

Diploma Syllabus – detailed course syllabus

First Semester: Theory

Course	Contents
LAN-111	<p>Introductory Livestock Anatomy</p> <p>Brief study of bones-Glossary of osteology, Classification and identification of various bones of the body of cow, horse, dog and fowl.</p> <p>Structure of Skin and its appendages (Includes Horn, Hoof, Claws and Nails). Introduction of joints and hinges of the body.</p> <p>Gross anatomy of digestive system and associated glands in ruminants and non - ruminants.</p> <p>Gross anatomy of respiratory system in cow, horse, dog and fowl.</p> <p>Brief introduction of circulatory system- systemic circulation, pulmonary circulation and foetal circulation.</p> <p>Gross anatomy of excretory system in cow, horse, dog and fowl.</p> <p>Gross anatomy of male and female reproductive system and accessory sex glands in cow, horse, dog and fowl.</p> <p>Structure of udder.</p>
APHY-111	<p>Introductory Animal Physiology</p> <p>Ocneral Physiology of cell, tissue and muscles. General Physiology of body fluids: plasma, serum, blood PH, various types of blood cells, immunity.</p> <p>General Physiology of digestive system, prehension, mastication, swallowing. gastric movement, physiology of small and large intestine.</p> <p>Digestion in ruminants and non- ruminants and their comparative study, various enzymes used during digestion, absorption of feed ingredients.</p> <p>Digestive glands e.g. salivary glands, gall bladder, pancreas and their functions.</p> <p>General Physiology of respiratory system- mechanism of respiration and exchange of gases etc.</p> <p>General Physiology of circulatory system of heart, shock (blood volume and pressure) in animals.</p> <p>General Physiology of urinary system physiology of kidney and nephron.</p> <p>Introduction to nervous and sensory system. Introduction to endocrinology.</p> <p>General Physiology of female genital system-puberty, oogenesis ovulation, formation of corpus luteum, estrous cycle, hormones of female reproduction system, fertilization, pregnancy and parturition.</p> <p>General Physiology of male reproductive system-Erection, ejaculation, hormones hormones of male reproduction system, spermatogenesis, spermatozoa, working of accessory sex glands.</p> <p>General Physiology of milk letdown-structure of udder, letdown of milk, milk fat and milk protein, agalactia.</p>
LPM-111	<p>Introductory dairy cattle and buffalo management</p> <p>Common terminologies and definitions used in animal husbandry practices of cows and buffaloes.</p> <p>Economic importance of animals, their products and population in Gujarat and India.</p> <p>Utility classification of cattle and buffalo.</p> <p>Cow and buffalo breeds of Gujarat (Cows: Kankrej, Gir, Dangi & Dagri; Buffalo: Surti, Mehsani, Jaffarabadi & Banni;), their synonyms, native, rearing practices, physical characters, economical characters and breeding. Breed/Herd registration.</p> <p>Brief note on exotic and cross breed cattle, their physical, economical characters and their importance in India - Jersey, Holstein Friesian and their crosses.</p> <p>Rearing practices of cattle and buffalo.</p> <p>Care and management of calf.</p> <p>Feeding and breeding management of heifers.</p> <p>Care and management of pregnant, dry and milch animals.</p> <p>Care and management of bull and bullock.</p> <p>Shelter management of dairy cattle and buffaloes.</p> <p>Animal husbandry practices followed by professional breeders, farmers, farm labours and city milk producers in India.</p> <p>Clean milk production and its importance.</p> <p>Maintaining various records of dairy farm.</p>

ENG-111	English English Grammar: Topics Sentence, Subject, Predicate, Phrase and the clause, Parts of speech, Noun (Kinds of Nouns, Gender, Number, Case), Adjective (Comparison of adjectives, Adjectives used as Nouns, Position of the Adjectives and correct use of Adjectives), Articles, Pronouns (Personal Reflexive, Emphatic, Demonstrative, Indefinite, Distributive, Relative and Interrogative), Verb, Active and passive voice, Tenses in detail, Infinitive, Participle, Adverb (Comparison Formation and Position of Adverbs), Preposition, Conjunction, Interjection.
CA-111	Introduction to Computer Application Computer: History, definition, types and functions. Characteristics of computer. Introduction of different Components of Computer system. Definition of internet and its uses. Basic concepts and differences of Hardware and Software. Various types and uses of input and output devices. Types of Storage devices. Operating system: Introduction, types, functions and uses. Basic concepts concepts of PowerPoint and MS-Excel. Introduction to anti-virus. Applications of computer in animal husbandry.

