Regulations for Affiliation of Polytechnic in Animal Husbandry to Kamdhenu University, 2015

Kamdhenu University

Karmayogi Bhavan, 4th Floor,
Block-1, Wing B-1, Sector-10 A,
Gandhinagar-382010

Kamdhenu University

Vision :

To be the National Leader in education and research in the fields of veterinary and allied sciences

Mission :

- To excel in education and research and make advancement in all the fields of learning leading to welfare of all living beings.
- To shape the students into compassionate professionals.
- To promote productivity of animals, livestock and aquaculture through dissemination of knowledge empowering their owners.

Motto :

'*सर्वभूतहिते रताः*' means striving for welfare of all living beings.

The KU is working for welfare of all living beings through its multifaceted academic, research and extension education programmes with focus on animals, milk and fisheries to uplift the standards of life of farmers and people at large.

Logo :

Our logo covers water, earth and sky, all the three elements described as *Panchmahabhuta* depicted by symbols of a fish, a cow and a bird. The milk-can denotes dairy and mechanization of entire animal sector. The open book at the bottom emanates knowledge. The blue-cross symbolizes veterinary profession, while K and U represents Kamdhenu University. 'K' as an arrow is pointing to our goals and test tube as 'U' indicates scientific research. Two majestic Asiatic lions the pride of Gujarat, signifies courage.

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No. of Copies : 200
Year : 2016

Published by :
Director of Extension Education &
Dean, Faculty of Veterinary Science & Animal Husbandry
Kamdhenu University
Karmayogi Bhavan, 4th Floor,
Block-1, Wing B-1, Sector-10 A,
Gandhinagar-382010

Printer :
Mirror Image Pvt. Ltd.
Gandhinagar,
M. 9825082124

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FOREWORD

Gujarat is bestowed with 1,48,08,200 of cattle and buffalos which include 58,98,200 indigenous and crossbred cows and rest are buffaloes. They are looked after by their owners as their family member. These animals should be hale and hearty and economically viable. Therefore, we need nearly 1250 veterinarians per year to treat these animals. But Gujarat produces only 255 veterinarians with B.V.Sc & A.H. degree. Out of these Veterinary Graduates 50 percent opt for higher studies in India or abroad. Thus, hardly 125-150 veterinary graduates are available for Animal Health Care Services. This is just 10% of the need. In this situation the role of Diploma holders in Animal Husbandry becomes important. They can follow better animal husbandry practices, which reduces health problems and increases milk production. In this background need of starting of Polytechnics in Animal Husbandry should be viewed. Now, realizing the need many NGO and Trusts are coming forward to start polytechnics in Animal Husbandry. Therefore, I am happy to present the Regulations for starting Polytechnics to award Diploma in Animal Husbandry under Kamdhenu University.

With the inception of Kamdhenu University there was a spate of applications by various trusts to start "Livestock Inspector Training Institute" with requests for affiliation to Kamdhenu University. A general misconception prevailed that on completion of the Livestock Inspector Training course, the certificate holders would be declared as "*Pashu Doctors*" or "*Veterinary Doctors*". When I took over as the Vice Chancellor a large number of applications were pending for affiliation. The Government could not decide on these applications in absence of Regulations and norms for affiliation. Therefore, it was felt imperative to prepare regulations or norms and fix the criteria so that quality in training of these Diploma holders is maintained by the institutions affiliated to Kamdhenu University. The students passed out after the three-year Diploma Course is to be equipped with knowledge and skills in animal husbandry. A human doctor will require a supporting team of staff nurse, compounder, dresser, lab technicians etc. Likewise, a Veterinary Doctor will also require para-veterinary staff, who can deal with the diseased animal under the supervision of Veterinary Doctor. This course and its regulations are framed such that a skilled person equipped with desired knowledge of animal husbandry and management practices is produced, who can assist a Veterinary Doctor, so that cattle owners are well advised and assisted in animal rearing and treatment.

These Regulations are the work of sincere efforts of Dr. P. H. Vataliya, Dean of Veterinary Faculty and Director of Extension Education, Shri V. P. Macwan, Registrar and Dr. Dinesh Chaudhari, Veterinary Officer. I appreciate their efforts and also thank the members of Academic Council and Board of Management of Kamdhenu University for granting approval to these Regulations.

Now, those trusts and institutes who desire to start Diploma in Animal Husbandry Program will have a clear guideline to initiate the Diploma programme and to proceed with process of affiliation. These regulations will therefore, facilitate this process.

Let many more institutes bloom and flourish under Kamdhenu University. Our ultimate motto is "Welfare of all living beings".

"सर्वभूतहिते रताः"

Prof. M. C. Varshneya
Vice Chancellor

Dr. P. H. Vataliya

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MESSAGE

Gujarat state is bestowed with vast biodiversity of flora and fauna Veterinary science and animal husbandry caters to the needs of husbandry and health of domestic as well as wild animals and birds. Therefore, a veterinarian working in the field requires assistance of trained manpower in discharging his / her duties relating to prevention and control of diseases, management of the production and productivity of animal and birds, nutritional requirement of animal and birds, reproduction and artificial insemination of animals, catering to the public health concerns due to threats of zoonotic disease crossing the species barriers etc.

Manpower to support such activities needs to be trained in the required skills with adequate theoretical and practical knowledge. Therefore, there was a need to design a diploma course in Animal Husbandry to be offered to 10th Standard students who may be exposed to education in animal husbandry leading to three years Diploma. The Diploma holders may provide their services in Animal Husbandry sector in public or private organizations or independently may take up livestock / poultry farming as an opportunity of entrepreneurship and build their career and future.

For offering such Diploma course the private or public sector organizations may start polytechnics under affiliation to Kamdhenu University. With these objectives in mind, it was felt necessary to formulate the "Regulations for Affiliation of Polytechnic in Animal Husbandry to Kamdhenu University 2015" and prepare the syllabus of Diploma in Animal Husbandry.

Hon. Vice Chancellor Prof. M.C. Varshneya has taken keen interest and provided encouragement for preparation of these Regulations. I am grateful to him for providing us the opportunity to perform this task with necessary guidance.

I take this opportunity to extend my gratitude and thanks to Shri V.P. Macwan, Registrar, Kamdhenu University for his valuable and critical suggestions and keen interest during the course of development of these Regulations. Dr. Dinesh Chaudhary, former Veterinary Officer, Kamdhenu University, Gandhinagar deserves appreciations for his sincere efforts.

P. H. Vataliya

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KAMDHENU UNIVERSITY
GANDHINAGAR

REGULATIONS FOR AFFILIATION OF POLYTECHNIC IN ANIMAL HUSBANDRY TO KAMDHENU UNIVERSITY, 2015

1. Short Title, Extent and Commencement:
   (i) These regulations shall be called "Regulations for Affiliation of Polytechnic in **Animal Husbandry to Kamdhenu University, 2015".**
   (ii) These regulations will be effective from the date of notification and shall also apply to the institution under the process of affiliation and those institution accorded affiliation provisionally to Kamdhenu University.
2. Definitions - In these regulations, unless the context otherwise requires:
   a) The words and expressions shall be the same as defined in the Kamdhenu University Act, 2009.
   b) "Institute" or "Institution" means an institution or organisation registered under the appropriate laws of State i.e. Societies Registration Act, 1860, Bombay Public Trust Act, 1950 etc. or a Company incorporated under the Companies Act, 2013 (Act No. 18 of 2013) as amended from time to time or the State/Central Government institutions and/or a Polytechnic which has been accorded provisional affiliation to impart education leading to Diploma in Animal Husbandry.
   c) "Affiliation" means affiliation accorded to a Polytechnic, whether private or public, by whatever name called, (provisional or permanent, as the case may be) with the University with respect to specific academic programmes;
   d) "Polytechnic" means for the purpose of these regulations, an Institution affiliated to the University and providing courses of study leading to Diploma in Animal Husbandry;
   e) "Principal" means head of an Affiliated Polytechnic or Institution;
   f) "Teacher" means for the purpose of these regulations, a person, known by any rank, appointed/ hired by the Affiliated Polytechnic or Institution for the purpose of imparting instruction;
3. Applicability:
   These regulations shall apply to all those institutes as defined in regulation no. 2(b).
4. General Regulations and Procedure for Affiliation:
   (i) The institute desirous to start a Polytechnic shall apply to the Registrar in the prescribed Application Form (Appendix-I), which shall be made available at a charge of Rs. 10,000/ (Rupees Ten thousand only) in the form of Demand Draft drawn in favour of the Kamdhenu University before 31st March of the year preceding the year from which affiliation is intended to take effect. Late applications shall not be considered.
   (ii) The applicant shall have proven financial capabilities of annual turnover of minimum Rs. one crore as evident from last three year's Income Tax Returns.
   (iii) The applicant shall have its own buildings and land with undisputed ownership and possession of the buildings and/or land proposed for starting a Polytechnic.
   (iv) The applicants shall have corpus funds of minimum Rs. 20 lacs and shall have minimum 20 acres of contiguous land under its clear title exclusively for the Polytechnic. Documentary evidences and affidavits shall be produced in this regards at the time of application. The affiliation shall not be granted for rented facilities.

(v) The Institute shall have infrastructure and other facility for the purpose of teaching and practicals are as per the Annexure I.

(vi) The application received by the Registrar shall be scrutinised by the Scrutiny Committee consisting of following members.

