medicine. 4-Explain Pathogenesis and Host-Pathogen Interactions o Understand how pathogens cause disease, immune responses to infections, and factors that influence disease severity and outcome. 5-Identify Key Infectious Diseases in Different Species o Know the major infectious diseases of companion animals, livestock, equines, and wildlife, including species-specific and zoonotic infections. 6-Understand Transmission and Epidemiology o Explain routes of transmission (direct, indirect, airborne, vector-borne, etc.), epidemiologic patterns, and risk factors for spread.	Enzootic abortion in sheep, Glanders, Epizootic lymphangitis	Theoretical lectures	Written Exam
3	3		Strangles, Contagious bovine pyelonephritis		
4-5	6		Caseous lymphadenitis of sheep		
6-7	6		Ulcerative lymphangitis, Brucellosis		
8	3		Listerosis, Leptospirosis		
9	3		Anthrax, Salmonllosis, Colibacillosis		
10	3		Footrot and Mastitis		
11	3		TB and john's disease.		
12	3		Actinomycosis and Actinobacillosis, Oral and laryngeal necrobacillosis		
13	3		Winter dysentery of cattle, Hemophilus and Moraxella		
14	3		Pasteurellosis and HS, Black leg, Black disease		
15	3		Tetanus, Enterotoxaemia, Botulism		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunbe W. (2017). Veterinary Medicine: A textbook of the diseas of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed W.B. Saunders, New York
Main references (sources)	1- Disease of small Ruminants, Hand book 2-Veterinary Infectious Diseases in Domestic Animals, 3rd Edition
Recommended books and references (scientific journals, reports...)	1- Merck veterinary manual 2-dairy science 3- Pathogens 4- Buffalo bulletin
Electronic References, Websites	www.google.com www.PupMed.com

Course Description Form

1. Course Name:

Infectious Diseases - 2

2. Course Code:

VED4126

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	3	3
Total	**3**	**3**

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

Name: Wisam Salim Hassan
Email: wissamsaleem@uomosul.edu.iq

8. Course Objectives

Course Objectives	1- Develop and understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-5	15	1- Identifies various causes of animal diseases, animal epidemics and how they can be diagnosed; including common and life-threatening diseases of animals 2- Describe the etiology, source, reservoir and mode of transmission of bacterial, parasitic and viral diseases of animal species (cattle, sheep, goats, equine and small animals) and describe the diagnostic methodology 3-Understand the Nature and Classification of Infectious Agents o Describe the biology and classification of bacteria, viruses, fungi, protozoa, and helminths relevant to veterinary medicine. 4-Explain Pathogenesis and Host-Pathogen Interactions o Understand how pathogens cause disease, immune responses to infections, and factors that influence disease severity and outcome. 5-Identify Key Infectious Diseases in Different Species o Know the major infectious diseases of companion animals, livestock, equines, and wildlife, including species-specific and zoonotic infections. 6-Understand Transmission and Epidemiology o Explain routes of transmission (direct, indirect, airborne, vector-borne, etc.), epidemiologic patterns, and risk factors for spread.	Diseases caused by Viruses	Theoretical lectures	Written Exam
6-10	15		Diseases caused by Fungus		
11-15	15		Diseases caused by Parasites		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunbe W. (2017). Veterinary Medicine: A textbook of the diseas of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed

	W.B. Saunders, New York
Main references (sources)	1- Disease of small Ruminants, Hand book 2-Veterinary Infectious Diseases in Domestic Animals, 3rd Edition
Recommended books and references (scientific journals, reports...)	1- Merck veterinary manual 2-dairy science 3- Pathogens 4- Buffalo bulletin
Electronic References, Websites	www.google.com www.PupMed.com

Course Description Form

1. Course Name:

Internal Medicine - 1

2. Course Code:

VED4110

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	3	3
Total	**3**	**3**

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

Name: Omer Khazaal Sallou Alhankawe
Email: ahmed2010mks@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**-Develop and understand the principles of veterinary medicine in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3-develop health methods to control and reduce them, as well as the ability to deal with various animals

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	1-Describe the etiology, source, reservoir and mode of transmission of bacterial, parasitic and viral diseases of animal species (cattle, sheep, goats, equine and small animals) and describe the diagnostic methodology 2- Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of a sick animal. 3-Understand the Pathophysiology of Diseases o Explain mechanisms of disease affecting major organ systems (e.g., cardiovascular, respiratory, gastrointestinal, renal, endocrine, hematologic, neurologic, and immune systems). 4-Describe Clinical Signs and Syndromes o Recognize clinical presentations and common syndromes across species. 5-Understand Diagnostic Techniques o Explain indications, limitations, and interpretations of diagnostic tools such as blood tests, imaging, endoscopy, and biopsy. 6-Know Therapeutic Approaches o Understand pharmacological and non-pharmacological treatmen modalities for various internal diseases.	Introduction	Theoretical lectures	Written Exam
2	3		General systemic states		
3-4	6		Digestive system: Principles of alimentary tract dysfunction		
5	3		Manifestation of alimentary tract dysfunction		
6-7	6		Diseases of the buccal cavity and associated organs, Stomatitis, Pharygeal obstruction, Pharyngeal paralysis, Esophagitis, esophageal obstruction		
8-11	12		Diseases of the forestomachs of ruminants		
12-13	6		Diseases of the stomach and intestine		
14-15	6		Equine colic		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunber W. (2017). Veterinary Medicine: A textbook of the diseas of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed W.B. Saunders, New York
Main references (sources)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunber W. (2017). Veterinary Medicine: A textbook of the diseas of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed W.B. Saunders, New York
Recommended books and references (scientific journals, reports...)	1- Merck veterinary manual 2-dairy science 3- Pathogens 4- Buffalo bulletin
Electronic References, Websites	www.google.com www.PuPMed.com

Course Description Form

1. Course Name:

Internal Medicine - 2

2. Course Code:

VED4128

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	3	3
Total	**3**	**3**

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

Name: Omer Khazaal Sallou Alhankawe
Email: ahmed2010mks@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**-Develop and understand the principles of veterinary medicine in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3-develop health methods to control and reduce them, as well as the ability to deal with various animals

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	9	-Describe the etiology, source, reservoir and mode of transmission of bacterial, parasitic and viral diseases of animal species (cattle, sheep, goats, equine and small animals) and describe the diagnostic methodology 2- Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of a sick animal. 3-Understand the Pathophysiology of Diseases o Explain mechanisms of disease affecting major organ systems (e.g., cardiovascular, respiratory, gastrointestinal, renal, endocrine, hematologic, neurologic, and immune systems). 4-Describe Clinical Signs and Syndromes o Recognize clinical presentations and common syndromes across species. 5-Understand Diagnostic Techniques o Explain indications, limitations, and interpretations of diagnostic tools such as blood tests, imaging, endoscopy, and biopsy. 6-Know Therapeutic Approaches o Understand pharmacological and non-pharmacological treatmen modalities for various internal diseases	Diseases of Liver	Theoretical lectures	Written Exam
4-8	15		Diseases of Nervous system		
9-13	15		Diseases of Respiratory system		
14-15	6		Diseases of Skin		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunbe W. (2017). Veterinary Medicine: A textbook of the diseas of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed W.B. Saunders, New York
Main references (sources)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunbe W. (2017). Veterinary Medicine: A textbook of the diseas of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed W.B. Saunders, New York
Recommended books and references (scientific journals, reports...)	1- Merck veterinary manual 2-dairy science 3- Pathogens 4- Buffalo bulletin
Electronic References, Websites	www.google.com www.PuPMed.com

Course Description Form

1. Course Name:

Veterinary Clinic - 1

2. Course Code:

VEC4112

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Practical classes utilizing live animals.
- Practice in the University Veterinary Clinic.

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

	Credit Hours	Units
Practical	4	2
Total	**4**	**2**

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

Name: Mohammad Osamah Dahl
Email: mdahl@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**- understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals. 4- A field visit to different farms of animals and learning about the different breeding systems, the most important problems facing animal husbandry, vaccination programs

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Practical classes utilizing live animals. • Practice in the University Veterinary Clinic. • Student prepare a scientific related reports.