First Semester: Practical

Course	Contents
LAN-111	Introductory Livestock Anatomy Identification of various bones of the body of cow, horse, dog and fowl. Demonstration of various joints of the body. Demonstration of various components of digestive system in ruminants and non-ruminants. Demonstration of organs of respiratory system Demonstration of structure of heart & Portal circulation. Demonstration of organs of excretory system. Demonstration of various organs of male and female genital system.
APHY-111	Introductory Animal Physiology Use of anticoagulants. Collection of whole blood plasma and serum. Estimation of haemoglobin. Determination of pack cell volume. Study of microscope and its uses. Study of general principals of counting cellular elements of body. Counting RBCs in blood. Counting WBCS in blood. Method of examination of blood smear for differential leucocytes count. To find out differential leucocyte count. Recording of blood pressure. Study of sperm motility. Live and dead sperm count. Study of physical and chemical properties of urine. Study of normal respiration rate in various domestic animal.
LPM-111	Introductory dairy cattle and buffalo management Visit to a dairy farm and study of their daily routines. Study of dairy farm equipments. Study of external body parts of cattle and buffalo. Approaching and handling of cattle and buffaloes. Casting and restraining of cattle and buffaloes. Methods of identification in cattle and buffaloes. Determination of ageing in cow and buffalo. Weight determination of animal by using different methods. Methods of Castration. Dehorning of calf. Study of existing methods of livestock farm waste management. Cleaning and disinfection of animal house and dairy farm equipment's.

ENG-111	English PART-A READING: Reading with correct pronunciation and intonations from books, magazines. LISTENING: Listening from recorded spoken talks, speech, records, taps, cassettes etc. DIALOGUE: Introducing one self and giving introduction of other, shorts question answers session, short talk/ speech on given topics etc. PART-B (composition writing) Practice in comprehension passages, letter writing, story writing with the help of given clues, essay writing with the help of given clues, application writing.
CA-111	Introduction to Computer Application Demonstration and working of computer system: monitor, keyboard, mouse, CPU, printer, CD drive, floppy disk. etc. Basic operations in Windows operating system. Creating, editing and printing of text files in MS-Word. Creating, editing and preparation of presentation in MS-Power Point. Usage of MS-Excel in farm data management. Introduction to Internet. Email and its usage in communication. Application of computer in farm database management.

Second Semester: Theory

Course	Contents
STAT-121	Elementary Statistics Basic concepts: Definition, importance, scope, limitations of statistics in Animal sciences. Introduction of sample, population, parameter, data, ratio, variation, variable. Types and source of data. Types and source of variable. Collection of data - Introduction, types, methodology and drafting of questionnaires. Classification and tabulation: Introduction, Objectives and types. Presentation of data (Diagrams and Graphs): Introduction and types. Measures of central tendency: Arithmetic mean, weighted mean, geometric mean, harmonic mean, mode and median for raw and grouped data. Measures of Dispersion: Range, standard deviation, variance, coefficient of variation and standard error of mean for raw and grouped data. Sampling: basic concepts and types. Sampling methods: Random and non-random. Sampling vs. complete enumeration. Statistical survey: Introduction, Planning and execution.
AN-121	Introductory Fodder Production and grassland Management Importance of fodder production in animal nutrition. Classification of feeds & fodder. Agronomical practices for cultivation of leguminous crops lucerne, cowpea and cereal crops i.e. maize, sorghum, oats, pearl millet (Rajkabujari) and hybrid napier. Pasture management, agro forestry and system of grazing. Important scarcity fodders. Fodder production through intercropping and backyard cultivation. Importance of unconventional feeds and fodder in livestock feeding. Preservation of fodder- silage, hay and haylage making. Recycling of livestock waste including vermin compost, Bio gas. Agencies involved in seeds, fertilizers, animal feeds and pesticides.
AB-121	Introductory Animal Breeding Animal Breeding: Introduction, Definition, Principles & Importance. Variation: Importance and Sources. Animal Genetic Resources (AnGRs) of Gujarat state: Species, Breeds, conservation and statistics.

