

ACADEMIC PROGRAMMES

B.V.Sc. Courses:

Course no.	Title of course	Credit hrs	Semester
VMD-411	Veterinary Clinical Medicine-I (General & Systemic)	2+1	VII
VMD-412	Veterinary Preventive Medicine -I (Bacterial, Fungal & Rickettsial Diseases)	2+0	VII
VMD-421	Veterinary Clinical Medicine -II (Metabolic & Deficiency Diseases)	2+0	VIII
VMD-422	Veterinary Preventive Medicine –II (Viral & Parasitic Diseases)	2+0	VIII
VMD-511	Animal Welfare, Ethics & Jurisprudence	2+0	IX
VMD-512	Zoo/Wild Animal Breeding, Management, Nutrition and Healthcare (To be taught jointly with AGB, LPM, ANN, VPP and VSR)	1+1	IX
VMD-513	Pet Animal Breeding, Management Nutrition-and 'Health Care (To be taught jointly with AGB, LPM. ANN, VPP and VSR) Associated with the teaching of VPP-312	1+1	IX
	Total Credits	12+3= 15	

Syllabus of

Semester- VII

Veterinary Clinical Medicine-I (General & Systemic)

VMD-411

Credit Hours 2+1=3

Theory

History and scope of Veterinary Medicine, Concept of animal diseases. Concepts of diagnosis, differential diagnosis and prognosis. General systemic, states, hyperthermia, hypothermia, fever, septicemia, toxemia, shock and dehydration. Aetiology, clinical manifestations, diagnosis, differential diagnosis, treatment prevention and control of the following diseases of cattle,- buffalo sheep/goat

equine, pig and pet animals. Diseases of digestive system with special reference to rumen dysfunction and diseases of stomach in non-ruminants. Affections of peritoneum, liver and pancreas. Diseases of respiratory and cardiovascular systems including blood and blood forming organs. Diseases of uro-genital system & lymphatic system. Emergency medicine and critical care.

Practical

Clinical examination and diagnosis: Methods of clinical examination of individual ailing animals including history taking. Examination of animal including behaviour and general appearance: demeanour, voice, eating, drinking, defecation, urination, posture, gait condition of skin and body coats. Inspection of body: examination of head and neck, thorax, respiratory rates, rhythm, respiratory depth, type of respiration, cardiac sounds, chest symmetry, abdomen, external genitalia, mammary glands and limbs. Physical examination: temperature taking, palpation, percussion, auscultation. Examination of ears, eyes, conjunctiva, eye balls, mouth, submaxillary and other superficial lymph nodes, jugular furrow, oesophagus, trachea. Passing of stomach tube for locating obstruction if any. Examination of specific condition of thorax pneumothorax, haemothorax and hydrothorax Percussion/ auscultation of lung and cardiac areas. Examination of abdomen: ruminal motility, consistency, microbial population and their motility in ruminal fluid, use of trocar and canula. Examination of liver and kidneys. Liver and kidney function tests.

Semester-VII

Veterinary Preventive Medicine-I (Bacterial, Fungal & Rickettsial Diseases)

VMD-412

Credit Hours 2+0=2

Theory

Clinical manifestation, diagnosis, prevention and control of infectious diseases, namely mastitis, haemorrhagic septicaemia, brucellosis, tuberculosis, Jobne's disease. black quarter, tetanus, listeriosis, leptospirosis, campylobacteriosis, actinomycosis, actinobacillosis, enterotoxaemia, glanders, strangles, ulcerative lymphangitis, colibacillosis, fowl typhoid, putiorum disease, fowl cholera, avian mycoplasmosis, spirochaetosis, salmonellosis, swine erysipelas. Other important bacterial diseases of regional importance (e.g. contagious caprine pleuropneumonia, contagious bovine pleuropneumonia etc.). Bacterial diseases of bio terrorism Instance - anthrax, botulism etc Chlamydiosis, Q fever, anaplasmosis, Dermatophilosis, aspergillosis (brooders pneumonia), candidiasis, histoplasmosis, sporotrichosis, coccidiomycosis, mycotoxicosis, etc

Semester VIII

Veterinary Clinical Medicine -II (Metabolic & Deficiency Diseases)

VMD-421

Credit Hour 2+0=2

Theory

Aetiology, clinical manifestations, diagnosis, differential diagnosis, treatment prevention and control of metabolic disorders/ production diseases. Milk fever, acute parturient hypocalcaemia in goats, sows and bitches, osteodystrophy fibrosa, lactation tetany in mares, downer cow syndrome, ketosis, hypomagnesaemia in cattle and buffalo, azoturia in equines, hypothyroidism and diabetes in dogs. Diagnosis and management of diseases caused by deficiency of iron, copper, cobalt zinc, manganese, selenium, calcium, phosphorus, magnesium, vitamin A, D, E, B. complex, K and C in domestic animals and poultry. Nutritional haemoglobinuria. Diseases of neonates. Diseases of skin, musculo-skeletal system, nervous system and sense organs of domestic animals. Management of common clinical poisonings. Role of alternative/integrated/ethno veterinary medicine in animal disease management.