1. Dean of Veterinary Faculty - Chairman
2. Two experts to be nominated by Vice Chancellor
3. One representative of Director of Animal Husbandry not below the rank of Joint Director
4. Registrar - Secretary

The above said committee shall strictly scrutinise the application in the light of above said clauses of these regulations and recommend for further necessary actions.

(vii) Having found satisfactory report of the scrutiny committee, the Registrar on the recommendation of the Scrutiny Committee, shall inform the institute to pay non refundable processing fees of Rs. 1,00,000/ (Rupees one lacs only) in the form of Demand Draft drawn in favour of Kamdhenu University.

(viii) On receipt of the processing fees, the University shall constitute an inspection committee consisting of following members which shall visit the institution and will present its inspection report to the University.

1. Dean of Veterinary Faculty - Chairman
2. Two experts to be nominated by Vice Chancellor
3. One representative of Director of Animal Husbandry not below the rank of Deputy Director
4. Executive Engineer of the University or his representative not below the rank of Deputy Engineer
5. Deputy Registrar - Secretary

(ix) The inspection committee appointed shall visit the institute and inspect all the documents, premises, financial capabilities, available infrastructures, academic and technical capabilities and other facilities of the institution. The institution shall, besides producing evidences of adequate financial capabilities as provided in the sub rule (iv) shall furnish a bank guarantee of an amount equivalent to six months' salary of teaching and non-teaching staff or a minimum of Rs 25,00,000/ (Rupees twenty five lacs only), whichever is higher, in favour of the University within one months of the commencement of the academic session.

(x) The inspection committee shall submit its report to the Registrar within two months from the date of receipt of non refundable fees along with the requirements mentioned in sub rule (ix). The report shall be placed before the Board of Management with recommendations of the Academic Council and on approval of the Board of Management, the Society / Trust shall obtain permissions /NOC separately from the State Government to start polytechnic.

(xi) The Board of Management shall accord provisional affiliation for one year or reject the application with reasons in writing which shall be conveyed to the applicant by the Registrar. On approval of the provisional affiliation by the Board, the Institute shall have to remit a non refundable one time affiliation fees of Rs. 10 lacs (Rupees ten lacs only) in the form of Demand Draft to the University before the beginning of common admission process by the University, failing which the institute will not be permitted to start the academic programme for that year.

(xii) The renewal of affiliation in subsequent years shall be accorded by the Board of Management on recommendation of the Academic Council and inspection committee as prescribed in sub rule

(ix) on receipt of application for renewal from the institute. The inspection committee for renewal of affiliation shall visit the institution before 30th April of that year on receipt of non refundable inspection fee of Rs. 25,000/ (Rupees twenty five thousand only) by 31st March every year. The fees for visit of inspection committee shall have to be remitted for each such visit of inspection committee. The amount of fees may be revised by University without notice. This will also apply to the institutions under provisional affiliation until they are permanently affiliated.

(xiii) Any institution whose application for affiliation has been rejected, may apply afresh as per the procedure laid down.

5. Admission, Fee Structure and Examinations:

(i) The admission procedure for diploma course shall be as provided in the Regulations for the Award of Diploma in Animal Husbandry.

(ii) The Institute shall compulsorily participate in centralized admission system and in no case admit students directly on its own.

(iii) The intake capacity for Polytechnic in Animal Husbandry course shall be initially 30 students which may be increased up to maximum of 60 students per year on recommendations of the inspection committee and on approval by the Academic Council.

(iv) The institution may issue advertisements for promotional purpose but in no case shall issue any advertisement for admission pertaining to concerned academic year.

(v) The Institute may charge fees to the students as prescribed by the University from time to time.

(vi) The entire process of conduct of final/end term examinations, evaluation and related issues for the diploma course shall be under the direct control and supervision of the Kamdhenu University.

6. Award of the Diploma:

After successful completion of the course, the diploma certificates (provisional or otherwise) shall be issued to the students by the University only.

7. Faculty and Support Staff:

The strength and qualifications of the teaching as well as supporting staff and the conditions governing their tenure of office shall be such as provided in Annexure I.

8. Recruitment of Staff:

(i) The teaching and other technical staff shall be recruited as per the recruitment rules prescribed by the University;

(ii) For recruitment of the Principal of the Polytechnic, selection committee which shall include a representative of the University nominated by the Vice-Chancellor;

(iii) In case of recruitment of a member of the teaching staff of the Polytechnic, a representative of the University nominated by the Vice-Chancellor and the Principal of particular Polytechnic shall be members.

9. The institute may provide residential accommodation to the Principal and other members of the teaching staff in or near the Polytechnic or the place provided for the residence of students.

10. University shall not be responsible for any kind of delay in affiliation.

11. The provisionally affiliated institute which completes five years shall apply for permanent affiliation to the University.

12. Regulations for Permanent Affiliation:
    a. Eligibility Criteria for granting Permanent affiliation:
        (i) The Polytechnic shall have completed at least five years of satisfactory performance after getting first provisional affiliation and attained the academic and administrative standards as prescribed by the University from time to time.
        (ii) The Polytechnic must have completed all necessary infrastructure prescribed under the regulations as stipulated from time to time.
        (iii) All the teaching and non-teaching staff are appointed on regular/permanent basis on scale of pay as per ICAR/Government.
        (iv) The affiliated Polytechnic shall furnish such reports, returns and other information as the Board, after consulting the Academic Council, may require enabling it to judge the efficiency of the Polytechnic or the institution.
    b. Procedure for Granting Permanent Affiliation
        (i) Polytechnic which wishes to get permanent affiliation shall apply to the University any time after completing five years of first provisional affiliation in the prescribed proforma.
        (ii) The procedure for according permanent affiliation, the proforma for application and inspection fees shall be the same as for granting provisional affiliation given in the regulations.
        (iii) If the University decides not to recommend for granting permanent affiliation to the Polytechnic for reasons, to be recorded in writing, of its failure to meet the conditions / requirements for getting such affiliation, the Polytechnic may apply again as and when it fulfils the conditions / requirements subsequently, but not earlier than six months from the date of rejection of its earlier application.
13. The University shall accord provisional affiliation to a Polytechnic/ Institution until it fulfils the requirements of permanent affiliation as mentioned under the rule 12.
14. The institute which is accorded provisional affiliation is authorized to mention the status in the form of "Provisionally Affiliated to Kamdhenu University" on their signboards, letterheads, properties and other such documents.
15. Till a Polytechnic/Institute is permanently affiliated to the University as provided in these regulations, the Polytechnic/Institute shall not be authorized to declare its status anywhere as "Affiliated to Kamdhenu University".
16. The affiliation granted under these regulations is non-transferable.
17. Every affiliated Polytechnic or recognized institution shall comply with the provisions of the Kamdhenu University Act, 2009 (specifically Section 46 to 52 Ch. VIII), its Statutes, Regulations and minimum standards and norms (Annexure I), as amended time to time. If any affiliated Polytechnic or recognized institution contravenes then,
    (i) The rights conferred on such polytechnic or institution by the affiliation or recognition shall stand withdrawn from the date of such contravention and such polytechnic or institution shall cease to be an affiliated Polytechnic or recognised institution.
    (ii) The rights conferred on an institution by recognition may be withdrawn or suspended for any period if the institution fails/has failed to observe any of the conditions of its recognition or the institution has conducted in a manner which is prejudicial to the interest of education.
18. The decision of the University for granting or not granting provisional or permanent affiliation to any institution shall be final.

Annexure-I

Minimum Standards and Norms for Affiliation of Polytechnic in Animal Husbandry to Kamdhenu University

Minimum requirement of land / building infrastructure of Main Polytechnic building, Instructional Farm, Veterinary Dispensary, Hostels etc., and Manpower shall be as per guideline given below:

A. Land: Minimum 20 acres of land with ownership or on long term lease in the name of institution under its clear title exclusively for the Polytechnic.

B. Infrastructure:

Sr. No.	Item	No.	Space Req. (sq. m.)
A	**Buildings**		
1-a	**Main Polytechnic Building**		
	a. Principal's Chamber (with ante room for PA and visitors)	1	30
	b. Conference / Meeting hall (20-25 sitting capacity)	1	50
	c. Office room for teaching staff (6-10 sitting capacity)	1	60
	d. Office room for non-teaching staff (3-5 sitting capacity) 1	50	
	e. Store room	1	20
	f. Lecture halls/ Class rooms	2	80 each
	g. Multipurpose hall (200 sitting capacity)	1	200
	h. Library	1	50
1-b	**Laboratories** (each having capacity of 30 students)		
	a. Anatomy Laboratory	1	80
	b. Basic Subject Laboratory (Physiology, Biochemistry, Pharmacology & Animal Nutrition)	1	80
	c. Animal Genetics & Breeding, Statistics & Computer Laboratory	1	80
	d. Diagnostic Laboratory (Pathology, Parasitology & Microbiology	1	80
2	**Instructional Farm** (with LPM and Extension Education Laboratory)	1	1000-1500
3	**Veterinary Dispensary** (with AI Laboratory)	1	200
4	**Hostels (For 150 Boys & 50 Girls)**	2	4000
B	**Student Amenities**		
1	**Play Ground and Sports Complex**	1	2 acres land
2	**Student Bus**	1	

* Adequate basic facilities and other civic amenities such as hygienic drinking water, toilets (gents and ladies), sewerages, biological waste disposal etc. must be provided at all buildings and farm.

1. Main Polytechnic Building:

The buildings in which the Polytechnic is or is to be housed shall be suitableto impart education and are as per standards mentioned above. No other educational programme shall be permitted to be undertaken in the same buildings.

