CHEM1103	General Chemistry Lab(1)						
Course type	College Needs	Level	1	hours (theoretical)	0	hours (practical)	1

Course Objectives

1 - 1. The objective of the general chemistry laboratory course is to become proficient in techniques used by practicing chemist, to carry out experiments safely and carefully in the laboratory, to obtain data accurately and to manipulate the data correctly. This course also complements and consolidates the theoretical knowledge acquired in the general chemistry lecture course. 2. To provide students with basic skills and laboratory safety rules by which they can be qualified for employment or further study. 3. To familiarize the student with handling the chemical substances, balances and equipments.

Intended Learning Outcomes

Knowledge and Understanding	*	1. Gain general basics and principles of chemistry. 2. Recognize physical and chemical properties of substance. 3. Synthesis of some organic compounds.
Intellectual Skills	*	1. Creative thinking 2. Ability to recognize and solve problems related to chemistry 3. Interpret issues in chemistry with reference to the practices of the international scientific community.
Professional Skills	*	1. Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions 2. Ability to diagnose 3. Ability to solve the problem 4. Implement practical training and reporting for solving problems considering scientific ethics. 5. Assess laboratory risk work taking into consideration the specific chemical hazards and safe handling and proper operation of the laboratory techniques.
General Skill	*	1. Ability to recognize and solve problems related to chemistry 2. Ability to communicate with scientists and nonscientists. 3. Demonstrate team-working ability through group projects. 4. Demonstrate time-management skills. 5. Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.

Course Contents

1 - 1. Safety role and lab equipments. 2. Physical properties: melting point and density determination. 3. Physical properties: boiling point and solubility determination. 4. Chemical Properties. 5. Formula of Hydrate. 6. Empirical Formula of Magnesium Oxide. 7. Midterm Exam. 8. Limiting Reactant. 9. Molar Mass of Volatile Liquid. 10. Colligative properties of solutions. 11. Synthesis of Aspirin. 12. Acid Base Titration- Analysis of Aspirin. 13. Acid Base Titration: determination the molarity of HCl solution. 14. Final exam.

Teaching and Learning Methods

1 - Laboratory manuals will be provided to students. The modular course consists of twelve experiments performed by teams of two to three students each. The lab work is organized as follows: 1- Preparing for the experiment. The students should read and understand the laboratory protocol and read suggested reference materials prior to the lab session. In addition, some lab session time will usually be devoted to a discussion of the theory concern the experiment. 2- Running the experiment. Each team is responsible for conducting each experiment under supervision of lecturer. 3- End of the experiment. Preliminary discussion of the experimental outcomes with lecturer. 4- Report.

Students Assessment

Assessment Method	TIME	MARKS
1. Mid Exam		20%
2. Attendance and discussion		10%
3. Homework and project reports		20%
4. Notebook		10%
5. Final Exam		40%

Books and References

Course note	Lecture notes.
Essential books	1. Lab manual prepared by lab lecturer 2. Chemistry, by Chang, 9th. ed., 2007, McGraw-Hill.
Recommended books	Chemistry, by Steven S. Zumdahl, 6th ed., Houghton Mifflin College Div.
Other References (Periodical, web sites, ... etc.)	1. http://www.chem.ucla.edu/harding/notes/notes.htm 2. www.siencedirect.com 3. www.chemweb.com

ISLM1101 Holy Quran (1)

Course type UNIV Needs **Level** 1 **hours (theoretical)** 1 **hours (practical)** 0

ITCS1301 Computer Science (1)

Course type College Needs **Level** 1 **hours (theoretical)** 3 **hours (practical)** 0

Course Objectives

1 - Increase familiarity with computers, their components and their operations.
2 - Explain how computers store and manipulate information.
3 - Identifying the steps involved in creating a program and itemize the elements of a typical program.
4 - Understanding the essential of the concepts of Programming Techniques.
5 - Understanding the nature and function of a high level language's constructs and syntax(C++)
6 - The concept of control constructs
7 - The concept of Looping techniques
8 - key concepts of simple and dynamic data structures
9 - Describe how functions are constructed and implemented.
10 - Give a brief account of library functions and user-defined functions.
11 - Write a complete C++ program using the different statements of the C++ language.

Intended Learning Outcomes

Knowledge and Understanding	* a1- Use high-level programming languages. * a2. Outline fundamental topics in computer systems, including hardware architectures and operating systems * a3. Define the concept of an algorithm and a few specific examples of algorithms * a4. Identify the essential of the concepts of Programming Techniques. * a5. Describe fundamental topics in computing including software architectures, software engineering principles and methodologies and software tools. * a6. Outline basic knowledge and understanding of a core of analysis. * a7. Explain the nature and function of a high level language's constructs and syntax(C++) * a8. Describe the concept of control constructs * a9. Explain Looping techniques * a10. Describe key concepts of simple and dynamic data structures * a11. Identifythe tools, practices and methodologies used in the specification, design, implementation and evaluation of computer programs. * b3. Generate an innovative design to solve a problem containing a range of commercial and industrial constraints.
Intellectual Skills	* b1. Perform problem analysis from written descriptions; derive requirements specifications from an understanding of problems (analysis, synthesis). * b2. Break a large problem into smaller parts, writing each part as a module or function. * b4. Analyze the requirements of a range of computer-based systems and examine the design alternatives based on the constraints imposed by society, organizations, and technology. * b5. Work with and model computer systems at different and appropriate levels of abstraction. * b6. Enhance ability to approach problems systematically.
Professional Skills	* c1. Use appropriate programming languages and tools, and design methodologies. * c2. Interpret verbal problem specifications into program code * c3. Design, write and debug computer programs in C++ language
General Skill	* d1. Communicate effectively by oral, written and visual means. * d2. Develop interpersonal skills planning and managing personal time and work. * d3. Work effectively as an individual and as a member of a team. * d4. Manage tasks and resources. * d5. Manage ones own learning and development, including time management and organizational skills.