Semester- VIII

Veterinary Preventive Medicine-II (Viral & Parasitic Diseases)

VMD-422

Credit Hours 2+0=2

Theory

Clinical manifestation, diagnosis, prevention and control of infectious diseases, namely foot and mouth disease, rinderpest bovine viral diarrhoea, malignant catarrhal fever, Infectious bovine rhinotracheitis, enzootic bovine leucosis, ephemeral fever, blue tongue, sheep and goat pox, PPR, classical swine fever. Important exotic diseases for differential diagnosis - African swine fever, swine vesicular disease, vesicular stomatitis, Rift valley fever, Aujeszky's disease. Rabies, African horse sickness, equine influenza, equine infectious anaemia, equine rhinopneumonitis, canine distemper, Infectious canine hepatitis, canine parvoviral disease. Highly pathogenic avian influenza, Newcastle (Ranikhet) disease, Marek's disease. avian leucosis, Infectious bronchitis, infectious laryntracheitis, avian encephalomyelitis, fowl pox, infectious bursal disease, Inclusion body hepatitis-hydropericardium syndrome. Other emerging and exotic viral diseases of global importance. Amphistomosis, fasciolosis, {Gastrointestinal nematodiasis, schistosomosis, echinococcosis, tapeworm infestations (cysticercosis), verminous

broochitis, coeneurosis, trichomonosis, blood protozoan infections (trypanosomosis. theileriosis. babesiosis etc.). canine eperythrozoon infection, coccidiosis.

Semester- IX

Animal Welfare, Ethics and Jurisprudence

VMD-511

Credit Hours 2+0=2

Theory

Definition of animal welfare and ethics. Human and animal welfare in relation to ecosystem and environmental factors. Role of veterinarians in animal welfare. Animal welfare organisations, Animal Welfare Board of India - their role, functions and current status. Rules, regulations, laws on animal welfare. Prevention of Cruelty to Animals (PCA) Act, 1960 (59 of 1960). Role and function of Committee for the purpose of Controlling and Supervising Experiments in Animals (CPCSEA). Protection of wild life in nature and captivity. Protection and welfare of performing animals. Welfare of animals during transportation. Animal welfare in commercial livestock farming practices. Protection and welfare of working animals. Pet and companion animal welfare. Animal welfare during natural calamities and disaster management. Legal duties of veterinarians, Forensic and State Medicine laws. Common offences against animals and laws related to these offences. Examination of living and dead animals in criminal cases. Cruelty to the animals and bestiality. Legal aspects of: Examination of animals for soundness, examination of Injuries and post-mortem examination. Causes of sudden death in animals. Collection and despatch of materials for chemical examination, detection of frauds-doping, alternation of description, bishoping etc. Cattle slaughter and evidence procedure in courts. Provincial and Central Acts relating to animals. Glanders and Farcy Act 1899 (13 of 1899). Dourine Act 1910 (5 of 1910), Laws relating to offences affecting Public Health. Laws relating to poisons and adulteration of drugs. Livestock Importation Act Evidence, liability and insurance. Code of Conduct and Ethics for veterinarians - the Regulations made under Indian Veterinary Council Act, 1984.

Semester- IX

Zoo/Wild animal Breeding, Nutrition, Management and Health Care

VMD-512

Credit Hours 1+1=2

Theory

Taxonomy of various genera of wild/zoo animals of India along with their descriptions. Ethology of wild life species. Basic principles of habitat and housing of various classes of wild and zoo animals. Population dynamics of wild animals, effective population size of wild animals in captivity/zoo/natural habitats. Planned

breeding of wild animals. Controlled breeding and assisted reproduction. Breeding for conservation of wild animals. Feeding habits, feeds and feeding schedules of zoo animals. Nutrient requirements of wild animals, Diet formulation and feeding of various age groups, sick and geriatric animals. Restrain, capture, handling, physical examination and transport of wild and zoo animals. Principles of anaesthesia, anaesthetics, chemicals of restraining, common surgical Interventions. Capture myopathy. Principles of zoo hygiene, public health problems arising from zoos. Prevention, control and treatment of infectious, parasitic, nutritional and metabolic diseases in zoo and wild animals. Acts and Rules related to Zoo and wild animals. National and international organisations and institutions interlinked to wild and zoo animals - rote and functioning.