Laboratories: The facilities including equipments, chemicals, glass wares and charts in respective laboratory are as per Annexure 1-A. Besides this all laboratories must be provided with minimum 30 stools, black/white board, projector, laboratory tables/platforms and basic civic amenities.

2. Instructional Farm:

Following infrastructure and facilities will be mandatory for instructional farm. The organization or institution can have a long term MOU with a similar or larger animal farm for imparting education. In such case, the farm must be in the vicinity of the Polytechnic and there should be enough provision for transportation of students to the location of the animal farm.

The Instructional farm should also accommodate laboratory for conducting practical for Livestock Production and Management and Extension Education courses. The minimum equipments and material for imparting education are as per Annexure 1-B

- **Buildings**

Category	**No.**	**Space Req. (sq. m.)**
Office cum Laboratory	One	80
Animal sheds	Cattle & Buffalo unit Sheep & Goat unit Horse & Camel unit Poultry unit	as per the standard space requirements for each species
Storage facilities for feeds & fodder	Fodder Godown	as per need
	Silo pit	

- **Livestock & Poultry**

Category	**No. of Animals/Birds**
Cattle	15-20
Buffalo	15-20
Bullocks	2 (1 pair)
Sheep	10-20
Goat	10-20
Horse (Optional)	2 (male & female)
Camel (Optional)	1
Poultry	100-200 birds

- **Fodder Production Unit**

Land	10-20 acre
Irrigation	bore well/ open well/ canal irrigation
Fodder Farm Implements	as per need

3. Veterinary Dispensary:

The organization or institution must have its own well equipped Veterinary Dispensary having following required building facilities for diagnosis and treatment of medicinal, surgical and gynaecological ailments of different animal species.

- Reception cum registration counter
- Animal Examination Section: Medicine, Surgery & Gynaecology unit

- Operation theatre
- Recovery room
- Indoor patient ward

In absence of such dispensary the Polytechnic may have an MOU with the nearby government or non-government organization with such dispensary for imparting education initially for the first three years only.

The veterinary dispensary should also accommodate AI laboratory for conducting practical. The minimum equipments and material for imparting education are as per Annexure 1-C.

4. Hostel facilities:

The organization or institution has to make appropriate provision for the boys and girls hostel as per standards. The hostels are in the vicinity of the polytechnic with all the civic amenities or facilities for the welfare of the students;

- Two separate hostels for boys and girls having adequate accommodation facilities for boys and girls. Hostel accommodation of twin or triple sharing basis is desirable.
- Accommodation facilities for warden and deputy warden near the hostels will be desirable. Warden for the girls' hostel will be mandatory.
- Student's mess and common room will be mandatory.

5. Library:

Due provision is made or shall be made for a library. The library facility with reading room will be mandatory and should be a part of the main polytechnic building with computers, internet and reprographic services.

The library must be possessing required multiple copies of the text books covering all the subjects of the course syllabus besides reference books, journals, periodicals, newspapers etc. The minimum number of books in the library should be 1000 (excluding literature and general purpose books). An indicative list of the books is given in Annexure 1-D.

6. For a polytechnic having intake capacity of 30-60 students below mentioned staff will be mandatory:

Sr. No.	Post	No.	Remarks
1	Principal	1	Qualifications and Experience are as per the University or Government of Gujarat norms, as the case may be.
2	Assistant Professor	3	
3	Veterinary officer	3	
4	Farm manager	1	
5	Livestock Inspector	2	
6	Laboratory Technician	4	
7	Computer Operator	1	
8	Clerks	2	
9	Animal Attendants	4-6 as per need	
10	Driver	1-2 as per need	

Annexure 1-A

Equipments, Labwares and other material for laboratories:

Anatomy Laboratory	
Bone-sets for each species, viz. Cattle, Buffalo, Sheep, Goat, Horse, Camel, Dog, Cat, Fowl etc.	Articulated skeleton one for Horse, Sheep/Goat, Buffalo, Dog/Cat, Camel, Fowl etc.
Student Microscopes	Ice-Box
Charts and models of different organs of large, small and pet animals and birds	Specimen slides of histology & embryology 5 sets each
Binocular microscopes	Staining Jars
Glass wares As per need	Steel Racks for bones store
Coupling Jars	Tissue disposal Buckets
Basic Subject Laboratory (Physiology, Biochemistry, Pharmacology & Animal Nutrition)	
Analytical balance	Desiccators
Burettes, Pipettes of different volume	Haemagglutination plate
Calorimeter	Isolated organ bath
Centrifuge (1000 RPM)	Mortar and pastel (porcelain and glass)
Common Balance	Microhematocrit tubes As per need
Compound microscopes (with eye pieces and objectives etc. complete)	Measuring glasses, cylinders of various sizes
Distillation units	Spectrophotometer
Electophoresis apparatus	Sphigmo manometers (dial type)
Glass ware As per need	pH meter
Mono pan digital balance	Photometer
Muffle furnace	Samples of feeds & fodders
Soxhlet apparatus set	Hot air oven
Spatula (iron, plastic and ebonite)	Refrigerator
Student microscopes	Haemoglobinometer sets
test tubes	Water bath
Top pan balance	Haemocytometer sets
Volumetric flasks	
Animal Genetics and Breeding , Statistics & Computer Laboratory	
Charts of Breeds of different species in India and world	Charts and diagram of breeding systems, genetic experiments etc.
Set of 10 computers with internet facilities	UPS and printers as per need
Diagnostic Laboratory (Pathology, Microbiology & Parasitology)	
Autoclave	Deep-freeze (-20 c degree)
Autopsy knives	Desiccators
Glass-ware, cottons wool, syringe, media, sugars, etc. As per need	Specimens of different organs (pathological), parasites etc.

Binocular microscopes	Autopsy table
Plastic tubs & buckets with lid for specimen collection and transport	Hanging drop preparation slides with cover slips
Centrifuge	Hot air oven
Containers, specimen jars, wide-mouthed bottle As per need	Post-Mortem sets (with chisels, saw rib cutter, shears, bone cutter, saw, sharpener)
Incubator	Petri-dishes 3" and 4" As per need
Instrument sterilizers	CO2 Incubator
Knife sharpener	Platinum loops As per need
Microscope Phase contrast Microscope with high power (HP) Oil immersion	Perspex plates for HA, HI tests Post-mortem tables (trolleys) for small animals
Protective wears (gloves, rubber apron, goggles, gum-boots, masks & cap)	Specimen washing sinks (with hot & cold water)
Refrigerator	Spectrophotometer
Slide Boxes	Staining jars, coupling jars etc. As per need
Specimen bottles, jars etc.	Water bath
Specimen cutting table	Surgical instrument As per need
Specimen slides of various histo-pathological lesions.	Vernier callipers
Students microscopes (complete with eye pieces and objectives)	Washing and disinfecting facility, aerosols etc.
Contingencies/Consumables: **Chemicals and Reagents (quantity required as per need)**	
Acetone	Sodium Nitrite
Acriflavin	Liquid Paraffin
Alizarine	Sodium hydroxide
Ammonium chloride	Magnesium Sulphate
Boric Acid	Alcohol
Buffer solutions	Salicylic acid
Castor oil	Copper Sulphate
Conc. H2SO4	Sodium carbonate (AR)
Conc. HCI	Acetic acid
Diluted HCI	Methylene blue tablet
Ethyl Alcohol	Sodium hypo chloride solution
Ferric chloride solution	Sodium bicarbonate
Filter paper Whatman No. - 42	Rosalic acid solution
Zinc sulphate	Magnesium sulphate
Giemsa stain	Lead acetate
Iodine	Sodium Tri. Poly Phosphate

Iso-amyl alcohol (specific gravity 0.814 - 0.816)	Phenol solution Trichloroacetic acid solution (TCA) - 24 % (w/v)
pH paper strips	Iodine Crystal
Kaolin	Boric Acid
KOH	Copper sulphate
Leishman's stain	Sodium bicarbonate
NaCl	Glycerine
NaOH	Disodium p-nitro phenyl phosphate
Paraphenylene - diamine solution	Methyl Alcohol
Pectin	Phenyl
Phenolphthalein indicator	Magnesium Oxide
Plaster of Paris	Turpentine oil
Potassium Iodide	Sodium Nitrate
Zinc oxide	Iodoform, Sulphur
Red Iodide of Mercury	Sodium acetate
Resorcinol powder/flakes	Sodium Acid Phosphate
Sodium Iodide	Bismuth subnitrate
Standard sodium hydroxide solution	Potassium Permanganate
Wood charcoal	
Glass wares (required as per need)	
Test tubes (10, 15 ml)	Flask (50, 100, 200, 500 ml)
Beaker (100, 250, 500 ml)	Test tube stand
Glass slides	Glass pipette (2, 5, 10, 25 ml)
Measuring cylinders (50,100,200,500 ml)	Cover slips
Charts: Below mentioned charts should be provided in respective laboratories	
1. Cell structure	
2. Muscular system of all animals (cattle, sheep, goat, dog, cat, poultry etc.)	
3. Digestive system of all animals (cattle, sheep, goat, dog, cat, poultry etc.)	
4. Respiratory system of all animals (cattle, sheep, goat, dog, cat, poultry etc.)	
5. Urinary system of all animals (cattle, sheep, goat, dog, cat, poultry etc.)	
6. Urogenital system of all animals (cattle, sheep, goat, dog, cat, poultry etc.)	
7. Skeletal system of all animals (cattle, sheep, goat, dog, cat, poultry etc.)	
8. Vaccination calendar for different animals	
9. Various ecto-endo parasites	
10. Different breeds of each species	

Additional equipment/material required for practical training to students as per course curriculum may be added as per the need.

