1. Lecture Schedule – UG, PG , PhD - Theory / Practical Schedule – Approved by BoS – Subject wise

Sr. No.	Lecture/ No.	Topic to be covered
I: UNIT-1(VETERINARY GENERAL SURGERY)		
1.	1.	Introduction: Historical perspective, Definitions, classification of surgery, tenets of Halsted
2.	2.	Pre-operative, intra-operative and post-operative considerations: History taking, physical examination, clinico-pathologicaltesting, intra-operative and Postoperative care
3.	3.	Sterilization and disinfection: Definitions, surgical sterilization, various methods Of sterilization (Heat, chemical and radiations etc.), disinfections.
4.	4.	Sutures: Definitions, suturing, factors influencing suturing, characteristics of an Ideal suture material, types of suture material-absorbable and non-absorbable.
5.	5.	Surgical knots, various suture patterns-apposition, eversion, inversion and special.
6.	6.	Treatment of acute and chronic inflammation: Use of anti-inflammatory drugs And proteolytic enzymes.
7.	7.	Haemostasis (physical and chemical methods, systemic haemostats, surgical diathermy)
8.	8.	Basic surgical affections: Definitions, classification, diagnosis and treatment of abscess, tumour, cyst, hernia, haematoma, necrosis, gangrene, burn and scald, frost bite.
9.	9.	Surgical affections of muscles, artery and vein.
10.	10.	Sinus and fistula.
11.	11.	Wounds: Definition, classification, examination and diagnosis, general principles for treatment of aseptic, contaminated and septic wounds,
12.	12.	Healing and factors affecting wound healing, complications of wounds and their remedies.
13.	13.	Surgical infection; the prevention and management: Classification of infection,
14.	14.	Introduction to biomaterials and stem cell therapy in wound management
15.	15.	Management of surgical shock.
16.	16.	Principles of fluid therapy in surgical patients.
II: UNIT-2(VETERINARYANAESTHESOLOGY)		
17	17.	Introduction: Development of anaesthesiology, Terminology, classification and indications.
18	18.	General considerations of anaesthesia: Factors affecting anaesthesia and selection

		Of anaesthetic technique,
19	19.	Factors modifying up take, distribution and elimination,
20	20.	Patient evaluation, categories of patients according to physical status, selection of Anaesthetic agent and patient preparation.
21	21.	Pain and its management in animals
22	22.	Local and regional anaesthesia: Definitions, local anaesthetics, mechanism of action.
23	23.	Premedication, properties and use of different preanaesthetics: Uses of premedication,
24	24.	Anticholinergic, sedatives and tranquilizers (Phenothiazine derivatives, Benzodiazepines, Butyrophenones, Narcotic analgesics, Alpha-2agonists, dosage Char to fall the drugs.)
25	25.	General anaesthesia: Definitions, methods of induction of anaesthesia,
26	26.	Intravenousanaesthetics(Total intravenousanaesthesia), monitoring of anaesthesia.
27	27.	Inhalation anaesthesia: Advantages of inhalant anaesthetics, types of inhalant Anaesthetics, their properties and effect on various systems.
28	28.	Methods of administration of inhalant anaesthesia.
29	29.	Dissociative anaesthesia: Definition, drugs, clinical application, properties and Effect on various body systems.
30	30.	Avian, wild, zoo, exotics and lab animal anaesthesia and capture myopathy
31	31.	Anaesthetic emergencies and management.
32	32.	Toxicity, antidote and reversal agents.
		First Internal Assessment
33.	33.	Introduction to Radiology-General terminology of radiology,
34.	34.	Physical properties of X-Rays, Scope and uses of Radiology,
35.	35.	Directional terms for veterinary radiology.
36.	36.	Production of X-rays and factors influencing production of X-rays.
37.	37.	Radiation hazards and safety measures- Scattered radiation,
38.	38.	Radiation hazards and safety measures- Scattered radiation,
39.	39.	Radiation protection, General principles of radiation safety, Radiation monitoring devices, Requirement of an ideal radiographic section.
40.	40.	Thestatutoryrequirementsofradiologyset-upasperAtomicEnergyRegulatory Board of India (AERB).
41.	41.	Production of quality diagnostic radiograph.
42.	42.	Recording of image-Manual and digital processing of X-ray films, storage and Retrieval system.
43.	43.	Radiographic Quality and faults- Radiographic detail, density& contrast and Factors affecting them, Radiographic faults, their possible causes and prevention.
44	44.	Contrast radiography-Definition, indications, contraindications and types of