Course Contents

1 - Computer definition and different computer types.
2 - Data representation.
3 - Introduction to Algorithms, problem-solving and software development methodology.
4 - Basic programming in C++, essential concepts, programming style, variables and data types, long, float, double, Boolean, character, strings, enumeration, I/O format,
5 - Logical expressions and control constructs: if-else, nested if, switch, arithmetic and assignment statements;
6 - Looping techniques, for, while, do-while, nested loop, functions, including parameter passing mechanisms, scope, and return values, pointers
7 - Introduction to structures and arrays.

Teaching and Learning Methods

1 - Lectures
2 - Tutorial Exercises
3 - Practical Exercises
4 - Projects

Students Assessment

Assessment Method	TIME	MARKS
Final Exam	Week 16	50%
Practical Exercises		15%
Mid-Term Exam	Week 8	20%
Projects		15%

Books and References

Course note	Short course notes available at doctor's office
Essential books	H. M. Deitel. P. J. Deitel, "C How To Program", Prentice Hall 2004, Fourth Edition.
Recommended books	J. Hanley, E. Koffman, Problem Solving & Program Design In C, Pearson Education, International of 7th edition (May 1, 2012) Brian W. Kernighan, Dennis M. Ritchie, The C programming language, 2nd edition, 1988.

Knowledge and Skills Matrix

Main Course Contents	Study Week	Knowledge and Understanding	Intellectual Skills	Professional Skills	General Skill
Computer definition and different computer types.	1	a1			d1-d5
Data representation.	2-3	a2,a4			d1-d5
Introduction to Algorithms, problem-solving and software development methodology.	4	a1,a3,a4,a5,a6	b1-b5	c1-c3	d1-d5
Basic programming in C++, essential concepts, programming style, variables and data types, long, float, double, Boolean, character, strings, enumeration, I/O format,	5-6	a8,a9,a12	b1-b5	c1-c3	d1-d5
Logical expressions and control constructs: if-else, nested if, switch, arithmetic and assignment statements	7-8	a7,a8,a11	b2,b3,b5	c1-c3	d1-d5
Looping techniques, for, while, do-while, nested loop, functions, including parameter passing mechanisms, scope, and return values, pointers.	9-11	a7,a8,a9,a11	b2,b3,b4,b5	c1-c3	d1-d5
Introduction to structures and arrays.	12-14	a8,a10,a11	b2-b6	c1-c3	d1-d5

BIOL1103 General Biology(1) lab

Course type College Needs **Level** 1 **hours (theoretical)** 1 **hours (practical)** 1

Course Objectives

1 - Safety in lab

2 - Commitment to laboratory standards

3 - Identification methodology of study in the lab and that will be different from lectures

4 - Identification biology courses by practical studies

5 - Identification theoretical subjects and concentration on the practical parts

6 - Improve work group skills for students

Intended Learning Outcomes

Knowledge and Understanding	* Distribution of students in groups
	* Identification and usage of tools and equipment with right methodologies
	* Usage of light microscope in a mastery way for examined samples
	* Students must be cautious from used chemicals and equipment
Intellectual Skills	* Selection proper tools for each test
	* Enabling students to do microscoping examination of samples according to magnification power
	* Ability to diagnostic and knowledge the cells and tissue using microscope
	* Students must be cautious from used chemicals and equipment of experiment
	* Ability for reading and analysis results
Professional Skills	* Usage of light microscope
	* Identification of magnification power of samples
	* Mastery working of plant and animal slides
	* Conducting of biochemistry tests and appearing results
	* Dealing with tools and equipment in cautious way
General Skill	* Systematic scientific thinking to study in the laboratory
	* Comparison between results of experiments
	* Presentation and analysis of results

Course Contents

1 - Safety in laboratory
2 - Introduction , microscope , and metric system (weight, volume, length, temperature)
3 - Plant tissues (slides)
4 - Types of animal tissues (slide)
5 - Identification of macromolecules "carbohydrates, lipids, protein" using general tests
6 - Microscopical examination of different types of microorganisms (bacteria, fungi, algae, protozoa)
7 - Experiments on diffusion, osmosis showing cell membrane integrity.
8 - Cell division slides for meiosis and mitosis

Teaching and Learning Methods

1 - Theoretical explanation for experiments
2 - Microscopic examination of cells and tissues
3 - Conducting experiments practically
4 - Reading, analysis and discussion of results
5 - Report writing for experiments
6 - Discussion of results

Teaching and Learning Methods for the Disabled Students

1 - Preparing the lab with required equipment, tools and techniques proper to disabled students

Students Assessment

Assessment Method	TIME	MARKS
Mid-term exam	1Hour	30
Attendance and reports		10
Final exam	1Hour	40
Assessment		20

Books and References

Course note	Practical general biology note
Other References (Periodical, web sites, ... etc.)	Webs related to general biology

BIOL1312 General Biology(1)

Course type College Needs **Level** 1 **hours (theoretical)** 3 **hours (practical)** 0

Course Objectives

1 - The fundamental and concepts of general biology will be presented eight parts of biological sciences including: general aspects, biochemistry, cytology, botany, histology, zoology, taxonomy, genetics

Course Contents

1 - General aspects: Introduction, branch of biology, properties of life
2 - Biochemistry:Chemical building blocks of life including water and macromolecules such as protein, carbohydrates, lipids and nucleic acid
3 - Cytology: cell structure and function, cell membrane & transport processes, cell cycle and types of division
4 - Botany: morphology and anatomy for root and shoot system
5 - Histology:including different types of tissues
6 - ZoologyDifferent systems including circulatory, urinary, endocrinology, ..etc
7 - Taxonomy:Classification of organisms, viruses, bacteria, protista, fungi, algae,
8 - Genetics: from gene to protein

Students Assessment

Assessment Method	TIME	MARKS
Assessment		20
Attendence		10
Midterm Exam		30
Final Exam		40

ENGL1201 English Language (1)

Course type UNIV Needs **Level** 1 **hours (theoretical)** 2 **hours (practical)** 0

Course Objectives

1 - The course aims at introducing all freshmen students to English Language
2 - This course makes kind of general revision of English grammar, writing and comprehension.