	<p>Selection: Introduction and types.</p> <p>Response to selection</p> <p>Basis of selection: Individual selection, family selection, pedigree selection, progeny testing.</p> <p>Methods of selection: individual selection, independent culling level, selection index.</p> <p>Economic traits of livestock: Introduction and their improvement.</p> <p>Mating Systems: Introduction and types</p> <p>Livestock Breeding Policy of Gujarat state.</p>
LPM-121	<p>Introductory Sheep and Goat Management</p> <p>Common terminologies and definitions of sheep and goat.</p> <p>Economic importance of sheep and goat production in India and Gujarat.</p> <p>Utility classification of sheep and goat breeds.</p> <p>Important sheep and goat breeds of Gujarat.</p> <p>Important exotic sheep and goat breeds being used in breed improvement in India.</p> <p>Rearing systems of sheep and goats in India.</p> <p>Care and management of lambs and kids.</p> <p>Care and management of breeding stock.</p> <p>Care and management of pregnant ewe and doe.</p> <p>Care and management of sheep and goat before and after parturition.</p> <p>Care and management of ram and buck.</p> <p>Selection and judging of sheep for mutton and fibres.</p> <p>Selection and judging of goat for milk and chevon.</p> <p>Sheep and goat housing.</p> <p>Shearing in sheep.</p> <p>Routine health care, deworming, vaccination schedule in sheep and goat.</p> <p>Factors influencing the quality of wool.</p>
AHE-121	<p>Introductory Animal Husbandry Extension-I</p> <p>Extension concept, principles scope</p> <p>Education: Informal, Formal, Non formal</p> <p>Need for extension, the concept of extension.</p> <p>Levels of extension, the philosophy of extension. objectives of extension, function of extension, extension education process.</p> <p>Teaching learning process</p> <p>Principles of extension education Rural sociology</p> <p>Rural sociology: rural-urban society difference</p> <p>Communication process</p> <p>Basic functions of communication, Elements of extension communication system.</p> <p>Communication methods</p> <p>Individual method, Group method and mass method</p> <p>Adoption and Diffusion of innovation</p> <p>Adoption, Innovation, Diffusion, perceived attributes of innovation, adoption process, innovation decision process, over adoption, consequence of innovations, transfer of technology</p> <p>Programme Planning</p> <p>Objectives, need of programme planning</p> <p>Principles of Programme planning, Steps in extension programme planning,</p> <p>Role of extension agent in programme planning.</p>
ENVS-121	<p>Introduction to Environmental Science</p> <p>Scope of Environmental science.</p> <p>Environment: Introduction, definition and importance.</p> <p>Components of environment interactions with organism.</p> <p>Indian environment -past and present status.</p> <p>Environmental pollution and pollutants. Air, water, food, soil, noise pollution sources.</p> <p>Causes of Smoke, acid rain, global warming and ozone hole. Impact of different pollutants on humans, plants, organisms and environment.</p>

	<p>Introduction to biological magnification of pollution technological and sociological measures and solutions- Indian and global efforts.</p> <p>Voluntary agencies of India working for environment conservation.</p> <p>International conferences, conventions and summits- major achievements.</p> <p>Environmental policy and legislation in India.</p> <p>Introduction to environmental impact assessment.</p> <p>Causes of environmental factors.</p> <p>degradation-socio-economic</p> <p>Human population growth and lifestyle.</p> <p>Biomedical waste management.</p> <p>Disaster management- introduction, Basic concepts.</p>
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Second Semester: Practical

Course	Contents
STAT-121	<p>Elementary Statistics</p> <p>Tabulation of data.</p> <p>Diagrammatic representation of data.</p> <p>Graphical representation of data.</p> <p>Calculation of measures of central tendency for raw and grouped data.</p> <p>Calculation of measures of dispersion for raw and grouped data.</p> <p>Data entry and management through MS EXCEL.</p>
AN-121	<p>Introductory Fodder Production and grassland Management</p> <p>Visit to a fodder farm.</p> <p>Familiarization with the various types of fodder.</p> <p>Agro climatic zone wise fodder crop rotation/fodder calendar.</p> <p>Study of cost of cultivation and net realization for fodder production.</p> <p>Demonstration of farm machinery involved in fodder production.</p> <p>Judging of appropriate stage of fodder crops for harvesting.</p> <p>Demonstration of hay making and silage making.</p> <p>Preparation of cropping scheme for dairy farm.</p> <p>Demonstration or visit of Livestock waste utilization and recycling unit</p>
AB-121	<p>Introductory Animal Breeding</p> <p>Study of dairy farm records.</p> <p>Identification of livestock breeds of Gujarat state.</p> <p>Standardization of breeding records.</p> <p>Estimation and calculation of various economic traits of livestock.</p> <p>Selection of dairy animals.</p>
LPM-121	<p>Introductory Sheep and Goat Management</p> <p>Familiarization with Sheep and goat farm routines.</p> <p>External body parts of sheep and goat.</p> <p>Dentition and ageing in sheep and goat.</p> <p>Handling of sheep and goat.</p> <p>Methods of identification in sheep and goat.</p> <p>Judging and selection of sheep and goat.</p> <p>Dipping, Spraying and Spotting of sick animals.</p> <p>Farm records and their maintenance.</p> <p>Shearing and grading of wool and their bailing and storage.</p> <p>Layout plant of sheep/goat farm of different flock size.</p> <p>Castration of kids.</p> <p>Culling in sheep and goat.</p>
AHE-121	<p>Introductory Animal Husbandry Extension-I</p> <p>Classification of Audio visual aids</p>