10. Course Structure

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-15	4	1. Animal Handling and Safety • Demonstrate safe and humane handling of common domestic animals (dogs, cats, rabbits, etc.). • Apply restraint techniques appropriate for physical examinations and minor procedures. • Recognize signs of stress or aggression in animals and respond appropriately. 2. Clinical Procedures and Support • Assist in routine veterinary procedures (vaccinations, wound care, sample collection). • Understand and follow protocols for infection control and aseptic technique. • Perform basic first aid and emergency stabilization under supervision. 3. Veterinary Terminology and Communication • Understand and accurately use common veterinary medical terminology. • Communicate effectively with veterinarians, clients, and team members. • Record patient history and clinical findings clearly and accurately. 4. Animal Health and Wellness • Understand the basics of animal anatomy, physiology, and nutrition. • Recognize common signs of illness, injury, and zoonotic diseases. • Support routine health maintenance (vaccination schedules,	Weekly rotation at the departments of the University Veterinary Clinic: 1. Internal medicine 2. Surgery. 3. Obstetrics. 4. Poultry and fish. 5. Clinical pathology.	Practice in the University Veterinary Clinic	Objective Structured Practical Veterinary examination (OSPVE)

		deworming, flea/tick control). 5. Diagnostic Support • Assist in sample collection (blood, urine, feces) and simple diagnostic tests (e.g., feca flotation, urinalysis).			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Practical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W.B. Saunders, New York 2- Coles, E. H. (1986). Veterinary Clinical Pathology, W. Saunders Co, Philadelphia, London, Toronto
Main references (sources)	.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Practice and Diagnosis
Electronic References, Websites	www. Google.com: Principles of Veterinary Clir

Course Description Form

1. Course Name:

Veterinary Clinic - 2

2. Course Code:

VEC4123

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Practical classes utilizing live animals.
- Practice in the University Veterinary Clinic.

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

	Credit Hours	Units
Practical	4	2
Total	**4**	**2**

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

Name: Mohammad Osamah Dahl
Email: mdahl@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**- understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals. 4- A field visit to different farms of animals and learning about the different breeding systems, the most important problems facing animal husbandry, vaccination programs

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Practical classes utilizing live animals. • Practice in the University Veterinary Clinic. • Student prepare a scientific related reports.

10. Course Structure **- Practical Subjects:**					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1-15	4	. Animal Handling and Safety • Demonstrate safe and humane handling of common domestic animals (dogs, cats, rabbits, etc.). • Apply restraint techniques appropriate for physical examinations and minor procedures. • Recognize signs of stress or aggression in animals and respond appropriately. 2. Clinical Procedures and Support • Assist in routine veterinary procedures (vaccinations, wound care, sample collection). • Understand and follow protocols for infection control and aseptic technique. • Perform basic first aid and emergency stabilization under supervision. 3. Veterinary Terminology and Communication • Understand and accurately use common veterinary medical terminology. • Communicate effectively with veterinarians, clients, and team members. • Record patient history and clinical findings clearly and accurately. 4. Animal Health and Wellness • Understand the basics of animal anatomy, physiology, and nutrition. • Recognize common signs of illness, injury, and zoonotic diseases. • Support routine health maintenance (vaccination schedules,	Weekly rotation at the departments of the University Veterinary Clinic: 1. Internal medicine 2. Surgery. 3. Obstetrics. 4. Poultry and fish. 5. Clinical pathology.	Practice in the University Veterinary Clinic	Objective Structured Practical Veterinary examination (OSPVE)

		deworming, flea/tick control). 5. Diagnostic Support • Assist in sample collection (blood, urine, feces) and simple diagnostic tests (e.g., feca flotation, urinalysis).			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Practical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W.B. Saunders, New York 2- Coles, E. H. (1986). Veterinary Clinical Pathology, W. Saunders Co, Philadelphia, London, Toronto
Main references (sources)	.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Practice and Diagnosis
Electronic References, Websites	www. Google.com: Principles of Veterinary Clir

Course Description Form

1. Course Name:

Zoonotic Diseases

2. Course Code:

VED4107

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	2	2
Total	**2**	**2**

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

Name: Mohammad A.S. Al-Taliby
Email: mohammadas98@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1- clinical diagnoses of zoonosis and infections shared between animals and humans** **2- Study the disease or infection that can be transmitted naturally from animals to humans or from humans to animals** **3- Study public health concern and a direct human health hazard** **4- the effective prevention and control of possible zoonosis**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1-Define Zoonoses and Their Importance o Understand the definition of zoonoses and their global significance in public and animal health. 2-Classify Major Zoonotic	Introduction to the zoonosis, Principles of zoonosis recognition	Theoretical lectures	Written Exam
2	2		Principles of zoonosis control and prevention, Viral zoonosis		
3	2		Eastern, Venezuelan and Western equine encephalitis, Louping - ill, Mad cow disease		

4	2	Diseases o Describe bacterial, viral, parasitic, and fungal zoonoses, including rabies, brucellosis, leptospirosis, tuberculosis, echinococcosis, avian influenza, and anthrax. 3-Understand Epidemiology and Transmission o Explain the modes of transmission (direct, indirect, vector-borne, foodborne, etc.), reservoirs, and risk factors for zoonotic diseases. 4-Recognize Species-Specific Risks o Identify zoonotic diseases associated with various animal species (e.g., livestock, pets, wildlife). 5-Diagnose and Investigate Zoonotic Diseases o Take clinical histories, recognize signs of potential zoonotic infections, and perform diagnostic testing. 6-Apply Principles of Infection Control o Implement biosecurity measures, isolation protocols, and PPE use in clinical and field settings. 7-Support Disease Surveillance and Reporting o Participate in case reporting and understand the roles of national and international bodies (e.g., WHO, OIE, CDC). 8-Educate Clients and the Public o Communicate	Rabies , California encephalitis, Colorado tick fever, West Nile fever, Yellow fever, Nairobi sheep disease		
5	2		Influenza, Newcastle disease, Psittacosis, Q fever		
6	2		Bacterial zoonosis, Anthrax, Listerosis, Leptospirosis, Lepracy		
7	2		Closterdium perfringes food poisoning, Streptocuccosis, Staphylococuccosis		
8	2		Colibacillosis, Vibriosis, Salmonllosis, Shigellosis		
9	2		Parasitic zoonosis, Arthropod infection and tick paralysis		
10	2		Cestoda infection: Coenuriasis, Taeniasis.		
11	2		Trematode infection:Fascioliasis, Dictoceliasis		
12	2		Nematode infection: Ascariasis, Capillariasis, Filariasis, Thelaziasis, Trichinosis		
13	2		Cutanous larva migrans, Visceral larva migrant		
14	2		Protozoa infection		
15	2		Fungal infection		

		risks and preventive strategies for zoonoses to pet owners, farmers, and the general public.			

11.Course Evaluation			
	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Zoonosis and Veterinary Public Health
Main references (sources)	Text book of zoonoses
Recommended books and references (scientific journals, reports...)	Text book of zoonoses
Electronic References, Websites	www. Google.com: Zoonotic Diseases: Etiology Impact, and Control

Course Description Form

1. Course Name:

Surgery – 1

2. Course Code:

VED4115

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Assis. prof. Sahar Mohammed
Email: sahar1212@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Teaching the fundamental of veterinary surgery** • **Provide student with basic skills of veterinary surgery especially, anaesthesia, suturing techniques and general surgery** • **Make sure that the students are capable of performing minor surgeries**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including general and local anesthesia, and various basics of radiology, enabling him to perform various surgical operations on various types of field and domestic animals.	Introduction and classification of Surgery	Theoretical lectures	Written Exam
2	3		Sterilization		
3	3		Response to trauma, Wound classification		
4	3		Heamastasis, Abscess, Ulcer		
5	3		Tumors, Hernia		
6	3		Inflammation		
7	3		Affection of the bursa, joints		
8	3		Affection of tendon		
9	3		Introduction of anesthesia and history		
10	3		Affection of the bursa, joints		
11	3		Introduction of anesthesia and history		
12	3		Classification of anesthesia		
13	3		Stage of anesthesia		
14	3		General anesthetic agents		
15	3		Local anesthesia		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including general and local anesthesia, and various basics of radiology, enabling him to perform various surgical operations on various types of field and domestic animals.	Introduction to surgical theater	Practical classes utilizing live animals.	Practical Exam
3-4	4		Instrumentation		
5-6	4		Preparation of surgical packs		
7-8	4		Preoperative examination		
9-10	4		Sutures and ligatures		
11-12	4		Local anesthesia		
13-14	4		Regional anesthesia		
15	2		Examination		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75

Practical	10	15	25
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	• Fossum, T. W. (2018). *Small Animal Surgery E-Book*. Elsevier Health Sciences.
Main references (sources)	• Fossum, T. W. (2018). *Small Animal Surgery E-Book*. Elsevier Health Sciences. •
Recommended books and references (scientific journals, reports...)	• Pavletic, M. M. (Ed.). (2018). *Atlas of small animal wound management and reconstructive surgery*. John Wiley & Sons.
Electronic References, Websites	https://pubmed.ncbi.nlm.nih.gov/ https://www.sciencedirect.com/