Course Contents

1 - Upon completion of the course, students will be able to ask and answer questions about daily life activities by using correct linguistic forms. Also, they will be able to use new vocabulary and relate the spelling to the sounds of English which will help improve their pronunciation. Being provided with longer reading passages in a higher level, students will be able to deal with less controlled exercises that develop into freer speaking practice. As they are provided with regular recycling of grammar and vocabulary, students will be able to incorporate the integrated skill activities in both speaking and writing.

Teaching and Learning Methods

1 - Lectures

2 - Exercises

Students Assessment

Assessment Method	TIME	MARKS
Final Exam	End of semester	100

Books and References

Course note	Lecturers special notes
Essential books	,New Headway Plus: Pre-Intermediate Student's Book 2010 John and Liz Soars

VETE1220 Veterinary medical terminology

Course type College Needs **Level** 1 **hours (theoretical)** 2 **hours (practical)** 0

Course Objectives

1 - knowledge of basic terms in veterinary medicine

2 - Analysis of medical terms

3 - case study of medical report

4 - Learning medical terms related to different systems

5 - Knowledge of the correct spelling of medical terms

Intended Learning Outcomes

Knowledge and Understanding	* Definition of medical term by analyzing elements
	* Application of different veterinary medical terms in fields of physiology, pathology, and diagnosis
	* The correct spelling of medical terms
	* Reading a medical report and understanding medical abbreviations
Intellectual Skills	* Description of a medical term according to components
Professional Skills	* Identify the medical diagnosis according to a medical report

Course Contents

1 - Basics of medical terms root, prefix, suffix
2 - Roots of different physiologic systems
3 - Prefix
4 - suffix
5 - Different medical terms applications, meaning, elements
6 - Medical reports
7 - Biochemical terms
8 - Spelling of medical terms
9 - Exercises

Teaching and Learning Methods

1 - Lectures
2 - Exercises
3 - case study and reports

Students Assessment

Assessment Method	TIME	MARKS
Med term exam	one hour	30
Quizes and assignments	15 minutes	30
Final exam	2 hours	40

Books and References

Course note	Lecture course note of the power point presentations
Essential books	Veterinary Medical Terminology" by Dawn E. Christenson
Recommended books	Veterinary Medical Terminology Guide and Workbook" by Angela Taibo

VETE1306 Biochemistry

Course type College Needs **Level** 1 **hours (theoretical)** 3 **hours (practical)** 0

Course Objectives

1 - Describe the biochemical function of water and buffer
2 - Learn the chemistry of carbohydrate, lipid and proteins and their importance, structure, classification, function for living organisms
3 - To imagine the structure of DNA and RNA
4 - Recognize the enzymes, their role in the biological processes in the body, mechanism of catalysis and regulation of their activity
5 - Recognize the vitamins and their importance to the human health

Course Contents

1 - Introduction to Biochemistry:Definition of Biochemistry, water, acids and bases, pH, and buffer
2 - Carbohydrate Chemistry:Definition, Biological importance of Carbohydrate, General Classification of Carbohydrate, Monosaccharides: Definition - Classification properties –structure of monosaccharides (Fisher and Haworth) and Derivatives of monosaccharides
3 - Carbohydrate Chemistry: Disaccharides, Oligosaccharides, and Polysaccharides (homopolysaccharides and heteropolysaccharides)
4 - Amino acids: definition and composition – classification of amino acids, chemical properties of amino acids
5 - Proteins: definition and biological importance of proteins, classification of proteins according to structure, shape, and composition
6 - Denaturation of proteins and misfolding of proteins
7 - Lipids: classification of lipids, properties and classification of fatty acids, properties, function and hydrolysis of triglycerides, saponification, types of phospholipids, sphingolipid and glycolipid, waxes, steroids
8 - Biological membranes
9 - Lipoproteins: Chylomicrons, VLDL, LDL, and HDL
10 - Enzymes: Properties and classification of enzymes, cofactors and coenzymes, mechanism of catalysis, factors affecting reaction velocity, regulation of enzyme activity, inhibition of enzyme activity, enzyme inhibitors as drugs, zymogens and isoenymes, enzymes in clinical diagnosis
11 - Nucleic acids: nucleotides and nucleosides, DNA and RNA, chromosomes
12 - Vitamins: Properties and classification. Fat soluble vitamins and water soluble vitamins. Functions, deficiency symptoms and toxicity of vitamins

Teaching and Learning Methods

1 - Lectures
2 - Reports
3 - Discussion
4 - Quizzes

Teaching and Learning Methods for the Disabled Students

1 - Not applicable

Students Assessment

Assessment Method	TIME	MARKS
Quiz 1	the third week	10
Quiz 2	fifth week	10
Midterm exam	the eighth week	30
Quiz 3	the eleventh week	10
Final exam	Fifteenth week	40

Books and References

Course note	Handouts
Essential books	David L. Nelson & Michael M. Cox. Lehninger Principles of Biochemistry 7th edition (2017)
Recommended books	Mary K. Campbell, Shawn O. Farrell and Owen M. McDougal. Biochemistry 9th edition (2018)
	Richard A. Harvey and Denise R. Ferrier. Lippincott's Illustrated Reviews: Biochemistry. 5th edition (2011)

ISLM2105	Holy Quran (2)						
Course type	UNIV Needs	Level	1	hours (theoretical)	1	hours (practical)	0

VETE1209	Veterinary Extension and Community Developm						
Course type	College Needs	Level	1	hours (theoretical)	2	hours (practical)	0

VETE1105	animal physiology (1) lab						
Course type	College Needs	Level	2	hours (theoretical)	0	hours (practical)	1