Annexure 1-B

Equipments, implements and related material for Instructional Farm:

• Equipments and Implements

Tractor and trolley	Maximum-Minimum Thermometer
Shearing and clipping equipment	Milk cans
Debeaking machine	Milking pales
Tattooing set, Ear tag applicator etc.	Milk measures
AI equipment (different species)	Models of Silo pit
Egg Candler	Branding set
Incubator (Hatchery)	Different registers for farm records
Brooder	Electric clipper
Milking Machine	Chaff cutter
Vernier Callipers	Micrometer Screw Gauge
Dairy models	Housing models
Lactometer	Ropes for different halters
Bull holder	Bull nose punch
Trocar and canula	Body brush
Metal/Plastic tags	Tag punch
Electric dehorner	Saw
Mouth gags	Buckets
Drencher	Clinical thermometer
Brooder guard	Grower battery
Layer battery	Chick feeder
Grower feeder	Layer feeder
Hanging feeder	Range feeder
Chick feeder/waterer	Grower drinker/waterer
Adult drinker/waterer	Earthen waterer
Water channel	Wing band
Leg band	Grinder and mixer
Automatic vaccinator syringe	Essential medicines and vaccines
Burdizo Castrator (for large and small ruminants)	Laminated Photographs of different breeds of cattle, buffalo, sheep, goat, horse, camel, poultry etc.

Any other material required for proper and smooth function of the farm and laboratory may be added.

Annexure 1-C

Equipments and related material for Veterinary Dispensary and Clinical & AI Laboratory:

- **Equipments:**

Probang	Sheath
AI equipments	Semen shippers
Artificial Vaginas	Travises
Autoclave	Straight atraumatic needles
Trocar & Cannula	All instruments of fetotomy
Binocular microscopes	Palpation tables
Burdizo castrator - For large and small animals	Vaginal speculum for small and large animals
Butter fly (For IV inj. in small animals)	Artificial Vagina
IV stands	Microscopes
Catheters	Assorted artery forceps
Cotton ropes	Hot air oven
Dehorner	Clinical thermometer (glass, digital)
Dental instruments for large and small animals	Different types of suture material (cotton, silk, stainless steel, catgut, vicryl etc.)
Digital pH meters	Ultra sonography machine (optional)
Disposable syringes	Phantom box
Distillation units	Stethoscopes with multiple ear-pieces
Drenching gun	Disposable sleeves
Dressing equipments	Animal transport trolley (optional)
Electro ejaculator	Storage tubes (cylinders)
Enameled trays	X-ray unit (optional)
Endotracheal tubes (cuffed and non-cuffed)	Muzzle for dog
Glass wares, As per need	Surgical instruments
Gloves and other plastic wares	AI box
Haemocytometers	Swab holders
Hoof pincer	Stainless steel saw
Hoof rasper	Seton needle
Hoof tester Curette	
Thumbs forceps	Vaginal clamps (large & small)
Incubator	Chisel and Hammer
Insemination catheters, As per need	Water bath
Instrument cabinets	Curved atraumatic needles
Instrument/syringe sterilizers	Biopsy instruments
Insulating bags	Water suction pump

IV sets Refrigerator	
Large animal trolley-cum-operation tables	Mayo scissors
Latex lining for assorted AV	Whelping set
Mouth gag for cattle and horse	Auto clave
Needle holder	Cheatal forceps
Needles (different sizes)	Obstetrical instruments
Operation table for small and large animals	Weighing instruments/scale
Operation tables for calves with drain	Straight traumatic needles
Orthopaedic instruments	B.P. blades & B.P. handles of different no.
Plaster saw Teat tumor extractor	
Plaster spreader	LN2 containers
Slides and Cover slips Rope, buckets, irrigators etc.	Hobbles Curved traumatic needles
Uterine catheters	Glass-ware, syringes, drugs, medicine, etc
Tattooing set	Vaccinator
Teat and udder instruments (optional)	Stomach tubes for ruminants
Teat bistuary	Rumenotomy set
Teat siphons	

- Medicines and Drugs:

  All routinely used medicines as per requirements should be available at veterinary dispensary.

One vial of each antibiotic
One vial of each anti-inflammatory
One vial of each steroid
One vial of each antipyretic
One bottle of each fluid therapy
Tablets/Bolus/Injection/Packet of each Dewormer
All types of herbal medicines
One vial of each haemostatic drug
All varieties of intra-mammary preparations
Different varieties of antiseptic creams and solutions
Vaccines: All available vaccines - Vaccines against FMD, HS, BQ, Theilera, Brucella, Anthrax etc. - Dog vaccines - Vaccines of Poultry

Annexure 1-D

Indicative list of reference books for library:

Sr. No.	Name of Book	Authors
1	Primary Veterinary Anatomy	R.K. Ghosh
2	Applied Anatomy of Domestic Animals	R.L. Bhardwaj, Rajesh Rajput, K.S.Roy
3	Handbook of Animal Husbandry	ICAR
4	Textbook of Animal Husbandry	G.C. Banerjee
5	Rearing of Cattle	Lal Mohan Mandal
6	Programme in Basics	Balgurusamy
7	Computer Primer	Rajaraman
8	Introduction to Animal Physiology	Jindal S.K.
9	Dukes Physiology of Domestic Animals	Swenson
10	Basics of Environmental Science & Engineering	Sivashanmugam, P
11	Fundamentals of Biostatistics	Khan & Khanun
12	Handbook of Biostatistics	Chandel
13	Textbook of Animal Breeding	Tomar S.S.
14	Extension Communication & Management	G.L. Ray
15	Animal Husbandry & Veterinary Extension	Peru Methialjn
16	English Guru Package	
17	Pathmala Vol 1 to 4.	
18	Animal Nutrition	G.C. Banerjee
19	Applied Nutrition	D.V. Reddy
20	Introductory Microbiology	Balchandar, D.
21	Practical Veterinary Microbiology	Panjaratihnam R.
22	Veterinary Bacteriology and Virology	Merchant & Packer
23	Objects and Short Questions in Veterinary Bacteriology & Mycology	B.S. Malik, C.S.Bakshi
24	General Veterinary Parasitology	P.C. Jain
25	Helminthes, Arthropods & Protozoa of Domestic Animals	Soulsby
26	Manual of general Veterinary Parasitology	Chaudhary S.S. & S.K. Gupta
27	Textbook of Veterinary Parasitology	Bhatia B.B.
28	Illustrated Special Veterinary Pathology	R.S. Chauhan
29	Special Veterinary Pathology	Thomason
30	A Textbook of Veterinary Systemic Pathology	Vegad
31	General Veterinary Parasitology	Brar R.S.
32	Helminthes, Arthropods & Protozoa of Domestic Animals	B.K. Roy
33	Manual of general Veterinary Parasitology	Garg Satish K.
34	Textbook of Veterinary Parasitology	V. Vaniprasad
35	Illustrated Special Veterinary Pathology	M. Pal
36	Special Veterinary Pathology	Mathialagan.P
37	A Textbook of Veterinary Systemic Pathology	Vegad.J.L.& A.K.katiyar

38	Veterinary Clinical Diagnosis by Laboratory Methods	Margaret.W et al
39	Veterinary Pharmacology & Toxicology	Ganti.A, Sastry
40	Veterinary toxicology	Rajeshwari, Y.B.
41	Veterinary Pharmacology & Toxicology	Rajeshwari, Y.B.
42	Zoonoses	Sharma, S.N.
43	Textbook of Animal Husbandry and livestock extension	Merck
44	A Textbook of Veterinary Special Pathology	Rahman, H.
45	Veterinary Clinical Parasitology	Dabas, Y.P.S
46	Veterinaty pathology	Squires E.J.
47	Handbook of rabbit production & management	Asdell.S.A.
48	Handbook on care & management of Laboratery & pet animals	Shuttleworth, A.C. & R.S. Smith
49	Textbook of Veterinary virology	Somvanshi
50	The Merck veterinary Manual	Zemjanis, R.
51	Veterinary Public health new trends	Sapre.V.A.
52	All About Dogs: A Book for Veterinarians and Dog Lovers	Nanda A.S.
53	Applied Animal Endocrinology	Anderson, James
54	Cattle Fertility And Sterility	Martin. S. & Wayna et al
55	Clinical Veterinary Surgery in 2 Vols.	Dabas
56	Current Advances In veterinary Science and Animal Production in india	Roberts, J.
57	Diagnostic and therapuetics in animal reproduction	Pandey, D.N.
58	A Handbook for veterinary physician	Douglas, S.W.
59	Recent advances in animal reproduction and gynaecology	Dollar
60	The semen of animals and its use for artificial insemination	Frank, E.R.
61	Veterinary epidemiology: Principles and methods	Shukla, M.
62	Veterinary Jurisprudence and post mortem	Sharma & Neelash
63	Veterinary obstetrics and genital diseases	Kumar, H.
64	Veterinary practioners pet lovers handbook for dogs & cats	Gangwar, A.K. & Navin kumar.
65	Veterinary Radiological Interpretation	Rajeshwari, Y.B.
66	Veterinary Surgery	Dollar
67	Applied Veterinary Andrology & Frozen semen Technology	Shukla, M.
68	Clinical Veterinary Medicine: Practical Manual Series	Sharma & Neelash
69	Common Reproductive Problems in Bovines & Canine	Kumar. H.
70	General Animal Surgery & Anaesthesiology: With Theory & Practical	Gangwar, A.K. & Navin Kumar
71	Handbook on care & management of Laboratory & pet animals	Rajeshwari, Y.B.
72	Veterinary Surgery	Frank, E.R.

