

SEMESTER- IX

VSR-511	Veterinary Orthopedics and Lameness	1+1=2
VMD-511	Animal Welfare, Ethics & Jurisprudence	2+0=2
VMD-512	Zoo/Wild Animal Breeding, Management, Nutrition and HealthCare	1+1=2
VMD-513	Pet Animal Breeding Management, Nutrition and HealthCare	1+1=2
VGO-511	Veterinary Andrology and Reproductive Techniques	1+1=2
VPE-511	Environment and Environmental Hygiene	2+1=3
VAE-511	Livestock Entrepreneurship	1+0=1
VCP-511	Veterinary Clinical Practice	0+5=5
Total Credits		9+10=19

VSR-511: VETERINARY ORTHOPAEDICS AND LAMENESS

Credit Hours 1+1=2

THEORY

Body conformation of the horse in relation to lameness (trunk, fore limb and hind limb) Lameness, definition, classification and diagnosis. Shoulder slip (sweeny), bicipital bursitis, omarthritis, capped elbow, radial paralysis, carpalis. bent knee, and knock-knee. Hygroma of knee, open knee, blemished knee. Fracture of carpal bone, fracture of accessory carpal, contraction of digital flexors. Splints, sore shin, wind puffs, sesamoid iris Osstots, ringbone, quittor, side bone, Navicular disease, pyramidal disease. Laminitis, sand crack, seedy toe, fractures of third phalanx, pedal osteitis, and sole penetration. Canker, thresh and com, Monday morning disease, cording up, myositis of psoas, Mac thrombosis, Crural paralysis, subluxation of sacroiliac joint rupture of round ligament trochantric bursitis. Upward luxation fixation of patella, stringhalt, gonitis, chondromalacia of patella, rupture of tendoachilles, rupture of peroneus tertius, fibrotic myopathy and ossifying myopathy. Thoroughpin, bog spavin, spavin, curb, capped hock. Bovine lameness: contusion of sole, ulceration of sole, septic laminitis. avulsion of hoof and subluxation of patella. Interdigital fibroma, cyst sand crack, hoof deformities. Speckle joint disease (septic arthritis, osteochondritis dessicans, degenerative joint disease) in large animals and their treatment. Specific joint disease in dogs and their treatment. (Intervertebral disc protrusion, spondylosis) elbow and hip dysptasta Rupture of cruciate ligament. Fracture and dislocation. Classification and general principles or fracture repair. Application of external and internal immobilization for different bone fractures in small and. large animals. Complications of fracture healing. Affections of tendon, tendon sheath, bursa and ligaments. Principles of physiotherapy, classification, scope and limitations.

PRACTICAL

Examination of the horse for confirmation of body (head, trunk, fore limbs and hind limbs) and diagnosis of lameness. Demonstration of equine shoeing. First aid in orthopaedic patients (splint application, Robert Jones's bandage) Plaster of paris cast- application in dogs and carves. Hanging pin and transfixation pinning (demonstration) Intra medullary pinning in dogs (demonstration). Diagnostic nerve block in equine(demonstration) Demonstration of: daw trimming of bovine foot neurological examination for evaluation of spinal trauma, tenectomies of lateral digital extensor tendon, medial patellar desmotomy Techniques and application of diathermy, electrical stimulators, ultrasonic, therapy, infra red and ultra- violet rays.

(Courses on Zoo/Wild Animal Breeding, Nutrition, Management and Health Care under VMD - 512 (2+1) and Pet/Companion Animal Breeding, Feeding, Management and Health Care under VMD- 513 (1+1) shall be taught jointly by Departments of Veterinary Medicine, Livestock Production Management Animal Genetics and Breeding, Animal Nutrition, Veterinary Pathology, and Veterinary Surgery and Radiology).