Course Objectives

1 - This is a general physiology course in which the major organ systems are described: the nervous, musculoskeletal, cardiovascular system, and respiratory system in addition to sensory organs, endocrinology and thermal regulation physiology will be discussed. This course will be continued in the 2nd semester by Animal Physiology II. This course will be covered by 3 theory hours per week

Intended Learning Outcomes

Knowledge and Understanding	* Connection between the theortical and practical veterinary physiological events related to central nervous system actions
Intellectual Skills	* Attempt to know methods of evaluation major nervous actions and assess animals by performing certain action
Professional Skills	* Students will know ways of dealig and handling animals, calculation of theortical medication preparations, auscaltation of animals

Course Contents

1 - Neurological examination of animals, sedation, applying anasthesia in animals (cat as a model), auscaltation of circulatory system of animals, auscaltation of respiratory system of anials, nasogastric intubation in horses

Books and References

Essential books	Cunningham's Textbook of Veterinary Physiology, 2013 Physiology of Domestic Animals, William O. Reece; second edition Text Book of Veterinary Physiology, B. Bhattacharyya

VETE1304	animal physiology (1)						
Course type	College Needs	Level	2	hours (theoretical)	3	hours (practical)	0

Course Objectives

1 - This is a general physiology course in which the major organ systems are described: the nervous, musculoskeletal, cardiovascular system, and respiratory system in addition to sensory organs, endocrinology and thermal regulation physiology will be discussed. This course will be continued in the 2nd semester by Animal Physiology II. This course will be covered by 3 theory hours per week.

Intended Learning Outcomes

Knowledge and Understanding	*	This course is designed to provide the student with a strong background in the basic physiological mechanisms and concepts of muscle, nerve, cardiovascular, respiratory system, endocrine, thermoregulation and sensory organ physiology. It helps the student to gain a fundamental understanding of the mechanisms controlling these systems and to determine the effects of pathological conditions on organ function as they relate to veterinary medicine.
Intellectual Skills	*	Describe the circulatory system and account for pressure differences between arterial and venous circuits. Illustrate the structure and activity of the heart and the circulatory pattern through pulmonary and systemic circuits

Course Contents

1 - After completing this course you should be able to: 1) Describe the main morphologic features of the nervous system. Review the physiology of sensory receptors, synaptic transmission, and different sensory pathways. Describe the motor functions of spinal cord, brain stem, and motor cortex. 2) Describe the circulatory system and account for pressure differences between arterial and venous circuits. Illustrate the structure and activity of the heart and the circulatory pattern through pulmonary and systemic circuits 3) Describe the anatomy and physiology of gas exchange and transport mechanisms. 4) Discuss the functional anatomy of the eye, the physiology of the image –forming mechanism, physiology of retina, visual pathway, visual cortex and eye movements. Describe the various parts of ear, and summarize the mechanism of hearing, auditory pathway, and various forms of deafness. Point out the physiology of receptor organs and pathways of smell and taste sensations. 5) Classify using anatomical detail, the different muscle types and review how muscle contractions are controlled by interactions at the molecular level. 6) Describe how animals are either able to closely achieve a constant body temperature or if not are prone to variation depending on environmental conditions 7) Describe the gross and microscopic anatomy of endocrine glands, mechanism of action of hormones, control of hormone secretions

Teaching and Learning Methods

1 - lecture-based instruction

Books and References

Course note	Cunningham's Textbook of Veterinary Physiology, 5th edition, 2013 Physiology of Domestic Animals, William O. Reece; second edition Text Book of Veterinary Physiology, B. Bhattacharyya

VETE2111	Animal Physiology(2) lab						
Course type	College Needs	Level	2	hours (theoretical)	0	hours (practical)	1

Course Objectives

1 - This is a continuation of Animal Physiology I. Topics highlighted are the blood components, digestive system, renal system, animal reproduction and lactation. This course will be covered by 2 theory and 2 practice hours per week.

Intended Learning Outcomes

Knowledge and Understanding	*	orientation and introduction to physiology
Intellectual Skills	*	Dealing with blood preparation samples, and getting familiar with various blood components, understand principle of antibody-antigen complexes,

Course Contents

1 - Blood grouping, Preparation of blood smear, differentiation of RBCs cells of various animals, Differentiation of white blood cells of various animals, hemagglutination assay, hemagglutination nhibition assay, ELISA principle

Books and References

Course note	Cunningham's Textbook of Veterinary Physiology, 2013 Physiology of Domestic Animals, William O. Reece; second edition Text Book of Veterinary Physiology, B. Bhattacharyya

VETE2210	Animal Physiology(2)						
Course type	College Needs	Level	2	hours (theoretical)	2	hours (practical)	0

Course Objectives

1 - This is a continuation of Animal Physiology I. Topics highlighted are the blood components, digestive system, renal system, animal reproduction and lactation. This course will be covered by 2 theory and 2 practice hours per week.

Intended Learning Outcomes

Knowledge and Understanding	*	Upon successful completion of this course, students will be able to Integrate the function of all systems and cells of the body into a one functional Unit. 1. To understand the function of individual organ system and the cells that make up those systems. 2. To comprehend the processes that control and regulate important properties of organ systems. 3. To integrate the vast net work of feedback control that achieves necessary homeostasis.

Course Contents

1 - (1) Blood and its Function (2) Digestion and Absorption (3) The Kidneys and Urinary system (4) Male reproductive organs (5) Female reproduction (6) Lactation

Books and References

Recommended books	Cunningham's Textbook of Veterinary Physiology, 2013 Physiology of Domestic Animals, William O. Reece; second edition Text Book of Veterinary Physiology, B. Bhattacharyya

VETE3128	veterinary Virology lab						
Course type	Major Needs	Level	2	hours (theoretical)	0	hours (practical)	1

Course Objectives

1 - In each laboratory session take into consideration the following rules: 1- Always come to the laboratory on time to avoid disturbing your fellows. 2- Late students will not be allowed to attend the practical, always bring with you note –book, pencil, eraser, marker and calculator. 3- Wear your Face Mask and laboratory coat at all times.