Course Description Form

1. Course Name:

Surgery - 2

2. Course Code:

VED4125

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	3	3
Practical	2	1
Total	**5**	**4**

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

Name: Prof. Osama Hazim
Email: osama79@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Teaching the fundamental of veterinary surgery** • **Provide student with basic skills of veterinary surgery especially, anaesthesia, suturing techniques and general surgery** • **Make sure that the students are capable of performing minor surgeries**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including general and local anesthesia, and various basics of radiology, enabling him to perform various surgical operations on various types of field and domestic animals.	Regional anesthesia	Theoretical lectures	Written Exam
2	3		Preanesthetic consideration		
3	3		Premeditation and muscle relaxant		
4	3		Inhalation anesthesia		
5-6	6		Anesthesia of lab animals and birds		
7	3		X-ray		
8	3		Radiation hazard and protection		
9	3		Diagnostic and procedures of radiology		
10	3		Processing of X-Ray		
11-12	6		Fracture		
13	3		Lameness and hoof affection		
14	3		Laser surgery		
15	3		Eye and ear		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	6	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including general and local anesthesia, and various basics of radiology, enabling him to perform various surgical operations on various types of field and domestic animals.	General anesthesia 6	Practical classes utilizing live animals.	Practical Exam
4-6	6		X-ray 6		
7-9	6		Orthopedics surgery 6		
10	2		Tendon surgery 2		
11	2		Intra articular injection 2		
12	2		Laser surgery		
13	2		Eye and ear surgery 2		
14	2		Docking 2		
15	2		Examination 2		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	30	45	75
Practical	10	15	25
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	• Fossum, T. W. (2018). *Small Animal Surgery E-Book*. Elsevier Health Sciences.
Main references (sources)	• Fossum, T. W. (2018). *Small Animal Surgery E-Book*. Elsevier Health Sciences.
Recommended books and references (scientific journals, reports...)	• Pavletic, M. M. (Ed.). (2018). *Atlas of small animal wound management and reconstructive surgery*. John Wiley & Sons.
Electronic References, Websites	https://www.sciencedirect.com/ https://pubmed.ncbi.nlm.nih.gov/

Course Description Form

1. Course Name:

Morbid Anatomy - 1

2. Course Code:

VED4111

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	1	1
Practical	2	1
Total	**3**	**2**

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

Name: Assist.Prof.Dr.Ahmad Mohammad Ali Al-Saidya
Email: al2011saidya@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Training students on necropsy methods and lesions of the animal diseases** • **Understand Structural Changes in Diseased Organs** • **To recognize pathological changes both macroscopically and microscopically**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Correlate Anatomical Changes with Clinical Conditions To link observable pathological changes with clinical signs and symptoms. To understand how postmortem examinations are conducted and their diagnostic value.	Bovine diseases: Tuberculosis, Leptospirosis,	Theoretical lectures	Written Exam
2	1		Contagious bovine pleuropneumonia,		
3	1		Colibacillosis, Shipping fever,		
4-5	2		Cattle plague, Bovine malignant catarrhal,		
6-7	2		Foot and mouth disease, Bovine viral diarrhea,		
8	1		Actinobacillosis, Actinomycosis,		
9	1		Theileriosis, Anaplasmosis,		
10	1		Babesiosis, Lumpy skin disease		
11-12	2		Ovine disease: contagious ecthyma, Sheep pox,		
13	1		Foot root, Black leg,		
14	1		Lamb dysentery, Anthrax, Listeriosis,		
15	1		Enterotoxaemia, Black disease		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Distinguish Between Normal and Abnormal Anatomy Support Diagnosis Through Anatomical Findings To prepare students for more advanced topics in pathology and related clinical sciences.	Introduction & P.M report	Practical work in laboratory	Practical Exam
2	2		Post mortem technique for large animals		
3	2		PM technique for lab animals		
4	2		Bovine diseases: Tuberculosis, Leptospirosis,		
5	2		Contagious bovine pleuro pneumonia,		
6	2		Colibacillosis, Shipping fever,		
7	2		Cattle plague, Bovine malignant		
8	2		catarrhal, Foot and mouth disease,		
9	2		Bovine viral diarrhea, Actinobacillosis,		
10	2		Actinomycosis, Theileriosis, Anaplasmosis,		
11	2		Babesiosis, Lumpy skin disease		
12	2		Ovine disease: contagious ecthyma, Sheep pox,		
13	2		Foot root, Black leg, Lamb dysentery,		
14	2		Anthrax, Listeriosis,		
15	2		Enterotoxaemia, Black disease		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	20	30	50
Practical	20	30	50

Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**THE NECROPSY BOOK** **A Guide for Veterinary Students, Residents, Clinicians, Pathologists, and Biological Researchers**
Main references (sources)	**Color Atlas of Veterinary Pathology** • **Authors**: Various (e.g., Palmer, Kennedy, others)
Recommended books and references (scientific journals, reports...)	**Veterinary Gross Pathology Atlas and Text** • **Authors**: Donald Meuten or other contributors (depending on edition)
Electronic References, Websites	https://norecopa.no/norina/dr-john-m-kin necropsy-show-tell/

Course Description Form

1. Course Name:

Morbid Anatomy - 2

2. Course Code:

VED4121

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	1	1
Practical	2	1
Total	**3**	**2**

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

Name: Assist.Prof. Enas Sheet Mustafa
Email: Snas.sheet1@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Training students on necropsy methods and lesions of the animal diseases** • **Understand Structural Changes in Diseased Organs** • **To recognize pathological changes both macroscopically and microscopically**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-2	2		Equine disease: Strangles, Glanders	Theoretical lectures	Written Exam
3-4	2		Shigellosis, Epizootic lymphangitis, Ulcerative lymphangitis		
5-6	2		Equine infectious anemia, Equine influenza		
7-8	2		Canine and Feline disease: Rabies		
9-10	2		Canine distemper		
11-12	2		Canine viral hepatitis, Feline parvovirus		
13	1		Lab animal disease: Tyzzer's disease		
14-15	2		Coccidiosis in rabbit, External parasite		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Distinguish Between Normal and Abnormal Anatomy Support Diagnosis Through Anatomical Findings To prepare students for more advanced topics in pathology and related clinical sciences.	Strangles,	Practical work in laboratory	Practical Exam
2	2		Glanders		
3	2		Shigellosis,		
4	2		Epizootic lymphangitis		
5	2		Ulcerative lymphangitis,		
6	2		Equine influenza		
7	2		Equine infectious anemia		
8	2		Rabies		
9	2		Canine distemper		
10	2		Canine viral hepatitis		
11	2		Feline parvovirus		
12	2		Tyzzer's disease		
13	2		Coccidiosis in rabbit		
14-15	4		External parasite		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	20	30	50
Practical	20	30	50
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	**THE NECROPSY BOOK** **A Guide for Veterinary Students, Residents, Clinicians, Pathologists, and Biological Researchers**
Main references (sources)	**Color Atlas of Veterinary Pathology** **Authors**: Various (e.g., Palmer, Kennedy others)
Recommended books and references (scientific journals, reports...)	**Veterinary Gross Pathology Atlas and Text** **Authors**: Donald Meuten or other

	contributors (depending on edition)
Electronic References, Websites	https://norecopa.no/norina/dr-john-m-kin necropsy-show-tell/

Course Description Form

1. Course Name:

Poultry Diseases - 1

2. Course Code:

VED4114

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Assist.Prof.Ayman Abdullah Ali
Email: Amoonizzz@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Teaching students about poultry diseases and treatments** • **Understand the Etiology and Pathogenesis of Poultry Diseases** • **Recognize Clinical Signs and Lesions of Common Diseases**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	To diagnose disease based on externa symptoms, behaviora changes, and postmorten findings. To understand biosecurity vaccination, hygiene, an management practices tha help prevent diseas outbreaks.	Introduction about diseases and poultry industry	Theoretical lectures	Written Exam
3-7	10		Bacterial diseases		
8-10	6		Mycoplasma and Chlamydia diseases		
11-15	2		Viral diseases		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Develop Diagnostic and Laboratory Skills To train students in proper sample collection, diagnostic techniques, and interpretation of lab results. Understand Zoonotic and Economically Important Diseases To enable students to provide practical advice for disease management on poultry farms. To understand how poor nutrition or inadequate management practices can predispose birds to disease.	Introduction about poultry industry in relation to diseases	Practical work in laboratory	Practical Exam
2	2		management of poultry house and their effected on diseases		
3	2		Method for killing chickens prepared for post mortem		
4	2		Learning student about how to write case report		
5	2		Comparative anatomy of bird (gross lesions and samples collection)		
6	2		E. coli infection		
7	2		Diseases caused by Salmonella		
8	2		Coryza/ fowl cholera and spirochetosis		
9	2		Necrotic and ulcerative enteritis		
10	2		Mycoplasma diseases		
11	2		Newcastle, Maerks disease, leukosis, avian encephalomyelitis		
12	2		IB, IBD, IH, ILT		
13	2		Avian pox, Stunting syndrome, EDS, HHS		
14	2		Introduction about poultry industry in relation to diseases		
15	2		Requirement of management of house and their effected on diseases		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricu books, if any)	**Diseases of Poultry** • **Editors**: David E. Swayne et al. • **Edition**: 14th edition (latest)