Practical

Visit of nearby wild life sanctuary/zoo/wild animal centres to study the care and management, restraint, examinations, administration of medicines etc. in zoo animals. To study the housing, feeds and feeding schedule of zoo animals. To study the implementation of various Acts and Rules related to Zoo animals care and management Post mortem examination of wild and zoo animals. Handling, processing and interpretation of pathological materials from zoo and wild animals. Attending to common surgical interventions on zoo and wild animals. Planning for balanced feeding. Diet charts, preparation of balanced diet for new bone, growing and sick animals as oral and intravenous feeds. Preparation of modified diet under selected conditions. Hygienic preparation, preservation and storage of foods. (This course shall be taught jointly with the Departments of Livestock Production Management, Animal Nutrition, Animal Genetics and Breeding, Veterinary Pathology, and Veterinary Surgery and Radiology)

Semester- IX

Pet/ Animal Breeding, Management, Nutrition and Health Care

VMD- 513

Credit Hours 1+1= 2

Theory

Breeds of dogs- international pedigree breeds and those commonly seen in India. Pedigree sheet and major breed traits. Detection of oestrus and Breeding of dogs. Selecting a breed to keep, selection of a pup. Feeding of dogs- nutritional requirements of important breeds and different age groups. Management of dogs-kennels, care of pups and pregnant bitch. Dog shows- preparation for the shows, kennel clubs, important characters for judgment. Whelping. Utility of dogs- guarding, defense, patrolling, riot control, scouting, espionage, mine detection, tracking, guiding, hunting, races, retrieving, rescue, and other uses. Principles of training of dogs. Common diseases affecting dogs (bacterial, viral, parasitic, fungal, nutritional etc.) - their clinical manifestations,

diagnosis, treatment and control. Vaccination/ deworming schedules. Common surgical interventions in dogs- docking, ear cropping, nail cutting, sterilization. Common anaesthetics and anaesthesia in dogs. Common breeds of cats, their habits, feeding, breeding and management. Common diseases of cats-their diagnosis, treatment and control. Common surgical interventions in cat. Common pet birds seen in India. Introduction to their caging, breeding, feeding, management, disease control and prevention.

Practical

Recognising various breeds. Handling of dogs. Types and use of leads and collars. Brushing/grooming and bathing of dogs. Restraining of dogs for examination/medication. Detection of oestrus, mating, whelping (through demonstration). Care of pups, weaning, administration of medicine. Nail and tooth care, clipping of hairs for show purposes. Hygiene of kennel/pens, feeding utensils. Visit to dog show. Vaccination and surgical interventions (nail clipping, docking, sterilization).

Common breeds of cats, handling, restraint, examination, medication and surgical intervention in cats and kittens.

Identification of common pet birds. Handling of pet birds, their examination and administration of medicines.

(This course shall be offered jointly by the Departments of Veterinary Medicine, Livestock Production Management, Animal Nutrition. Animal Genetics and Breeding. Veterinary Pathology, and Veterinary Surgery and Radiology).

Reference Books

1. Radostitis, O.M., Gay, C.C., Blood, D.C. and Hinchcliff, K.W. 2000. *Veterinary Medicine*. A textbook of the disease of Cattle, Sheep, Pigs, Goats and Horses. IX edn. Book Power, WB Saunders, London, U.K.
2. Geo. F. Boddie. 2000. *Diagnostic Methods in Veterinary Medicine*. 5th edn. Greenworld Publishers, Lucknow.
3. Craig. E. Greene. 1998. *Infectious Diseases of the Dog and Cat*. 2nd edn. W.B. Saunders Company, London, U.K.
4. Ettinger, S. J and Feldman E.C .2000. *Textboob of Veterinary Internal Medicine*. 5th Edn. Vol1. W.B. Saunders, London, U.K.
5. Amalendu chakrabarti. 1988. *A textbook of Preventive Veterinary Medicine*. Kalyani Publishers, New Delhi.

Degree programme offered

The Division of Veterinary Medicine is offering M.V.Sc. and Ph.D. (Veterinary Medicine) programme.

A. Master's Degree Programme (M.V.Sc. - Veterinary Medicine)

It is a two year full time degree programme spread over four semesters. The annual intake capacity of the programme is 7 out of which 2 seats are under self financed category.