Course Contents

1 - Introduction, lab equipment, and safety in virology lab Conduction of virology laboratory, Biosafety requirements Collection, Transport and Receipt of Infectious Materials Detection of virus Electron microscopy (Project) Virus isolation on cell culture and the cytopathic effect Inoculation of embryonated eggs by the allantoic cavity rout Detection of viral antigens Complement fixation test (CFT) Virus Neutrilization test (VNT) Direct ELISA Haemagglutination test Detection of virus specific antibody; Haemagglutination inhibition test Indirect ELISA Detection of viral nucleic acids; Polymerase Chain Reaction (PCR) Reverse Transcription Real Time Polymerase Chain Reaction (RT-RT-PCR) Vaccine and vaccination in Palestine

Books and References

Recommended books	Murphy FA, Gibbs EP, Horzinek MC, Studdert MJ. Veterinary virology. Elsevier; 1999 Oct 27.

VETE3227	Veterinary Virology						
Course type	Major Needs	Level	2	hours (theoretical)	2	hours (practical)	0

Intended Learning Outcomes

Knowledge and Understanding	* 1. Describe the principles of virus structure and replication. .
Intellectual Skills	* 2. Know the characteristic features of the major viral groups and the important veterinary viruses within those groups.
Professional Skills	* 3. Understand the different types of relationship that viruses can have with their hosts and how certain viral infections become persistent.
General Skill	* 4. Understand the principles involved in the diagnosis of viral infections

Course Contents

1 - Week Topics 1 Introduction and history of virology, Virus structure and proprieties 2 Taxonomy and viral classification 3 Viral replication 4 Viral Genetics and Evolution 5 Virus-cell interactions 6 Mechanisms of Infection and Viral Spread through the Body 7 Immune Response to Viral Infections 8 Pathogenesis of Viral Diseases" Viral Strategies and Host Defense Mechanisms" 9 Poxviridae, Herpesviridae 10 Adenoviridae, Papovaviridae 11 Parvoviridae, Circoviridae, and Retroviridae 12 Reoviridae, Birnaviridae 13 Paramyxoviridae and Rhabdoviridae 14 Orthomyxoviridae, Bunyaviridae , Coronaviridae, and Arteriviridae 15 Picornaviridae, Caliciviridae, Togaviridae 16 Prions" Agents of Transmissible Spongiform Encephalopathies"

Books and References

Essential books	Murphy FA, Gibbs EP, Horzinek MC, Studdert MJ. Veterinary virology. Elsevier; 1999 Oct 27.

ISLM2202	**Studies in Islamic Faith**						
Course type	UNIV Needs	**Level**	2	**hours (theoretical)**	2	**hours (practical)**	0

VETE3120	**Veterinary Parasitology (1) lab**						
Course type	Major Needs	**Level**	3	**hours (theoretical)**	0	**hours (practical)**	1

Course Objectives

1 - To provide students with practical experience in the collection, handling, and processing of samples for parasitological examinations

2 - To provide the students with general safety measurements in lab

3 - To educate students on various laboratory techniques used in veterinary parasitology, such as fecal examinations, blood smears, and serological tests

4 - To familiarize students with the proper use and maintenance of laboratory equipment, including microscopes and centrifuges

5 - To develop students proficiency in microscopic identification of veterinary parasites based on morphological characteristics

Intended Learning Outcomes

Knowledge and Understanding	* Students will develop the ability to identify and differentiate between different parasitic species based on microscopic examination of samples
Professional Skills	* Students will be able to operate and maintain laboratory equipment effectively and safely * Students will gain practical experience in performing various laboratory techniques used in veterinary parasitology * Students will apply quality control measures and adhere to standard operating procedures

Course Contents

1 - Lab safety rules in lab
2 - Different techniques in veterinary samples collections and handling
3 - Microscopical examination
4 - Identification of parasites by microscopical examination
5 - Confirmatory tests for diagnosis
6 - Discussion of cases: diagnosis and biochemical results

Teaching and Learning Methods

1 - Practical part per lab
2 - Theoretical part per subject and lab
3 - Exercises and discussion of cases

Students Assessment

Assessment Method	TIME	MARKS
Quizes and assignments per lab	15 minutes	50
Practical med term exam	40 minutes	25
Practical final test	one hour	25

Books and References

Course note	Laboratory skript
Essential books	Veterinary Parasitology: Reference Manual" by William J. Foreyt
Recommended books	Diagnostic Parasitology for Veterinary Technicians" by Charles M. Hendrix and Ed Robinson

VETE3229 Veterinary Parasitology (1)

Course type Major Needs **Level** 3 **hours (theoretical)** 2 **hours (practical)** 0

Course Objectives

1 - To provide students with an understanding of the life cycles, transmission, and host-parasite relationships of common veterinary parasites
2 - To familiarize students with the clinical signs, pathogenesis, and diagnostic methods for identifying parasitic infections in animals
3 - To introduce students to the fundamental principles of veterinary parasitology, including the classification and characteristics of parasites
4 - To educate students about the principles and methods of parasite control and prevention in veterinary practice
5 - To develop students skills in conducting parasitological examinations, including sample collection, microscopy, and laboratory techniques.