	• **Publisher**: Wiley-Blackwell
Main references (sources)	**Manual of Poultry Diseases *(FAO / OIE / regional manuals)***
Recommended books and references (scientific journals, reports...)	**Avian Pathology (Journal)** • **Publisher**: British Veterinary Poultry Association (BVPA)
Electronic Referenc Websites	https://extension.msstate.edu/agriculture/livestock/poultry/diseas poultry

Course Description Form

1. Course Name:

Poultry Diseases - 2

2. Course Code:

VED4124

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Dr.Omar Basim Ahmad
Email: dr.omar.b@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Teaching students about poultry diseases and treatments** • **Understand the Etiology and Pathogenesis of Poultry Diseases** • **Recognize Clinical Signs and Lesions of Common Diseases**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	To diagnose diseases based on external symptoms, behavioral changes, and postmortem findings. To understand biosecurity vaccination, hygiene, and management practices tha help prevent disease outbreaks.	Mycotic poultry Diseases	Theoretical lectures	Written Exam
3-7	10		Nutritional diseases		
8-10	6		Parasitic poultry diseases		
11-15	2		Metabolic poultry diseases		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Develop Diagnostic and Laboratory Skills To train students in proper sample collection, diagnostic techniques, and interpretation of lab results. Understand Zoonotic and Economically Important Diseases To enable students to provide practical advice for disease management on poultry farms. To understand how poor nutrition or inadequate management practices can predispose birds to disease.	Malnutrition of diseases	Practical work in laboratory	Practical Exam
3	2		Method for killing chickens prepared for post mortem		
4	2		Method used for vaccination		
5	2		Parasitic diseases		
6	2		Drug used for treatment of poultry diseases		
7	2		Mycotic diseases		
8-9	4		Field visiting to layers, parents stock		
10-11	4		Bacteriological and serological method and collection of blood,		
12-13	2		diseases of seabird, wild birds and prey birds (Eagles and Hawks)		
14	2		Methods of treatment		
15	2		Visiting to scientific central lab in veterinary medicine college		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Diseases of Poultry** • **Editors**: David E. Swayne et al. • **Edition**: 14th edition (latest)

	• **Publisher**: Wiley-Blackwell
Main references (sources)	**Manual of Poultry Diseases *(FAO / OIE / regional manuals)***
Recommended books and references (scientific journals, reports...)	**Avian Pathology (Journal)** **Publisher**: British Veterinary Poultry Association (BVPA)
Electronic References, Websites	https://extension.msstate.edu/agriculture/livestock/poultry/diseas poultry

Course Description Form

1. Course Name:

Female Fertility

2. Course Code:

VED4113

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Isam Bahnan Basheer
Email: isamsharum@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The importance of studying this subject lies in its close relationship with animal reproduction and increasing production levels in both model farms and household breeding models. • It enhances familiarity with the breeding and reproduction of pets such as dogs and cats. • Students are taught the fundamentals and principles of female fertility and infertility, along with training on various therapeutic methods.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understand the female fertility	Female puberty and maturity	Theoretical lectures	Written Exam
2	2		Physiology of the female reproductive system		
3	2		Female reproductive hormones		
4	2		Estrus cycle		
5	2		Seasonality, Ovulation, Luteolysis		
6-8	6		Infertility and sterility		
9-10	4		Reproduction in buffalo cows		
11-12	4		Reproduction in mares		
13	2		Reproduction in she camels		
14	2		Reproduction in ewes and does		
15	2		Reproduction in bitch and queen		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Test of the female fertility and how it works	Anatomy of the female reproductive system	Practical work in laboratory	Practical Exam
2-3	4		Estrus signs and detection		
4	2		Vaginal examination		
5-7	6		Rectal palpation		
8	2		Clinical uses of hormones		
9-11	6		Female infertility and sterility		
12	2		Abnormalities of the female reproductive system		
13	2		Intrauterine therapy		
14	2		Reproductive performance		
15	2		Records		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics.

	Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X. Gary England. Fertility and Obstetrics in the Horse. Blackwell 3ed Edition, Leicestershire UK; 2005. ISBN-13 978-14501-2095-1. Heide S, Gheorghe M C. Comparative Reproductive Biology. Blackwell 1st edition. Oxford, UK 2007. ISBN-13: 978-0-8138-1554-1/2007.
Main references (sources)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics. Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X.
Recommended books and references (scientific journals, reports...)	Iraqi Journal of Veterinary Science; Theriogenology; Animal Reproduction Science; Reproduction in Domestic Animals
Electronic References, Websites	PubMed; ScienceDirect

Course Description Form

1. Course Name:

Veterinary Obstetrics

2. Course Code:

VED4122

3. Semester / Year:

Second Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Uday T. naoman
Email: Uday.naoman@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The importance of studying this subject lies in its close connection to animal reproduction and productivity enhancement, both in model farms and in home breeding practices. • This field enhances students' familiarity with the breeding and reproduction of companion animals, such as dogs and cats. • Students learn the fundamentals and principles of fertility and infertility in females, along with training on various therapeutic techniques.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The outcomes of this learning process will focus on providing students with the foundational knowledge and principles of obstetrics, along with various obstetric maneuvers for addressing dystocia in different types of livestock and companion animals, ultimately enabling them to successfully perform various obstetric procedures and maneuvers.	Fertilization	Theoretical lectures	Written Exam
2	2		Physiology of pregnancy		
3	2		Maternal recognition of pregnancy		
4	2		Length of gestation period		
5	2		Maintenance of pregnancy		
6	2		Pregnancy diagnosis		
7-8	4		Problem of pregnancy		
9	2		Parturition		
10	2		Normal uterine involution		
11	2		Uterine defense mechanism		
12-13	4		Dystocia		
14-15	4		Puerperal diseases		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The outcomes of this learning process will focus on providing students with the foundational knowledge and principles of obstetrics, along with various obstetric maneuvers for addressing dystocia in different types of livestock and companion animals, ultimately enabling them to successfully perform various obstetric procedures and maneuvers.	Implantation and embryo development	Practical work in laboratory	Practical Exam
2	2		Fetal membrane		
3	2		Position of uterus during pregnancy		
4-5	4		Rectal palpation		
6-7	4		Method of pregnancy diagnosis		
8	2		Induction of abortion and parturition		
9	2		Normal Presentation, Position and Posture		
10-11	4		Abnormal Presentation, Position and Posture		
12	2		Obstetrical instruments		
13	2		Obstetrical maneuvers		
14	2		Fetotomy		
15	2		Caesarian section		

11.Course Evaluation			
	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics. Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X
Main references (sources)	Gary England. Fertility and Obstetrics in the Horse. Blackwell 3ed Edition, Leicestershire UK; 2005. ISBN-13 978-14501-2095-1. Rodriguez-Martinez, H. Assisted reproductive techniques for cattle breeding in developing countries: A critical appraisal of their value and limitations. Blackwell Publishing, Sweden; 2012. doi: 10.1111/j.1439-0531.2011.01961.x.
Recommended books and references (scientific journals, reports...)	Iraqi Journal of Veterinary Science; Theriogenology; Animal Reproduction Science; Reproduction in Domestic Animals
Electronic References, Websites	https://pubmed.ncbi.nlm.nih.gov/ https://www.sciencedirect.com/

Course Description Form

1. Course Name:

Meat Hygiene

2. Course Code:

VEH5114

3. Semester / Year:

First Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Prof. Dr. Raad Abdulghany Alsanjary.
Email: ralsanjary61@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Introducing students to the basics of meat hygiene science. • Introducing students to the importance of meat safety for consumer health. • Providing students with the basic information necessary to establish modern slaughterhouses and the mechanism of operation of these slaughterhouses. • Identifying the hygienic practices that must be adopted in modern slaughterhouses. • Identifying the methods and stages of slaughtering different animals. • Training students on how to conduct various examinations of the carcasses and its parts. • Learn the methods of taking meat samples, in addition to teaching students how to distinguish between types of meat from different animals. • Learn how to judge diseased cases.

