



## Certificate in Livestock and Veterinary Science

Subject Code	Course	Internal	External	Total
CLVS101	Introductory Anatomy, Physiology of domestic animals	40	60	100
CLVS102	Elementary Principles of Animal Nutrition	40	60	100
CLVS103	Introduction to Livestock & Poultry Management	40	60	100
CLVS104	Introduction to Animal Products Technology ,Breeding	40	60	100
CLVS105	Introduction to Reproduction, AI And Storage of Semen	40	60	100
CLVS106	Introduction to Clinical Procedures & Animal Farm Practices	40	60	100
CLVS107	INTRODUCTION TO SURGICAL PROCEDURES	40	60	100
CLVS18	Practical	60	40	100
TOTAL		340	460	800

## **VLDD-COURSE CONTENTS**

### **I INTRODUCTORY ANATOMY OF THE DOMESTIC ANIMALS 1+1**

#### **Theory**

Introduction to arrangement of different bones of axial and appendicular skeleton of ox with comparison to that of horse (only identification). Classification of bones.

Introduction to different organs of digestive, respiratory, urinary, male and female genital systems circulatory and central nervous systems of ox.

#### **Practical**

Identification of bones and different organs of various systems of ox.

### **INTRODUCTORY PHYSIOLOGY OF DOMESTIC ANIMALS 1+1**

#### **Theory**

Physiological functioning of digestive system, respiratory system, cardiovascular system, renal system, reproductive system and nervous system of domestic animals.

#### **Practical**

1. General precautions to be taken in physiology laboratory.
2. Collection of blood from domestic animals.
3. Separation of plasma and serum from blood.
4. Methods of collection of urine in domestic animals.
5. Macroscopic and microscopic examination of urine.
6. Methods of collection of rumen liquor.
7. Measurement of ruminal movements.
8. Recording of body temperature.
9. Recording of respiration rate.
10. Recording of heart rate.
11. Measurement of growth in animals.

### **ELEMENTARY PRINCIPLES OF ANIMAL NUTRITION 1+1**

#### **Theory**

Elementary description of nutrients and their requirements for maintenance, growth, reproduction, lactation, egg production, wool production and work production: General principles of feeding and common practices for different categories of live-stock: A brief

description of production of common fodder crops including pastures and knowledge about common grasses.

- a) Preparation, preservation and storage of hay and silage.
- b) Common feed and fodder, their classification and identification.

### **Practical**

Elementary knowledge of computation of ration for different types of live-stock and poultry :  
Silage and hay making

## **INTRODUCTION TO LIVE-STOCK & POULTRY MANAGEMENT 2+1**

### **Theory**

Important definitions related to animal management, care of animals (Cattle, Sheep, goat and Swine) during and after parturition, housing of animals: Routine management practices like grooming, washing, dipping, casting, shearing and exercising: Raising and feeding of farm animals: Signs of health in different animals: Care of sick animals: Milking management: Control of vices of animals: Introduction to feeding and management of horses and camels. Importance of Poultry farming: Elementary knowledge of incubation and hatchery management; Management of chicks, growers and layers: Poultry housing and feeding: Vaccination against poultry diseases.

### **Practical**

#### **Live Stock**

Visit to various animal farms. External body parts of different animals. Methods of approaching and handling animals (casting, lifting of hind leg, foreleg, etc). General managerial practices followed in the farm (dipping, spraying, grooming, exercising, Debudding, castration, etc). Methods of identification (Branding, tagging, tattooing, ear notching, etc). Determination of age. Determination of body weight. Familiarization with daily farm operations. Detection of vices and control measures. Feeding of animals. Milking of animals. Detection of heat in animals. Methods of recording temperature, pulse and respiration. First aid and method of administration of medicine. Record keeping in the farm.

#### **Poultry**

Survey of the Poultry farm. Handling and identification of Birds. Study of External body parts of birds. Breeds and Varieties of various species of poultry. Study of the reproductive system of fowl. Study of the digestive system of fowl. Structure and composition of egg. Selection and care of hatchable eggs. Incubation of eggs and hatching of chicks. Pedigree hatching. Brooding and rearing of Chicks. Debeaking of birds. Selection and culling of chickens. Poultry housing. Poultry feeding. Prevention and control of poultry diseases. Maintenance of poultry records.

## INTRODUCTION TO ANIMAL BREEDING

1+1

### Theory

1. General terms used in animal breeding.
2. Important breeds of live-stock (Cattle buffalo, sheep, goat and swine) and poultry, their origin distribution and breed characteristics.
3. Basis of selection.
4. Selection of a Breeding Bull and a Dairy Cow/Buffalo.
5. Methods of selection.
6. Economic utility characters of different species of live-stock and poultry.
7. Importance of live-stock record keeping and various types of records.
8. Elementary knowledge of breeding systems.

### Practical

Identification of various breeds of live-stock and poultry. Recording of breeding data. Animal Data Generation. Estimation of Breeding Efficiency. Estimation of Most Probable Production Ability (MPPA).