Intended Learning Outcomes

Knowledge and Understanding	* Students will demonstrate a comprehensive understanding of the classification, biology, and life cycles of common veterinary parasites
	* Students will understand the clinical manifestations and pathogenic mechanisms associated with parasitic infections in animals
Professional Skills	* Students will be able to identify and differentiate between different parasitic species based on morphological characteristics
	* Students will be able to apply diagnostic techniques
	* Students will develop skills in interpreting laboratory results

Course Contents

1 - Introduction to veterinary parasitology
2 - Classification of parasites
3 - Life cycle, transmission to human, host parasite relationship of selected veterinary parasites
4 - Classes of Nematodes nematodirus spp
5 - Class of Cestoda
6 - Class of trematoda
7 - Heterophyes
8 - Trichomonas spp

Teaching and Learning Methods

1 - Lectures
2 - Exercises and reports in selected topics
3 - Demonstrations through learning videos and other tools

Students Assessment

Assessment Method	TIME	MARKS
Med term exam	one hour	30
Quizes and assignments	15 minutes	30
Final exam	2 hours	40

Books and References

Course note	lectures course notes of power point presentations
Essential books	Veterinary Parasitology" by M. A. Taylor, R. L. Coop, and R. L. Wall
	Georgis Parasitology for Veterinarians" by Dwight D. Bowman
Recommended books	Veterinary Clinical Parasitology" by Anne M. Zajac and Gary A. Conboy

ISLM2201 Studies in Prophetic Tradition

Course type UNIV Needs **Level** 3 **hours (theoretical)** 2 **hours (practical)** 0

ISLM3201	Interpretation of Quran						
Course type	UNIV Needs	Level	3	hours (theoretical)	2	hours (practical)	0

VETE3126	Veterinary Parasitology (2) lab						
Course type	Major Needs	Level	3	hours (theoretical)	0	hours (practical)	1

Course Objectives

1 - Practical extension of the theoretical knowledge gained in veterinary parasitology

2 - Continue to develop students proficiency in microscopic identification of veterinary parasites based on morphological characteristics.

3 - Continuous education of students on various laboratory techniques used in veterinary parasitology,

4 - Demonstrations in practical field

Intended Learning Outcomes

Knowledge and Understanding	* Equip students with the necessary knowledge and proficiency to perform accurate and reliable parasitological examinations
	* Equip the students with the necessary knowledge of transmission diseases in practical field
	* Effective interpretation of biochemical tests
Intellectual Skills	* Provide students with skills in differential diagnosis
Professional Skills	* Effectively operate and maintain laboratory equipment, ensuring safe and efficient use
	* Knowledge of preventive measurements

Course Contents

1 - Microscopical identification of parasites

2 - Handling of samples: fecal, blood, , urine

3 - Identification techniques per immunoassays

4 - Case study discussions

Teaching and Learning Methods

1 - Practical part per lab

2 - theoretical part per lab

3 - Field demonstrations

4 - Practical part in sample collection

Students Assessment

Assessment Method	TIME	MARKS
Quizzes and assignments	15 minutes	50
Practical med term exam	40 minutes	20
Final practical exam	one hour	30

Books and References

Course note	Laboratory script
Essential books	Veterinary Parasitology: Reference Manual by W. Foreyt
	Veterinary Parasitology Manual by Smith, J. R. and Johnson, A. B.

VETE3225 Veterinary Parasitology (2)

Course type Major Needs **Level** 3 **hours (theoretical)** 2 **hours (practical)** 0

Course Objectives

1 - Provide students with an understanding of the life cycles, transmission, and host-parasite relationships of common veterinary parasites

2 - Familiarize students with clinical signs, pathogenesis, and diagnostic methods for identifying parasitic infections in animals

3 - Develop students skills in conducting parasitological examinations, including sample collection, microscopy, and laboratory techniques.

4 - Enhance critical thinking and problem-solving abilities through case studies and practical applications of veterinary parasitology.

5 - Instill ethical and responsible practices in the treatment and management of parasitic infections in animals

Intended Learning Outcomes

Knowledge and Understanding	* Identify and differentiate between different parasitic species based on morphological characteristics
	* Continuous understanding of clinical manifestations and pathogenic mechanisms associated with parasitic infections in animals
	* Attain proficiency in conducting parasitological examinations, including sample collection, preparation, and microscopic identification of parasites.
Intellectual Skills	* Recognize the significance of zoonotic parasites and comprehend the importance of preventive measures to protect animal and human health.
Professional Skills	* Exhibit ethical and responsible practices in the administration and use of antiparasitic drugs and other treatment modalities.

Course Contents

1 - Class Arachnida

2 - class Pentastomida

3 - Arthropod paeasites

4 - Phylum Arthropoda

5 - Class Insecta

Teaching and Learning Methods

1 - lectures
2 - Demonstrations using digital learning materials
3 - Case Study
4 - Reports and discussions

Students Assessment

Assessment Method	TIME	MARKS
Med term exam	one hour	30
Quizzes and assignments	15 minutes	30
Final exam	two hours	40

Books and References

Course note	Lectures power point presentations
Essential books	Veterinary Helminthology" by Hany Elsheikha and Ian Wright
	Veterinary helminthology and entomology: the diseases of domesticated animals caused by Helminth and Arthropod parasites. Monnig, M. O.
Recommended books	Veterinary Entomology: Arthropod Ectoparasites of Veterinary Importance" by Richard Wall and David Shearer

VETE3130 Veterinary Clinical Pathology lab

Course type Major Needs **Level** 3 **hours (theoretical)** 0 **hours (practical)** 1

Course Objectives

1 - In each laboratory session take into consideration the following rules: 1- Always come to the laboratory on time to avoid disturbing your fellows. Late students will not be allowed to attend the practical, always bring with you note –book, pencil, eraser, marker and calculator. 2- Wear your laboratory coat at all times. Students failing to wear laboratory coat may be excluded from the laboratory.

Intended Learning Outcomes

Knowledge and Understanding	*	Introduction and lab devices Blood Sample collection, blood film preparation and staining RBC morphology of different species Blood parasite CBC, RBC count, MCV, MCH, MCHC, and PCV Detection of fibrinogen White Blood Cell Counts, Platelet Counts leukocyte morphology and abnormities Hepatic lab. Test, ALT, AST, SDH blood glucose concentration Macroscopic urine analysis, and Dipstick urine analysis Microscopic urine analysis Cytology of body fluids

Books and References

Recommended books	Text Book: Kenneth SL, Edward AM, VETERINARY LABORATORY MEDICINE CLINICAL PATHOLOGY, 4th edition 2003, Blackwell PC. Useful resources: Veterinary Laboratory Medicine (I994): J. Robert Duncan, Keith, W. Prasse and Edward A. Mahttffey. The Iowa State Uni.