9. Teaching and Learning Strategies

Strategy	• Explaining scientific subjects through theoretical lectures. • Training students on practical applications in laboratories. • Prepare relevant scientific reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Abattoir construction Conversion of muscle to meat Meat preservation method Abattoir sanitation and hygiene Meat residues	Terms in meat hygiene	Theoretical lectures	Written Exam
2	2		Meat structure		
3	2		Conversion of muscle to meat		
4	2		Parts of abattoir		
5	2		Pre slaughter meat inspection		
6	2		Post slaughter meat inspection		
7	2		Meat preservation		
8	2		Meat spoilage		
9	2		Meat microbiology		
10	2		Food poisoning		
11	2		Residues in meat		
12	2		Sanitation in abattoir		
13	2		Judgment on bacterial diseases		
14	2		Judgment on parasitic diseases		
15	2		Slaughtering and dressing poultry carcasses		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Practical skill on ante Morten inspection Practical skill on post Morten inspection Judgment on meat	Meat plant construction and operation	Practical work in laboratory	Practical Exam
2	2		Ante-mortem inspection of animals		
3	2		Carcass inspection		
4	2		Head and viscera inspection		
5	2		Bleeding efficiency of carcasses		
6	2		Estimation of meat pH		
7	2		Abnormal odors in meat		
8	2		Abnormal colors in meat		
9	2		Distinguishing between fat and meat of different animals		
10	2		Meat Quality tests		
11	2		Meat microbiology (part 1)		
12	2		Meat microbiology (part 2)		

13	2		Detection of drug residues in meat		
14	2		Detection of mycotoxin residues in meat		
15	2		Slaughtering and dressing poultry carcasses		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricu books, if any)	Thimjos Ninios, Janne Lundén, Hannu Korkeala, and Maria Fredriksson-Ahomaa. Meat Inspection and Control in the Slaughterhouse. Published 2014 John Wiley & Sons, Ltd.
Main references (sources)	David S. Collins and Robert J. Huey. Gracey's Meat Hygiene, Eleve Edition. Published 2015 by John Wiley & Sons, Ltd.
Recommended books and references (scientific journals, reports...)	Y. H. Hui, J. L. Aalhus, L. Cocolin, I. Guerrero-Legarreta, L. M. Nollet, R. W. Purchas, M. W. Schilling, P. Stanfield, and Y. L. Xiong. Handbook of meat and meat processing. Published 2012 by Taylor & Francis Group, LLC.
Electronic References, Websites	https://www.nphindia.com/book/9789382471127/meat-hygiene-and-food-safety. https://www.astralint.com/book/9789352221394/textbook-o meat-hygiene.

Course Description Form

1. Course Name:

Milk Hygiene

2. Course Code:

VEH5121

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Omar Hashim Sheet
Email: omar.sheet@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Ensuring Public Health and Safety** • **Maintaining Milk Quality** • **Economic Benefits for Producers** • **Enhancing Animal Health and Productivity** • **Methods for producing milk products**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1. **Explain officia definitions of milk.**	Definition of milk, The Importance of Milk from Animals	Theoretical lectures	Written Exam
2	2		Structure of Mammary Gland, mechanism of milk synthesis		
3	2	**2. Describe the composition and properties of milk**	Milk Components and Milk Quality, and nutritional aspect of milk		
4	2		The Microbiological of the Dairy Milk		
5	2		Milk from farm to dairy plant, and characteristics of milk		
6	2		Microbiology of milk		
7	2	**3. Understand milk's role in food processing and milk products**	Guidelines for dairy food manufacturing premises		
8	2		Milk and dairy science		
9	2		Milk quality and Mastitis		
10	2		Diagnostic procedures of mastitis		
11	2		Mastitis staphylococci		
12	2		Somatic Cell Counts		
13	2	**4. Explain the principles and significance o cleaning and sanitizing**	Contaminants and drug residues of milk		
14	2		Probiotic and Health Aspects		
15	2		Cleaning and Sanitizing in Milk Production and Processing		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	**Milk sampling**	Procedures for collecting milk samples	Practical work in laboratory	Practical Exam
2	2		Milk specific gravity determination		
3	2		Determination of fat and total solids in milk.		
4	2		Measurement of milk proteins and pH		
5	2	**Milk analysis**	Detection of milk adulteration		
6	2		Mastitis test.		
7	2	**Residues in milk**	Petrifilm method for detecting bacterial contamination in milk		
8	2		Detection of drug residues in milk		
9	2		Detection of mycotoxin residues in milk		
10	2	**Milk microbiology**	ELISA method for detecting milk contaminants		
11	2		Estimation of milk acidity		
12	2		Somatic Cell Counts		
13	2		Isolation and identification of bacteria causing mastitis (part 1)		
14	2		Isolation and identification of bacteria causing mastitis (part 2)		
15	2		Isolation and identification of bacteria causing mastitis (part 3)		

11.Course Evaluation			
	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Advances in Dairy Microbial Products
Main references (sources)	Disease of dairy cattle
Recommended books and references (scientific journals, reports...)	Dairy microbiology (Journal)
Electronic References, Websites	1. https://www.fda.gov/food/guidan documents-regulatory-information-topic- food-and-dietary-supplements/milk- guidance-documents-regulatory-informat 2. https://www.dgridenergy.com/ content/uploads/2018/11/milk-hygiene- guide-for-milk-producers.pdf

Course Description Form

1. Course Name:

Summer Clinic

2. Course Code:

VEC5109

3. Semester / Year:

Summer Semester / Fourth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Practice in the University Veterinary Clinic.

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

	Credit Hours	Units
Practical	15	3
Total	**15**	**3**

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

Name: Sadam Dhahir Hassan
Email: hasanali@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**- understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals. 4- A field visit to different farms of animals and learning about the different breeding systems, the most important problems facing animal husbandry, vaccination programs

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Practical classes utilizing live animals. • Practice in the University Veterinary Clinic. • Student prepare a scientific related reports.

10. Course Structure

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-9	15	1. Animal Handling and Safety • Demonstrate safe and humane handling of common domestic animals (dogs, cats, rabbits, etc.). • Apply restraint techniques appropriate for physical examinations and minor procedures. • Recognize signs of stress or aggression in animals and respond appropriately. 2. Clinical Procedures and Support • Assist in routine veterinary procedures (vaccinations, wound care, sample collection). • Understand and follow protocols for infection control and aseptic technique. • Perform basic first aid and emergency stabilization under supervision. 3. Veterinary Terminology and Communication • Understand and accurately use common veterinary medical terminology. • Communicate effectively with veterinarians, clients, and team members. • Record patient history and clinical findings clearly and accurately. 4. Animal Health and Wellness • Understand the basics of animal anatomy, physiology, and nutrition. • Recognize common signs of illness, injury, and zoonotic diseases. • Support routine health maintenance	Weekly rotation at the departments of the University Veterinary Clinic: 1. Internal medicine 2. Surgery. 3. Obstetrics. 4. Poultry and fish. 5. Clinical pathology.	Practice in the University Veterinary Clinic	Objective Structured Practical Veterinary examination (OSPVE)

		(vaccination schedules, deworming, flea/tick control). 5. Diagnostic Support • Assist in sample collection (blood, urine, feces) and simple diagnostic tests (e.g., feca flotation, urinalysis).			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Practical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if ar	1- Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W.B. Saunders, N York 2- Coles, E. H. (1986). Veterinary Clinical Pathology, W. B. Saunde Co, Philadelphia, London, Toronto
Main references (sources)	.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Practice and Diagnosis
Electronic References, Websites	www. Google.com: Principles of Veterinary Clinic

Course Description Form

1. Course Name:

Surgery - 1

2. Course Code:

VEC5115

3. Semester / Year:

First Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Prof. Layth Al-Kattan
Email: laythalkattn@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Teaching the advanced skills of veterinary surgery** • **Provide student with basic skills of systemic veterinary surgery** • **Make sure that the students are capable of performing all kinds of veterinary surgeries**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including anesthesia and various suture methods enabling him to perform various surgical operations on various types of field and domestic animals	Digestive system: Affection of salivary gland	Theoretical lectures	Written Exam
2	2		Affection of tongue		
3	2		Affection of teeth		
4	2		Affection of esophagus		
5	2		Affection of stomach		
6	2		Affection of small intestine		
7	2		Affection of digestive accessory organs		
8	2		Facial paralysis		
9	2		Respiratory system: Affection of upper tract		
10	2		Affection of larynx and guttural		
11-12	4		Affection lungs and trachea		
13	2		Affection of chest wall		
14	2		Cardiovascular system: cardiac anomalies		
15	2		Pericarditis		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including anesthesia and various suture methods, enabling him to perform various surgical operations on various types of field and domestic animals.	Oesophagotomy	Practical work in laboratory	Practical Exam
3-4	4		Tracheotomy		
5-7	6		Intestinal surgery		
8-9	4		Enterotomy		
10-11	4		Castration		
12-13	4		Gastrotomy		
14-15	4		Mammectomy		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	• Tyagi, R. P. S., & Singh, J. (2012). *Ruminant surgery*. CBS publishers and Distributors.
Main references (sources)	Oehme, F. W. (2008). *Textbook of large ani surgery* (No. Ed. 2). Williams and Wilkins
Recommended books and references (scientific journals, reports...)	Oehme, F. W. (2008). *Textbook of large ani surgery* (No. Ed. 2). Williams and Wilkins
Electronic References, Websites	https://pubmed.ncbi.nlm.nih.gov/ https://www.sciencedirect.com/