.		contrast radiography,
45.	45.	Different contrast materials and their use, Techniques of some selected contrast Radiography in animals (Barium swallow, Retro grade urography etc.)
46.	46.	Diagnostic ultra sonography- Principles, indications, techniques and artifacts of Ultra sonography.
47.	47.	Advanced diagnostic imaging tools-The brief introduction to the use and limits of Some advanced imaging techniques,
48.	48.	Interventional radiology- CAT scanning, MRI, etc.
IV: UNIT-4 (REGIONAL SURGERY-I)		
49.	49.	Affections of lips, cleft palate, tongue, cheek, and their treatment: General Anatomical considerations, avulsion of lip, cleft lip ranula, neoplasm and traumatic injuries.
50.	50.	Affections of teeth and jaws and their treatment: General anatomical considerations, Developmental abnormalities,
51.	51.	Dental tartar, periodontal disease, over grown molars, fractures and luxation ofjaw.
52.	52.	Affections of nose, face, ear, head and horn and their treatment: General Anatomical considerations.
53.	53.	Brachycephalic syndrome, Stenotic nostrils, nasal polyps, empyema of sinuses,
54.	54.	Fracture and avulsion of horn, horn cancer, aural haematoma, otitis.
55.	55.	Affections of eye and their treatment: General anatomical considerations and Examination of eye.
56.	56.	Affections of eyelids and nictitating membrane and their treatment: entropion, ectropion, chalazion, sty, Cherry eye and traumatic injuries.
57.	57.	Affections of lachrymal apparatus, eyeball & orbit and their treatment: occlusion of nasolacrimal duct, traumatic proptosis, Panopthalmia, orbital neoplasms, glaucoma, eyeworms.
58.	58.	Affections of cornea, iris & lens and their treatment: corneal ulcers, corneal opacity, Kerato Conjunctivitis Sicca (KCS), prolapsed of iris, corneal dermoid, Corneal lacerations and perforations, cataract.
59.	59.	Affections of guttural pouch, oesophagus and their treatment: General anatomical Considerations. Empyema, tympanitis and Mycosis of guttural pouch,
60.	60.	Oesophageal diverticulum, mega oesophagus, achalasia and choke.
61.	61.	Affections of glands of head & neck and their treatment: General anatomical considerations. Salivary mucocele, sialoliths, salivary fistula.
62.	62.	Affections of neck and their treatment: General anatomical considerations. Yoke gall, yoke abscess, fistulous withers, poll evil, torticollis.
63.	63.	Affections of larynx and Trachea: Tracheal collapse, stenosis, roaring in horses, Dorsal entrapment of soft palate in horses and camels, emergency tracheotomy.
64.	64.	Management of ocular emergencies.
		Second Internal Assessment

65.	65.	Thoracic affections: Surgical approaches, perforated wounds, pyothorax, Pneumothorax, pneumocele,
66.	66.	Diaphragmatic hernia and traumatic pericarditis in cattle.
67.	67.	Abdominal affections: Surgical approach to the abdomen in different animal species.
68.	68.	Common surgical affections of the stomach in dogs and their management: dilation and torsion of stomach, gastric ulcerations, foreign bodies in the stomach, Pyloric stenosis etc.
69.	69.	Surgical affections of the stomach in large animal and their management: Ruminal impaction, traumatic reticulitis, omasal and abomasal impaction and abomasaldisplacement.
70.	70.	Surgical affections of small intestines and their management: Intestinal obstruction, intussusception and strangulation (volvulus). Techniques of intestinal anastomosis.
71.	71.	Surgical affections of large intestine and their management: Caecal dilatation and torsion, rectal prolapse, rectal and perineal tear, recto-vaginal fistula.
72.	72.	Surgical affections of anus and perineal region and their management: Atresia-ani, Anal stenosis, anal sac impaction.
73.	73.	Surgical affections of abdomen and their management: Perforating wounds & fistulae of abdomen, umbilical hernia, ventral abdominal hernia, inguinal and Scrotal hernia, perineal hernia.
74.	74.	Urinary system: Urolithiasis and its management. Urolithiasis in small and large animals. Patent urachus, ectopic ureter.
75.	75.	Surgical management of equine colic.
76.	76.	Genital system: Surgical affections of male genital system and their management, prostatic enlargement/ hyperplasia/ neoplasm, Phimosis, paraphimosis, preputial prolapse, penile amputation.
77.	77.	Castration, vasectomy, scrotal ablation in large & small animals.
78.	78.	Surgical affections of female genital system and their management: Canine Transmissible venereal tumour. Ovariohysterectomy and caesarean section.
79.	79.	Applications of rigid and flexible endoscopes in the management of surgical disorders.
80.	80.	Integumentary system: Surgical affections of udder, teat and canine mammary neoplasms.
81.	81.	Surgical affections of tail and tail docking
82.	82.	Wild/ zoo animal surgery (only awareness)
VI: UNIT-6 (ORTHOPAEDICS AND LAMENESS)		
83.	83.	Body conformation of the horse in relation to lameness (trunk, fore limb and hind limb).
84.	84.	Lameness: Its definition classification and diagnosis. General methods of therapy For lameness. Body and limb conformation in relation to lameness in equine.
85.	85.	Equine lameness: Shoulder slip (sweeny), bicipital bursitis, omarthritis, capped elbow, radial paralysis, carpitis. Bent knee, and knock-knee.
86.	86.	Hygroma of knee, open knee, blemished knee. Fracture of carpal bone, fracture of Accessory carpal, contraction of digital flexors.

