SEMESTER – I

<table>
<thead>
<tr>
<th>COURSE NO.</th>
<th>COURSE TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>VAN-111</td>
<td>Veterinary Gross Anatomy-1 (Osteology, Arthrology &amp; Biomechanics)</td>
<td>1+2=3</td>
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<tr>
<td>VPB-111</td>
<td>Veterinary Physiology-1 (Blood, Cardiovascular &amp; Excretory Systems, Body Fluids)</td>
<td>2+1=3</td>
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<tr>
<td>VPB-112</td>
<td>General Veterinary Biochemistry</td>
<td>1+1=2</td>
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<tr>
<td>LPM-111</td>
<td>Livestock Production Management-I (General Principles and Ruminants)</td>
<td>3+1=4</td>
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<tr>
<td>AGB-111</td>
<td>Biostatistics and Computer Application</td>
<td>2+1=3</td>
</tr>
<tr>
<td>ANN-111</td>
<td>Principles of Animal Nutrition &amp; Feed Technology</td>
<td>2+1=3</td>
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<td>Total Credit</td>
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<td>11+7=18</td>
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VAN-111 VETERINARY GROSS ANATOMY-I (Osteology, Arthrology and Biomechanics) Credit hours 1+2=3

THEORY
Osteology: Definition of the terms used in Veterinary Anatomy in general and osteology in particular. Classification, physical properties and structure of bones, Gross study of bones of appendicular and axial skeleton of Ox / Buffalo as type species and comparison with Sheep / Goat, Pig, Horse, Dog and Fowl with particular emphasis on their topography, contour, landmarks and functional anatomy from clinical and production point of view. Detail study of bones of head, neck, thorax, abdomen, pelvis, tail, fore limb and hind limb.

Arthrology: Classification and structure of joints. Articulation and ligaments of head, neck, thorax abdomen, pelvis, tail, fore limb and hind limb of Ox / Buffalo as type species, their structure, functional anatomy and comparison with other domestic animals from clinical and production point of view.

Biomechanics: Biomechanics and its application with reference to quadruped locomotion, kinetics of locomotion, stress and strains falling on locomotor apparatus, landmarks, angulation and weight bearing bones of ox, buffalo and comparison with other animals particularly horse and dog.

PRACTICAL
Comparative study of the bones of appendicular and axial skeleton, their structure, landmarks, angulation, weight bearing and function in Ox/Buffalo and comparison with that of Sheep/Goat, Pig, Horse, Dog and Fowl and relate them in live animals. Dissection of joints of all the body regions of Ox/Buffalo to study the structure and function and comparison with other domestic animals. Biomechanics and kinetics of locomotion.

VPB-111 VETERINARY PHYSIOLOGY –I (Blood, Cardiovascular, Excretory system and Body Fluids) Credit Hours: 2+1=3

THEORY
Introduction to Blood; Properties of blood as a body fluid, metabolism and fate of R.B.C; Hemoglobin-chemical structure, synthesis,physiological functions, derivatives of hemoglobin; Anemia; Plasma proteins, lipids -origin and function; Coagulation mechanisms and regulation of haemostasis; fibrinolysis; anticoagulation mechanism. Blood pH, Wood volume and their determination. Osmotic fragility, erythrocyte sedimentation rate, haemotocrit and haemolysis; Leucocyte- phagocytic and immunogenic functions.

Heart- morphological characteristic, systemic excitability conduction & transmission processes. Cardiac Cycle:-Regulation of cardiac output; coronary circulation; properties of pulse; metabolism & energetic of working myocardial cell, extrinsic and intrinsic regulation; ECG and its significance in Veterinary Sciences - Echocardiography.


Kidney:- Functional morphology of nephron, factors determining filtration pressure, determination of glomerular filtration rate (GFR) and renal plasma flow -Reabsorption mechanisms for glucose, protein, amino acids, electrolytes; ammonium mechanism, glomerulotubular balance, methods of studying renal functions; urine concentration; micturition, uraemia. Fluid, water balance, fluid therapy, dehydration, water concentration mechanisms. Acid base balance and H+ regulation, correction and evolution of imbalances, total osmotic pressure, potassium balance, electrolyte and water imbalances, thirst Formation and excretion of urine in Birds.

Cerebrospinal fluid, synovial fluids -composition, formation and flow; Joints. Regulations of bone metabolism and homeostasis.

PRACTICAL
THEORY

Biochemistry of carbohydrates: Biological significance of important Monosaccharides (ribose, glucose, fructose, galactose, mannose and amino sugars), Disaccharides (maltose, isomaltose, lactose, sucrose & cellulose), Polysaccharides, (starch, dextrins, dextran, glycogen, cellulose, insulin, chitin), and Mucopolysaccharides including bacterial cell wall polysaccharides.


Biochemistry of nucleic acids: Chemistry of purines, pyrimidines, nucleosides and nucleotides. Biological significance of nucleosides & nucleotides. Structures and functions of deoxyribonucleic acid (DNA) and a typical ribonucleic acid (RNA).

PRACTICAL

LPM-111 LIVESTOCK PRODUCTION MANAGEMENT-I (GENERAL PRINCIPLES AND RUMINANTS)

THEORY
Livestock in India- association of livestock to Indian society during vedic, medieval and modern era. Demographic distribution of livestock and role in economy. Animal holding and land holding patterns in different agro-ecologies.


Recovery of wool wax and its use. Housing systems, layout and design of different buildings for small ruminants Judging for the quality and confirmation of body parts of cattle, buffalo, sheep and goat Culling of animals. Preparation of animals for show.


PRACTICAL


REFERENCE BOOKS
AGB-111: SEMESTER-I BIO-STATISTICS AND COMPUTER APPLICATION  
Credit Hours 2+1=3  

THEORY  
A. Basic Statistics:  

B. Experimental designs: Completely Randomized Design (CRD.) and Randomized Block Design (R.B.D). Analysis of variance.  

C. Computer application:  

PRACTICAL  

DEMONSTRATION  
Use of word processor and spreadsheet Graphics and their uses. Data retrieving and analysis through computer (Data base). Use of local area network (LAN) and other network systems. Retrieving library information through network. G.I.S. and Its use.  

REFERENCE BOOKS  
1. Statistical methods - Snedecor & Cochran  
3. Fundamentals of applied statistics - Gupta & Kapur  
4. Statistical Methods for Biological workers - Pillai & Sinha  
5. Biostatistical Analysis - Zar  
6. Fundamentals of Biostatistical Analysis - Rosner  

ANN-111: PRINCIPLES OF ANIMAL NUTRITION AND FEED TECHNOLOGY  
Credit Hours 2+1=3  

THEORY  

PRACTICAL  