Application form for Affiliation of Polytechnic in Animal Husbandry to Kamdhenu University, Gandhinagar

1.	**Details of Application Fee** (attach Demand Draft)				
(a)	Application fees	**Rs. 10,000/ (Rupees Ten Thousand only)**			
(b)	Application Date				
(c)	D.D./Cheque No		Date		
(d)	Name of Bank				
	Please issue Demand Draft in favour of "Kamdhenu University, Gandhinagar" payable at State Bank of India, Civil Supply Branch, Gandhinagar				
2.	**Details of Institution** (attach relevant attested documents)				
(a)	**Name of Institute** (Society/Trust/ Institution/Company)				
(b)	**Memorandum of Association and bye laws** (please attach copy)				
(c)	**Details of Registration**	Registered under:			
		Registration No:			
		Date of Registration:			
		Registration Certificate (attach copy): Yes / No			
(d)	**Postal Address of Institute** (Society/Trust/ Institution/Company)				
(e)	**Details of Managing Director/Managing Trustee**				
	Name				
	Address				
	Email		Contact No		
(f)	**Details of Board of Directors/Trustees** (use separate sheet if needed)				
	Sr. no	Name		Contact Details	
	1				
	2				
	3				
	4				
(g)	**Details of the other activities i.e. educational / training programmes being run by the Institution.** (please attach separate sheet, if required)				
	1				
	2				
	3				
	4				

3. Details of Financial Resources

(attach documentary evidences, affidavits and other relevant proofs of each)

(a)	Annual turnover			
	Present sources of income			
	Future sources of income			
(b)	PAN No.			
(c)	TAN No.			
(d)	Details of last three years Income and Tax paid (attach IT returns)			
	Sr. No	Year	Total Taxable Income	Tax Paid
	1			
	2			
	3			
(e)	Corpus Fund			
	1	FDR/Bank Deposits		Rs.
	2	Other Deposits		Rs.
	3	Other instruments of investment		Rs.
	4	Liquid fund (attached copy of Bank Passbook)		Rs.
	5	Statement of accounts		

4. Proposed Course for which affiliation is sought

☐ **Diploma in Animal Husbandry**

☐ **Other** (Specify) -

5. Full Postal Address of the proposed Polytechnic to be located with pin code

Pin		Contact No.	

6. Land and Buildings (attach copy of ownership rights of land and Title clear certificate of property and plan of buildings)

A.	a.	Name of Property			
	b.	Survey Number			
	c.	Total Area	Hector:	Acre:	sq m:
	d.	Status of ownership			

B. Buildings of Proposed Polytechnic (please attach Building Use permission)

Main Polytechnic Building

Principal's chamber No. ☐ Size ☐ sq m	Conference/Meeting Hall No. ☐ Size ☐ sq m	Administrative office No. ☐ Size ☐ sq m
Teaching staff room No. ☐ Size ☐ sq m	Non-teaching staff room Store room No. ☐ Size ☐ sq m	No. ☐ Size ☐ sq m
Lecture halls/Class rooms No. ☐ Size ☐ sq m	Multipurpose hall No. ☐ Size ☐ sq m	Library No. ☐ Size ☐ sq m

	Laboratories No. ☐ Size ☐ sq m	Computer room No. ☐ Size ☐ sq m	
	Amenities		
	Toilets No. ☐ Size ☐ sq m	Rest room No. ☐ Size ☐ sq m	Water room No. ☐ Size ☐ sq m

C. Hostels

a.	Category	No of rooms	No of Students per room	Total capacity	Address
	Boys hostel				
	Girls hostel				

b.	Hostel furniture	attach list
	Location	☐ within campus ☐ outside campus
	Ownership	☐ owned ☐ rented ☐ leased

D. Students amenities

a. Sport complex

i. Play ground area_____ sq m

ii. Outdoor sports facility:_____,_____,_____,_____,_____, _____,_____

iii. Indoor sports facility:_____,_____,_____,_____,_____, _____,_____

iv. Sports equipments: attach list

b. Student bus: ☐ Yes ☐ No If yes, Owned ☐ or Rented ☐

7. Management of the Polytechnic

A. Details about the Principal and teaching staff if appointed (attach documentary proofs of qualifications and experience for each staff, use extra sheet for detail information)

Sr.	Name	Designations	Qualifications	Experience			Pay scale
				Y	M	D	

B. Non-Teaching staff (use extra sheet if needed)

Sr.	Name	Designations	Qualifications	Experience			Pay scale
				Y	M	D	

8. Laboratory facilities (attach list of facilities for each laboratory)

Please attach list of all items give below

Furniture	Equipments	Chemicals or glassware
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Computers or printer	Net connectivity	
☐ Yes No	☐ Yes ☐ No	

9. Library facilities (attach list of facilities for library)

Please attach list of all items give below

No. of Text bookso	No. of Reference books	No. of Journals
No. of Other Books/ Reading Material	No. of CDs/DVDs	No. of Computers & Printers

10. Instructional farm facilities (give details plan of the buildings on a separate sheet also)

A. Buildings

Office cum Laboratory No. ☐ Size ☐ sq m	Cattle & Buffalo sheds No. ☐ Size ☐ sq m	Sheep & Goat sheds No. ☐ Size ☐ sq m
Horse & Camel sheds No. ☐ Size ☐ sq m	Poultry sheds No. ☐ Size ☐ sq m	Fodder godowns No. ☐ Size ☐ sq m
Silo pits No. ☐ Size ☐ sq m		

B.	**Livestock & Poultry** (give numbers of animals)			
	Cattle No. ☐	Buffalo No. ☐	Bullocks No. ☐	Sheep No. ☐
	Goat No. ☐	Horse No. ☐	Camel No. ☐	Poultry No. ☐
C.	**Fodder Production facilities**			
	Land available Yes ☐ No ☐ Total area ☐		Irrigation facility Yes ☐ No ☐	Fodder farm implements (attach list) Yes ☐ No ☐
D.	Equipments, Implements and related materiel for instructional farm		attach list	

11. Veterinary Dispensary (give details of the building and equipments on a separate sheet also)

A.	**Buildings**		
	Animal examination ward No. ☐ Size ☐ sq m	Operation theatre No. ☐ Size ☐ sq m	Recovery room No. ☐ Size ☐ sq m
	indoor patient No. ☐ Size ☐ sq m	clinical & AI laboratory No. ☐ Size ☐ sq m	
B.	Equipments, Implements and related clinic material for Veterinary	attach list of items vailable	

List of documents enclosed:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

DECLARATION

On behalf of the _____ (name of society / trust/ organization), I _____Son/daughter of _____ r/o _____do hereby declare that the particulars furnished above in the application for grant of affiliation of_____(name of the Polytechnic) to Kamdhenu University, are correct to the best of my knowledge and belief, and if any of the particulars furnished are found to be false or misleading I am liable to penalty and/or legal action by the Kamdhenu University. I also further declare that I shall abide by the conditions, rules and regulations of the University as amended from time to time for granting affiliation to establish and run this Polytechnic and maintain the academic standards as per the directives of the University.

Place……..... .....……..……

Date: ……..... Signature of the applicant

(Authorized Signatory with official seal)

Place…….....…… .....……

Date: ……..... Managing Director/Chairman/Trustee

(Authorized Signatory with official seal)

Note:

- The application, incomplete in any respect, will not be considered.
- The application not accompanied by the declaration and the undertaking as per format given on the following pages will not be considered.
- All correspondence shall be addressed to the Registrar, Kamdhenu University, Block-1, B-1 wing, 4th floor, Karmayogi Bhavan, Sector-10-A, Gandhinagar-382010, Gujarat.

UNDERTAKING

(To be submitted along with the application form on a non-judicial stamp paper of Rs.1000/- duly attested by first class executive magistrate)

I_____S/O_____ resident of_____ on behalf of (Institution name) registered office at_____ _____ _____ solemnly declare that:

1. I have applied for affiliation of institute (named below) for award of the Polytechnic in Animal Husbandry to the Kamdhenu University, Gandhinagar on the prescribed form along with prescribed fee.
2. Detailed infrastructure facilities etc. are given in Annexure 1 entitled on its page- Minimum Standards and Norms for Affiliation of Polytechnic in Animal Husbandry to Kamdhenu University consisting of total……pages, duly filled in on behalf of me.
3. On behalf of the Applicant Body, of which I am authorized representative, I have full knowledge of the norms of the Kamdhenu University, Gandhinagar.
4. On behalf of the Applicant Body, of which I am authorized representative, I am fully aware that the diploma programme, to which the Applicant Body, of which I am authorized representative, has applied, is governed by the norms of the Kamdhenu University, Gandhinagar.
5. On behalf of the Applicant Body, of which I am authorized representative, I declare that it shall be binding on the Applicant Body to fully, in letter and spirit, to follow the norms of affiliation to the Kamdhenu University, Gandhinagar, as laid down at present as well as in future.
6. On behalf of the Applicant Body, of which I am authorized representative, I declare that it shall be binding on the Applicant Body to fully, in letter and spirit, to abide by the guidelines/ advises/directives etc. provided by the Kamdhenu University including their authorities.
7. On behalf of the Applicant Body, I also assure that the directions in regard to Academic Programmes including examinations would be followed in *toto* as per the rules and regulations of Kamdhenu University amended from time to time.
8. On behalf of the Applicant Body, I will abide by all the Rules and Regulations of affiliation and instructions given by the University from time to time.

