

# VET - VETERINARY SCIENCE (VET)

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## **VET 1103 Veterinary Anatomy and Physiology I (2-3-3)**

Provides an introduction to basic anatomy and physiological principles from cellular level to the whole organism. The focus will be on establishing a basic understanding and appreciation of the interrelationship between the different topics covered. Topics will include an Introduction to Anatomy and Physiology; the Chemical Basis of Life, Cellular Structure and Processes, Tissues, The Integumentary, Skeletal, Muscular, Digestive, Cardiovascular and circulatory systems. A laboratory component will allow students to explore physiological concepts through a range of laboratory based activities.

## **VET 1123 General Chemistry (2-2-3)**

Develops an understanding and necessary skills to apply the fundamental concepts of chemistry to Veterinary Scientists. The following topics are covered: matter and measurements in chemistry, atomic theory and periodic table, naming and formulas of inorganic compounds, concepts of chemical bonding, mass relations in chemical compounds and reactions. Classroom concepts are supported by laboratory experiments.

## **VET 1203 Veterinary Anatomy and Physiology II (2-3-3)**

The second semester of Anatomy and Physiology will encompass the respiratory system structure and processes, the nervous system, the urinary and reproductive systems, the sensory organs and the endocrine system. The anatomy and morphology of the different organs and systems in poultry are covered. This course covers histology.

**Prerequisites:** VET 1103

## **VET 1223 Animal Science and Husbandry (3-1-3)**

Upon successful completion of this course students will have the knowledge and understanding of different breeds of animals, approaching, handling and restraining of animal. General management practices, identification (ear tagging, tattooing), housing systems and age determination of different animal species (dentations).

## **VET 1313 Physics for VET Sciences (2-2-3)**

This course is an introductory level physics course. It covers many of the fundamental principles of physics such as units of measurement, energy, mechanics, fluids, heat, sound, and light. Laboratory work is required to reinforce and stress the importance of these principles using the experimental method for investigating and reporting results.

## **VET 1403 Veterinary Terminology (3-1-3)**

Covers basic medical terminology beginning with prefixes, suffixes and word roots used in the animal care and veterinary language. Students build on this knowledge by identifying, analysing, defining, spelling and pronouncing terms and learning abbreviations related to each of the animal systems.

## **VET 1413 Inorganic Chemistry (2-2-3)**

Introduces the fundamental concepts of Inorganic Chemistry, to include chemistry laboratory safety, basic knowledge on the analysis of subatomic and atomic properties based on the periodic table of elements; integration of concepts of higher order of organization of elements to molecules; acid base reactions; oxidation reduction reactions, thermodynamics, kinetics, gravimetric, volumetric analysis and practical aspects of chemical reactions and quantities.

## **VET 1904 Veterinary Preceptorship I (0-6-4)**

Provides workplace experience in a real working environment both in veterinary laboratories and clinic. It should give students the opportunity to develop professional and work skills, ethics, habits, and practices as observed in real work situations. Combining knowledge obtained at the college to the practice they will do in workplace will improve students' professional skills. This course will enable students to apply and practice skills, knowledge, and techniques gained during their first year in the veterinary programme in real work placement.

## **VET 2003 Veterinary Pathology (2-2-3)**

Provides students with an understanding of principles of disease related to pathological processes (mechanisms of cell injury, inflammation and healing, degeneration, necrosis, and neoplasia, vascular disturbance) and their causes (physical, chemical, infectious and genetic). Students will be introduced with concepts of general features of the immune system, innate and adaptive immunity, disorders of the immune system and immunodiagnostic techniques.

**Prerequisites:** VET 1203

## **VET 2123 Animal Nutrition and Feeding (3-1-3)**

Covers the basic concepts and principals of animal nutrition including digestion in various types of digestive systems. The course will cover the nutritional requirements (water, carbohydrate, proteins, lipids, vitamins, minerals and trace elements) for livestock and companion animals during their various stages of life.

## **VET 2133 Systemic Pathology (2-2-3)**

Systemic pathology covers diseases as they occur in each organ system. Systems covered in Systemic Pathology include the cutaneous, musculoskeletal, cardiovascular, respiratory, and digestive system; Hematopoietic, urinary and genital; the nervous system and endocrine. Lectures are supplemented by practical classes.