Course Description Form

1. Course Name:

Surgery - 2

2. Course Code:

VEC5123

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Assist. Prof. Moyaser Thanoon
Email: moyaserthanoon@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Teaching the advanced skills of veterinary surgery** • **Provide student with basic skills of systemic veterinary surgery** • **Make sure that the students are capable of performing all kinds of veterinary surgeries**

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including anesthesia and various suture methods enabling him to perform various surgical operations on various types of field and domestic animals	Hernia	Theoretical lectures	Written Exam
2	2		Treatment of Fistula whether		
3	2		Affection of male genital system		
4	2		Affection female genital system		
5	2		Treatment Pneumovagina		
6	2		Affection of penis and prepuce		
7	2		Preparation of teaser		
8	2		Castration		
9	2		Urinary system: Affection of kidney		
10	2		Affection of ureter		
1	2		Affection of urinary bladder		
12	2		Affection of urethra		
13	2		Affection of teat and udder		
14	2		Ear surgery		
15	2		Eye surgery		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	The outcomes of the learning process will focus on providing the student with the basics and principles of general veterinary surgery, including anesthesia and various suture methods, enabling him to perform various surgical operations on various types of field and domestic animals.	Teat fistula	Practical work in laboratory	Practical Exam
3-4	4		Nephrectomy		
5-6	4		Ovariohysterectomy		
7-8	4		Cystotomy and Cystectomy		
9-10	4		Urethrostomy and Urethrotomy		
11-12	4		Splenectomy		
13-14	4		Rumenotomy		
15	2		Ophthalmic surgery		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	• Tyagi, R. P. S., & Singh, J. (2012). *Ruminant surgery*. CBS publishers and Distributors.
Main references (sources)	Oehme, F. W. (2008). *Textbook of large ani surgery* (No. Ed. 2). Williams and Wilkins
Recommended books and references (scientific journals, reports...)	Oehme, F. W. (2008). *Textbook of large ani surgery* (No. Ed. 2). Williams and Wilkins
Electronic References, Websites	https://www.sciencedirect.com/ https://pubmed.ncbi.nlm.nih.gov/

Course Description Form

1. Course Name:

Fish Diseases

2. Course Code:

VED5110

3. Semester / Year:

First Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.

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

	Credit Hours	Units
Theoretical	2	2
Practical	2	1
Total	**4**	**3**

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

Name: Assist.Prof. Shahbaa Khalil Ibrahim
Email: shabaa-khal@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Expanding knowledge about fish diseases and treatments .** • Understand the Causes and Pathogenesis of Fish Diseases • Recognize Clinical Signs and Lesions in Diseased Fish •

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	To identify infectiou (bacterial, viral, fungal parasitic) and non infectious (nutritional environmental) causes o disease in fish. To observe and interpre behavioral changes external signs, and interna lesions during examinatio or necropsy. To train students in sampl collection, microscopy bacteriology, histopathology, an molecular diagnosis of fis diseases.	Introduction of Ichthyology and Fish Pathology	Theoretical lectures	Written Exam
2-3	4		Prevention and health control		
4-7	8		Infectious diseases		
8-12	10		Parasitic diseases		
13-15	6		Non infectious diseases		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	evaluate how water quality, stocking density, nutrition, and farming practices influence fish health. developing knowledge of biosecurity, vaccination (when applicable), quarantine, and treatment strategies. identify fish diseases that can affect human health or cause financial loss in aquaculture. understand the relationship between gross and microscopic lesions and clinical diagnosis.	Introduction in fish breeding and diseases	Practical work in laboratory	Practical Exam
2	2		External appearance for fish and anatomy		
3	2		Physical and chemical property of pond water		
4	2		Pond's designed		
5	2		Fish feeding, breeding, and types of ponds		
6	2		Sample taken and preservation		
7	2		Practical examination		
8	2		Practical tests and bacterial culture in fish		
9	2		Parasitic tests and diagnosis methods in fish		
10	2		Practical fishing and field fish exam		
11	2		Diagnostic and pathological slides show		
12	2		Methods with practical apply		
13	2		Practical work on pathological samples for diagnosis		
14	2		Pond's fertilization and it's methods		
15	2		Final Practical examination		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	27	40	67
Practical	13	20	33
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Fish Disease: Diagnosis and Treatment** • **Author**: Edward J. Noga **Edition**: 2nd edition
Main references (sources)	**A Color Atlas of Diseases of Tropical Fish** • **Author**: Thomas A. Lewbart
Recommended books and references (scientific journals, reports...)	**Manual of Diagnostic Tests for Aquatic Animals (OIE / WOAH)** **Publisher**: World Organisation for Ani Health (WOAH, formerly OIE)
Electronic References, Websites	https://www.msdvetmanual.com/all-othe pets/fish/disorders-and-diseases-of-fish

Course Description Form

1. Course Name:

Internal Medicine - 1

2. Course Code:

VED5113

3. Semester / Year:

First Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	3	3
Total	**3**	**3**

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

Name: Salam A. Esmaeel
Email: salamesmaeel@uomosul.edu.iq

8. Course Objectives

Course Objectives	1-Develop and understand the principles of veterinary medicine in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3-develop health methods to control and reduce them, as well as the ability to deal with various animals

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	24	1-Describe the etiology, source, reservoir and mode of transmission of bacterial, parasitic and viral diseases of animal species (cattle, sheep, goats, equine and small animals) and describe the diagnostic methodology 2- Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of a sick animal. 3-Understand the Pathophysiology of Diseases o Explain mechanisms of disease affecting major organ systems (e.g., cardiovascular, respiratory, gastrointestinal, renal, endocrine, hematologic, neurologic, and immune systems). 4-Describe Clinical Signs and Syndromes o Recognize clinical presentations and common syndromes across species. 5-Understand Diagnostic Techniques o Explain indications, limitations, and interpretations of diagnostic tools such as blood tests, imaging, endoscopy, and biopsy. 6-Know Therapeutic Approaches o Understand pharmacological and non-pharmacological treatmen modalities for various internal diseases.	Metabolic Diseases: - Milk fever, Downer cow syndrome, Hypomagnesemia tetany - Pregnancy toxemia, Ketosis, Post parturient Hb urea, Azoturia.	Theoretical lectures	Written Exam
9-15	21		Nutritional Diseases: - Vitamin deficiency: D, A, E, K, C and B vitamins. - Mineral deficiency: Ca, P, Cu, Iodine, Mn, Zn and Osteomalacia.		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunb W. (2017). Veterinary Medicine: A textbook of the disease cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W Saunders, New York
Main references (sources)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunb W. (2017). Veterinary Medicine: A textbook of the disease cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W Saunders, New York
Recommended books and references (scientific journals, reports...)	1- Merck veterinary manual 2-dairy science 3- Pathogens 4- Buffalo bulletin
Electronic References, Websites	www.google.com www.PuPMed.com

Course Description Form

1. Course Name:

Internal Medicine - 2

2. Course Code:

VED5120

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	3	3
Total	**3**	**3**

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

Name: Qaes T. Al-Obaidi
Email: qaestalb1976@uomosul.edu.iq

8. Course Objectives

Course Objectives	1-Develop and understand the principles of veterinary medicine in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3-develop health methods to control and reduce them, as well as the ability to deal with various animals

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	9	Describe the etiology, source, reservoir and mode of transmission of bacterial, parasitic and viral diseases of animal species (cattle, sheep, goats, equine and small animals) and describe the diagnostic methodology - Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of a sick animal	Cardiovascular system	Theoretical lectures	Written Exam
4-8	15		Blood and blood forming organs		
9-12	12		Poisonous material		
13-15	9		Urinary system		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunb W. (2017). Veterinary Medicine: A textbook of the disease cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W Saunders, New York
Main references (sources)	constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunb W. (2017). Veterinary Medicine: A textbook of the disease cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W Saunders, New York
Recommended books and references (scientific journals, reports...)	1- Merck veterinary manual 2-dairy science 3- Pathogens 4- Buffalo bulletin
Electronic References, Websites	www.google.com www.PuPMed.com

Course Description Form

1. Course Name:

Veterinary Clinic - 1

2. Course Code:

VEC5112

3. Semester / Year:

First Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Practical classes utilizing live animals.
- Practice in the University Veterinary Clinic.