9. Details of management committee members along with verified address (by revenue officer) and their photographs are provided in Annexure 3.
10. I hereby declare that the said Polytechnic/Institute (which has applied for affiliation) shall abide all the rules and regulations, orders, instruction etc. issued by the University and also framed by in the future, failing which the University reserves the right to withdraw the affiliation.
11. The above information in Para 1 to 10 is correct to the best of my knowledge and nothing, herein, has been concealed.

Annexure enclosed with it:

a) Annexure 1: Prescribed application form duly filled and signed

YES/NO

b) Annexure 2: Detailed information's as required in the application form

YES/NO

c) Annexure 3: The details of management committee members along with verified address (by revenue office) and their photographs.

YES/NO

Place……. .....…….

Date: ……. Signature of the applicant

(Authorized Signatory with official seal)

Witness 1:	Witness 2:
Name:	Name:
Father's name:	Father's name:
Full Address:	Full Address:

COURSE SYLLABUS
FOR
DIPLOMA IN ANIMAL HUSBANDRY

KAMDHENU UNIVERSITY
GANDHINAGAR

SEMESTER WISE COURSE DISTRIBUTION

(Total duration Three years)

First Semester

Sr. no	Course No.	Title of the Course	Credit
1.	LAN-111	Introductory Livestock Anatomy	3+1=4
2.	APHY-111	Introductory Animal Physiology	3+1=4
3.	LPM-111	Introductory Animal Management-I	2+1=3
4.	ENG-111	English	2+1=3
5.	CA-111	Introduction to Computer Application	1+2=3
Total			**11+6=17**

Second Semester

Sr. no	Course No.	Title of the Course	Credit
1.	STAT-121	Elementary Statistics	2+1=3
2.	AN-121	Introductory Fodder Management and grassland Management	1+1=2
3.	AB-121	Introductory Animal Breeding	1+1=2
4.	LPM-121	Introductory Animal Management-II	2+1=3
5.	AHE-121	Introductory Animal Husbandry Extension-I	2+1=3
6.	ENVS-121	Introduction to Environmental Science	2+1=3
Total			**10+6=16**

Third Semester

Sr. no	Course No.	Title of the Course	Credit
1.	VMI-211	Introductory Veterinary Microbiology	2+1=3
2.	VPARA-211	Introductory Veterinary Parasitology	2+1=3
3.	VPA-211	Preliminary Pathology	2+1=3
4.	AHE-211	Introductory Animal Husbandry Extension-II	2+1=3
5.	AN-211	Introductory Animal Nutrition-I	1+1=2
Total			**9+5=14**

Fourth Semester

Sr. no	Course No.	Title of the Course	Credit
1.	AHEM-221	Introductory Animal Husbandry Economics and Marketing	2+0=2
2.	AN-222	Introductory Animal Nutrition-II	1+1=2
3.	VP-221	Introductory Pharmacology	3+2=5
4.	AR-221	Introductory Animal Reproductions-I	1+2=3
5.	AHC-221	Introductory Animal Health Care-I	2+2=4
Total			**9+7=16**

Fifth Semester

Sr. no	Course No.	Title of the Course	Credit
1.	AHC-312	Introductory Animal Health Care-II	2+2=4
2.	AR-312	Introductory Animal Reproductions-II	1+2=3
3.	VPH-311	Introductory Veterinary Public Health	2+2=4
4.	LPM-313	Introductory Animal Management-III	2+1=3
5.	VSUR-311	Minor Veterinary Surgery	2+1=3
Total			**9+8=17**

Sixth Semester

Farm Practice Training:

1. Two months of cattle and buffalo
2. One month of sheep and goat
3. One month poultry
4. One months and three weeks of government dispensary
5. Seven days Educational tour
6. Report Writing

Semester wise credits hours distributions:

Credit hour means the weekly unit of work reorganization for particular course as per the Syllabus. A theory lecture class of one hour per week shall be counted as one credit hour where as a practical class of two or three hours durations per week shall be counted as one credit hour.

	Semester	Theory	Practical	Total Credit Hours
First Year	I	11	6	17
	II	10	6	16
Total				**33**
Second Year	I	9	5	14
	II	9	7	16
Total				**30**
Third Year	I	9	8	17
	II	0	15	15
Total				**32**
Grand Total				**95**

DETAILED COURSE SYLLABUS

FIRST SEMESTER:

Course No. VAN-111: Introductory Veterinary Anatomy (Credit Hours: 3+1=4)

Theory:

Cell Structure, Tissue Structure, Study of bones - Glossary of osteology, Classification, work and identification of various bones of the body of cow, horse, dog, sheep, pig and poultry and comparison thereof. Study of joints and hinges of the body. Study of muscles and tendons of leg and neck. Study of skin and others e.g. epidermis, dermis, hypodermis, sweat glands of skin, horn, claws, chest nut etc. Digestive system - mouth, tonsils, pharynx, esophagus, ruminant and non-ruminant stomach, Small intestine, large intestine. Associated organs and digestive gland for digestion. Respiratory system- nostril, nasal cavity, sinus, pharynx, larynx, trachea, lungs, thorax, pleura. Circulatory system-heart, blood arteries, veins, portal circulation, foetal circulation, lymphatic system. Excretory system-Structure of kidney, ureter, bladder, urethra, working of kidneys, structure of nephrons, micturation etc. female genital system. male genital system - testis, scortum, epididymis, ductus deferens, penis, muscles, blood arteries, nerves related to genital system, accessory sex glands, secondary sex characters. Structure of udder.

Practical

Practical introductory study of following using charts, models and basis laboratory facilities:

Cell structure, tissue structure .gross study of bones-identification of various bones of the body of cow, horse, dog, sheep, pig, and poultry and comparison thereof. gross study of joints and hinges of the body. Study of muscles and tendons of legs and neck. study of skin and others e.g. epidermis ,dermis ,hypodermis, sweat glands of skin, horn, claws, chest nut etc. gross study of digestive system- mouth, tonsils, pharynx, esophagus, ruminant and non ruminant stomach, small intestine, large intestine. Associated organs and digestive gland for digestion. Respiratory system-nostril, nasal cavity, sinus, pharynx, larynx, trachea, lungs, thorax, pleura. Gross study of circulatory system- heart, blood arteries, veins, portal circulation, foetal circulation, lymphatic system. Excretion system- Structure of kidney, ureter, bladder, urethra, working of kidneys, structure of nephrons, micturation, etc. gross study of female genital system- ovary, uterine tube, uterus, vagina, vulva, blood arteries and nerves related to genital system.

Gross study of male genital system- testis, scrotum, epididymis, ductus deferens, penis, muscles, blood arteries, nerves related to genital system, accessory sex glands, secondary sex character. Gross study of structure of udder.

Course No. VPHY-111: Introductory Veterinary Physiology (Credit Hours: 3+1=4)

Theory:

General Physiology of muscles i.e. smooth, cardiac, voluntary striated muscle. General physiology of body fluids: Formation of blood cells, haemopoiesis, plasma, serum, blood PH, blood clot formation, various types of blood cells, lymph, cerebrospinal fluid, synovial fluid, serum, macrophages and immunity. General physiology of digestive system, prehension, mastication, swallowing, gastric movement ,physiology of small

and large intestine, digestion in ruminants and non-ruminants and their comparative study, various enzymes used during digestion, absorption of feed ingredients, metabolism of protein, carbohydrate and fat. Digestive glands e.g. salivary glands, gall bladder, pancreas and their functions. General physiology of respiratory system- mechanism of respiration, respiratory action, dead space, artificial respiration, exchange of gases etc. general physiology of circulatory system Cardiac cycle, system of heart, nervous control of blood flow, shock (blood volume and pressure,) Venus and lymphatic return, theory of vaccination and immunity in animals. General Physiology of urinary system physiology of kidney and nephron. General physiology of female genital system-puberty, oogenesis ovulation, formation of corpus luteum, estrous cycle, hormones of female reproduction system, pregnancy and parturition. General physiology of male reproductive system- Erection, ejaculation, hormones of male reproduction system, factors affection working of testis, sex determination, spermatogenesis, spermatozoa, working of accessory sex glands. General physiology of milk letdown- structure of udder, milk secretion, galactopoesis, letdown of milk, formation of colostrums, milk fat and milk protein, agalactia.

Practical

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.

Course No. LPM-111: Introductory Animal Management-1 (Credit Hours: 2+1=3)

Theory

Economic importance of animals and their products. Common terminologies and definitions used in animal husbandry practices of cows and buffaloes. Importance of cow-buffaloes. Their classification based on utility milk purpose, draft purpose. Cows and buffalo population, income and their importance in Gujarat and in India. Exotic cattle: milk, Beaf and dual purpose breeds. Animal husbandry practices followed by professional breeders, Farmers, Farm labours and city milk producers in India, Cow and buffalo breeds of Gujarat, their synonyms, native, rearing practices, physical and economical Characters, and breeding farms. Cows: Kankrej, Gir Dangi. Buffalo: Surti, Mehsani, Jaffarabadi, banni. Brief note on /knowledge about exotic and cross breed cow, their physical and economical characters and their importance in India. Jersey, Holstein Friesian, cross breed cows. Calf rearing, care of new bone of calf, method of calf rearing with their advantages and disadvantages. Feeding rearing and breeding management of heifers. Feeding care and management of pregnant, dry and milch animals. Management of dry cow- reason for drying of cow (not milking), various method of drying, Care and management of bullock. Identification and importance of different buildings-structures of dairy farm, study of housing of milch animals and calves. Clean milk production and its importance. Maintaining records of dairy farm. Cattle yard report, service book, classified service register, daily milk production register, monthly milk production register, history sheet, Birth and death register, Roll call register, livestock register concentrate feeding register, dairy Business of Gujarat and knowledge of arrangement of milk distribution in Gujarat.

