



College of Veterinary Science and Animal Husbandry
Kamdhenu University, Bhuj (Kutch)



DEPARTMENT OF VETERINARY ANATOMY

About Department

The Department of Veterinary Anatomy was established in accordance with VCI-MSVE-2016 regulations, with the primary objective of imparting quality education to undergraduate students. Since its inception, the department has been progressively strengthened to cater to the academic requirements of both under-graduate and post-graduate students and also fostering research excellence in the field of Veterinary Anatomy. The department is equipped with state-of-the-art infrastructure, and laboratories- Osteology, Arthrology, Histology and Embryology laboratories to facilitate effective practical training. This Department is having a Dissection Hall with an attached Embalming Room, and a well-developed Museum with a variety of teaching aids. Various instructional resources such as skeletons, educational charts, teaching manuals, and study materials is available to enhance the learning experience of students. Veterinary Anatomy, being a foundational discipline, has wide-ranging applications in clinical, para-clinical, production, reproductive, and allied sciences. The department is committed to imparting comprehensive knowledge of gross, microscopic, and embryological anatomy along with applied anatomical aspects of domestic animals and birds. This subject also plays a vital role in updating and enhancing the anatomical knowledge of field veterinarians and especially veterinary clinicians, thereby supporting clinical diagnosis, physical examination, and surgical procedures through hands-on training. In future, the department aims to develop modern techniques for preparing advanced teaching models, including plastination, corrosion casting, and pneumatic dry specimen methods. Furthermore, the Kutch region, with its diverse bovine and domestic animal population, provides immense opportunities for conducting research of regional and national importance in the field of Veterinary Anatomy.

Name	Dr. R. Menka	
Designation	Associate Professor & Head	
Qualification	M.V.Sc. & Ph.D.	
Contact No.	9512263361	
Email ID	menaka@kamdhenuuni.edu.in	
Joining date	22-01-2009	
Professional Experience	16 years	
Job profile	Teaching, Research & Extension	
Exams cleared	ICAR-NET, CCC+, Gujarati Vinay & Hindi Exams Cleared	
Additional Duties Performed	Assistant Rector- Girl's hostel, Placement cell team member, SRC- girls' sports advisor, Security Consignee, E-newsletter editorial member, SRC-College magazine editorial member, Anti-ragging committee member etc.,	
Publication	International Journals/ National Journals (Articles Published in Peer Reviewed Journals)	37
	Semi technical articles/Review articles	23
	Book Chapters/Lab. Manuals	05
Recommendations	For Farming Community: Nil For Scientific Community: 06	
Departmental Research	AS PI-03; As Co-PI-05	
	Summer School/Winter School/ <u>CAFT</u> /Orientation: 03	

Competence building	Seminar/Symposium/Conference/workshop: 45
Professional Membership	Indian Association of Veterinary Anatomists (IAVA/2001/L-201)
	Society for Immunology & Immunopathology (SIIP/Reg. Under article 21 of societies Act 1860)
	Indian Association of Veterinary Public Health Specialists (Reg. No. 33965/98 Life Membership No. 180)
	National Academy of Veterinary Sciences (India)
	Indian Society of Study of Animal Reproduction (ISSAR) LM No. 1490.
	The Gujarat Association for Agricultural Sciences (GAAS) LM No. 2265.
	Indian Society of Veterinary Pharmacology and Toxicology (ISVPT) LM No. 673
	Society for Veterinary Sciences and Biotechnology (Reg. No. 03/27/03/15552/12, Indore, MP) LM No. 220.
	Gujarat Veterinary Council (GVC) LM No. 2993
	All Gujarat Veterinarians Social Security Trust (AGVSST) LM No. 1367

	Name:	Dr. Harishbhai P. Gori
	Designation:	Assistant Professor
	Qualification:	Ph.D.
	Experience:	1 Yr. 9 months
	PG Students Guided	-
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	Scopus ID G Scholar ID	- wHUnOGAAAAJ

Summary of Publications

Sr. No.	Details	Numbers
1.	Research Paper (National Journal)	3
2.	Research Paper (International Journal)	5
3.	Short Communications	--
4.	Recommendations	--
5.	Book/ Booklets	--
6.	Chapters in Books	1
7.	Training Manual / Practical Manual	2
8.	Technical Bulletins	--
9.	Review articles in scientific journals	--
10.	Popular articles in vernacular languages	4
11.	Informative leaflets / folders for farmers	--