REFERENCE BOOKS

1. Veterinary Surgical techniques by Amresh Kumar
2. Dollar's Veterinary Surgery by O'connor
3. Veterinary Radiology by A.P. Singh & Jit Singh
4. Veterinary anesthesia by Hall and Clarke
5. Adam's lameness in horses by Stashak, Ted.S
6. Ruminants surgery by R.P.S. Tyagi & Jit Singh
7. Veterinary anesthesia 10th Edition by L.W. Hall, K.W. Clarke, C.M. Trim
8. Atlas of approaches for general surgery of dog and cat by Mark, M. Smith, Don.R.Waldras
9. Textbook of small animal surgery - 2nd Edition Vol.I and Vol.II by Douglas Slatter,W.B. Saunders Co.
10. Lameness in cattle by P.R. Greenough.

VMD-511: ANIMAL WELFARE, ETHICS AND JURISPRUDENCE

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 animate. 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 Hearth. 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.

VMD-512: ZOO/WILD ANIMAL BREEDING, NUTRITION, MANAGEMENT AND HEALTH CARE**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)

VMD- 513 : PET/ ANIMAL BREEDING, MANAGEMENT, NUTRITION AND HEALTH CARE**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.

VGO-511: VETERINARY ANDROLOGY AND REPRODUCTIVE TECHNIQUES**Credit Hours 1+1=2****THEORY**

Introduction to Andrology. Development of male genitalia and gonads. Puberty, sexual maturity, sexual behaviour and libido. Factors affecting maturity and sex drive in bulls. Forms of male infertility. Factors causing infertility in male, its diagnosis and treatment Abnormalities, malformations, diseases of male genitalia and coital injuries, their diagnosis and treatment. Testicular hypoplasia and degeneration. Diseases of the accessory sex glands. Introduction, history, development, advantages and limitations of artificial insemination (A.I.). Methods of semen collection in various species. Factors affecting qualify and quantity of semen. Macroscopic/physical, microscopic, biochemical and biological tests for evaluation of semen. Extenders used for semen preservation. Extension of semen, preservation of semen at different temperatures. Storage and shipment of semen. Technique of A.I.

PRACTICAL

Planning and organization of A.I. Centre. Selection, care, training and maintenance of breeding bulls for A.I. Andrological investigations for breeding soundness of bulls. Castration in different species, preparation of teaser bulls. Care, sterilization, storage and upkeep of equipments used for artificial Insemination. Preparation of A.V Collection of semen. Evaluation of semen (Macroscopic/physical, microscopic, biochemical and biological tests). Preparation of extender and Extension of semen. Preservation techniques at different temperatures. Freezing of semen. Insemination techniques for chilled and frozen semen. Recording Systems. Handling and shipment of frozen semen and liquid nitrogen containers at field level.

REFERENCE BOOKS

1. *Physiology of Reproduction and A I of Cattle* by Salisbury
2. *Text Book of Veterinary Andrology* by Sahni & Varma
3. *Semen of Animals and it's use for A I* by Anderson & James

4. Breeding problems & Artificial Insemination by Renseberg
5. Veterinary Obstetrics & Genital Diseases by S.J.Roberts
6. Arthur's Veterinary Reproduction & Obstetrics by Noakes et all

VPE-511 : ENVIRONMENT AND ENVIRONMENTAL HYGIENE

Credit Hours 2+1=3

THEORY

Definition, scope and importance. Ecosystem: types, structure and functions. Food chains. Bio-diversity uses, threats and conservation. Natural resources: forest, mineral, soil and water-their uses and abuses. Environmental pollution-causes, and effects. Control measures of air, water, soil, marine, thermal and noise pollution. Nuclear hazards. Bio-safety and risk assessment Environment Protection Acts and related issues. Disaster management Sources of water supply and water quality, Sources of water contamination. Bacteriology of water. Physical, chemical, microbiological and biological evaluation of water. Water purification. Disposal of sewage and farm wastes. Health implications of farm wastes. Sanitation and disinfection of animal houses. Recycling of farm wastes. Sources of air pollution within animal houses and its effect on animal health and production Ventilation and ventilation systems within animal houses and specialized laboratories. Prevention and control of air and water-borne diseases. Problems of atmospheric pollution (acid rain, depletion of ozone layer, methane production, green house effect and global warming). Tannery, wool, bone and blood meal industry pollution and its control. Stray and fallen animal management Pollution due to industrial wastes.