VETE3129	Veterinary Clinical Pathology						
Course type	Major Needs	Level	3	hours (theoretical)	1	hours (practical)	0

Course Objectives

1 - This course covers methods of hematological and body fluid examination, liver, pancreas and kidney function tests in order to make laboratory interpretations.

2 - By the end of this course the students will be obtainable by knowledge and understanding the principles of examination of a live body fluids as blood (whole blood, serum and plasma), urine, and etc. the student able to aid in diagnosis, differential diagnosis, prognosis and follow up of treatment of diseases.

Intended Learning Outcomes

Knowledge and Understanding	* Upon completion of this course, for each of the following areas the student will be able to: 1. Understand the basic knowledge of blood constituents and illustrate principles of blood cells maturation and release to circulation 2. Describe the laboratory method of the blood film spreading and evaluation 3. Understand the normal morphology of blood cells and differential diagnosis of its abnormalities 4. Know the laboratory method of body fluid examination and interpret the result for different body systems. 5. Mention the practice of evaluation of complete blood picture (CBC) and recognize the fundamental aspect and diagnosis of anemia, polycythemia, leukogram disorders

Course Contents

1 - By the end of this course the students will be obtainable by knowledge and understanding the principles of examination of a live body fluids as blood (whole blood, serum and plasma), urine, and etc. the student able to aid in diagnosis, differential diagnosis, prognosis and follow up of treatment of diseases.

Books and References

Recommended books	Text Book: Kenneth SL, Edward AM, VETERINARY LABORATORY MEDICINE CLINICAL PATHOLOGY, 4th edition 2003, Blackwell PC. Useful resources: Veterinary Laboratory Medicine (I994): J. Robert Duncan, Keith, W. Prasse and Edward A. Mahttffey. The Iowa State Uni.

VETE3132	Poultry Diseases lab						
Course type	Major Needs	Level	3	hours (theoretical)	0	hours (practical)	1

Course Objectives

1 - This course will discuss poultry diseases. Specific details about each disease will be explained including etiology, transmission, clinical signs, gross lesions, and samples to be collected, diagnostic tests, treatment, vaccination, prevention and control strategies.

Course Contents

1 - 1. Evaluate environmental conditions in relation to flock health 2. Know proper handling and restraint techniques and necropsy for poultry . . . 3. Collect appropriate diagnostic samples and perform relevant diagnostic tests for disease investigation. .. 4. Develop preventive medicine protocols for poultry of various ages including biosecurity and vaccination protocols. 5. Communicate rational protocols for flock management, nutrition and preventive medicine to poultry producers. 6. Explain regulatory and public health implications (including slaughter concerns and drug withholding times) of common poultry diseases.

Books and References

Essential books	Avian disease manual, 7th edition, 2012. American Association of Avian Pathologists
Recommended books	Y. M. Saif. (2011) Diseases of Poultry. 12nd edition.

VETE3231	POULTRY DISEASES						
Course type	Major Needs	**Level**	3	**hours (theoretical)**	2	**hours (practical)**	0

Course Objectives

1 - This course will discuss poultry diseases. Specific details about each disease will be explained including etiology, transmission, clinical signs, gross lesions, and samples to be collected, diagnostic tests, treatment, vaccination, prevention and control strategies.

Intended Learning Outcomes

Knowledge and Understanding	*	1. Evaluate environmental conditions in relation to flock health 2. Know proper handling and restraint techniques and necropsy for poultry . . . 3. Collect appropriate diagnostic samples and perform relevant diagnostic tests for disease investigation. .. 4. Develop preventive medicine protocols for poultry of various ages including biosecurity and vaccination protocols. 5. Communicate rational protocols for flock management, nutrition and preventive medicine to poultry producers. 6. Explain regulatory and public health implications (including slaughter concerns and drug withholding times) of common poultry diseases. 7. Know the clinical reasoning of different medication and/or vaccination administration routes (including oral, eye drop, spray, subcutaneous, wing web, thigh-stick, and feed) of individual/flocks. 8. Develop management protocols to treat and prevent common diseases of poultry breeder flocks.

Course Contents

1 - Introduction and overview of poultry industry. Mechanism of disease transmission, Adenovirus Infections Avian Encephalomyelitis, Avian Influenza Avian Metapneumovirus Infection, Avian Nephritis Virus Infection In Chickens Neoplastic Diseases, Chicken Infectious Anemia Pox, Infectious Bronchitis, Infectious Bursal disease Laryngotracheitis, Newcastle disease, Viral Arthritis First Exam Chlamydiosis, Cholera-Coryza-Bordetella-TB Clostridium, Colibacillosis Mycoplasmosis, staph, strep, spiro, erysi,campylo Salmonellam, Second exam Fungal Diseases: Aspergillosis, Candidiasis, Favus, Aflatoxicosis, external parasite Parasites and coccidia Nutritional disease

Books and References

Essential books	Avian disease manual, 7th edition, 2012. American Association of Avian Pathologists
Recommended books	Y. M. Saif. (2011) Diseases of Poultry. 12nd edition.

VETE3337	Practical Training (1)						
Course type	Major Needs	**Level**	3	**hours (theoretical)**	0	**hours (practical)**	3

ISLM3107	Holy Quran (3)						
Course type	UNIV Needs	**Level**	4	**hours (theoretical)**	1	**hours (practical)**	0

AGAP4222	Enironment and Adaptation Physiology of Anim						
Course type	Major Needs	**Level**	4	**hours (theoretical)**	2	**hours (practical)**	0

GEOL3203	Environmental Sciences						
Course type	UNIV Needs	**Level**	4	**hours (theoretical)**	2	**hours (practical)**	0

Course Objectives

1 - The main aim of the course is to classify the components of the environment and its elements and effects (pollution) that affect the ecological balance.