	Name:	Dr. Nirav H. Joshi
	Designation:	Assistant Professor
	Qualification:	M.V.Sc
	Experience:	1 Years 10 months
	PG Students Guided	-
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	ORCID	-
	Scopus ID G Scholar ID	- -

Summary of Publications

Sr. No.	Details	Numbers
1.	Research Paper (National Journal)	6
2.	Research Paper (International Journal)	4
3.	Short Communications	--
4.	Recommendations	--
5.	Book/ Booklets	1
6.	Chapters in Books	2
7.	Training Manual / Practical Manual	4
8.	Technical Bulletins	--
9.	Review articles in scientific journals	2
10.	Popular articles in vernacular languages	8
11.	Informative leaflets / folders for farmers	--

Awards

Sr. No.	Details
1.	Chancellor's gold medal, SDAU (2017)
2.	Dr. A. M. Srivastava Award for Best M. V. Sc. Thesis IAVA (2018)
3.	Student of the Year AGVSST (2013)

	Name:	Dr. Maitriben J. Patel
	Designation:	Assistant Professor
	Qualification:	M.V.Sc
	Experience:	3 months
	PG Students Guided	00
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Summary of Publications

Sr. No.	Details	Numbers
1.	Research Paper (National Journal)	4
2.	Research Paper (International Journal)	3
3.	Short Communications	--
4.	Recommendations	--
5.	Book/ Booklets	--
6.	Chapters in Books	--
7.	Training Manual / Practical Manual	1
8.	Technical Bulletins	--
9.	Review articles in scientific journals	--
10.	Popular articles in vernacular languages	7
11.	Informative leaflets / folders for farmers	--

Awards

Sr. No.	Details
1.	M.M. Jani Gold plated silver medal, Kamdhenu University-Anand (2021)
2.	Memon trust Dr. N.C.Buch Cashprize, Kamdhenu University-Anand (2021)
3.	Shree Jivanlal G. Gold plated silver medal, Kamdhenu University-Anand (2021)
4.	Best Paper presentation Award (Histo-enzymology and Immunohistochemistry) Mathura, IAVA (2024)

Technical supporting staff

	Name:	Ms. Gopiben J. Dumaniya
	Designation:	Laboratory Technician
	Qualification:	B.Sc.(Micro), MLT
	Joining year:	2025
	Experience:	3 Months
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UG Academics

UG Course (As per VCI MSVE 2016 course curriculum)

Sr. No.	Course offered in Third Professional Year	Credits Hours
1	VETERINARY ANATOMY	4+3 =7

UG Syllabus – First Professional year

Theory

Unit	Contents
Unit 1	Introduction to anatomy and branches of anatomy and descriptive terms used in anatomy and study of anatomical planes. General Osteology, Arthrology and Myology: Study of properties and structure of bone. Classification of skeletons, classification of bones with suitable examples and terms used in osteology Introduction to arthrology, classification of joints, different diarthrodial joints, structure of diarthrodial joints and movements permitted. Introduction to myology, classification of muscles, etymology of muscles. Description of tendon, ligaments, aponeurosis, synovial bursa and synovial sheath. (Note: Detailed description of muscles of different regions of the body will be studied in the respective practical). General Angiology, Neurology and Aesthesiology: Introduction to angiology. Structure of heart. General plan of systemic and pulmonary circulations, lymphatic and venous systems. Introduction to neurology and parts of central, peripheral and autonomic nervous system and sense organs. Formation of spinal nerve. Structure of meninges, brain, spinal cord. Different surface regions, joint regions, Palpable Bony areas or prominences of the body of the animal. Palpable Lymph nodes and Arteries of the body and Surface veins for Venepuncture. Sites for collection of Bone marrow and Cerebrospinal fluid. General Splanchnology: Introduction to splanchnology, boundaries of thoracic, abdominal and pelvic cavities, topography of different organs of digestive, respiratory, urinary, endocrine, male and female reproductive systems of domestic animals and fowl. Principles and application of Radiography and Ultrasound for bones and soft tissues.
Unit 2	Fore limb: Study of bones of fore limb of ox and differences in horse, dog, pig and fowl. Study of hoof of ox and horse. Study of joints, ligaments, stay apparatus, major blood vessels, nerves, veins and lymph nodes of fore limb. Sites for Radial, Median, Ulnar and Volar nerve blocks.
Unit 3	Head and neck: Study of cranial and facial bones, cervical vertebrae of ox and differences in horse, dog, pig and fowl. Boundaries of the oral, orbital, nasal and cranial cavities. Study of paranasal sinuses in ox, horse, dog and pig. Study of articulations and special ligaments of the head and neck. Muscles of face, mastication, eye, ear, tongue, pharynx, soft palate, hyoid and larynx. Study of teeth, hard and soft palate, tongue, pharynx, larynx, thyroid, parathyroid and salivary glands and differences in horse, dog, pig and fowl. Study of cranial nerves, blood vessels and lymph nodes of head and neck regions. Study of boundaries of jugular furrow and structures of carotid sheath along with neck muscles. Study of sense organs, trachea and