**Prerequisites:** VET 2003

## **VET 2213 Organic Chemistry (2-2-3)**

Covers the basic and fundamental principles of organic chemistry, nomenclature, structure and properties of organic molecules, reactions and mechanisms. In the practical component, the student will identify compounds based on their functional groups and apply the knowledge and principles learnt in the theory sessions.

## **VET 2323 Biochemistry (2-2-3)**

Focuses on the chemical properties of the living systems, and the study of the molecular basis of life to include their roles in all biological processes. The main topics include structures, properties and functions of amino acids, proteins, carbohydrates, enzymes, lipids and nucleic acids. These topics are supported by hands on practical sessions to demonstrate some of the functions and utilities of biochemical compounds and processes.

## **VET 2423 Veterinary Microbiology (2-2-3)**

Provides students with theoretical and laboratory techniques in the classification, isolation and identification of microorganisms. The course comprises study of the diverse bacteria mechanisms, pathogenicity, body defense mechanisms, antibacterial action and resistance to antimicrobial agents. A range of important bacteria in livestock and domestic animals will be discussed, with emphasis of their ecology, and pathobiology of the disease. Theoretical concepts in virology and practical techniques including viral culture and viral diagnosis will be addressed.

**VET 2904 Veterinary Preceptorship II (0-6-4)**

Provides workplace experience in a real working environment both in veterinary laboratories and clinic. It should give students the opportunity to develop professional and work skills, ethics, habits, and practices as observed in real work situations. Combining knowledge obtained at the college to the practice they will do in workplace will improve students' professional skills. This course will enable students to apply and practice skills, knowledge, and techniques gained during their second year in the veterinary programme in real work placement.

**Prerequisites:** VET 1904

**VET 3003 Veterinary Parasitology (2-2-3)**

Students will be familiarised with the essential facts and concepts of veterinary parasitology (Protozoology, Helminthology and Entomology). Emphasis is placed on diagnosis, pathogenesis and management of parasitic infections. The biology of parasites of major veterinary importance will be stressed to impart the understanding necessary for control of parasitism.

**VET 3033 Principles of Genetics and Animal Reproduction (3-1-3)**

Provides students with a basic understanding of the principles of animal genetics, and breeding. This course will cover the Applied aspects for reproduction in animals. Topics covered will include in brief comparative functional anatomy and physiology of male and female reproductive systems, development of the gametes, pregnancy and parturition, breeding soundness examination of male and female farm animals, natural mating management including artificial insemination, in vitro fertilization and embryo transfer.

**Prerequisites:** VET 1203

**VET 3103 Meat Inspection and Food Safety (3-1-3)**

Covers the pre-slaughter examination of animals and humane slaughter practices. Lectures outline and explore the pre-slaughter care, slaughtering and preparation operations, ante- and post-mortem exam. Covers the characteristics and identification of carcass species. Pathology, microbial, parasitic diseases and judgement in disease. The principles of food hygiene and safety will be discussed.

**Prerequisites:** VET 1203, VET 3003, VET 2133, VET 2423

**VET 3113 Animal and Disease Prevention I (3-1-3)**

Provides students with the fundamentals understanding of animal health and agents that lead to disease, including the general aspects of disease within different body systems. It covers the theoretical and practical skills required to perform general clinical examination, including the visual examination, the normal physiologic values for the different animal species and the clinical examination by body systems and region. Additionally, the basic principles of disease prevention in animals will be discussed.

**Prerequisites:** VET 2133, VET 2423, VET 3003

**VET 3143 Veterinary Professional Practice (2-2-3)**

Students are introduced to basic knowledge and skills needed to work in a clinical setting. Students will be able to perform patient assessment through physical examination and collection of diagnostic specimens including blood, urine, and feces. Therapeutics will also be covered including administration of medications, bandaging, and wound management. This course will also cover emergency and critical care applicable to a broad range of species.

**Prerequisites:** VET 2423, VET 3003, VET 3423

**VET 3423 Clinical Pathology and Diagnostic Laboratory Tests (2-2-3)**

Further the skills of students in laboratory tests of various samples (blood in addition to urine, body fluids, and tissue samples) that are commonly used in veterinary clinical pathology. The value of these tests as a diagnostic tool of animal diseases (disorders) will be demonstrated. Understanding and interpretation of results obtained from each test will be emphasized and correlated to clinical cases. Hands-on laboratory experiences will emphasize the common clinical pathological tests and how tests are performed.