	<p>Preparation of poster for A.H. extension use Preparation of leaflets for A.H. extension use Preparation of folders for A.H. extension use Preparation of pamphlets for A.H. extension use</p> <p>Social survey, its kinds and importance in sampling process</p> <p>Methods and tools of data collection from field to collect farmer information</p> <p>Type of Sampling and sampling techniques</p> <p>Use and principles of LCD projector</p> <p>Visit to animal health camp/farmers meet/exhibition</p> <p>Visit to village institution</p> <p>Visit to dairy cooperative society</p>
ENVS-121	<p>Introduction to Environmental Science</p> <p>Visit to a local areas-river /forest/grassland/catchments etc.</p> <p>Study of common plants, insects, birds and animals.</p> <p>Visit to industries to study pollution abatement techniques.</p> <p>Demonstration of water purification plant, Sewage disposal plans.</p> <p>Carcass and fallen animal disposal methods.</p> <p>Visit to a recycling plants.</p> <p>Collection and examination of water sample, sampling of air.</p> <p>Creating useful articles out of waste materials.</p>

Third Semester: Theory

VMI-211	<p>Introductory Veterinary Microbiology</p> <p>Introduction to microbiology (History & Branches).</p> <p>Microbiology and structure of bacteria, shape, size and arrangement of bacteria.</p> <p>Microbiological variations and classification of bacteria.</p> <p>Methods of transmission of infections.</p> <p>Sterilization, disinfection, and aseptic handling of sterilization materials.</p> <p>Introduction, morphology, growth, nutrition, reproduction and classification of fungi.</p> <p>Introduction to general characteristics of virus, basic classification, cultivation and replication of viruses.</p> <p>Microbiological feature of important bacterial, viral and fungal disease, its diagnosis in animal and vaccine.</p>
VPARA-211	<p>Introductory Veterinary Parasitology</p> <p>Introduction of Veterinary Parasitology.</p> <p>Parasite and its types.</p> <p>Host and its types.</p> <p>Classification of parasites.</p> <p>Important morphological features, life cycles, clinical signs and symptoms, diagnosis, prevention and control of liver flukes, blood flukes, rumen fluke, lung fluke.</p> <p>Important morphological features, life cycles, clinical signs and symptoms, diagnosis, prevention and control of ruminant tape worms, dog tape worms, poultry tape worms, broad fish tapeworm and Spirometra.</p> <p>Important morphological features, life cycles, clinical signs and symptoms, diagnosis prevention and control of Ascaris, Parascaris, Toxocara, Toxascaris, Ascaridia, Heterakis and Oxyuris. Strongyloides, Strongylus, Syngamus and Oesophagostomum. Kidney worms hook worms, Trichostrongylus, and Haemonchus. Habronema, Draschia. Thelazia, Spirocerca, and Gongylonema. Dirofilaria, Parafilaria, Onchocerca, Setaria and Stephanofilaria. Lung worms Trichuris and Capillaria. Acanthocephala.</p> <p>Important morphological features, life cycles, vector potentiality and control of biting midges, black flies. mosquitoes, horse fly, house fly, stable fly, flesh fly, warble fly, stomach bot fly, nasal bot fly, bottle flies, sheep ked. lice, fleas, soft ticks, hard ticks, mites.</p>