Syllabus

- As per course curriculum of BSMA, there were 16 courses of 29 credit hours in Division of Clinical Medicine & Jurisprudence and 13 courses of 29 credit hours in Division of Veterinary Epidemiology and Preventive Medicine and after combining the courses of Clinical and Preventive Medicine (deleting epidemiology courses) 19 courses of 34 credit hours are proposed in Veterinary Medicine.
- Courses pertaining to Preventive and Clinical Veterinary Medicine, are combined for each species to include internal as well infectious diseases
- New courses entitled "Veterinary Neonatology & Paediatrics" and "Clinical Nutrition of Sick Animals" have been designed.

M.V.Sc. Courses

Course No	Course title	Credit hrs	Semester
VMD-601	Ruminant Medicine- I	3+0	I
VMD-602	Ruminant Medicine- II	3+0	II
VMD-603	Production and Deficiency Disorders	2+0	I
VMD-604	Canine & Feline Medicine- I	2+0	I
VMD-605	Canine & Feline Medicine- II	2+0	II
VMD-606	Equine Medicine	2+0	II
VMD-607	Veterinary Neonatology & Paediatrics	2+0	I
VMD-608	Avian Medicine	1+0	II
VMD-609	Swine, Yak and Camel Medicine (Diseases of Animal Species of regional importance)	1+0	II

VMD 602

Ruminant Medicine - II

3+0

Objective

To study the internal and infectious (viral, parasitic, mycoplasma and prions) diseases of bovine, sheep and goats.

Theory

UNIT I

Diagnosis, treatment and control of internal diseases of cardiovascular system, blood and blood forming organs, musculoskeletal system, skin, eye and ear.

UNIT II

Etiology, epidemiology, pathogenesis, diagnosis, treatment and control of viral, parasitic, mycoplasma and prions diseases.

Suggested Readings

Radostits OM, Gay CC, Blood DC & Hinchcliff KW. 2000. *Veterinary Medicine*. WB Saunders.

Smith, B.P., 1996. Large Animal Internal Medicine. Diseases of horses, cattle, sheep and goats. The C.V. Mosby Co., Philadelphia, USA.

VMD-603

Production and Deficiency Disorders

2+0

Objective

Study of metabolic, production and mammary gland diseases of dairy animals.

Theory

UNIT I

General aspects, production diseases (parturient paresis, downer cow syndrome, ketosis, post-parturient haemoglobinuria, hypomagnesemic tetany, pregnancy toxemia), rheumatism-like syndrome in buffaloes, Deficiency diseases (calcium, phosphorus, and vitamins), Deficiency diseases (iron, copper, cobalt, zinc, manganese, iodine, vitamin E and selenium).

UNIT II

Review of gross structure of the bovine mammary glands; physiology of lactation; types and pathogenesis of mastitis; defense mechanisms of bovine mammary glands; diagnostic tests; epidemiology, treatment and control of mastitis caused by contagious, environmental and opportunistic pathogens; specific and non-specific

Diagnosis, treatment and control of internal diseases of urogenital and nervous systems, musculoskeletal system, skin and endocrine system.

UNIT II

Etiology, epidemiology, pathogenesis, diagnosis, treatment and control of viral and fungal diseases.

Suggested Readings

Dunn JK. 1999. *Text Book of Small Animal Medicine*. WB Saunders.

Ettinger SJ & Feldman EC. 2000. *Text book of Veterinary Internal Medicine*. 5th Ed. WB Saunders.

Gormann NT. 1998. *Canine Medicine and Therapeutics*. Blackwell.

Tilley LP & Smith FWK Jr. 2004. *The 5-minute Veterinary Consult (Canine and Feline)*. 3rd Ed. Lippincot, Williams & Wilkins.

VMD-606

Equine Medicine

2+0

Objective

To study the internal and infectious diseases of equines.

Theory

UNIT I

General systemic states. Diagnosis, treatment and control of internal diseases of gastrointestinal system, respiratory, musculoskeletal systems, urinary and nervous systems, skin, cardiovascular system, blood and blood forming organs,. Production diseases.

UNIT II

Etiology, epidemiology, pathogenesis, diagnosis, treatment and control of bacterial, parasitic, protozoal, rickettsial viral and fungal diseases.

Suggested Readings

Robison NE. 1997. *Current Therapy in Equine Medicine*. WB Saunders.

Wintzer HJ. 1986. *Equine Diseases, a Text Book for Students and Practitioners*. Verlaug Paul Parcey.