	oesophagus. Age determination by Dentition. Sites for Tracheotomy, Esophagotomy, Ligation of Stensons duct and Mental, Mandibular, Maxillary, Cornual, Infraorbital, Supraorbital (frontal) , Orbital and Auriculopalpebral nerve blocks and surgical approach to guttural pouches in horse. Importance of Cornual nerve and superficial Temporal artery in Amputation of Horn in cattle.
Unit 4	Thorax: Study of thoracic vertebrae, ribs and sternum of ox and differences in horse, dog, pig and fowl. Study of joints, special ligaments, blood vessels, nerves, lymph vessels and lymph nodes of thorax. Study of organs of thorax i.e. trachea, thymus, oesophagus, lungs and differences in horse, dog, pig and fowl. Study of pleura, its reflections and mediastinum. Areas of auscultation and percussion of heart and lungs and site for Paracentesis Thoracis.
Unit 5	Abdomen: Study of bones of abdomen of ox and differences in horse, dog, pig and fowl. Study of joints, special ligaments blood vessels, nerves of abdomen region. Blood and nerve supply to abdominal viscera. Study of peritoneal reflections, organs of digestive, urinary, male and female reproductive systems present in abdomen and differences in horse, dog, pig and fowl. Study of mammary glands in cow and differences in mare, bitch and sow. Study of spleen of ox and differences in horse, dog, pig and fowl. Study of major veins, lymph vessels, lymph nodes and endocrine glands of abdomen. Boundaries and Clinical importance of the flank and Para Lumbar Fossa. Sites for Liver, Gall Bladder and Caecal Biopsies, Laparotomy, Rumenocentesis, Rumenotomy, abomasotomy, splenectomy, Cystotomy, Caesarean Operation, enterotomy, and paravertebral block.
Unit 6	Hind limb and pelvis: Study of bones of hind limb and pelvis of ox and differences in horse, dog, pig and fowl. Study of joints, ligaments, blood vessels, lymph nodes and nerves of hind limb, pelvis and tail region and pelvic viscera. Study of pelvic peritoneal reflections, organs of digestive, urinary, male and female reproductive systems present in pelvic cavity and differences in horse, dog, pig and fowl. Boundaries of the inguinal canal and structures of the spermatic cord, pre pubic tendon and its importance. Study of external genital organs. Sites for Tibial, Peroneal, Plantar and Pudic nerve blocks, Patellar desmotomy, Urethrotomy, Castration, Vasectomy, cranial and caudal epidural anaesthesia.
Unit 7	Cytology, cell junctions, study of basic tissues i.e. epithelial, connective, muscular and nervous tissues, blood and bone marrow. Study of microscopic structures of digestive, circulatory, urinary, respiratory, nervous, lymphatic, endocrine, male and female genital systems and mammary glands of domestic animals. Study of microscopic structure of sense organs i.e. eye, ear and integument.
Unit 8	Introduction to embryology, gametogenesis, fertilization, cleavage, types of eggs, morula, blastulation, gastrulation, types of implantation, twinning. Formation of foetal membranes in mammals and birds, Placenta and its classification. Different germ layers and their derivatives. Study of development of organs of digestive system including accessory structures i.e. tongue, teeth, salivary glands, liver and pancreas. Study of development of organs of respiratory, urinary, circulatory, lymphatic, nervous, musculoskeletal, male and female reproductive systems. Development of endocrine glands, sense organs i.e. eye and ear.