	Important morphological features, life cycles, clinical signs and symptoms, diagnosis prevention and control of Trypanosoma, Trichomonas, Histomonas. Giardia and Balanidium, coccidia of poultry and domestic animals. Babesia, Theileria, Anaplasma, Coccidia and Ehrlichia.
VPA-211	Preliminary Pathology Introduction to scope of pathology. Common terminologies of pathology: Pathology, health, disease, etiology, predisposing, pathogenesis symptoms of sign, lesion, diagnosis, incubation period, prognosis morbidity, mortality, autopsy, Biopsy, Necrosis, Somatic death, inflammation, fever/pyrexia. Study of different causes of diseases. Mode of transmission of disease. Disturbance of growth: common terminology aplasia, agenesis, hypoplasia, atrophy hypertrophy, metaplasia, dysplasia. Wound healing by primary and secondary intention including growth factors. Local defence mechanism and resistance to infection. Preliminary pathology of common diseases. Collection of various samples for laboratory diagnosis, care in preservation and dispatch of sample. Procedure to be followed in collection of samples of specimen for laboratory examination.
AHE-211	Introductory Animal Husbandry Extension-II Entrepreneur, concept of entrepreneurship, Characteristics of entrepreneur, Difference between entrepreneur and Manager, Types of entrepreneur Types of business organization, Business organizing process. Major schemes of state and central govt. in livestock entrepreneurship development. Various state government institutions involved in entrepreneurship development Co-operative Society: Objectives of Co-operative society, Principles of Cooperation. Impact of co-operative society in animal husbandry sector. Operation flood, NDDB Panchayati raj Types of farming: small scale farming, Large scale farming, Mixed farming, Co-operative farming, Integrated farming
AN-211	Introductory Animal Nutrition-I History of animal nutrition. Nutritional terms and their definitions. Common feeds and fodder, their classification with example and availability. Unconventional feeds and fodder and their significance in livestock feeding. Proximate composition of feeds. Importance of nutrients in animal body, their functions. Classification with examples, and requirements in ration (Water, Carbohydrates, Protein, Fat, Vitamins, and Minerals). Feed additives, its uses and example. Antibiotics, prebiotics and probiotics in the ration of livestock and poultry.

Third Semester: Practical

VMI-211	Introductory Veterinary Microbiology Microscope: Its parts, uses and maintenance. Demonstration of various laboratory equipments and apparatus. Glassware preparation. Sterilization. Preparation of reagents media. Simple Staining i.e. methylene blue and Negative stain, Differential staining i.e. Grams and Acid fast stain. Lactophenol cotton blue for fungi. Blood smear stain i.e. Leishaman, Field and Giemsa stain. Cultivation of bacteria and fungi.
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	<p>Antibiotic sensitivity test.</p> <p>Demonstration of important serological tests for disease diagnosis.</p>
VPARA-211	<p>Introductory Veterinary Parasitology</p> <p>Methods of collection, fixation, preservation and mounting of parasites.</p> <p>Faecal examination for the gastrointestinal parasites.</p> <p>Blood examination for the haemoparasites.</p> <p>Skin scraping test for the ectoparasites.</p> <p>Demonstration of the type species of trematode, nematode and cestodes through charts, specimen, mounted slides etc.</p> <p>Demonstration of the type species of insects, ticks and mites through charts, specimen, mounted slides etc.</p> <p>Demonstration of the type species of haemoparasites through slides, charts, etc.</p>
VPA-211	<p>Preliminary Pathology</p> <p>Demonstration of post-mortem of livestock and poultry. Post mortem technique, preparation for post mortem. Post mortem examination.</p> <p>Record keeping of all kinds for pathology laboratory. Collection of various samples for laboratory diagnosis care in preservation and dispatch of sample.</p> <p>Urinalysis- physical, chemical and microscopic techniques for urine analysis.</p> <p>Clinical estimation of haematological parameters (Haemoglobin, PCV, TEC, TLC, DLC) from clinical samples.</p> <p>Collection of biopsy and cytology including exfoliative cytology as rapid diagnostic techniques.</p>
AN-211	<p>Introductory Animal Nutrition-I</p> <p>General precautions while working in animal nutrition laboratory.</p> <p>Overview of animal nutrition laboratory.</p> <p>Familiarization of common feeds and fodders, their classification, selection and identification.</p> <p>Preparation of commonly used solutions, reagents and indicators.</p> <p>Preparation and processing of samples for chemical analysis herbage, faeces, urine and silages.</p> <p>General precautions while weighing feeds and fodders.</p> <p>Weende's system of analysis.</p> <p>Estimation of dry matter in feed sample.</p> <p>Estimation of total ash in feed sample.</p>