87.	87.	Splints, sore shin, wind puffs, sesamoiditis, Osslets, ringbone, quittor, sidebone, Navicular disease, pyramidal disease. Laminitis, sand crack, seedy toe, fractures of third phalanx, pedal osteitis, and sole penetration.
88.	88.	Canker, thrush and corn, Monday morning disease, cording up, myositis of psoas, Mac thrombosis, Crural paralysis, subluxation of sacroiliac joint rupture of round Ligament trochanteric bursitis.
89.	89.	Upward fixation of patella, stringhalt, gonitis, chondromalacia of patella, rupture of tendo-achilles, rupture of peroneustertius, fibrotic myopathy and ossifying myopathy.
90.	90.	Thorough pin, bog spavin, spavin, curb, capped hock.
91.	91.	Canine lameness: Intervertebral disc diseases, elbow & hip dysplasia, rupture of Cruciate ligament, elbow hygroma etc.; their management, Onychectomy.
92.	92.	Bovine lameness: Contusion of sole, ulceration of sole, septic laminitis, avulsion of hoof and subluxation of patella, inter digital fibroma, cyst, sand crack, and hoofdeformities.
93.	93.	Fracture: Definitions, classification, fracture healing and complications.
94.	94.	Fracture: The preliminary assessment and management off factures. Techniques of External immobilization of fractures.
		Third Internal Assessment
95.	95.	Techniques of internal immobilization of fractures. Management of fracture Complications
96.	96.	Luxations: Definition, signs, diagnosis. Management of common joint luxations inanimals.
97.	97.	Spinal trauma, diagnosis and its management
98.	98.	Rehabilitation and physiotherapy of orthopaedic patients

PRACTICAL

Sr. No.	Practical No.	Topic to be covered
I: UNIT-1(VETERINARY GENERALS URGERY)		
1.	1.	Introduction to layout of operation theatre and surgical unit.
2.	2.	Introduction of common surgical equipment and instruments.
3.	3.	Suture materials, surgical knots and suture patterns.
4.	4.	General examination of surgical patients. Preparation of surgical patients.
5.	5.	Operation theatre routines-sterilization,
6.	6.	Operation theatre routines- preparation of theatre, Surgeon and surgical pack.
7.	7.	Bandaging and basic wound management.
8.	8.	Demonstration (Audio visual aids) of surgery,
9.	9.	Control of haemorrhage and suturing
10.	10.	Familiarization with anaesthetic apparatus, monitoring equipment and accessories.
11.	11.	Methods of local infiltration analgesia (Linear ring block, inverted L block etc.) Regional nerve block demonstration and practice (Auriculopalpebral block,Peterson block/ 4-point retrobulbar nerve block)

12.	12.	Para vertebral block, Epidural block etc.
13.	13.	Intravenous regional anaesthesia cattle.
14.	14.	Administration of general anaesthesia in small and large animals. (Demonstration and practice).
15.	15.	Administration of inhalant anaesthesia (Demonstration).
16.	16.	Monitoring of general anaesthesia.
17.	17.	Management of anaesthetic emergencies, use of artificial respirator and analeptics.
18.	18.	Visit to a wild animal facility and/ or audio-visual aids.
19.	19.	Familiarization with the operation of the x-ray unit. Formulation of X-ray Exposure technique charts,
20.	20.	Adoption of safety measures and film processing.
21.	21.	Positioning and radiography of different parts of the body in small and largeanimals.
22.	22.	Handling, viewing and interpretation of radiograph.
23.	23.	Familiarization with the film contrast, density and details, common radiographicartefacts.
24.	24.	Radiographic pathology of the head, neck and thorax of large and small animals.
25.	25.	Radiographic pathology of abdomen of large and small animals.
26.	26.	Radiographic pathology of the bones and joints of large and small animals.
27.	27.	Demonstration of contrast radiographic techniques in animals.
28.	28.	Demonstration of ultrasonography in animals.
29.	29.	Fluoroscopy, Image intensifier (familiarization).
IV: UNIT-4(REGIONAL SURGERY-I)		
30.	30.	Amputation of horn and disbudding. (***Demonstration/Audio visual aids :***)
31.	31.	Tooth rasping, dental scaling.
32.	32.	Examination of ear (otoscopy).
33.	33.	Examination of eye (General examination, Ophthalmoscopy, tonometry, Fluorescein dye test, Scheirmer tear test, test for blindness).
34.	34.	Operation for aural haematoma, ear cropping in dogs.
35.	35.	Protection and bandage of eyes,
36.	36.	tarsorrhaphy, third eyelid flap,
37.	37.	Flushing of nasolacrimal duct
V: UNIT-5(REGIONAL SURGERY-II)		
38.	38.	Castration in different species. (***Demonstration/Audio visual aids***)
39.	39.	Ovariohysterectomy in dogs and cats.
40.	40.	Rumenotomy, Gastrotomy in dogs,
41.	41.	Urethrotomy and urethrostomy.
42.	42.	Cystotomy and cystorrhaphy.
43.	43.	Enterotomy/ Enterectomy.
44.	44.	Management of teat and udder affections.
45.	45.	Amputation of tail in different animals.
46.	46.	Circumcision operation for preputial and rectal prolapse.
47.	47.	Thoracocentesis and abdominocentesis
VI:UNIT-6(ORTHOPAEDICS AND LAMENESS)		
48.	48.	Familiarization with various orthopaedic instruments and implants.(***Demonstration/Audio visual aids***)
49.	49.	Basic orthopaedic and neurological examination in small and large animals.
50.	50.	Nerve blocks in equine.
51.	51.	Application of basic physiotherapy techniques in animals.