Practical

Unit	Contents
Unit 1	Study of general terms used in anatomy, study of anatomical planes. Study of different parts of skeleton, different surface and joint regions. Study of boundaries of thoracic, abdominal and pelvic cavities. Demonstration of different types of joints, muscles tendons, ligaments, synovial bursa and synovial sheath. In situ demonstration of heart, meninges, brain and spinal cord. Boundaries of Thoracic, Abdominal and Pelvic Cavities and in situ demonstration of organs of digestive, respiratory, urinary, endocrine, male and female reproductive systems of domestic animals. Demonstration of Different surface regions, joint regions and Palpable Bony areas or prominences of the body of the animal , Common sites of fractures, Palpable Lymph nodes and Arteries of the body (ventral coccygeal artery in ox, femoral artery in dog and cat , facial artery in horse) and Surface veins for Venepuncture(cephalic vein and recurrent tarsal vein in dog and cat , jugular vein in large animals.) and Sites for collection of Bone marrow and

	Cerebrospinal fluid. Visualization of Radiographs and ultrasound pictures of various organs and Fractures of various bones.
Unit 2	Fore limb: Demonstration of different bones of fore limb of ox and comparison with horse, dog, pig and fowl. Dissection of the fore limb. Study of joints, ligaments, muscles, major blood vessels, lymph nodes and nerves of fore limb. Study of sites for different nerves blocks or neurectomies in fore-limb. Study of suprascapular nerve paralysis shoulder sweeney, radial nerve paralysis-capped elbow. Structure of the equine hoof and comparison with ox. Demonstration of radiographs of normal bones of fore limb. Clinical importance of cephalic vein for intravenous injections in dog.
Unit 3	Head and neck: Demonstration of cranial and facial bones, cervical vertebrae of ox and comparison with horse, dog and fowl. Dissection of muscles of face, mastication, tongue, pharynx, soft palate, hyoid, larynx, eye and ear. Dissection of superficial neck muscles. Dissection of brain and its parts. Dissection or demonstration of tunics of eye. Study of teeth, tongue, pharynx, thyroid, parathyroid and salivary glands and differences in horse, dog, pig and fowl. Study of cranial nerves, and blood vessels of head and neck regions. Study of trachea and oesophagus. Study of nerve blocks of the head i.e. cornual, auriculo-palpebral, Peterson's orbital nerve block, mandibulo-alveolar and mental nerve blocks. Importance of facial artery for recording pulse in horse. Surgical importance of Stenson's duct in domestic animals. Surgical approach to guttural pouches-Viborg's triangle. Clinical importance of jugular vein for intravenous injections in large animals. Demonstration of radiographs of normal bones of head and neck.
Unit 4	Thorax: Demonstration of thoracic vertebrae, ribs and sternum of ox and comparison with horse, dog, pig and fowl. Dissection of muscles, blood vessels, nerves and lymph nodes of thorax. Demonstration of organs of thorax i.e. trachea, oesophagus, thymus, lungs and heart and differences in horse, dog, pig and fowl. Study of pleural reflections of thoracic cavity. Demonstration of sites for auscultation and percussion. Recurrent laryngeal nerve paralysis-roaring in horses. Choke or oesophageal obstruction. Demonstration of radiographs and videos of ultrasonography of organs of thorax.
Unit 5	Abdomen: Demonstration of bones forming boundaries of abdomen of ox and comparison with horse, dog, pig and fowl. Dissection of muscles, blood vessels and nerves of abdomen. Demonstration of peritoneum, omentum, mesentery and organs of digestive, urinary, male and female reproductive systems present in abdomen and differences in horse, dog, pig and fowl. Demonstration of mammary glands of cow, mare, bitch and sow. Demonstration of major veins, lymph vessels and lymph nodes of abdomen. Topographic location of abdominal viscera of ox and comparison with horse, dog, pig and fowl. Demonstration of sites for laparotomy, caesarean section, ovario-hysterectomy, catheterization of urinary bladder and sites for paravertebral and epidural anaesthesia. Demonstration of Boundaries and Clinical importance of the flank and Para Lumbar Fossa, Sites for Liver, Gall Bladder and Caecal Biopsies, Laparotomy, Rumenocentesis, Rumenotomy, abomasotomy, splenectomy Cystotomy, Caesarean Operation, catheterization of urinary bladder and enterotomy and paravertebral block. Demonstration of radiographs and videos of ultrasonography of organs of abdomen.
Unit 6	Hind limb and pelvis: Demonstration of bones of hind limb of ox and comparison with horse, dog, pig and fowl. Demonstration of joints and ligaments of hind limb and pelvis. Dissection of muscles, blood vessels, lymph nodes and nerves of hind limb and pelvic cavity. Demonstration of peritoneal reflections of pelvic cavity and organs of digestive, urinary, male and female reproductive systems in pelvic cavity and differences in horse, dog, pig and fowl. Study of external genital organs. Clinical importance of femoral artery to record pulse in dog. Clinical importance of recurrent tarsal vein for intravenous injections in dog. Demonstration of radiographs of normal bones and videos of ultrasonography of organs of pelvis. Demonstration of Sites for Tibial, Peroneal, Plantar and Pudic nerve blocks, Patellar desmotomy, Urethrotomy, Castration, Vasectomy and cranial and caudal epidural anaesthesia.
Unit 7	Microscopy and micrometry. Comparison of light and electron microscopy. Histological techniques, processing of tissues for paraffin sectioning and haematoxylin and eosin staining. Microscopic examination of epithelium, connective tissue, muscular tissue, nervous tissue and blood. Microscopic examination of organs of digestive, circulatory, urinary, respiratory,