Fourth Semester: Theory

AHEM-221	<p>Introductory Animal Husbandry Economics and Marketing</p> <p>Economics</p> <p>Nature and scope of economics, definition and concepts, divisions of economics, economic systems, approaches to the study of economics.</p> <p>Consumption-theory of consumer behaviour, laws of consumption, classification of goods.</p> <p>Wants-their characteristics and classification, utility and its measurement.</p> <p>Theory of demand, demand schedule and curve market demand. Price, income and cross elasticity.</p> <p>Engle's law of family expenditure-consumer's surplus. Theory of firm, factors of production-land and its characteristics, classification and capital formation, Laws of return - cost concepts.</p> <p>Law of supply - Supply schedule, Supply curve & elasticity</p> <p>Marketing</p> <p>Concepts of marketing, Needs of marketing.</p> <p>Marketing elements (Importance of logos, slogans, taglines in marketing).</p> <p>Marketing of perishable and non-perishable items.</p> <p>Types of market, functions of marketing, Problems of livestock marketing, measures for improvement.</p>
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AN-221	<p>Introductory Animal Nutrition-II</p> <p>Importance of scientific feeding, Balanced ration and its characteristics. Overviews of feeding standards for ruminants. Feeding management of dairy cattle and buffalo during different phase of growth, development and production Feeds for different class of poultry. Feeding of sick animals. BIS specifications for cattle feeds, poultry feeds and mineral mixture. Use of NPN compounds for ruminants, its significance and precautions. Various physical, chemical and biological methods of feed processing for improving the nutritive value of inferior quality roughages. Common anti-nutritional factors of feeds and fodders eg. Cyanide, nitrate and saponin. Feeding of livestock during natural calamities. Concept of total mixed ration (TMR), Bypass protein, Bypass fat and chelated minerals.</p>
VP-221	<p>Introductory Pharmacology</p> <p>Introduction to Pharmacology: Historical development, branches and scope of Pharmacology. Definitions of the terms: Pharmacology, Pharmacy, Chemotherapy, Therapeutics, Toxicology, Posology and metrology etc. Nature and sources of drugs; Routes of drug administration; Dosage forms; Pharmaceutical processes; Handling of Hazardous substances. Antiseptics and disinfectants; Weights and measures. Definition of pharmacological terms related to various systems: digestive system, respiratory system, urinary system, skin and mucous membrane and pain management. Analgesics and antipyretics used as oral administration. Classification & General principal of chemotherapeutic drugs in animal use. Definition Broad therapeutic classification of drugs employed in minor Veterinary Practice- Definitions, examples and therapeutic uses in animals. Scope of toxicology, Sources of poisoning, mode of action, its diagnosis and treatment/management of poisons. Alternative approaches (Indigenous drugs etc...) used as therapeutic in minor Veterinary practices.</p>
AR-221	<p>Artificial Insemination in farm Animals</p> <p>Introduction to terminologies pertaining to the animal reproduction. Introduction to male and female reproductive organs. Puberty and oestrus cycle and its patterns in farm animals. Artificial insemination: history, advantages disadvantages. Semen collection using AV method and freezing. Basic steps of semen evaluation. Transportation of semen. Recto-vaginal method of Artificial insemination. Handling of frozen semen straws. Post-Insemination advice and follow-up. Precautions of handling of liquid nitrogen. LN2 container: Structure, handling and its maintenance.</p>
AHC-221	<p>Introductory Animal Health Care</p> <p>(A) Etiology, clinical signs, diagnosis and first aid of following diseases: Diseases of Digestive System (Stomatitis, Choke, Simple Indigestion, Bloat, Ruminant Acidosis, Enteritis, Colic) Diseases of Respiratory System (Epistaxis, Pneumonia) Diseases of Urinary System (Nephritis, Urolithiasis, Hematuria, Cystitis) Udder/Mammary gland affections (Mastitis, Agalactia, Hemagalactia) Metabolic & Deficiency Diseases (Milk fever, Ketosis, Hypomagnacsemic cetany, Vitamin deficiencies, Mineral deficiencies) Diseases of the Skin, Eye & Ear (Otitis, Dermatitis, Scabies, Eczema, Conjunctivitis)</p>

	<p>Miscellaneous conditions [Poisoning in animals (HCN, Nitrate, OPs, Urea), Snake bite, Heat stroke]</p> <p>(B) Etiology, clinical signs, diagnosis, first aid, prevention and control of following infectious diseases:</p> <p>Bacterial diseases: Anthrax, HS, Brucellosis, TB, JD, Actinomycosis, Actinobacillosis, Leptospirosis, CCPP, Tetanus, Enterotoxaemia, Salmonellosis, Colibacillosis</p> <p>Viral diseases: FMD, Pox (Cow pox, Sheep pox, Fowl pox), Rabies, BVD-MD, Ephemeral fever, Ranikhet disease, Marek's disease, Contagious ecthyma.</p> <p>Fungal disease: Ring worm, Aflotoxicosis</p> <p>Parasitic diseases: Protozoa diseases (Anaplasmosis, Theilariosis, Babesiosis, Surra)</p> <p>Helminths (Fasciolasis, Amphistomiasis, Ascariasis, Tapeworm)</p> <p>Ectoparasites (Ticks, Fleas, Lice, Mites)</p> <p>(C) Elementary knowledge about deworming and vaccination of domestic animals and poultry.</p>
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Fourth Semester: Practical