Radostits OM, Gay CC, Blood DC & Hinchcliff KW. 2000. *Veterinary Medicine*. WB Saunders.

VMD-607

Veterinary Neonatology & Paediatrics

2+0

Objectives

Study of diseases of non-infectious and infectious origin in neonates of farm and companion animals

UNIT I

Perinatal management, perinatal adaptation, neonatal health, asphyxia, resuscitation, physical examination of the neonate, perinatal and neonatal mortality, colostrum and its substitutes, milk and milk replacers, manifestations of disease.

UNIT II

Immunization for neonates, fluid replacement therapy and nutritional support, blood and serum transfusion, antimicrobial therapy neonatal diarrhoea.

UNIT III

Various internal and infectious diseases of viral, bacterial, mycoplasmal, and parasitic origin, diseases acquired from dam, congenital disorders, metabolic disorders, nutritional deficiencies, chemical and plant poisoning, miscellaneous conditions (hyperthermia, hypothermia, starvation, arthritis), management of shock and other emergencies, detection and correction of failure of passive transfer of immunity.

Books Recommended

Radostits OM, Gay CC, Blood DC & Hinchcliff KW. 2000. *Veterinary Medicine*. WB Saunders.

Roy, J.H.B., 1990. *The Calf. Vol.I, Management of Health*. 5th Ed., Butterworths, London, UK.

Smith, B.P., 1996. *Large Animal Internal Medicine. Diseases of horses, cattle, sheep and goats*. The C.V. Mosby Co., Philadelphia, USA.

Hosgood, G. and J. D. Hoskins, 1998. *Small animal Paediatric Medicine & Surgery*, Butterworth – Heinemann Oxford, U.K

Research & Review Papers in current Journals.

VMD 608

Avian Medicine

1+0

Objective

To study the internal and infectious diseases of poultry and pet birds.

Theory

UNIT I

Diseases due to deficiency of vitamins (vitamins A, B complex, C, D, K); minerals (calcium, phosphorus, manganese, zinc) and sodium chloride, Miscellaneous diseases conditions, vices (cage layer fatigue, blue comb disease, beak necrosis, round heart disease, kerato- conjunctivitis, ascites, urolithiasis, fatty liver, kidney hemorrhagic syndrome, heat stroke, cannibalism, vent picking).

UNIT II

Bacterial diseases: *Escherichia coli* and Salmonella infections, coryza, fowl cholera, gangrenous dermatitis, mycoplasmosis, CRD. Viral diseases: Newcastle disease, infectious bursal disease, Marek's disease, infectious bronchitis, inclusion body hepatitis, hydro-pericardium syndrome, avian pox, infectious laryngo-tracheitis, avian influenza, lymphoid leucosis, avian encephalomyelitis, infectious bronchitis. Fungal and parasitic diseases: aspergillosis, candidiosis, favus, mycotoxicosis, coccidiosis, roundworm and tape worm infestations, vaccination schedule etc.

UNIT III

Application of different diagnostic techniques for diagnosis and therapeutic management of systemic and infectious diseases of pet birds.

Suggested Readings

Calnek BW, Barnes HA, Beard CW, Reid WM & Yoder HW Jr. 1994. *Diseases of Poultry*. 10th Ed. Iowa State Univ. Press.

Jordan FTW & Pattison M. 1996. *Poultry Diseases*. WB Saunders.

Gordon RF & Jordan ETW. 1982. *Poultry Diseases*. ELBS.

Leeson S, Diaz G & Summers JD. 2001. *Poultry Metabolic Disorders and Mycotoxins*. IBDC Publ.

Brichard S.J. 1994. *Saunders manual of small animal practice*

VMD 609

Swine, Yak and Camel Medicine

1+0

Objective

To study the internal and infectious diseases of swine, yak and camel.

Theory

UNIT I

General systemic states. Diseases of digestive, cardiovascular, respiratory, urogenital, nervous, skin and endocrine system.

UNIT-II

Etiology, epidemiology, pathogenesis, diagnosis, treatment and control of bacterial, parasitic, protozoal, rickettsial viral and fungal diseases.

Suggested Readings

Dunne HW & Leman AD. (Eds.). 1978. *Diseases of Swine*. Iowa State Univ. Press.

Radostits OM, Gay CC, Blood DC & Hinchcliff KW. 2000. *Veterinary Medicine*. WB Saunders.

Straw BF. (Eds.). 1999. *Diseases of Swine*. 8th Ed. Iowa State Univ. Press.