## VLDD- VI ENGLISH

2+1

### Theory

- a) Text for Comprehension entitled 'The Pointed Vision edited by Usha Bande and Krishan Gopal, Oxford Univ. Press'
- b) Vocabulary: Synonyms, Antonyms, Words often confused.
- c) Applied Grammar: Voice, Narration, Tense
- d) Letter Writing: Voice, Narration, Tense
- e) Report Writing (150 words) :
  - 1) Pashu Mela
  - 2) Animal care Clinic
  - 3) Inauguration of a Veterinary Clinic.
  - 4) Road Accident
  - 5) Spread of a disease among animals
  - 6) Village Panchayat Meeting.

### Practical

- 1) Listening Comprehension
- 2) Reading Comprehension
- 3) Facing an Interview
- 4) Group Discussion

## **PHARMACY 3+1**

### **Theory**

Definitions of terms: Pharmacology, Pharmacy, Chemotherapy, Therapeutics, Toxicology, Posology, Metrology etc. Sources and nature of drugs ; Routine Pharmaceutical processes ; Various dosage forms with suitable examples ; Principles of compounding and dispensing of drug preparations ; Different methods for the administration of drugs ; Pharmacy weights and measures- Apothecary & metric system; Household measures ; Prescription reading- parts of prescription and commonly used Latin abbreviations in prescription writing ; Broad therapeutic classification of drugs employed in Vety. Practice- Definitions examples and therapeutic uses in animals.

### **Practical**

Identification of common drugs; Labeling and storage of common drugs: Compounding and dispensing of pharmacy preparations.

## **ELEMENTARY ANIMAL HUSBANDRY EXTENSION 1+1**

### **Theory**

1. Animal Husbandry Extension - Meaning, concept, levels, functions, philosophy and principles.
2. Communication - Definition, elements, models, barriers and factors affecting communication.
3. Adoption - Definition, stages of adoption, adopter's categories and factors affecting adoption of animal husbandry practices.
4. Audio-Visual Aids - Meaning importance in veterinary and animal husbandry extension, selection criteria of suitable A.V. aids and their limitation.
5. Extension Methods- Meaning, concept, classification and their relative merits and demerits.
6. Programme planning – Meaning, objectives, principles and steps in programme planning.
7. Extension programmes launched by State Department of Animal Husbandry and SAU/SVU for the development of animal husbandry sector.
8. Need assessment of livestock farmers and problems identification.

### **Practical**

1. Handling of episcope, slide, overhead and multimedia projectors
2. Preparation of visuals: Pamphlets, folders, posters, charts, transparencies, flash cards, flip charts etc.
3. Writing for cattle owners: Advisory letters, circular letters, news item
4. Group discussion on situational/ contemporary animal husbandry problems.

5. Dealing with farmers visiting the veterinary hospitals
6. Identification of field problems of livestock owners
7. Conducting practical demonstrations for livestock owners
8. Maintenance of veterinary hospitals and its surroundings
9. Building team work and dignity of labour
10. Conducting socio-economic surveys and data collection for livestock census

## **INTRODUCTION TO ANIMAL PRODUCTS TECHNOLOGY**

**1+0**

### **Theory**

Handling, storage and distribution of meat, poultry and eggs. Candling and grading of eggs (also to be demonstrated in theory classes). Milk definition and its composition; Factors affecting composition and quality of milk; Elementary knowledge about nutritive value; Source of bacterial contamination of milk and clean milk production. Sampling; C.O.B. and alcohol tests; pH by indicator paper; Specific gravity test; Estimation of fat, S.N.F and T.S in milk (also to be demonstrated in theory classes). Milk collection; Legal standards of milk; Processing, packaging and distribution of milk.

## **ELEMENTARY MEDICINE 3+1**

### **Theory**

Preliminary knowledge about signs of diseases; Clinical methods of examination and detection of abnormalities ; Abnormal body discharge ; Body temperature, pulse and respiration ; Methods of injecting drugs, sera, vaccine etc ; Use of canula, passing stomach tube, probang, teat syphon and other instruments for treatment ; General agents responsible for causing diseases: Bacteria, Viruses, Fungi and Parasites ; General principles of prevention and control of diseases ; Utilization and disposal of carcasses ; Elementary clinical diagnostic methods, history and general examination.

**Non infectious diseases** - symptoms and first aid of following diseases:

Stomatitis, Choke, Upper respiratory tract infections, Tympany, Impaction, Constipation, Diarrhoea, Dysentary, Indigestion, Pneumonia, Haemoglobinuria, Milk fever, Ketosis, Pica in camels, Reteintion of urine.

**Infectious diseases** - Symptoms and first aid in the following diseases :

**Bacterial and Viral diseases** : Johne's disease, Mastitis, Haemorrhagic septicemia, Anthrax, Black Quarter, Tetanus, T.B., Enterotoxaemia, Rinderpest, Rabies, Swine Fever.

**Paratitic diseases** : Babesiosis, Theileriasis, Trypanosomiasis, Coccidiosis, Ascariasis: Control of flies, lice, ticks and mites and mange.