52.	52.	Basic limb stabilization techniques and splinting techniques.
53.	53.	Application of cast in small and large animals.
54.	54.	Internal fixation techniques in animals.
55.	55.	Medial patellar desmotomy in bovines.
56.	56.	Examination of animals for soundness and preparation of soundness certificate.

M.V.Sc.

Sr No	Course No.	Title	Credit	Semester
1	VSR 501	Clinical Practice-I*	0+3	
2	VSR 502	Clinical Practice-II*	0+3	
3	VSR 503	Principles of Surgery*	2+1	
4	VSR 504	Anaesthesia And Analgesia*	2+1	
5	VSR 505	Diagnostic Imaging Techniques*	2+1	
6	VSR 506	Soft Tissue Surgery	2+1	
7	VSR 507	Orthopaedic Surgery*	2+1	
8	VSR 508	Anaesthesia of Zoo, Wild, Exotic and Laboratory Animals	1+1	
9	VSR 509	Urogenital Surgery	1+1	
10	VSR 510	Ophthalmology	1+1	
11	VSR 511	Dentistry and Oral Surgery	1+1	
12	VSR 512	Camel Surgery	1+1	
13	VSR 513	Elephant Surgery	1+1	
14	VSR 587	Clinical Case Conference	0+1	
15	VSR 588	Special Problem in Radiology	0+2	
16	VSR 589	Special Problem in Anaesthesia	0+2	
17	VSR 590	Special Problem in Surgery	0+2	
18	VSR 591	Masters Seminar	1+0	
19	VSR 599	Masters Seminar	0+30	

(PhD)

Sr No	Course No.	Title	Credit	Semester
1	VSR 601	Clinical Practice-I*	0+2	
2	VSR 602	Clinical Practice-II*	0+2	
3	VSR 603	Clinical Practice-III*	0+2	
4	VSR 604	Cardiovascular Surgery	2+1	
5	VSR 605	Advances in Anaesthesiology	2+1	
6	VSR 606	Advances in Radiology	2+1	
7	VSR 607	Advances in Diagnostic Imaging Techniques	2+1	
8	VSR 608	Advances in Orthopaedics	2+1	
9	VSR 609	Neurosurgery	2+1	
10	VSR 610	Reconstructive and Regenerative Surgery	1+1	
11	VSR 611	Advances in Soft Tissue Surgery	2+1	
12	VSR 612	Advances in Ophthalmology	1+1	
13	VSR 613	Surgical Oncology	1+1	
14	VSR 687	Clinical Case Conference*	0+1	
15	VSR 688	Special Problem in Diagnostic Imaging	0+2	
16	VSR 689	Special Problem in Anaesthesia	0+2	
17	VSR 690	Special Problem in Surgery	0+2	
18	VSR 691	Doctoral Seminar-I	2+0	
19	VSR 692	Doctoral Seminar-II	2+0	
20	VSR 699	Doctoral Research	0+75	

LECTURE SCHEDULE
Course Title: Clinical Practice-I

Course Code: VSR 501
Credit Hours: 0+3

Sr. No.	Name of topic	Number of lectures
1	Basic requirements and designing surgical and general veterinary hospital	02
2	Developing different proformas required in hospital facility	02
3	Assessing surgical patients and documentation	03
4	Preparation of surgical team and duties of team members	03
5	Surgical suite maintenance and sterilization	03
6	Acquaintance with inhalant anaesthesia machine	02
7	Acquaintance with Radiography systems	02
8	Acquaintance with Ultrasonography	02
9	Acquaintance with Endoscopy	02
10	Acquaintance with Electro-surgery	01
11	Acquaintance with Cryosurgery	01
12	Acquaintance with physiotherapy	01
13	Client management and public relation	04
14	Code of conduct	03
15	Management of surgical affections	06
16	Hospital database management	02
17	Attending surgical cases	06
18	Disaster management	02
	Total	**48**