VMD 610 Zoo, Wild and Laboratory Animal Medicine 1+0

Objective

Study of diseases and health management of zoo, wild and laboratory animals.

Theory

UNIT I

Etiology, symptoms, diagnosis and management of diseases of zoo, wild, laboratory and exotic animals.

UNIT II

Restraint, feeding, behaviour and management of zoo, wild and laboratory and exotic animals.

Suggested Readings

Baker HJ. 1978. *Pathology of Laboratory Animals*. Springer, New York.

Fowler ME. 1986. *Zoo and Wild Animal Medicine*. 2nd Ed. W. B. Saunders.

Fox JG, Anderson LC, Loew FM & Quimby FW. (Eds.). 2004. *Laboratory Animal Medicine*. 2nd Ed.

Hafez ESE. (Ed.). *Reproduction and Breeding Techniques for Laboratory Animals*. Lea & Fabiger.

Hrapkiewicz K. 2007. *Clinical Laboratory Animal Medicine- An Introduction*. 3rd Ed. Blackwell Publ.

Joshi BP. 1991. *Wild Animal Medicine*. Kalyani.

Sirois M. 2005. *Laboratory Animal Medicine: Principles and Procedures*. 2nd Ed. Elsevier.

VMD 611

Clinical Diagnostic Techniques

0+2

Objective

Study the diagnostic protocols and procedures for various diseases of farm and pet animals.

Practical

UNIT I

Clinical tests and their interpretation related to diseases of alimentary tract, liver, cardio vascular system, blood and blood-forming organs of various species of animals.

UNIT II

Clinical tests and their interpretation related to respiratory, urinary, nervous, endocrine, musculoskeletal and integumentary systems of various species of animals.

UNIT III

Application of various serological and immunological diagnostic tests for diagnosis of infectious diseases of farm and pet animals

Suggested Readings

Kaneko JJ. 2008. *Clinical Biochemistry of Domestic Animals*. 6th Ed. Elsevier.

Kelly WR. 1984. *Veterinary Clinical Diagnosis*. 3rd Ed. Eastbourne Balliere-Tindall.

Deborah C.Silverstein & Kate Hopper 2009. *Small animal critical care medicine*. Saunders Elsevier

VMD 612

Veterinary Emergency Medicine

1+1

Objective

Diagnosis and therapeutic management of various medical emergencies in farm and companion animals.

Theory

Diagnosis and therapeutic management of various emergencies of cardiovascular, respiratory, gastrointestinal, urinary and nervous systems, Diagnosis and therapeutic management of various emergencies of toxicities, sting bites and burns of farm and companion animals.

Practical

Monitoring critical ill patient, application of emergency care procedures for resuscitation of critically ill patient

Suggested Reading

Kirk RW.1995. *Handbook of Veterinary Procedures and Emergency Treatment*. 6th Ed. WB Saunders.

Sattler FP & Knowles W. 2001. *Veterinary Critical Care*. Lea & Febiger.

Deborah C.Silverstein & Kate Hopper. 2009. *Small animal critical care medicine*. Saunders Elsevier.

VMD 613 Diseases of Animals Caused by Toxicants 1+0

Objective

Study of diseases caused by various toxicants in domestic and companion animals.

Theory

UNIT I

Diseases caused by physical agents and poisoning of organic and inorganic compounds. Diseases caused by farm chemicals and phytotoxins

UNIT II

Diseases caused by mycotoxins and zootoxins, Diseases caused by poisonous plants, snake and insect bites.

Suggested Readings

Kahn CM. (Ed.). 2005. *The Merck Veterinary Manual*. Merck & Co.

Radostits OM, Gay CC, Blood DC & Hinchcliff KW. 2000. *Veterinary Medicine*. WB Saunders.

VMD 614 Clinical Nutrition of Sick Animals 1+0

Objective

To study the nutritional management of sick animals.

Theory

UNIT I

Nutritional management of sick animals (cattle, horse, dog and cat) in diseases of digestive, urinary, cardiopulmonary and endocrine systems.

UNIT II

Feeding of geriatric patients, parenteral nutrition of sick animals and use of nutraceuticals

Suggested Readings

Burger, I. 1996. The Waltham book of Companion Animal Nutrition. Butterworth-Heinemann, Oxford, UK.

Selected articles from journals.

VMD 615 Veterinary Jurisprudence and Animal Welfare 1+0

Objective

Study of various aspects of veterinary jurisprudence and animal welfare.

Theory

UNIT I

Veterolegal aspects of ante mortem and post mortem examination.