**Poultry diseases** : Ranikhet disease, Fowl pox, Salmonellosis.

**Common camel diseases**

**Vaccination** : Elementary Knowledge about vaccination of Domestic animals & Poultry.

**Practical**

Cleaning of slides, glass wares and other laboratory equipments ; Techniques of staining and preparation of blood smears ; Care and use of Microscopes ; Collection, processing for examination of blood, urine, faeces ; Collection, preservation, fixation and dispatch of morbid material for laboratory examination.

**INTRODUCTION TO SURGICAL PROCEDURES 2+1****Theory**

Introduction and common terms used in Surgery : Sterilization in surgical practice ; Introduction to superficial surgical ailments ( Abscess, Fistula, Sinus, Wounds, Gangrene Cyst ) ; Introduction to dental care ; Introduction to hoof management ; First aid management of fracture, bloat, haemorrhage ; Introduction to post operative management ; Application and uses of various antiseptics, lotions, ointments and tinctures in surgical practice.

**Practical**

Preparation of pack for autoclaving ; Surgical attires and their uses by the Surgeon ; Operation room discipline ; Dressing of wounds and bandages ; Identifications of various surgical instruments ; Physical restraint of animals for surgery ; Various injections ; Burdizzo castration ; Preparing animals for surgery ; Application of counter irritants, heat, cold fomentation.

**INTRODUCTION TO REPRODUCTIVE DISORDERS 2+1****Theory**

Introduction to reproductive patterns of live-stock ; Genital organs of male and female ; Transport of materials from abortions ; Assistance in holding obstetrical cases ; Preparation of packs for obstetrical operations ; Sterilization of instruments ; Preparation of animals ; Intrauterine medication ; Assistance to parturient animals ; Care of new born ; Nomenclature of gynecological and obstetrical conditions.

**Practical**

Intrauterine medication; Use of Vaginoscope; Preparation of packs for obstetrical cases; Preparation of different stains for semen evaluation and cytology; Assistance in obstetrical cases.

## **INTRODUCTION TO REPRODUCTION, ARTIFICIAL INSEMINATION AND STORAGE OF SEMEN**

**1+1**

### **Theory**

Structure and function of reproductive organs of cow, horse, dog, pig and poultry; Estrous cycles of domestic animals: Signs of heat in domestic animals: Gestation periods of domestic animals: Symptoms of parturition in cattle, buffaloes, sheep, goat and pigs; Advantages and limitations of the technique of Artificial Insemination.

### **Practical**

Rectal palpation of reproductive organs: Training of bulls ; Preparation of artificial vagina for semen collection ; Semen collection and evaluation ; Preparation of diluters and extension of semen ; Demonstration of semen freezing techniques ; Artificial Insemination technique with liquid/frozen semen ; Sterilization of glass wares/laboratory wares used in A.I. work.

## **INTRODUCTION TO CLINICAL PROCEDURES & ANIMAL FARM PRACTICES**

**0+6**

### **Practical**

Recording of temperature, pulse and respiration ; Methods of drug administration ; Practice of compounding and dispensing of various drugs ; Use of trocar and canula, stomach tube and probang ; Intramammary infusions ; Dressing of wounds ; Preparation of commonly used ointments tinctures, lotions/solutions etc ; Acquaintance with various gynecological and surgical instruments with their uses : Sterilization of instruments etc. ; Demonstration of gynecological and surgical problems ; Preparation and handling of surgical pack ; Introduction to X-ray procedure ; Collection of clinical material for laboratory examination ; Burdizzo castration of calf, sheep and goat. Prophylaxis measure against common domestic animals & Poultry diseases.

### **Animal Breeding:-**

#### **Cattle**

1. Phenotypic characterization of important breeds. 2. Feeding, management & disease control in young calves. 3. Animal identification and performance recording. 4. General management & feeding. 5. Elementary knowledge and schedule of vaccination.

#### **Poultry**

1. Different indigenous breeds of poultry and their characteristics. 2. Management of hatchery. 3. Brooding of chicks from 0-6 weeks. 4. Management of layers in the layer house. 5. Demonstration of A.I.



### **Animal Nutrition**

1. Different methods/procedures for efficient purchase of feed ingredients. 2. Types of storage structures form of storage, scientific requirements for safe storage and different methods to avoid storage losses of feeds & feed ingredients. 3. Processing of feed ingredients to improve their nutritive value. 4. Ration formulation and preparation for livestock and poultry. 5. Complete feed block formulation and preparation. 6. Urea molasses mineral block formulation and preparation.

### **Live Stock & Poultry Management:-**

#### **Buffalo**

1. Identification of External body parts. 2. Handling and restraining of animals. 3. Selection, culling and judging of animals. 4. Feeding and other day to day management practices. 5. Demonstration of A.I. & Pregnancy diagnostic. 6. First aid of sick animals.

#### **Poultry**

1. Identification of Poultry birds. 2. Brooding management. 3. Litter management. 4. Lay out plan of different types of poultry houses.