**Prerequisites:** VET 2423

**VET 3904 Veterinary Preceptorship III (0-6-4)**

Provides workplace experience in a real working environment both in veterinary laboratories and clinic. It gives students the opportunity to develop professional, work skills, ethics, habits, and practices as observed in real work situations. Combining knowledge obtained at the college to the practice they will do in workplace will improve student's professional skills. This course will enable students to apply and practice skills, knowledge, and techniques gained during their second year in the veterinary program in real work placement.

**Prerequisites:** VET 2904

**VET 4003 Pharmacology and Toxicology for Veterinary Science (3-1-3)**

Provides students with an understanding of pharmacology and pharmaceuticals applicable in the veterinary field. Content includes the application of pharmacology, classifications of drugs and their usage, mechanism of action, side effects, and dosing. Preparation and administration of medications, interpreting prescriptions. Veterinary management and practice dispensing medication are also addressed. The basics concepts of drug residues to identify potential harmful effects of chemical compounds to humans, animals and the environment, and toxicology science will be discussed.

**Prerequisites:** VET 1203, VET 2133

**VET 4033 Animal Disease and Prevention II (3-1-3)**

Completes the Animal Disease and Prevention I course, focus on basic and clinical aspects of the disease, disease transmission, clinical signs and diagnosis of diseases in different groups of animals, birds, poultry and wildlife. The methods used in the control and prevention of disease will be discussed including the importance of vaccination and the types of vaccines available in disease prevention and control.

**Prerequisites:** VET 3113

**VET 4113 Infectious Diseases and Animal Quarantine (3-1-3)**

Provides the essential information on the major infectious diseases of different animal species caused by viral, bacterial, fungal and parasitic infections and vector-borne diseases. It covers the zoonoses, the pathogenesis, clinical signs, the host-pathogen interactions, mode of disease transmission and means of prevention and control. Various strategies of detecting and confirming and managing disease outbreaks will be discussed as well as the principles of animal quarantine and biosecurity.

**Prerequisites:** VET 3143

**VET 4123 Veterinary Epidemiology and Public Health (3-1-3)**

Introduces students to the basic concepts of veterinary epidemiology. the concept of disease occurrence as a complex interaction between host, agent and environmental factors, present descriptive epidemiology exercises on the strengths and weaknesses of different epidemiological study designs. The quality of evidence of causal relationships provided by different epidemiological study designs will be compared and discussed.

**Prerequisites:** VET 4113, VET 4033

**VET 4133 Wildlife and Aquaculture (3-1-3)**

Provides students with the opportunity to learn and apply the principles of wildlife and aquaculture husbandry, handling, welfare, health care and management. In addition, it will provide students with the opportunity to learn and apply the principles of wildlife and aquaculture disease ecology, conservation medicine and ecohealth and conservation practice.

**VET 4223 Veterinary Legislations and Animal Welfare (3-1-3)**

Provides students with the principles and applications of animal welfare rules and regulations on animal Husbandry Systems and animal Transport, animal ownership, use of animals in entertainment , legislation and ethics concepts in a wide range of situations with farm animal practice, transport and slaughter, companion animals, laboratory animals, animals used in competition and wildlife or for scientific research. Covers the UAE law and regulations on animal use in research, clinical trials and teaching.

**VET 4904 Veterinary Preceptorship IV (0-6-4)**

Provides workplace experience in a real working environment both in veterinary laboratories and clinic. It gives students the opportunity to develop professional, work skills, ethics, habits, and practices as observed in real work situations. Combining knowledge obtained at the college to the practice they will do in workplace will improve students' professional skills. This course will enable students to apply and practice skills, knowledge, and techniques gained during their second year in the veterinary programme in real work placement.

**Prerequisites:** VET 3904

**VET 4906 Veterinary Capstone Project (2-8-6)**

Provides an opportunity for the Vet students to study a specific area from the four major areas in the Vet program. Students are expected to utilize knowledge learned in the four years of the program and Practicum experiences to select an area of interest to investigate, choose appropriate methodology, collect and analyze data and present conclusions in a final capstone presentation.

**Prerequisites:** HSC 4003, VET 4003, VET 4113, VET 4033