UNIT II

Examination of wounds, blood, offenses, frauds in sale of animals and their products, animal cruelty and welfare. DNA analysis, Study of common laws related to veterolegal aspects.

Suggested Readings

Sharma SN, Gahlot AK & Tanwer RK. 2003. *Veterinary Jurisprudence*. 5th Ed. Camel Publ. House.

VMD 616 Biosecurity Practices in Disease Prevention 1+0

Objective

To study the application of various biosecurity measures for disease prevention.

Theory

UNIT I

Definition and principles of biosecurity, shedding of pathogens by infected animals, their survival in the environment, routes of entry and transmission of pathogens. Protection of susceptible animals, interruption of pathways of transmission, role of disinfection to break cycle of infection.

UNIT II

Ph.D. COURSES

Course no.	Course title	Credit hrs.	Semester
VMD-701	Advances in farm animal gastroenterology	2+0	I
VMD-702	Advances in farm animal neurological, dermatological and musculoskeletal system diseases	1+0	II
VMD-703	Advances in farm animal cardiopulmonary and urological system diseases	1+0	I
VMD-704	Advances in farm animal neonatology & pediatrics	1+0	II
VMD-705	Advances in production diseases	2+0	I
VMD-706	Herd health medicine	1+1	II
VMD--707	Advances in equine medicine	1+0	II
VMD-708	Advances in emerging and re-emerging infectious diseases of animals	2+0	II
VMD-709	Advances in canine & feline gastroenterology	1+0	I
VMD-710	Advances in canine & feline diseases of eye, ear, nervous and musculoskeletal system	2+0	I
VMD-711	Advances in canine & feline cardiopulmonary and urological diseases	1+0	II
VMD-712	Advances in canine & feline dermatology and endocrinology	1+0	II
VMD-713	Advances in canine & feline neonatology and paediatrics	1+0	I
VMD-714	Critical care	1+0	II
VMD-715	Advanced clinical practice- I	0+2	I
VMD-716	Advanced clinical practice- II	0+2	II
VMD-790	Special problem	0+2	I & II
VMD-791	Doctoral seminar- I	1+0	I & II
VMD-792	Doctoral seminar- II	1+0	I & II
VMD-799	Doctoral research	45	
	Total	27+45	

VMD 701 Advances in Farm Animal Gastroenterology 2+0

Objective

Study of contemporary advancements in farm animal gastroenterology

Theory

UNIT I

Advances in diagnosis, therapy and control of internal diseases of gastrointestinal system and associated organs.

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to gastrointestinal system

Suggested Readings

Selected articles from journals.

VMD 702 Advances in Farm Animal Neurological, Dermatological and Musculoskeletal System Diseases 1+0

Objective

Study of contemporary advancements in farm animal neurological, dermatological and musculoskeletal system diseases.

Theory

UNIT I

Advances in diagnosis, therapy and control of diseases of neurological, dermatological and musculoskeletal system of farm animals

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to neurological, dermatological and musculoskeletal system

Suggested Readings

Selected articles from journals.

VMD 703 Advances in Farm Animal Cardiopulmonary and Urological System Diseases 1+0

Objective

Study of contemporary advancements in farm animal cardiopulmonary and urological system diseases.

Theory

UNIT I

Advances in diagnosis, therapy and control of internal diseases of cardiopulmonary and urological system of farm animals

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to cardiopulmonary and urological system

Suggested Readings

Selected articles from journals.

VMD 704 Advances in Farm Animal Neonatology & Pediatrics **1+0**

Objective

Study of contemporary advancements in farm animal neonatology & pediatrics

Theory

UNIT I

Advances in diagnosis, therapy and control of neonatal and pediatrics disorders of farm animals

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to neonates and pediatrics

Suggested Readings

Selected articles from journals.

VMD 705 Advances in Production Diseases **2+0**

Objective

Study of recent advances in production diseases.

Theory

UNIT I

Latest advances in diagnosis, therapy and prophylaxis of metabolic diseases of farm and companion animals.

UNIT II

Latest advances in diagnosis, therapy and prophylaxis of nutritional diseases of farm and companion animals.

VMD 706

Herd Health Medicine

1+1

Objective

Adoption of holistic approach to address issues of herd health targeting production

Theory

UNIT I

An over-view of factors affecting the development of dairy industry in India, action plan for the development of dairying; the concepts of integrated multi-disciplinary approach in production medicine; components of a planned herd health programme; herd health programmes for improving productive performance

UNIT II

Designing a control programme for ecto and endo-parasites; antibiotics/chemicals residue prevention programme for protecting the consumers' health; basic requirements for producing quality milk; interaction of milking equipment with udder health, evaluating the performance of milking system; analyzing and interpreting the farm records of production, reproduction and health

UNIT III

Handling of sick animals, the concept of closed herds for disease prevention; quarantine at farm level, Toxicities of fodders, vaccination programme; combating heat stress; review of common disease problems of dairy animals.