Practical

Visit to a dairy farm and study of their daily routines. Identification of dairy farm utensils, utensils of milking and milk storage, milking machine chaff cutter, weighing machine etc. Body parts of cow, bull and importance of body parts. Compost making. Cleaning and disinfection of animal house. Daily routine operations of dairy farm. Care of cow and buffalo at calving. General information like handling of animals and their control-common restraints used in cow, bullock , bull and casting of these animals. use of nose ring and bull holder etc. Identification of animal by colours and marks. Determination of age by dentition of cow and buffalo. Weight determination of animal by girth and length. Method of identification animals by firing, numbering, tattooing, ear tagging, foot ring and number at foot etc. Normal temperature, pulse and respiration of animals. Castration of male calf and dehorning of calf.

Course No. ENG-111: English (Credit Hours: 2+1=3)

Theory

Grammatical Topics like- Parts of speech, sentence pattern, articles and determiners, tenses and auxiliaries, use of prepositions, transformation of sentences: (degree forms, voice, affirmative and negatives, use of too and enough, use though and although etc.,) direct and indirect speech.

Practical

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.

Course No. CA-111: Introduction to Computer application (Credit Hours: 2+1=3)

Theory

Computer- Definition, history, computer system, digital system, analog system. Block Diagram of Computer system. Functions and working of each part in block diagram. Types of Computers. Types, working and uses of various and output devices. Concept, meaning and differences of hardware and software . Operating system- DOS, WINDOWS. Directory, folder, importance of file. Data entry- text file, worksheet, entry and accounting in readymade software. Picture file, photographs (editing) and Printing, Importance and knowledge about anti-virus. Multimedia - song, music, recording, presentation etc.

Practical

Demonstration of Computer system. Demonstration and working of computer peripherals like monitor, key-board, mouse, floppy disks, CD drive, printer, etc. Uses of DOS commands. Uses of start menu, uses of

start menu, uses of paste, cut and copy of files. Preparation, editing and printing of simple text file. Preparation of work-sheet, formula and printing. Preparation of picture, photo file, editing with use of camera, scanner. Use of multimedia, net- work, e-mail, internet etc.

SECOND SEMESTER

Course No. STATE- 121: Elementary Statistics (Credit Hours: 2+1=3)

Theory

Basic concepts: variable, statistics, types and sources of data. Classification and tabulation of data, construction of frequency distribution tables. Graphical representation of data, simple, multiple, component and percentage bar diagram; pie diagram, histogram, frequency polygon and frequency curve. Average and measures of location: arithmetic mean, mode, median, geometric mean and harmonic mean for raw and grouped data. Dispersion: range, quartiles, standard deviation, variance, coefficient of variation and standard error of mean for raw and grouped data. Sampling: basic concepts, sampling vs. complete enumeration, parameter and statistic. Sampling methods: simple random sampling and stratified random sampling. Tests of significance: basic concepts. Test for equality of means: one sample and two (independent) sample; paired t-tests. Introduction to experimental designs (CRD and RBD).

Practical

Construction of frequency distribution table. Graphical representation of data: histogram, frequency polygon, frequency curve; bar chart-simple, multiple, component and percentage bar charts; pie chart. Mean median, mode and quadrille for raw and grouped data. Tests for equality of means: one sample and two (independent) sample; paired t-tests. Analysis of CRD and RBD.

Course No. AN-121: Introductory fodder management and Grassland management

(Credit Hours: 1+1=2)

Theory

Importance of fodder production in animal nutrition. Soil plant animal relationship classification of animal feed. Proximate composition of animal feeds. Agronomical practices for cultivation of leguminous roughages - Lucerne, Berseem, Cowpea, Cluster bean and sun flower. Agronomical practices for cultivation of cereal roughages (a) Maize and sorghum, Oats and pearl millet (rajkabajari). Pasture management, Silvi pasture, agro forestry and system of grazing. Agronomical practices for cultivation of grasses (a) Hybrid Napier and APPN Grass. Agronomical practices for cultivation of pasture grasses. (b) Marvel grass, Guinea grass, Para grass, Sudan grass, Dinanath, Dasarath and Anjan. Fodder trees-subabul, shevari, Borchi. Importance of unconventional feeds and fodder in livestock feeding. Preservation of forages-silage, hay making and haylage. Feeding of livestock during scarcity and management of cattle camps. Recycling of livestock waste including vermin compost, Bio gas. Preparation of cropping scheme/crop rotation for dairy fodder farm Agencies involved in seeds, fertilizers, animal feeds, pesticides.

Practical

Visit to a fodder farm. Familiarization with the various types of fodder. Agro climatic zone wise fodder crop rotation/fodder calendar. Preservation of fodders. Cost of fodder production. Familiarization with back yard fodder cropping of fodder, Silvi pasture and Agro forestry. Livestock waste utilization and recycling. Preparation of cropping scheme for dairy farm.

Course No. AB-121: Introductory Animal Breeding (Credit Hours: 1+1=2)

Theory

Breeding- Definition and importance. Variation, sources of variation, implications. Choosing traits for selection. Degrees of relationship. System of breeding, inbreeding: close breeding, line breeding, Out breeding: out, cross breeding, species hybridization, grading up. Livestock breeding strategies in Gujarat. Selection methods: performance testing, pedigree selection, progeny testing, fertility and breeding efficiency, Factors affecting and technique to improve. Embryo transfer technology. Preliminary ideas of heritability, repeatability, genetic and phenotypic correlation of different economic traits. Heterosis, definition, causes, importance.

Practical

Visit to a cattle breeding farm. Study the breeding records of farms. Analysis of breeding records of different livestock farms. Method of selection of dairy animals and breeding bulls. Identification of animal in oestrus. Practical aspects of theory syllabus and basic statistical principles and practice.

Course No. LPM-122: Introductory Animal Management-II (Credit Hours: 2+1=3)

Theory

Economic importance of sheep production in India and Gujarat. Different indigenous and exotic breeds of sheep. Care of lambs young stock, Weaning, Shearing. Selection of sheep for mutton and fibres. Judging of the quality and conformation of body parts. Sheep housing, routine health care, Deworming, Vaccination, Breeding schedule, care in pregnancy, lambing, lambs. Marketing of wool and mutton, their economics of production. Grading and marketing, impurities in wool. Factors influencing the quality of wool importance of goat production at national and state level. Goat production for profit livelihood. Different indigenous and exotic breed. Buck management, care of goat in pregnancy and kidding. Rearing of kids, Weaning, Fattening etc. Selection of goats for chevon and milk. Judging of the quality and conformation of body parts. Rearing sheep and goat together. Goats as leaders in grazing. Goat housing and marketing. Chevon and goat milk marketing and their economics of production.

Practical

Familiarization with livestock farm routines. Identification and selection of sheep and goat. Feeding of sheep and goat dipping, Spraying, Spotting sick animals. Examination for purities, Identification of impurities. Farm records and their maintenance. Detection of heat, mating. Care of pregnant animals, lambing, neonatal and young stock. Judging sheep for wool and mutton. Shearing and grading of wool and their bailing and storage. Layout plant for sheep/goat farm of different flock size. Determination of sepals length, crimps, diameters and strength of wool fibre. Visit to a wool analytic laboratory and woollen industries. Castration of kids, detection of vices of goat, Culling. Judging of goats for chevon and sheep for mutton. Marketing of chevon and live goats.

Course No. AHE-121: Introductory Animal Husbandry Extension-1

(Credit Hours: 2+1=3)

Theory

Extension, concept, principles, scope. Education : Formal, informal and non-formal. Formal educational Vs non-formal educations. Non-formal education Vs A.H. extension. Concept of extension. Needs for extension. Levels of extension. Philosophy of extension. Objectives of extension. Function of extension. Extension educational process. Teaching learning process. Criteria for effective extension teaching-learning. Principles of learning as applicable to extension. Principles of A.H. extension. Motivation in extension. Scope of A.H. extension. Rural sociology and psychology. Concept of rural sociology: family, social interaction, community, society, personality, leadership, value, social institution, social control, beliefs, social change. Dairying as an instruments of change in rural India. Communication process: concept: communication response, empathy, homophily, heterophily, fidelity, perception, communication system. Feed back. Management information system, communication methods, its classification, audio visual aids. Adoption and diffusion of innovations: concept, adoption, diffusion, innovation, attributes of innovation, stage of adoption, innovation Decision process, over adoption. Agricultural journalism, definition, principle of Agricultural journalism.

Practical

Visit to a village institution like village panchayat, village co-operative milk marketing society, identification of key communicator and working through functional leader. Study of functioning of village institutions. Social survey, its kinds and importance. Methods and tools of data collection in social research social sampling, its kind and importance. Methods and tools of data collection in social research. Preparation of leaflets, folders and pamphlets for A.H. extension use. Use and principles of overhead projector and preparation overhead transparencies. Use and principles of LCD projector and preparation PPT presentation. Organizing a vaccination camp, farmers meet, exhibition at village level. Report writing.