AHEM-221	<p>Introductory Animal Husbandry Economics and Marketing</p> <p>Basic terms related to banking and investment.</p> <p>Visit to business organization</p> <p>Importance of record keeping in business organization.</p> <p>Preparation of project report for livestock entrepreneurship.</p> <p>To prepare project for 10 cross breed cows/ indigenous cows/ buffaloes.</p> <p>To prepare project for 100 goats</p> <p>To prepare project for 1000 broiler birds</p> <p>To prepare project for 1000 layer birds</p> <p>Use of information technology in livestock entrepreneurship/various websites etc</p> <p>Visit to livestock entrepreneur/ progressive farmer</p>
AN-221	<p>Introductory Animal Nutrition-II</p> <p>Calculation of nutritive value of feeds in terms of DCP and TDN.</p> <p>Methods of formulation of concentrate mixture.</p> <p>Formulation of ration for different livestock by thumb rule method.</p> <p>Demonstration of the methods for improving the nutritive quality of straws and other crop residues.</p> <p>Visit to feed factory, dairy farm and poultry farm.</p>
VP-221	<p>Introductory Pharmacology</p> <p>Pharmacology: Introduction of apparatus and fittings, labelling.</p> <p>Custody of poisons/ Handling of Hazardous substances.</p> <p>Weighing of drugs, pharmacy calculations.</p> <p>Drug standards and regulations.</p> <p>Prescription writing.</p> <p>Pharmacy preparation: triple carb, antidiarrheal powder. Simple ointment, iodine ointment, carminative mixture, turpentine liniment. Pharmacy Preparations: Potassium permanganate solution, lugol's iodine solution, tincture iodine, ointment of Whitfield /salicylic acid with benzoic acid etc. Demonstration of toxic weeds and plants.</p> <p>Demonstration of Herbal plants.</p>
AR-221	<p>Artificial Insemination in farm Animals</p> <p>Demonstration of female genitalia.</p> <p>Methods of heat detection in farm animals.</p> <p>Palpation of female genitalia by per rectal examination in live animal or via phantom box.</p> <p>Demonstration of Instruments used for artificial insemination.</p> <p>Sanitization of equipment used in artificial insemination and semen laboratory.</p>

	<p>Preparation of artificial insemination gun.</p> <p>Demonstration of recto-vaginal method of artificial insemination in farm animals.</p> <p>Demonstration of preparation of artificial vagina for semen collection from cattle and buffalo.</p> <p>Visit to a frozen semen station/laboratory.</p>
AHC-221	<p>Introductory Animal Health Care</p> <p>Knowledge of instrument used in laboratory or hospitals including cleaning, sterilization and maintenance</p> <p>Case registration, maintenance of medicine register and record keeping</p> <p>Clinical attendance and history taking</p> <p>Basic understanding of routes of administration of drugs</p> <p>Care and management of sick indoor and outdoor animals</p> <p>General examination of animals (Recording of body temperature, heart rate, pulse rate, respiration rate, ruminal motility)</p> <p>Demonstration of different diagnostic procedures (Use of stethoscope/auscultation, palpation, thermometer, metal detector)</p> <p>Collection, handling, preservation, transport and processing of samples (milk, urine, faeces, skin scrapings and blood) for disease diagnosis</p>

Fifth Semester: Theory

AR-311	<p>Reproductions in Farm Animals</p> <p>Gestation period in farm animals.</p> <p>Pregnancy diagnosis in farm animals.</p> <p>Parturition stages and care during and after parturition.</p> <p>Nursing care of new born calf.</p> <p>Introduction to reproductive disease conditions in farm animals i.e. Definition, etiology, common clinical signs and preventive measures:</p> <ul style="list-style-type: none"> ✓ Silent heat ✓ Anoestrus ✓ Repeat breeding ✓ Endometritis ✓ Pyometra ✓ Metritis ✓ Uterine and vaginal prolapse
VPH-311	<p>Introductory Veterinary Public Health</p> <p>Introduction related to veterinary public health.</p> <p>Different definition related to veterinary public health.</p> <p>Dairy milk hygiene practices on dairy farm and public health.</p> <p>Most common microbial flora of milk and milk products.</p> <p>Source of bacterial milk contamination and method of control.</p> <p>Hygienic milk production: Collection, Processing, Pasteurization and Transport and equipment hygiene.</p> <p>Milk hygiene practice in Gujarat in comparison to other part of India.</p> <p>Most common milk borne diseases.</p> <p>Meat hygiene related terminology.</p> <p>Meat hygiene practices. Humane transport of food animals and birds.</p> <p>Meat adulteration and its test. Meat borne diseases.</p> <p>Definitions of zoonosis. Classification of zoonosis, Role and transmission of local domesticated, wild and cold blooded animals in transmission of zoonotic diseases.</p> <p>Study of the important regional specific common zoonotic diseases and its methods of prevention and control. Most commonly used terminology related to epidemiology.</p>
LPM-311	<p>Introductory Poultry Management</p> <p>Economic importance of poultry and development of poultry industry in India.</p> <p>Different terms used in poultry science.</p>