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

	Credit Hours	Units
Practical	14	7
Total	**14**	**7**

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

Name: Qaes T. Al-Obaidi
Email: qaestalb1976@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**- understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals. 4- A field visit to different farms of animals and learning about the different breeding systems, the most important problems facing animal husbandry, vaccination programs

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Practical classes utilizing live animals. • Practice in the University Veterinary Clinic. • Student prepare a scientific related reports.

10. Course Structure

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-15	14	1. Animal Handling and Safety • Demonstrate safe and humane handling of common domestic animals (dogs, cats, rabbits, etc.). • Apply restraint techniques appropriate for physical examinations and minor procedures. • Recognize signs of stress or aggression in animals and respond appropriately. 2. Clinical Procedures and Support • Assist in routine veterinary procedures (vaccinations, wound care, sample collection). • Understand and follow protocols for infection control and aseptic technique. • Perform basic first aid and emergency stabilization under supervision. 3. Veterinary Terminology and Communication • Understand and accurately use common veterinary medical terminology. • Communicate effectively with veterinarians, clients, and team members. • Record patient history and clinical findings clearly and accurately. 4. Animal Health and Wellness • Understand the basics of animal anatomy, physiology, and nutrition. • Recognize common signs of illness, injury, and zoonotic diseases. • Support routine health maintenance	Weekly rotation at the departments of the University Veterinary Clinic: 1. Internal medicine 2. Surgery. 3. Obstetrics. 4. Poultry and fish. 5. Clinical pathology.	Practice in the University Veterinary Clinic	Objective Structured Practical Veterinary examination (OSPVE)

		(vaccination schedules, deworming, flea/tick control). 5. Diagnostic Support • Assist in sample collection (blood, urine, feces) and simple diagnostic tests (e.g., feca flotation, urinalysis).			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Practical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W.B. Saunders, New York 2- Coles, E. H. (1986). Veterinary Clinical Pathology, W Saunders Co, Philadelphia, London, Toronto
Main references (sources)	.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Practice and Diagnosis
Electronic References, Websites	www. Google.com: Principles of Veterinary Clir

Course Description Form

1. Course Name:

Veterinary Clinic - 2

2. Course Code:

VEC5118

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Practical classes utilizing live animals.
- Practice in the University Veterinary Clinic.

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

	Credit Hours	Units
Practical	12	6
Total	**12**	**6**

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

Name: Maab Ibrahim AL-Farwachi
Email: maabalfrwche@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1**- understand the principles of veterinary application in a way that supports the practical side of the profession 2-The ability to deal with disease cases, diagnose them clinically and laboratory, treat them 3- develop health methods to control and reduce them, as well as the ability to deal with various animals. 4- A field visit to different farms of animals and learning about the different breeding systems, the most important problems facing animal husbandry, vaccination programs

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Practical classes utilizing live animals. • Practice in the University Veterinary Clinic. • Student prepare a scientific related reports.

10. Course Structure

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-15	12	1. Animal Handling and Safety • Demonstrate safe and humane handling of common domestic animals (dogs, cats, rabbits, etc.). • Apply restraint techniques appropriate for physical examinations and minor procedures. • Recognize signs of stress or aggression in animals and respond appropriately. 2. Clinical Procedures and Support • Assist in routine veterinary procedures (vaccinations, wound care, sample collection). • Understand and follow protocols for infection control and aseptic technique. • Perform basic first aid and emergency stabilization under supervision. 3. Veterinary Terminology and Communication • Understand and accurately use common veterinary medical terminology. • Communicate effectively with veterinarians, clients, and team members. • Record patient history and clinical findings clearly and accurately. 4. Animal Health and Wellness • Understand the basics of animal anatomy, physiology, and nutrition. • Recognize common signs of illness, injury, and zoonotic diseases. • Support routine health maintenance (vaccination schedules,	Weekly rotation at the departments of the University Veterinary Clinic: 1. Internal medicine 2. Surgery. 3. Obstetrics. 4. Poultry and fish. 5. Clinical pathology.	Practice in the University Veterinary Clinic	Objective Structured Practical Veterinary examination (OSPVE)

		deworming, flea/tick control). 5. Diagnostic Support • Assist in sample collection (blood, urine, feces) and simple diagnostic tests (e.g., feca flotation, urinalysis).			

11.Course Evaluation

	Course Exam	Final Exam	Sum
Practical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Constable, P.D.; Hinchcliff, K.W.; Done, S.H. and Grunberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats. Vet. Med., 11th ed. W.B. Saunders, New York 2- Coles, E. H. (1986). Veterinary Clinical Pathology, W Saunders Co, Philadelphia, London, Toronto
Main references (sources)	.
Recommended books and references (scientific journals, reports...)	Veterinary Clinical Practice and Diagnosis
Electronic References, Websites	www. Google.com: Principles of Veterinary Clir

Course Description Form

1. Course Name:

Veterinary Ethics

2. Course Code:

VEC5119

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	1	1
Total	**1**	**1**

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

Name: Wasem hanna Karomy
Email: wasemhana09@uomosl.edu.iq

8. Course Objectives

Course Objectives	• Understand the Principles of Veterinary Ethics • Develop Moral Reasoning and Ethical Decision-Making Skills • Promote Professional Conduct and Responsibility

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	1	introduce students to the fundamental ethical principles that guide veterinary practice analyzing ethical dilemmas and make justified professional decisions instill values of honesty integrity, compassion, and accountability in veterinary professionals ensure students know the laws, regulations, and ethical codes that govern their profession	Veterinarians Medical Doctor Duties	Theoretical lectures	Written Exam
2	1		Ethics of Veterinarians		
3	1		Veterinary job Licenses		
4	1		Veterinary Medicine clinic		
5	1		Veterinary Medical Services		
6	1		Veterinary Medical consultant burses		
7	1		Order for giving consultant		
8	1		Graduating consultant of veterinaries		
9-15	7		Job Ethics		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Veterinary Ethics: Navigating Tough Cases** • **Author**: Jerrold Tannenbaum
Main references (sources)	**Veterinary Ethics: An Introduction** • **Author**: James W. Yeates • **Publisher**: Wiley-Blackwell
Recommended books and references (scientific journals, reports...)	**Principles of Veterinary Medical Ethics (PVME)** • **Published by**: American Veterinary Medical Association (AVMA)
Electronic References, Websites	https://www.avma.org/resources-tools/avma-policies/principles-veterinary medical-ethics-avma

Course Description Form

1. Course Name:

Veterinary Forensic Medicine

2. Course Code:

VED5122

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	1	1
Total	**1**	**1**

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

Name: Prof. Dr.Karam Hashim Al-Mallah
Email: karamyahya74@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Understand the Principles of Forensic Veterinary Medicine • Learn Proper Methods of Animal Autopsy and Evidence Collection • Identify and Interpret Signs of Abuse, Neglect, or Poisoning

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related reports.

10. Course Structure

- Theoretical Subjects:					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1-3	3	ensure students know thei legal duties when handling suspected cases of anima abuse or crimina investigations. To develop the ability t write forensic reports an provide expert testimony in court when needed To understand hov forensic investigation contribute to diseas surveillance, outbreal investigations, and foo safety	Death, cause of general death, syncope, asphyxia	Theoretical lectures	Written Exam
4-6	3		Drowning, sudden death, death from starvation, death from cold, death from effect of heat, death from electric current		
7-9	3		Burns and it's types		
10-12	3		Wounds and it's types		
13-15	3		Toxin and it's types		

11.Course Evaluation			
	Course Exam	Final Exam	Sum
Theoretical	40	60	100
Total	**40**	**60**	**100**

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**Veterinary Forensics: Animal Cruelty Investigations** • **Authors**: Melinda D. Merck **Edition**: 2nd Edition
Main references (sources)	**eterinary Forensic Pathology** **Authors**: Jason H. Byrd and Patricia Nor
Recommended books and references (scientific journals, reports...)	**AVMA Guidelines for Veterinarians Respond to Animal Abuse** – Ethical and legal responsibili
Electronic References, Websites	https://www.veterinary-practice.com/article/what-is-veterinary-forensic-medicine-and-why-is-it-importa

Course Description Form

1. Course Name:

Reproductive Biotechnology

2. Course Code:

VEC5117

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	1	1
Practical	2	1
Total	**3**	**2**

