SEMESTER VI

<table>
<thead>
<tr>
<th>COURSE NO.</th>
<th>COURSE TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>VPT-321</td>
<td>Veterinary Neuropharmacology</td>
<td>2+1=3</td>
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<tr>
<td>VMC-321</td>
<td>Systematic Veterinary Virology</td>
<td>2+1=3</td>
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<tr>
<td>VPP-321</td>
<td>Avian Pathology</td>
<td>1+1=2</td>
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<td>VPF-322</td>
<td>Aquatic Animal Diseases, Heath Care and Management</td>
<td>1+1=2</td>
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<tr>
<td>VPE-321</td>
<td>Veterinary Epidemiology and Zoonosis</td>
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<tr>
<td>LPT-321</td>
<td>Meat Science</td>
<td>1+1=2</td>
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<tr>
<td>VPB-321</td>
<td>Animal Biotechnology</td>
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<tr>
<td>VAE-321</td>
<td>Livestock Economics, Marketing and Business Management</td>
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Total Credits: 13+8=21

VPT-321: VETERINARY NEUROPHARMACOLOGY  Credit Hours 2+1=3

**THEORY**

Drugs acting on autonomic nervous system: Neurohumoral transmission, adrenoceptors agonists and antagonists, adrenergic- neuron blockers, cholinceptors agonists and antagonists, ganglionic stimulants and blockers.

Autacoids: Histamine and antihistamine agents, 5-Hydroxytryptamine and its antagonists, prostaglandins, angiotensin and bradykinin.

Drugs acting on central nervous system (CNS): Pharmacology of neurotransmitters History of general anaesthetics and theories of anaesthesia. Inhalent, intravenous and dissociative anaesthetics; hypnotics and sedatives; tranquilizers, psychotropic drugs, anticonvulsants, opioid analgesic, nonsteroidal anti-inflammatory drugs, analaetics and other CNS stimulants, central muscle relaxants.

Drugs acting on somatic nervous system: Local anaesthetics and peripheral muscle relaxants. New drugs end drug formulations.

**PRACTICAL**

Demonstration of the effect of CNS depressants, analgesics, CNS stimulants, muscle relaxants, anticonvulsants, local anaesthetics in laboratory animals.

Demonstration of the action of adrenergic and cholinergic agonists and antagonists on isolated and intact preparations of the animals

Alternate use of animals as model for demonstration

VMC-321: SYSTEMATIC VETERINARY VIROLOGY  Credit Hours 2+1=3

**THEORY**

Brief history, classification and characteristics of various families of DNA and RNA viruses causing diseases in livestock and poultry, laboratory diagnostic techniques, immunity to viral infections, systemic virology including: DNA viruses:

- **Poxviridae**: Pox viruses of cow, sheep, goat and fowl
- **Asfarviridae**: African swine fever
- **Herpesviridae**: Aujeszky's disease, malignant catarrhal fever, infectious bovine rhinotracheitis, equine abortion. Marek's disease, infectious laryngotracheitis.
- **Circoviridae**: Chicken infectious anaemia. RNA viruses:
  - **Orthomyxoviridae**: Swine, equine and Avian influenza.

**PRACTICAL**

Glassware and media preparation, Demonstration of Cell culture, virus propagation by egg inoculation, animal inoculation and cell culture, study of cytopathogenesis, viral inclusions, diagnostic procedures, serological techniques, preservation and transportation of clinical samples for virological investigations. Diagnostic procedures for Peste des petits ruminants (PPR), FMD, Ranikhet disease (RD), Blue tongue, Infectious bronchitis (IB), Infectious bursal disease (IBD) and other viral agents.

**REFERENCE BOOKS**

1. Veterinary Virology - Murphy, Gibbs, Horzineck and Studert
2. Essentials of Veterinary Microbiology - Carter & Wise
3. Veterinary Microbiology & microbial diseases - Quinn, Markey & Carter
4. Veterinary Microbiology - Dwight C. Hirsh

VPP-321: AVIAN PATHOLOGY  Credit Hours 1+1=2

**THEORY**


Mycoplasmal and Chlamydial Diseases: Pathogenesis, gross and microscopic pathology of Mycoplasma gallisepticum infection (chronic respiratory disease), Mycoplasma synoviae infection. Avian chlamydiosis (psittacosis).

Parasitic Diseases: Pathogenesis, gross and microscopic pathology of Helminthic diseases (flukes, cestodes, nematodes), protozoal diseases (coccidiosis, histomoniasis), ectoparasites, Avian malaria Nutritional and metabolic diseases: Pathogenesis, gross and microscopic pathology of major diseases due to deficiency/excess of carbohydrates, proteins, minerals and vitamins in poultry Vices and Miscellaneous Diseases: Pathology of important vices and miscellaneous conditions. Pathology of exotic and emerging poultry diseases.

PRACTICAL

VPP-322 AQUATIC ANIMAL DISEASES, HEALTH CARE AND MANAGEMENT Credit Hours 1+1=2

THEORY

PRACTICAL

REFERENCE BOOKS
1. Veterinary Pathology (199) Jones, Hunt, King William & Wilkins
6. Textbook of Special Veterinary Pathology-Infectious Diseases of Livestock and Poultry. J.L. Vegad. IBIC publishers

VPE-321: VETERINARY EPIDEMIOLOGY AND ZOOONES Credit Hours 2+1 =3

THEORY

PRACTICAL
Collection of epidemiological samples. Measurement of disease: determination of morbidity and mortality rates/risks. Generation of epidemiological protocols and reports. Demonstration of selected software programmes/models e.g. EPITRAK, HandiSTATUS and India-Admas-EPITRAK. Evaluation of vaccines and diagnostic tests. Determination of associations and risks: relative risk, Odd's ratio and attributable risk. Survey of an animal disease on a farm. Field survey of zoonotic diseases. Concurrent isolation and identification of important pathogens of zoonotic importance from animal and human sources including foods of animal origin and their interpretation. Study of rural environment and health status of rural community. Visit to primary health centre/human hospital and study of the common diseases affecting rural/urban population, and probable relationships of these human disease conditions with animal diseases present in the area.
LPT-321: MEAT SCIENCE Credit Hours 1+1 = 2

THEORY

PRACTICAL

REFERENCE BOOKS

VPB-321 : ANIMAL BIOTECHNOLOGY Credit Hours 2+1=3

THEORY:

PRACTICAL
DNA and plasmid isolation. Gel electrophoresis. PCR. Screening of gametes and embryo. Use of Multimedia and audio-visual aids for molecular biology aspects.

(The course is to be taught jointly with the Departments of Veterinary Microbiology and Veterinary Gynaecology and Obstetrics)

REFERENCE BOOKS
THEORY

Economics:
Introduction, definition and scope (production, consumption, exchange and distribution) of economic principles as applied to livestock. Common terms - wants, goods, wealth, utility, price, value, real and money income. Important features of land, labour, capital and organization.
Definition, objectives, common terms. Different systems of book keeping- single and double entry system. Various types of account books including books of original entry. Classification of accounts and rules of debit and credit Recording of business transactions. Analysis of financial accounts- income and expenditure accounts, trading account, profit and loss accounts.

PRACTICAL
Book keeping: general entry, writing of journal and ledger, cash book (two and three column), purchase-safe and purchase-sale return registers, trading account, profit and loss accounts, income and expenditure accounts, balance sheet bills of exchange (bill of receivable and bill of payable), bank reconciliation statement.
Economics of a dairy unit poultry, piggery, sheep and goat units. Visit to” farms, markets and cattle fairs, backyard units and preparation of report.

REFERENCE BOOKS