	nervous, lymphatic, endocrine, male and female genital systems and sensory organs of domestic animals.
Unit 8	Demonstration of Placenta, umbilical cord and foetal membranes of different domestic animals. Demonstration of congenital anomalies of domestic animals as per availability. Study of slides of developing organs of different systems as per the availability.

Syllabus Distribution for Annual Board Examination

Examination	PAPERS	UNITS	MAXIMUM MARKS	WEIGHTAGE
Internal Assessment	First	30 %	40	10
	Second	60 %	40	10
	Third	90%	40	10
Annual Board	THEORY			
	Veterinary Anatomy Paper-I	Unit 1,2,3 and 4	100	20
	Veterinary Anatomy Paper-II	Unit 5, 6, 7 and 8	100	20
	PRACTICAL			
	Veterinary Anatomy Paper-I	Unit 1,2,3 and 4	60	20
	Veterinary Anatomy Paper-II	Unit 5, 6, 7 and 8	60	20

PG Academics

PG students:

Sr. No.	Details	No. of Students passed out	No. of Students presently enrolled
1.	Master	-	-
2.	Doctorate	-	-
3.	Total	-	-

To be started in next academic year (2026-27)

PG Courses

COURSE NO.	COURSE TITLE	CREDITS
ANA-601	Comparative osteology and arthrology	1+2
ANA-602	Comparative splanchnology	2+2
ANA-603	Myology, angiology, neurology & aesthesiology of Ox	2+2
ANA-604	Gross, histological and histochemical techniques	1+3
ANA-605	Clinical anatomy	0+1
ANA-606	General histology and ultrastructure	1+1
ANA-607	Systemic histology and ultrastructure	3+1
ANA-608	Developmental anatomy	2+1
ANA-609	Wild life and forensic anatomy	1+0
ANA-610	Master's seminar	1+0
ANA-611	Master's research	0+30

Ph.D Academics

As per ICAR-2020

COURSE NO.	COURSE TITLE	CREDITS
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ANA-700	Research and Publication Ethics	1+1
ANA-701	Myology, angiology, neurology and aesthesiology of equine, canine and porcine	2+1
ANA-702	Principles and applications of biomechanics	1+0
ANA-703	Avian anatomy	1+1
ANA-704	Neuroanatomy	2+1
ANA-705	Comparative endocrine anatomy	1+1
ANA-706	Theory and applications of electronmicroscopy	1+1
ANA-707	Histoenzymology and immunocytochemistry	2+1
ANA-708	Applied embryology and teratology	1+1
ANA-709	Functional veterinary anatomy	1+0
ANA-710	Gross anatomy of laboratory animals	1+1
ANA-711	Cross sectional anatomy of ox	0+1
ANA-712	Animal alternatives in veterinary anatomy	1+1
ANA-713	Special problem	0+2
ANA-714	Doctoral seminar- I	1+0
ANA-715	Doctoral seminar- II	1+0
ANA-716	Doctoral research	0+75

PG Examination Patterns

Sr. No.	Examination	Theory	Practical
1.	Self-study (Assignment/ Presentation)	20	-
2.	Internal tests: - First Test Mid Term Test	10 20	- 50
3.	Semester End Examination	50	50
	Total Marks	100	100

Research Area of the Department

- Gross, microscopic and histochemistry study of various organs in Bunny buffaloes of Kutch region - Gross, microscopic and biometric study of various organs of sheep and goats of Kutch region - Gross, microscopic and biometric study of various organs of camel of Kutch region - Gross, microscopic and biometric study of various organs of equines of Kutch region - Gross, microscopic and biometric study of mesenteric lymph nodes of Bunny buffaloes of Kutch region - Gross, microscopic and biometric study of mesenteric lymph nodes of camel of Kutch region

Contact details

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