Intended Learning Outcomes

Knowledge and Understanding	* In this course the students can find out the environment and its elements and components, environmental balance, energy flow in the environment, the environmental envelops, and biogeochemical cycles affecting the ecological balance. As well as local and global pollution issues that lead to ecosystem degradation and the impact of pollution issues on human health. In addition the environmental of Palestine.

Course Contents

1 - Introduction to Environment and Ecology (1)
2 - Outline of earth envelops (2)
3 - Natural biogeochemical cycles in the environment (3)
4 - Environmental pollution (4)
5 - Human health and the environment (5)
6 - The environment of Palestine (6)

Teaching and Learning Methods

1 - Lectures presentation by Power Point Projector
2 - Shore research report on the subject of pollution topic

Students Assessment

Assessment Method	TIME	MARKS
Attendance and participation + short report and search on the subject of pollution + Final Exam		Attendance (10 marks) + report (10 marks) + Final Exam (80 marks)

Books and References

Course note Lecture notes

Knowledge and Skills Matrix

Main Course Contents	Study Week	Knowledge and Understanding	Intellectual Skills	Professional Skills	General Skill
(1) (Introduction to Environment and Ecology	first and second				
(2)Outline of earth envelops	Third and fourth				
(3)Natural biogeochemical cycles in the environment	Fifth and sixth				
(4)Environmental pollution	Seventh, eighth, ninth and tenth				
(5)Human health and the environment	Eleventh, twelfth, and thirteenth				
(6)The environment of Palestine	Fourteenth and fifteenth				

AGAP4231 Research Methodology & Communication Skills

Course type Major Needs **Level** 4 **hours (theoretical)** 2 **hours (practical)** 0

AGAP4220	Aquaculture						
Course type	Major Needs	**Level**	4	**hours (theoretical)**	2	**hours (practical)**	0

VETE4340	Veterinary Infectious Disease						
Course type	Major Needs	**Level**	4	**hours (theoretical)**	3	**hours (practical)**	0

Course Objectives

1 - This course covers diseases caused by viruses, bacteria, parasites, and fungi affecting different domestic animals, in addition to the causative agents, clinical symptoms, diagnosis, treatment and control.

Intended Learning Outcomes

Knowledge and Understanding	* Understand the pathogenesis of infectious diseases.
Intellectual Skills	* . Identify the most important diseases of domestic animals in Palestine.
Professional Skills	* Learn the differential diagnosis the infectious diseases of domestic animals.
General Skill	* . Investigate disease treatment and outbreaks control.

ISLM4113	Holy Quran (4)						
Course type	UNIV Needs	**Level**	4	**hours (theoretical)**	1	**hours (practical)**	0

ISLM1201	Jurisprudence						
Course type	UNIV Needs	**Level**	4	**hours (theoretical)**	2	**hours (practical)**	0

AGRI4202	Entrepreneurship and Small Business Managem						
Course type	College Needs	**Level**	4	**hours (theoretical)**	2	**hours (practical)**	0

Course Objectives

1 - Introduce concept and economic significance of small enterprises
2 - Planning for small enterprises
3 - Introduce market based approach
4 - How to prepare feasibility study for small enterprises
5 - Marketing of agricultural products
6 - Value chains and small enterprises
7 - sources of financial support and how to analyze the investment

Intended Learning Outcomes

Knowledge and Understanding	* Students know how to access good markets for their products
	* Students can manage small enterprises
	* Students can analyze the market demand and design income generating enterprises
Intellectual Skills	* Students know how to study the feasibility of small enterprises
Professional Skills	* Students can access source of finance for their enterprises

Course Contents

1 - Introduction to pioneers skills
2 - Introduction to Market based approach and value chain analyses
3 - feasibility studies
4 - Market analyses
5 - finance of small enterprises
6 - Investment analyses
7 - successful models of enterprises in Gaza strip.

Teaching and Learning Methods

1 - Lectures
2 - Seminar
3 - Discussion

Teaching and Learning Methods for the Disabled Students

1 - To be prepared when needed

Students Assessment

Assessment Method	TIME	MARKS
Midterm exam	8th week	25
Seminar	12th week -15th week	25
final exam	16th week	50

Books and References

Course note	Lectures by Dr. Ahmed Abu Shaban

VETE1201 veterinary medical terminololgy

Course type College Needs **Level** 6 **hours (theoretical)** 2 **hours (practical)** 0

Course Objectives

1 - To introduce students to the fundamental principles of medical veterinary terminology.
2 - To familiarize students with the structure and components of medical terms
3 - To explore anatomical terminology and its application to different body systems and structures.
4 - To introduce students to the terminology associated with surgical procedures in veterinary practice
5 - To educate students on the appropriate use and interpretation of abbreviations
6 - o develop students skills in analyzing and building medical terms related to veterinary medicine.

Intended Learning Outcomes

Knowledge and Understanding	* Demonstrate proficiency in constructing and interpreting medical veterinary terms. * Identify and define terms related to common diseases and conditions in veterinary practice. * Apply appropriate anatomical terminology to describe the location and structure of various body systems.
Intellectual Skills	* accurately interpret and use anatomical terminology related to various body systems
Professional Skills	* Interpret and utilize common abbreviations and acronyms found in veterinary medical records and communications. .

Course Contents

1 - Basic word structure: prefixes, suffixes, and root words
2 - Building and analyzing medical terms
3 - Understanding word origins
4 - Application of medical terms in the fields of physiology, pathology and diagnosis
5 - Medical report and medical abbreviations
6 - Spelling of medical terms
7 - Exercises

Teaching and Learning Methods

1 - Lectures
2 - Exercises
3 - case study and reports

Students Assessment

Assessment Method	TIME	MARKS
Med term exam	one hour	30
Quizes and assignments	15 minutes	30
Final exam	2 hours	40

Books and References

Course note	lectures course notes of power point presentations
Essential books	Veterinary Medical Terminology" by Dawn E. Christenson
Recommended books	Veterinary Medical Terminology Guide and Workbook" by Angela Taibo