PRACTICAL

Sampling of water for sanitary examination. Physical examination of water estimation of colour, turbidity, total hardness, solids, alkalinity and acidity of water. Chemical and Microbiological evaluation of water quality. Disinfection of animal houses. Determination of the efficacy of disinfectants. Demonstration of water purification system. Disposal of carcasses, Pathogenic microbes in air. Demonstration of various ventilation systems in animal houses. Demonstration of toxic residues in water and air. Visit to local polluted sites and documentation of local environmental problems.

REFERENCE BOOKS

1. Text book of Preventive and Social Medicine* K.Park
2. Dairy Microbiology ~ Anandakrishnan C.P., Singh R.B and Padmanabhan P.N
3. Fundamentals of Dairy Microbiology ~ Prajapathy, J B
4. The technology of food preservation- Norman W. D., and James N.D
5. Environmental Pollution: Impact of technology on Quality of life- Ray,M.
6. Environmental Hazards and Human Health- Richard B.Philp
7. Wilsons' Practical Meat Inspection- Wilson W.G
8. Food Microbiology ~ Frazier V. and Westhoff D.C.,
9. Food safety and Quality Assurance-Foods of Animal Origin- Hubbert W.T
10. Food safety-Contaminants and Toxins- D'Mello J.P.F
11. Methods of Analysis and Analysis- James P.L. and Je.
12. Review of Parasitic Zoonosis- Parija S.C
13. Industrial Hygiene Evaluation Methods- Bisese S and James P.K.
14. Health and health care in Third world- Phillips D.R
15. Infectious Waste Management-A practical guide.-Garvin M. L.
16. Hand book of Biomedical Instrumentation- Khandpur
17. Veterinary Preventive Medicine- White E.C. and Jordan FTW
18. A textbook of Preventive Medicine- Chakrabarti.A
19. Meat Hygiene * Gracy, Collins and Huey
20. Meat Hygiene * Joshi.B.P
21. A colour Atlas of Meat Inspection- Durao.G
22. Manual on simple methods of Meat preservation- FAO Manual No. 79
23. Poultry Meat Hygiene and Inspection - Bremner.A and Jhonston M
24. Diseases of Animals Transmissible to Man- Thapliyal D.C.
25. Zoonoses * - Mahendra Pal
26. Fundamentals of Parasitic Zoonoses- Pathak K.M.L
27. Zoonoses: Recognition Control and Prevention- Martin.E., Jones.E.H., Hubbart,W.T and Hagstard H.V
28. Zoonoses: Infectious diseases Transmitted from Animals to Human Being Krauss H
29. Dogs Zoonoses and Public Health- Calum N.L., Macpharson, Fracois,X., Moslin and Wandeler,A.
30. CRC handbook series in Zoonoses- Steele J.L.
31. Zoonoses ~ Palmer, Soulsby and Simpson
32. Applied Dairy Microbiology- Marth.E.H. and Steele J.L.
33. Modern Food Microbiology- Jay. M.J
34. Handbook of milk Microbiology- Srivatava.M.L.
35. Basic Food Microbiology- Banwart.G.J.
36. Industrial Microbiology- Prescott and Ponn
37. Urban Health Research in Developing Countries- Atkigson.S., Sangsore,J and Werns,E.
38. Safety Evaluation of Environmental Chemicals- Dikshith, T.S.S.
39. Influence and Removal of Organics in Drinking Water- Mallevilla,Suffet and Chan
40. Manual of Aquatic Sediment Sampling.- Murdoch,A Asane J.M.
41. Text book of Medical Parasitology- Parija S.C.
42. Worms and Human Disease- Muller
43. Food Borne Pathogens ~ Varnem and Evans
44. Gradwohls' Clinical Lab Methods and Diagnosis- Sonnenwirth and Jarett
45. Fish Disease and Disorders - Viral Bacterial and Fungal Infections. Wro and Bruno
46. Epidemiology, Diagnosis and Management of Zoonoses ~ Narayan K.G. 47 Outline of Dairy Technology- Sukumar De
48. Textbook of Human Nutrition- Bamji.M.S., Rao,N.P and Reddy V
49. Principles and Practice of Animal Health and Hygiene- Prasad. J., and Neeraj
50. Veterinary Epidemiology- Thrushfield. M.
51. Fundamentals of Animal Hygiene and Epidemiology ~ Thapliyal D.C.
52. Communicable disease Epidemiology and Control- Webber,R.
53. Veterinary Epidemiology-Principles and Methods ~ Willeberg,M. 54. Medical Parasitology- Parija S.C.
55. Veterinary Medicine- Radostits,O.M, Gay C.C, Douglas,C, Blood.C and Kenneth W.H.
56. Practical Medical Microbiology ~ Mackie and Mc.Cartney
57. Helminthes, Arthropods and Protozoa of Domesticated Animals- Soulsby.J.L. (indicates books which can be used for under graduate reference)