VSR-502: Clinical Practice- II (0+3)

Practical

Sr.No	Topic	No of lecture
1	General considerations of anaesthesia and various Pre Anaesthetics	1
2	General anaesthesia, its stages and various general anaesthetics.	1
3	Acquaintance to the equipments used for inhalation anaesthesia and endotracheal intubation.	1
4	Application of inhalation anaesthesia in small animals	2
5	Application of inhalation anaesthesia in large animals	2
6	Positioning for Radiography	1

7	Radiographic interpretation of head, neck thorax and abdomen – detail, density and contrast	3
8	Factors affecting radiographs and Artifacts	1
9	Contrast Radiography of various systems GIT, nervous system, Urinary system, etc.	1
10	Fractures, classification and its radiographic reporting.	2
11	Basics of Ultrasonography and its interpretation	1
12	USG of abdomen- USG of various systems- GIT, Genito- Urinary	2
13	Ultrasonography of eye, echocardiography, doppler.	2
14	Management of the radiography section and maintenance of the records.	1
15	Electro surgery and Cryosurgery	1
16	Physiotherapy and acquaintance to Physiotherapy equipments and their application.	1
17	Managing Surgical emergencies and cases.	2
18	Management of the Operation theatre operations and maintenance of the records.	2
19	Attending various surgical cases - soft tissue surgeries	4 -8
20	Attending various fracture management cases.	4
21	Ocular affections, Ocular emergencies and Management	4
22	Attending various specialized surgeries	4
23	Introduction to Veterinary endoscopy and equipments	1
24	Use of flexible endoscopy, gastroscopy, Bronchoscopy, cystoscopy, etc. Collection of biopsies, fluids for cytology.	2
25	Rigid Endoscopy - Laparoscopy and its applications. Otoscopy, esophagoscopy, etc.	2
	Total -	48

VSR 503: Principles of Surgery (2+1)

Topics for Theory/ Practical's

THEORY LECTURE SCHEDULE:

Sr. No.	Topics	No. of Lectures
	Unit I	
1	Classification of wounds	1
2	Wound healing	1
3	Mechanism of wound repair	1

4	Local and systemic factors affecting wound healing	1
5	Current concepts of inflammation and manag1ement	1
6	Thermal injuries and their management	1
7	Electrical injuries and their management	1
8	Chemical injuries and their management	1
	Unit II	
9	Asepsis, sterilization and disinfection	1
10	Principles of antimicrobial therapy in surgical patients	1
11	Practice of antimicrobial therapy in surgical patients	1
	Unit III	
12	Shock-classification	1
13	Shock- pathophysiology	1
14	Shock- diagnosis	1
15	Shock- treatment and monitoring	1
16	Surgical stress and its systemic effects	1
17	Haemorrhage and haemostasis	1
18	Acid-base balance	1
19	Fluid therapy	1
20	Fluid therapy	1
21	Blood transfusion	1
22	Metabolism of the surgical patient	1
23	Metabolism of the surgical patient	1
	Unit IV	
24	Principles and clinical applications of Laser surgery	1
25	Principles and clinical applications of Cryosurgery	1
26	Principles and clinical applications of Electrosurgery	1
27	Principles and clinical applications of Physiotherapy	1

	Unit V	
28	Minimally invasive surgical procedures which includes laparoscopy	1
29	Minimally invasive surgical procedures which includes endoscopy	1
30	Principles of microscopic surgery-vessel and nerve anastomosis	1
31	Application of computers in surgery	1
32	Application of computers in surgery	1

PRACTICAL SCHEDULE: VSR 503 (2+1)

Sr. No	Topics	No. of Practicals
1	Identification and handling of surgical instruments	1
2	Identification and handling of surgical instruments	1
3	Identification and handling of surgical instruments	1
4	Preparation of surgical pack	1
5	Preparation of surgical team	1
6	Preparation of surgical patients	1
7	Surgical facilities	1
8	Surgical equipment	1
9	Introduction to clinical skill laboratory	1
10	Practice of different suturing patterns	1
11	Practice of different suturing patterns	1
12	Repair of different wounds, using drains, bandages and bandaging techniques	1
13	Repair of different wounds, using drains, bandages and bandaging techniques	1
14	Monitoring of traumatized surgical patient	1
15	Monitoring of traumatized surgical patient	1
16	Operation theatre conduct	1

Course No: VSR-504 (2+1)

Course Title: Anesthesia and Analgesia

Theory:

Sr. No.	Topics	No. of Lectures
	Unit - I	
1.	Introduction and history of anaesthesia	1
2.	General consideration for anaesthesia in animals	1
3.	Properties of ideal anaesthetic agent, types of anaesthesia	1
4.	Anaesthetic triad	1
5.	Preanesthetic evaluation of patient	1
6.	Selection of anaesthesia	1
	Unit - II	
7.	Preanesthetic medication -Anticholinergics, Sedatives	1
8.	Preanesthetic medication – Tranquilizers, Alpha-2 agonist, Narcotics.	1
9	Muscle relaxants and neuromuscular blocking agents	1
	Unit - III	
10	General Anaesthetics	1
11	Factors affecting uptake, distribution and metabolism of General anaesthetics	1
12	General properties of injectable anaesthetic agents	1
13	Dosage of administration of injectable anaesthetic agents	1
14	Usage of injectable anaesthetic agents	1
15	Combinations of injectable anaesthetics agents and Neuroleptanalgesia	1
16	Inhalation anesthetic agents and their properties	1
17	Inhalation anaesthetics: Methods of administration, dosage and usages	1
18	Inhalation anaesthesia equipment and breathing circuits	1
19	Artificial ventilation	1
	Unit - IV	
20	Post-operative care of the surgical patient	1
21	Operating room emergencies	1
22	Cardio-pulmonary arrest and resuscitation	1
23	Monitoring of anesthetic recovery	1
	Unit - V	
24	Local anaesthetics, their mechanisms	1
25	Local and regional nerve blocks	1
26	Regional Nerve blocks - head region	1
27	Regional Nerve blocks - abdomen and appendages.	1
28	Spinal analgesia, intravenous regional anaesthesia	1
29	Peri-operative pain and its management	1
30	Post-operative pain and its management	1
31	Euthanasia	1
32	Anaesthesia Record keeping	1

Course No: VSR-504 (2+1)

Practical's

Sr. No.	Topic	No of Practicals.
1.	Introduction to Inhalation Anaesthesia equipments	1
2.	Detailed study of circuits and vaporizers in inhalant anaesthesia machine	1
3.	Artificial ventilation	1
4.	Basics of Pre-anaesthesia and Anaesthesia in small and large animals.	1
5.	Use of various pre-anesthetic and anesthetic agents in small animals	1
6.	Use of various pre-anesthetic and anesthetic agents in large animals	1
7.	Anesthetic triad	1
8.	Balanced anaesthesia	1
9.	Total intravenous anaesthesia	1
10.	Regional and local nerve blocks using local anaesthetics	1
11.	Repair of different wounds, using drains, bandages and bandaging techniques	1
12.	Alpha-2 agonists and their combinations in domestic animals	1
13.	Monitoring of anaesthesia	1
14.	Reversal of sedation and analgesia induced by alpha-2 agonists	1
15.	Practice of anaesthesia in clinical cases	1
16.	Importance of Record keeping in anaesthesia and euthanasia	1

VSR 505: Diagnostic Imaging Techniques (2+1)
Theory

Sr. No.	Topics	No. of Lectures
Unit I		
1.	Regulations regarding establishment and handling of x-ray units, requirements for establishment of x-ray units	1
2.	Conventional and digital X-ray machine	1
3.	X-ray films, cassettes, screen	1
4.	X-ray production, qualities of x-rays	1
5.	Image formation and dark room procedures	1
6.	Image plate, formation of radiograph technique chart, artifacts and their prevention	1
7.	Radiographic quality (Contrast, density and details)	1
8.	Radiographic accessories	1
9.	Radiographic positioning for different organs/parts in small and large animals	1
Unit II		
10.	Plain and contrast radiographic techniques of small animals	1
11.	Plain and contrast radiographic techniques of large animals	1
12.	Contrast radiographic techniques of blood vessels in animal	1

13.	Fluoroscopy/ C-arm	1
14.	Principles of radiographic interpretation	1
Unit III		
15.	Principles of radiation therapy, medical radioisotope curves	1
16.	Radiation laws and regulations	1
17.	Radiation hazards and monitoring of radiographic exposure to personnel	1
18.	Protection from the radiation hazards	1
Unit IV		
19.	Basic physics of ultrasound waves	1
20.	Basic physics of ultrasound image formation	1
21.	Scanning principles of ultrasound	1
22.	Transducers, equipment controls, modes of display	1
23.	Terminology used for echotexture	1
24.	USG artifacts	1
25.	Common USG artifacts in small animals	1
26.	Acoustic enhancement during the USG examination	1
Unit V		
27.	Doppler techniques echocardiography	1
28.	Application of Doppler technique echocardiography	1
29.	Introduction to nuclear imaging techniques	1
30.	Introduction to computerized tomography, magnetic resonance imaging, positron emission tomography techniques	1
31.	Introduction to magnetic resonance imaging and positron emission tomography techniques	1
32.	Introduction to magnetic resonance imaging and positron emission tomography techniques	1