Practical

Hands-on training of the use of computer programmes for dairy health and production; tests for the detection of antibiotic residues in milk and meat; somatic cell counts and standard plate counts for evaluation of milk quality; drinking water analysis. Designing a herd health programmes for a dairy in a peri-urban setting.

Suggested Readings

Radostits, O.M., K.E. Leslie, & J. Fetrow, 1994. Herd Health: Food Animal Production Medicine, W.B. Saunders Co., Philadelphia, USA.

Howard, J.L. 1993 Current Veterinary therapy III. Food Animal Practice W.B. Saunders Co., Philadelphia

Andrews A. H. 2000. The Health of Dairy Cattle, Blackwell Science, Oxford

Research & Review Papers in current Journals

VMD 707

Advances in Equine Medicine

1+0

Objective

Advances in internal and infectious diseases of equines.

Theory

UNIT I

Advances in diagnosis, treatment and control of internal diseases of gastrointestinal system, respiratory, musculoskeletal systems, urinary and nervous systems, skin, cardiovascular system, blood and blood forming organs.

UNIT II

Advances in pathogenesis, diagnosis, treatment and control of bacterial, parasitic, protozoal, rickettsial viral and fungal diseases.

Suggested Readings

Robison NE. 1997. *Current Therapy in Equine Medicine*. WB Saunders.

Wintzer HJ. 1986. *Equine Diseases, a Text Book for Students and Practitioners*. Verlag Paul Parcey.

Radostits OM, Gay CC, Blood DC & Hinchcliff KW. 2000. *Veterinary Medicine*. WB Saunders.

VMD 708

**Advances in Emerging and Re-Emerging Infectious Diseases
Domestic of Animals**

2+0

Objective

Study of contemporary advancements in emerging and re-emerging diseases of domestic animals and surveillance methods.

Theory

UNIT I

General concepts for emergence of new diseases and re-emergence of old diseases.

UNIT II

Epidemiology of globally and nationally important emerging/re-emerging diseases and designing of strategies for their prevention and control.

Suggested Readings

Selected articles from journals.

VMD 709 Advances in Canine & Feline Gastroenterology 1+0

Objective

Study of contemporary advancements in gastrointestinal system of canine & feline

Theory

UNIT I

Advances in diagnosis, therapy and control of internal diseases of gastrointestinal system and associated organs.

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to gastrointestinal system

Suggested Readings

Selected articles from journals.

VMD 710 Advances in Canine & Feline Diseases of Eye, Ear, Nervous and Musculoskeletal System 2+0

Objective

Study of contemporary advancements in canine & feline neurological and musculoskeletal system

Theory

UNIT I

Advances in diagnosis, therapy and control of internal diseases of neurological and musculoskeletal system of canine & feline

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to neurological and musculoskeletal system

Suggested Readings

Selected articles from journals.

VMD 711 Advances in Canine & Feline Cardiopulmonary & Urological Diseases 1+0

Objective

Study of contemporary advancements in canine & feline cardiopulmonary and urological system

Theory

UNIT I

Advances in diagnosis, therapy and control of internal diseases of cardiopulmonary and urological system of canine & feline

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to cardiopulmonary and urological system

Suggested Readings

Selected articles from journals.

VMD 712 Advances in Canine & Feline Dermatology & Endocrinology

1+0

Objective

Study of contemporary advancements in canine & feline dermatology and endocrinology

Theory

UNIT I

Advances in diagnosis, therapy and control of internal diseases of skin and endocrine system of canine & feline

UNIT II

Advances in diagnosis, therapy and control of infectious diseases related to skin and endocrine system

Suggested Readings

Selected articles from journals.

VMD 713 Advances in Canine & Feline Neonatology & Paediatrics

1+0

Objective

Study of contemporary advancements in canine & feline neonatology and paediatrics

Theory

UNIT I

Practical

Diagnostic and therapeutic protocol application, specimen collection, examination and management of sick farm and companion animals.

Note: This course shall be conducted in TVCC (Faculty Clinics), where students shall participate in diagnosis and treatment of diseased animals.

VMD 790**Special Problem****0+2****Objective**

A short-term project work on some aspect of etio-pathogenesis, diagnosis and therapy of diseases of farm and companion animals.