THEORY

Livestock Entrepreneurship. Avenues of entrepreneurship/employment in private and public sectors. Key concepts and theories of self-employment and entrepreneurship. Essential criteria for development of entrepreneurship in livestock sector - basic requirements for entrepreneurship initiatives in livestock and allied sectors (i.e. techno economic feasibility of the enterprises under different conditions, training and management skills, business acumen, business communication, inter-personnel skills for establishing an enterprise, etc.). Entrepreneurial training/development programmes at the State and National level. Animal Insurance. Bank support for entrepreneurship. Financial credit and financial management-general Principles and practices, analysing project appraisals and reports, capital, expenditure decisions, reinvestment and payback. Preparing projects for bank appraisal, banking requirements. Assessing project profits. Procurement management quality issues, standardisation, grading and packaging. Marketing channels. Retail marketing, sales operations and management advertising, marketing of services. Expectations from a Veterinary professional. Eco-jobs and sustainable development through livestock. Approach to preparation of Entrepreneurial Project on livestock.

REFERENCE BOOKS

1. **Alan ,L. Carsrdnd & Malin ,E. Brannback** (2007) Entrepreneurship : Greenwood Publishing group
2. **Peter Ducker** Innovation and Entrepreneurship : Harper Bus. Publisher.
3. **Null** Successful Entrepreneurs Guide book: Manotar Publishers
4. Entrepreneur Starter Kit six cds : Coach series
5. **Miner John, B.** The 4 steps to Entrepreneurial success: Berett - ICO
6. **Birley Sre** Masteries Entrepreneurship, Financial Publishers

VCP-5111: VETERINARY CLINICAL PRACTICE**Credit Hour- 0+5=5**

The students shall be Imparted the trainings on rotation basis in the following sections of Teaching Veterinary Clinical Complex (TVCC):

1. Ambulatory Section:

Handling, examination, diagnosis and treatment of sick animals under field conditions under the supervision of faculty designated for Ambulatory Clinical activity. Ambulatory Clinics shall be operated by small groups of students and faculty through an equipped mobile unit in which the departments of Veterinary Medicine, Veterinary Gynaecology and Obstetrics and Veterinary Surgery and Radiology shall be involved.

2. Diagnostic Laboratory Section:

The Clinical Diagnosis Laboratory will form an important component of Teaching Veterinary Clinical Complex. The Diagnostic Laboratory will impart training to groups of students for laboratory evaluation and interpretation of clinical samples leading to diagnosis/comparative diagnosis of diseases. This activity will involve training in examining clinical samples (biochemical, toxicological, pathological, parasitological and bacteriological) at the clinical complex, analyzing and correlating with clinical findings and interpreting the results. Note: The Laboratory shad be run in collaboration with the Department of Pathology.