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

Name: Isam Bahnan Basheer
Email: isamsharum@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The significance of studying reproductive physiology lies in its close relationship with animal breeding and productivity at both model farming and household levels. • Students are taught the fundamentals and principles of the most important modern reproductive technologies, such as embryo transfer and in vitro fertilization, as well as field-based techniques like synchronization of estrus, in parallel with hands-on laboratory training on these technologies. • Students receive training in pregnancy examination and determining the age and sex of fetuses in various animal species using ultrasound devices.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related report.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The outcomes of this learning process will provide students with a foundational understanding of ultrasound principles, enabling them to diagnose pregnancy and determine the age and sex of fetuses in different types of livestock and companion animals, while also gaining practical laboratory experience in modern reproductive technologies.	Ultrasonography-general information	Theoretical lectures	Written Exam
2	1		Ultrasonography in large animals		
3	1		Ultrasonography in small animals		
4	1		Estrus synchronization in bovine		
5	1		Estrus synchronization in ovine and caprine		
6	1		Controlling the age of puberty		
7	1		Superovulation		
8-9	2		Embryo Transfer		
10	1		Laparoscopic intrauterine insemination		
11	1		Methods of oocyte collection and maturation		
12	1		In vitro fertilization		
13	1		Sperm sexing (Gender selection)		
14	1		Cloning and splitting of embryo		
15	1		Suppress of reproductive activity		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	The outcomes of the learning process will focus on providing students with a foundational understanding of the female reproductive system and the principles of ultrasound technology, enabling them to diagnose pregnancy and determine the age and sex of fetuses in various types of livestock and companion animals.	Clinical application of ultrasonography	Practical work in laboratory	Practical Exam
3	2		Estrus synchronization		
4	2		Controlling the age of puberty		
5	2		Superovulation		
6	2		Embryo transfer		
7	2		Intrauterine insemination		
8	2		Methods of oocyte collection and maturation		
9-10	4		In vitro fertilization		
11	2		Sperm sexing (Gender selection)		
12	2		Cloning and splitting of embryo		
13	2		Suppress of reproductive activity		
14-15	4		Ovariectomy and castration		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	20	30	50
Practical	20	30	50
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics.

	Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X
Main references (sources)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics. Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X. Gary England. Fertility and Obstetrics in the Horse. Blackwell 3ed Edition, Leicestershire UK; 2005. ISBN-13 978-14501-2095-1. Rodriguez-Martinez, H. Assisted reproductive techniques for cattle breeding in developing countries: A critical appraisal of their value and limitations. Blackwell Publishing, Sweden; 2012. doi: 10.1111/j.1439-0531.2011.01961.x.Oxford, UK 2007. ISBN-13: 978-0-8138-1554-1/2007.
Recommended books and references (scientific journals, reports...)	Noakes DE, Parkinson TJ, England GC Veterinary reproduction and obstetrics. Saund Ltd, 9th Edition. London UK; 20 doi:10.1016/C2014-0-04782-X.
Electronic References, Websites	www.youtube .com

Course Description Form

1. Course Name:

Male Fertility

2. Course Code:

VEC5111

3. Semester / Year:

First Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.
- Practical work in laboratory.
- Practical classes utilizing live animals.

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

	Credit Hours	Units
Theoretical	1	1
Practical	2	1
Total	**3**	**2**

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

Name: Uday T.naoman
Email: Uday.naoman@uomosul.edu.iq

8. Course Objectives

Course Objectives	• The importance of studying this subject lies in its close relationship with animal reproduction and increased production levels in both model farms and household breeding. • Students are taught the fundamentals and principles of the collection, evaluation, and preservation of semen, alongside laboratory training on these techniques. • Students receive training in the examination of sperm in various animal species using semen evaluation devices and light microscopes.

9. Teaching and Learning Strategies

Strategy	• Explanation of scientific subjects through theoretical lectures. • Training of students for practical applications in laboratories. • Student prepare a scientific related report.

10. Course Structure

- Theoretical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The outcomes of this learning process will focus on providing students with the fundamentals and principles of handling semen, including methods of collection, preservation, insemination, and transportation, across various types of livestock and companion animals.	Male puberty and maturity	Theoretical lectures	Written Exam
2	1		Hormonal control of male reproductive system		
3	1		Spermatogenesis		
4	1		Composition of semen		
5	1		Sperm metabolism 1		
6	1		Method of semen collection		
7-8	2		Method of semen evaluation		
9-10	2		Method of semen dilution		
11	1		Method of semen storage		
12	1		Artificial insemination and Sperm transport		
13-15	3		Infertility in males		

- Practical Subjects:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The outcomes of this learning process will focus on providing students with the fundamentals and principles of handling semen, including methods of collection, preservation, insemination, and transportation, across various types of livestock and companion animals.	Anatomy of the male genital system	Practical work in laboratory	Practical Exam
2	2		Breeding soundness		
3-4	4		Semen collection		
5-7	6		Semen evaluation		
8	2		Semen dilution		
9-10	4		Semen storage		
11-12	4		Insemination techniques		
13-15	6		Infertility in males		

11.Course Evaluation

	Course Exam	Final Exam	Sum
Theoretical	20	30	50
Practical	20	30	50
Total	**40**	**60**	**100**

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics. Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X

Main references (sources)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics. Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X. Gary England. Fertility and Obstetrics in the Horse. Blackwell 3ed Edition, Leicestershire UK; 2005. ISBN-13 978-14501-2095-1. Rodriguez-Martinez, H. Assisted reproductive techniques for cattle breeding in developing countries: A critical appraisal of their value and limitations. Blackwell Publishing, Sweden; 2012. doi: 10.1111/j.1439-0531.2011.01961.x.Oxford, UK 2007. ISBN-13: 978-0-8138-1554-1/2007.
Recommended books and references (scientific journals, reports...)	Noakes DE, Parkinson TJ, England GCW. Veterinary reproduction and obstetrics. Saunders Ltd, 9th Edition. London UK; 2018. doi:10.1016/C2014-0-04782-X.
Electronic References, Websites	Iraqi Journal of Veterinary Science; Theriogenology; Animal Reproduction Science; Reproduction in Domestic Animals

Course Description Form

1. Course Name:

Research project

2. Course Code:

VEC5125

3. Semester / Year:

Second Semester / Fifth Year

4. Description Preparation Date:

1 / 9 / 2024

5. Available Attendance Forms:

- Theoretical lectures.

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

	Credit Hours	Units
Theoretical	1	1
practical	1	1
Total	2	2

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

Name: Omer Khazaal Sallou Alhankawe
Email: ahmed2010mks@uomosul.edu.iq

8. Course Objectives

Course Objectives	1- Teaching students about the mechanism of conducting scientific research is intended to increase their knowledge and develop their scientific expertise. 2- Developing their awareness and expanding their intellectual encyclopedia. 3- Developing society and its social and economic growth, as well as finding solutions to a number of complex problems that require a comprehensive study, starting with the causes and ending with the results and solutions. 4- Field visits to various animal farms to learn about the different breeding systems, the most important problems facing animal breeding, and vaccination programs.

9. Teaching and Learning Strategies

Strategy	• Explaining material through theoretical lectures. • Using various educational methods during the teaching of the material and referencing practical training examples. • Using discussion in lectures as an effective means of communicating the course material to students. • The student prepares relevant scientific reports. • Keeping abreast of the latest methods, approaches, and trends in the teaching process.

10. Course Structure

- Theoretical Subjects:					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1-3	3	1-Understand Research Methodologies: Demonstrate knowledge of scientific methods used in veterinary research, including experimental design, data collection, and statistical analysis. 2-Subject-Specific Knowledge: Apply veterinary science knowledge (e.g., anatomy, pathology, pharmacology, epidemiology) to formulate research questions and interpret findings. 3-Ethical Considerations: Recognize and apply ethical standards in the use of animals and data in research. 4-Critical Thinking: Analyze and critically evaluate scientific literature to inform your research. 5-Problem Solving: Identify problems or gaps in current veterinary knowledge and propose appropriate research strategies. 6-Data Interpretation: Analyze quantitative and/or qualitative data using appropriate tools, and draw valid conclusions	Research methods and hypothesis testing 3	Theoretical lectures	Written Exam
4-6	3		Defining problems 3		
7-9	3		Designing study 3		
10-12	3		Data management 3		
13-15	3		Writing reports 3		
Practical Subjects:					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
The students conducts a research project and submits the work for discussion					

11.Course Evaluation		
Course Exam	Final Exam	Sum

Theoretical	20	30	50
Practical	20	30	50
Total	40	60	100

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	The Craft of Research Fourth Edition, The University of Chica Press Chicago & London
Main references (sources)	Designing a Research Project, Piet Verschuren and Hans Dooryard Second edition 2010
Recommended books and references (scientific journals, reports...)	Research projects from start to finish
Electronic References, Websites	www.google.com : Research project design www.PupMed.com