Practical - VSR- 505

Sr. No.	Topics	No. of Practicals
1.	Acquaintance with imaging equipment	1
2.	Acquaintance with computed radiography	1
3.	Acquaintance with digital radiography systems	1
4.	Dark room processing techniques and X-ray film handling	1
5.	Formulation of technique chart with fixed kVp and variable mAs	1
6.	Radiographic artefacts and their prevention	1
7.	Basics of radiographic interpretation of diseases – Hard tissue	1
8.	Basics of radiographic interpretation of diseases – Soft tissue	1
9.	Radiography positioning of different regions in domestic animals	1
10.	Contrast radiographic techniques – G.I. Tract	1
11.	Contrast radiographic techniques – Urogenital and musculoskeletal system	1
12.	Interpretation of radiographs	1
13.	Interpretation of radiographs	1
14.	PACS	1
15.	Practice of ultrasonographic imaging	1
16.	Ultrasonographic report writing	1

Lecture Schedule - Theory
VSR – 507 (2+1) Orthopaedic Surgery

Aim of the course: To learn about various affections of bones, joints, tendons, ligaments and feet and their treatment in companion and farm animals.

Sr. No.	Name of Topics	No of lectures
Unit I		
	Bone structure and function, growth, response to injury, fractures and luxations	1
	Classification of fracture	1
	Fracture healing, Biological osteosynthesis	1
Unit II		
	Biomechanics of fracture healing	1
	Considerations for selection of fixation techniques	1
	Current trends in treatment of fractures of different bones of forelimb (scapula, humerus, radius and ulna, carpals, metacarpals and phalanges) in companion animals	1
	Current trends in treatment of fractures of different bones of hindlimb (Pelvis, femur, tibia and fibula, tarsals, metatarsals and phalanges) in companion animals	1
	Current trends in treatment of fractures of different bones of forelimb (scapula, humerus, radius and ulna, carpals, metacarpals and phalanges) in farm animals	1
	Current trends in treatment of fractures of different bones of hindlimb (scapula, humerus, radius and ulna, carpals, metacarpals and phalanges) in farm animals	1
	Diseases of bone (developmental bone disease, osteomylitis, hypertrophic osteopathy)	1
	Diseases of bone (nutritional osteopathies, bone tumour and fracture)	1
Unit III		
	Various affections of the joints and their treatment (Classification of joints, components and healing process and arthroscopy)	1
	Non inflammatory joint diseases and their treatment	1
	Inflammatory joint diseases and their treatment	1
	Various affections of the ligaments and tendons and their treatment (anatomical considerations, tendon healing, principles of tendon surgery)	1
	Tendon injuries, luxation, contracted tendons and spastic paresis	1
	Tenosynovitis, bursitis, cranial cruciate ligament rupture, upward fixation of patella	1
Unit IV		
	Spinal affections and injury to axial skeleton (anatomy, etiology, types, diagnosis and its treatment)	1
	Specific fracture and dislocations of the spine (Atlantoaxial instability, cervical spondylomyopathy)	1

	Cervical vertebral fractures, thoracic and lumbar fractures and lumbosacral fractures	1
Unit V		
	Method of evaluation of conformation of the limb, cranial view, lateral view	1
	Faults in conformation of the forelimbs and hoof	1
	Faults in conformation of the forelimbs and hoof	1
	Anatomy of hoof	1
	Anatomy of limbs and foot (Anatomical, conformational and pathological causes of lameness and allied surgical conditions of fore and hind limbs)	1
	Classification of lameness	1
	Etiology and diagnosis of lameness	1
	Surgical conditions of forelimb of horse	1
	Surgical conditions of hindlimb of horse	1
	General methods of therapy for equine lameness	1
31	General methods of therapy for equine lameness	1
32	General methods of therapy for equine lameness	1

Lecture Schedule - Practical
VSR – 507 (2+1) Orthopaedic Surgery

Sr. No	Topics	No of lectures
1	Application of Plaster of Paris cast	1
2	Application of fiberglass cast	1
3	Application of Roberts Jones bandage	1
4	Application of modified Schroeder Thomas splint	1
5	Application of Coaptation splint, sling application	1
6	Practice of IM pinning, wiring	2
7	Practice of bone plating	1
8	Practice of inter locking nailing	1
9	Practice of external skeletal fixation	1
10	Practice of arthrotomy	1
11	Practice of tenotomy	1
12	Examination of limbs for lameness	1
13	Desmotomy, nerve blocks, injections in joints	1
14	Operations for arthritis and hoof surgery	1
15	Corrective shoeing	1

VSR 510: Ophthalmology (1+1=2) Theory

Sr.No.	Topic	No of lecture
1	Unit I	
2	Anatomy and physiology of eye and its adnexa	1
3	Ophthalmic examination and diagnosis,	1
4	Ophthalmic diagnostic instrumentation	1