3. Medicine Section:

Orientation to Veterinary Clinics including hospital set up, administration and functioning. Methods of record keeping. Retrieval, processing, analysis and interpretation of data. Hospital management involving out patient department (OPD), Indoor patient, Critical care/intensive care unit, sanitation, up keeping, practice management etc. Doctor client interaction: Orientation to local language/dialect/ local terminology of the diseases. Registration, filling up registration cards, history taking. Relating generic and trade names of drugs along with their doses, indications and contraindications to prescribed treatment regimens. Familiarization and practice of first aid procedures and emergency medicine. Practice of collection, labeling, packaging and evaluation of laboratory samples. Clinical practice comprising of clinical examination of the patient, with emphasis on history taking, examination techniques- palpation, percussion and auscultation, systematic examination of various systems, recording of clinical observations viz. temperature, respiration, pulse, cardiac sounds, cardiac function, pulmonary function, functional motility of digestive system, routes and techniques of administration of medicaments. Diagnosis and treatment of common clinical cases like pharyngitis, laryngitis, stomatitis, indigestion, ruminal impaction, tympany, enteritis, traumatic reticulo-peritonitis, traumatic pericarditis, pneumonia, haemoglobinurea. haematuria. milk fever, ketosis, rickets, osteomalacia, common poisoning, and others. Collection of materials like urine, faeces, skin scraping, blood, milk and other body fluids for laboratory tests. Preparation of case records; follow-up records etc. Treatment of causalities and other emergencies. Screening of livestock/poultry through tests, mass diagnostic campaigns. Vaccination and other disease prevention and control programmes in the field. Practice of feeding of sick animals. Acts and regulations pertaining to generation and disposal of biomedical wastes in veterinary institutions. Biomedical waste generation, handling, storage, sorting, coding, transportation and disposal. Hazards of biomedical waste, and impact of biomedical waste on the environment.

4. Gynecology & Obstetrics Section:

Practice of pregnancy diagnosis, examination of cases of anoestrus, silent oestrus and conception failure. Treatment of cases of metritis, cervicitis and vaginitis. Handling of case of retention of placenta. Management of Ante and post partum prolapse of vagina. Examination and preliminary handling of dystocia cases, faetotomy, caesarian . operation Castration of male carves. Breeding soundness evaluation of bulls. Collection of cervical and vaginal mucus for cytology. Rectal examination of genitalia, vaginal examination. Familiarization with common drugs & hormones used in reproductive disorders, epidural and local anaesthesia for gynaecological cases. Filling of clinical case records and their maintenance.

5. Surgery & Radiology Section:

Familiarization with equipments used in different sections of the Hospital. Restraining and positioning of different species of animals for examinations, diagnosis and surgical treatment Prescription of common drugs, their doses and uses in clinical surgical practice. Filling of clinical case records and their maintenance. Preparation of surgical packs, sterilization procedures for surgical instruments, drapes, operation theaters. Passing oi' stomach tube and gastric tube. Catheterization and urine collection.

Techniques of examination of neuromuscular and skeletal functions, Familiarisation with antiseptic dressing techniques, bandaging, abdomino-centesis, thoracocentesis. Topography anatomy of Cattle, Horse and Dog. Radiographic positioning and terminology. Treatment and Management of inflammation, wounds, abscess, cysts, tumors, hernia, haematoma hemorrhage, sinus, fistula, necrosis, gangrene, bum, sprain and tendinitis. First aid in fractures and dislocations and other affections of joints, facial paralysis, Eye worm & other minor affections of Eye. irregular teeth and their rasping, tail amputation, knuckling, upward fixation of patella (medical patellar desmotomy) etc.

Familiarisation with the landmarks for the approach to various visceral organs, thoraco-centesis, abdominocentesis. Laparotomy, palpation and visualisation of viscera. Urethrotomy, castration, vasectomy, caudectomy, ovaio-hysterectomy, thoracotomy, cystotomy, cystorraphy and spleenectomy. Examination of horse for soundness and preparation of certificate for soundness. Tenotomies, suturing of tendon, shortening of tendon. Note: The skills required for the Comprehensive Examination of Core Competence to be held for the purpose of assessment/evaluation of Internship shall be imparted under these courses.