	<p>Different breeds and varieties of chicken and ducks.</p> <p>Structure of egg. Egg formation, formation of yolk, albumen and shell.</p> <p>Handling, care and management of hatching eggs.</p> <p>Different systems of housing of poultry; floor space requirements, construction details of poultry houses.</p> <p>Care and management of chicks, pullets and cockerels</p> <p>Care and management of broilers and layers</p> <p>Feeds and feeding of broilers and layers</p> <p>Commercial hatcheries and its role in poultry development</p> <p>Disinfection of incubators, brooders, farm implement and poultry houses</p> <p>Introduction to integrated poultry farming</p> <p>Vaccination and deworming in poultry</p>
VSUR-311	<p>Minor Veterinary Surgery</p> <p>Introductions, history, classification and development of Veterinary Surgery.</p> <p>Objectives of surgery</p> <p>General surgical principles preoperative and post-operative considerations.</p> <p>Importance of sutures and suturing materials.</p> <p>Asepsis, antisepsis and their applications.</p> <p>Basic Surgical instruments and its uses.</p> <p>Methods of their sterilization.</p> <p>Introduction to Inflammation, abscess, cysts, hemorrhage, burns and scald.</p> <p>Introduction to Wound and its primary management</p> <p>Introduction to Fracture, its basic classification and Primary Management</p> <p>Different kinds of bandages and its application.</p> <p>General considerations of anesthesia and preparation of patients.</p>

Fifth Semester: Practical

AR-311	<p>Reproductions in Farm Animals</p> <p>Familiarization with the equipment used in obstetrical operations.</p> <p>Care of animal operated for obstetrical operation.</p> <p>Demonstration of pregnancy diagnosis in farm animals.</p> <p>Postpartum management in farm animals.</p> <p>Considerations for fertility improvement in farm animals.</p> <p>Measures of reproductive performance in dairy herds.</p>
VPH-311	<p>Introductory Veterinary Public Health</p> <p>Collection of milk samples for quality examination.</p> <p>Grading of milk on the basis of MBR test.</p> <p>Test for efficiency of milk pasteurization.</p> <p>Demonstration of S.P.C.</p> <p>Demonstration of coliform count.</p> <p>Detection of adulteration in milk.</p> <p>Carcass/ fallen animal disposal methods.</p> <p>Hygienic disposal of farm waste.</p>
LPM-311	<p>Introductory Poultry Management</p> <p>Handling of poultry birds</p> <p>External body parts of birds</p> <p>Common Poultry Farm equipments</p> <p>Day to day management of layer birds</p> <p>Day to day management of broiler birds</p> <p>Debeaking in hen</p> <p>Candling of Egg</p> <p>Differentiation between cock and hen</p>

	<p>Different methods of preservation of eggs</p> <p>Record keeping of poultry farm</p> <p>Preparation of feasibility reports on small and medium poultry farms.</p> <p>Judging of layer birds.</p>
VSUR-311	<p>Minor Veterinary Surgery</p> <p>Introduction to the layout of operation theatre</p> <p>Preparation of operation theatre and its maintenance</p> <p>Identify the common surgical instruments and their use</p> <p>Restraining and positioning of surgical patients</p> <p>Preparation of general surgical pack</p> <p>Preparation of surgical team</p> <p>Preparation of surgical patients</p> <p>Methods of sterilization</p> <p>Familiarization with various suture materials</p> <p>Control of hemorrhage</p> <p>Primary management of wound</p> <p>Application of bandages</p> <p>Preoperative and post-operative monitoring of surgical patients.</p>

Sixth Semester

FPT	<p>Farm Practice Training:</p> <p>Cattle and buffalo farms</p> <p>Sheep and goat farms</p> <p>Poultry farm</p> <p>Veterinary College/ Veterinary Clinical Complex (VCC)/ Livestock Farm Complex (LFC)</p> <p>Government dispensary/ Co-operative dairy unit/ Gaushala</p> <p>Seven days Educational tour</p> <p>Report Writing</p> <p>Note: The maximum duration for each centre should not exceed 03 weeks. The selection of centre as per regulation for Farm Practice Training for Diploma in Animal Husbandry course, 2016 (Appendix-1 (A) point no.09)</p>
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