5	Anaesthesia during various eye surgery	1
6	Unit II	
7	General consideration for eye surgery in companion and farm animals	1
8	Therapeutic agents for eye diseases and surgery of eye lids, lacrimal apparatus, naso-lacrimal duct	1
	Unit III	
9	Diseases of conjunctiva	1
10	Diseases of cornea, sclera.	1
11	Diseases of iris, orbit	1
12	Diseases of lens	1
13	Diseases of vitreous and aqueous humour	1
14	Diseases of retina and optic nerve	1
15	Eye tumours, enucleation, exenteration	1
16	Unit IV	
17	Ocular manifestations of systemic diseases	1
	Unit V	
18	Neuro-ophthalmology	1
19	Ocular emergencies and Management	1

VSR 510: Ophthalmology (1+1=2) Practical

Sr no	Topic	No of lecture
1	Ophthalmic instrumentation	1
2	Examination of the eye and its adnexa	1
3	Ophthalmic surgery preparation of patient, suture materials for eye surgery	1
4	Anaesthesia for ophthalmic	1
5	Canthotomy, tarsorrhaphy	1
6	Keratoplasty, anterior chamber paracentesis	1
7	Flushing of naso-lacrimal duct	1
8	Iridectomy	1
9	Phacoemulsification	1
10	Implantation of foldable lens	1
11	Surgical treatment of entropion	1
12	Surgical treatment of cherry eye	1
13	Schirmer tear test	1
14	Use of fluorescein dye in corneal ulcer	1
15	Glaucoma surgery	1
16	Eye worm removal	1

1. Teaching Schedule:UG, PG, PhD - Prepared by – Course Teacher – Year wise / Course Wise

As per approval in BOS dated 24/12/2021 the Semester wise distribution for M.V.Sc courses in the major field of Veterinary Surgery & Radiology and their lecture schedules according to new revised and restructured PG syllabus (2021)**:**

Semester 1 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 501*	0+3	Clinical Practice - I
2	VSR - 503*	2+1	Principles of Surgery
3	VSR-504*	2+1	Anaesthesia and Analgesia
	Total	9	

Semester 2 -

Sr. no.	Course no	Credit	Course - Name
1	VSR- 502*	0+3	Clinical Practice - II
2	VSR - 505*	2+1	Diagnostic Imaging
3	VSR- 510	1+1	Ophthalmology
	Total	8	

Semester 3 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 507*	2 +1	Orthopaedic surgery
2	VSR- 591*	1+0	Seminar
3	VSR - 599*	0+10	Research

Semester 4 -

Sr. no	Course no	Credit	Course - Name
1	VSR - 599*	0+20	Research
	Total	20	

Note:M.V.Sc Students are required to register for minor courses – 8 credits, Supporting courses – 6 credits, Common courses – 5 credits.

As per Approval in BOS dated 24/12/2021 the Semester wise distribution for Ph.D courses in the major field of Veterinary Surgery & Radiology and their lecture schedules according to new revised and restructured PG syllabus (2021) - For Regular Candidate

Semester 1 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 601*	0+2	Clinical Practice - I
2	VSR – 607	2+1	Advances in Diagnostic Imaging Techniques
	Total	5	

Semester 2 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 602*	0+2	Clinical Practice - II
2	VSR-689	0+2	Special problem Anaesthesia
	Total	**4**	

Semester 3 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 603*	0+2	Clinical Practice - III
2	VSR – 687*	0+1	Clinical case conference
3	VSR- 691*	2+0	Doctoral seminar -I
	Total	5	

Semester 4 to 6 -

Sr. no	Course no	Credit	Course - Name
1	VSR - 699	0+25 per semester	Doctoral research
	Total	75	

Note: Ph.D. Students are required to register for minor courses – 6 credits, Supporting courses – 5 credits.

As per approval in BOS meeting date 24/12/2021 the Semester wise distribution for Ph.D. courses in the major field of Veterinary Surgery & Radiology and their lecture schedules according to new revised and restructured PG syllabus (2021) - For Inservice Candidate

Semester 1 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 601	0+2	Clinical Practice - I
2	VSR - 607	2+1	Advances in Diagnostic Imaging Techniques
	Total	5	

Semester 2 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 602	0+2	Clinical Practice - II
2	VSR- 689	0+2	Special problem in Anaesthesia
	Total	4	

Semester 3 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 603	0+2	Clinical Practice - III
2	VSR - 687	0+1	Clinical case conference
	Total	3	

Semester 4 -

Sr. no	Course no	Credit	Course - Name
1	VSR- 691	2+0	Doctoral seminar - I
	Total	2	

Semester 5 to 8 -

Sr. no.	Course no	Credit	Course - Name
1	VSR - 699	0+75	Doctoral research
	Total	75	

Note: Ph.D. Students are required to register for minor courses – 6 credits, Supporting courses – 5 credits.

***Mark -** the core courses compulsorily to be taken by the students as per ICAR revised syllabi.