Course No. ENVS-121: Introduction to Environmental Sciences (Credit Hours: 2+1=3)

Theory

Environment: introduction, definition and importance. Components of environment interactions with organism. Animal ecology. Global and Indian environment -past and present status. Environmental pollution and pollutants. Air, water, food , soil, noise pollution sources. Causes and types. Smoke, acid rain, global warming, ozone hole, sewage and hazardous waste management. Impact of different pollutants on humans, plants, organisms and environment. Introduction to biological magnification of pollution technological and sociological measures and solutions- Indian and global efforts. India, international and voluntary agencies for environment conservation-mandates and activities. International conferences, conventions and summits- major achievements. Environmental policy and legislation in India. Introduction to environmental impact assessment. Causes of environmental degradation-socio-economic factors. Human population growth and lifestyle. Sources of water supply, contamination, and its prevention. Possibilities of recycling of farm surplus, waste etc.

Practical

Visit to a local areas-river /forest/grassland/catchments etc. Study of common plants, insects, birds and animals. Visit to a industries to study pollution abatement techniques. Demonstration of water purification plant, sewage disposal plans, carcass and fallen animal disposal methods. Visit to a recycling plants.

THIRD SEMSESTER

CourseNo.VMI-211: Introductory Veterinary Microbiology (Credit Hours: 2+1=3)

Theory

Microbiology of unicellular organisms and their classification. Microbiology and structure of bacteria, shape, size and arrangement of bacteria, microbiological variations and classification of bacteria. Important bacterial, viral and fungal disease of animal. Source of infections. Methods of transmission of infections. Sterilization, disinfection, evaluation of disinfectants and antiseptics. Aseptic handling of sterilization materials; disinfection of animals. Introduction, morphology, growth, nutrition, reproductive and classification of fungi. Classification, cultivation and replication of viruses.

Practical

Microscopy and routines, Staining (simple & Grams), Acid fast, Lactophenol cotton blue, Special staining : leishmenn, methylene blue staining. Glassware preparation. Sterilization, evaluation of disinfectants, asepsis etc. Preparation of reagents media, Demonstration: Equipment and sterilization disinfection, Cultural characters, Pathogenicity test and antibiogram, slide culture technique for fungus

Course no.VPARA-211: Introductory Veterinary Parasitology (Credit hours: 2+1=3)

Theory

Introduction of Parasitology, history, definitions. Importance of Parasitology in animal science curriculum. Parasites and parasitism. Type of parasitism. Classification of parasites. Important cestodes of livestock, their life cycle, mode of transmission and control measures. Important trematodes of livestock, their life cycle, mode of transmission and control measures. Important nematodes of livestock, their life cycle, mode of transmission and control measures. Important of protozoa of livestock, their life cycle, mode of transmission and control measures. Important insects, ticks and mites of livestock, their life cycle, mode of transmission and control measures.

Practical

Examination of the faecal samples for the trematode, cestode and nematode eggs. Demonstration of the life cycle and development of the type species of trematode, nematode, cestode, acanthocephalan. Demonstration of the type representative of various groups of insects, ticks and mites through charts, specimen, mounted slides etc. Demonstration of differential characters of insect and acarina (ticks and mites). Procedure for diagnosis of arthropoda infestation to hides and skin. Examination of the faecal materials for identification of intestinal protozoa, Coccidia, flagellates etc. Preparation of blood smears, their staining and examination of slides for haemoprotozan parasites. Methods of collection, fixation, preservation and mounting of protozoan parasites.

Course No. VPA-211: Preliminary Pathology (Credit hours: 2+1=3)

Theory

Introduction to scope of pathology. Common terminologies of pathology: Pathology, health, disease, etiology, predisposing, pathogenesis symptoms or 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. Local defence mechanism. Resistance to infection. Preliminary pathology of common diseases. Collection of various sample for laboratory diagnosis care in preservation and dispatch of sample. Preparation for post mortem. Post mortem examination. Procedure to be followed in collection of samples of specimen for laboratory examination.

Practical

Demonstration of post-mortem of livestock and poultry. Post mortem technique and collection of morbid materials. Technique of preservation, dispatch and section cutting. Record keeping of all kinds for pathology laboratory.

Course No. AHE-212: Introductory Animal husbandry Extension-II

(Credit Hours: 2+1=3)

Theory

Statistics of livestock & products of the state and nation. Organizational aspects of livestock farm, resource management, record keeping and accounting. Aspects of livestock farm, tools of management, function of management Entrepreneurship as an instrument of socio-economic transformation: Scope for a successful entrepreneur in livestock sector like, livestock feed manufacturing, dairy farming, livestock-poultry, dairy products manufacturing and marketing, farm equipment manufacturing and marketing etc. Knowledge of working and powers of officials of the department. Knowledge of various schemes and programmes of the department. Milk recording, herd registration, bull registration, owner registration, artificial insemination, follow up should be visualized. Animal production programme (Individual benefit scheme)-Cross breeding programme. Special poultry, swine, sheep, goat production. Information of departmental activities of animal husbandry, poultry and swine, sheep, goat production. Information of departmental activities of animal husbandry, poultry and swine husbandry. WTO and its implication on Indian dairy farming, Market, marketing, types of marketing. Functions of marketing. Channels of marketing of livestock products. Comparison of dairy farming on India with that of advanced countries of world. Integrated farming, need for integrated farming: factors determining types of integrated farming or factors to be considered for integrated types of farming, Physical condition: Topographic factors, climatic condition, pattern of rainfall, nature of water balance. Socio-economic conditions: Population pressure, pattern of land ownership, land inequalities, occupational structure. Technological advancement: Traditional pattern, modern pattern, level of mechanization, various systems of integrated farming: cash crop & vegetable crop integrated with dairy cattle. Cash crop & horticultural crop integrated with dairy cattle. Horticulture + rabbit farming +duck farming + wormi compost, goat farming, fish farming, bee keeping, cross bred dairy cow, buffalo and various other combination of integration and their economic viability & sustainability. Other income generating programmes.

Practical

Visit to a private, co-operative or public dairy enterprise. Study of economic aspects of a private, co-operative or public dairy or any livestock enterprise. Book keeping, to know about the book keeping and general entry. Visit to an integrated farming, units/village and collection of data (three different combinations

for three different practical) and to study the economic aspects of the same. To study about the trading account, profit and loss account and balance sheet. To visit cattle fair, livestock market, backyard unit and study their tools of management. Farm budgeting, its importance, object, methods and advantages. To estimate a project of 12 cross-breed cows. To estimate a project of 12 buffaloes. To estimate a project of 12 dairy cows. To estimate a project of 1000 layer birds

Course No. An-211: Introductory Animal Nutrition-I (Credit Hours: 1+1=2)

History of animal nutrition. Importance of nutrients in animal health and production Composition of animal body and plants. Biochemical bases of soil, plant and animals Nutritional terms and definitions. Nutrients and their metabolism. Role and requirements of water. Carbohydrates, their digestion, absorption and metabolism in ruminants. Proteins and amino acids, their digestion, absorption and metabolism in ruminants. Use of NPA compound for ruminants. Lipids and their utility. Mineral elements and their functions importance of macro and micro elements in livestock health and production. Importance of vitamins, their deficiency symptoms, requirements in feed. Feed additives in the ration of livestock. Antibiotics and hormonal compounds and other growth stimulants, probiotics: their use and abuses.

Practical

General precautions while working in Animal Nutrition Laboratory. Preparation of normal solutions. Preparation of standard solutions. History of proximate principles of feed preparation of common reagents and indicators. Preparation of samples for chemical analysis. General precautions while weighing feed fodder sample. Estimation of dry matter, ash, acid insoluble ash in feed sample. Familiarization of various feed and fodders.

FOURTH SEMESTER

Course No. AHEM-221: Introductory Animal Husbandry Economics and Marketing (Credit Hours: 2+0=2)

Theory

Nature and scope of economics, definition and concepts, divisions of economics, economic systems, approaches to the study of economics. Consumption-theory of consumer behaviour, laws of consumption, classification of goods. Wants-their characteristics and classification, utility and its measurement. Theory of demand, demand schedule and curve market demand. Price, income and cross elasticities, Engle's law of family expenditure-consumer's surplus. Theory of firm, factors of production- land and its characteristics-classification and capital formation. Enterprises-forms of business organization-merits and demerits. Lows of return - cost concepts. Law of supply - schedule and curve elasticity's. money & bank. Marketing:- Concepts of marketing, Needs of marketing. Marketing of perishable and non-perishable items. Types of marketing, functions of marketing, Defects of marketing, measure of improvement.

Course No. AN-222: Introductory Animal Nutrition-II (Credit Hours: 1+1=2)

Theory

Enzymes/ Metabolites. Vitamins. Hormones. Toxic plants and poisonous food stuffs. Economic status of animal feed. Feeding of diseased animal, Utility of trees as roughage, Study of non-conventional feed. Feeding

management of different animals like young ones, pregnant animals, dry/ lactating animals, breedable male, sick animals. Grazing farm management.

Practical

Preparation of concentrate, identification of roughage, crops, trees and cereals as animal feed. Calculation of nutritive values in terms of DCP, TDN, & MF for maintenance, growth & production. Formulation of ration for different livestock under different condition. Familiarization of various feed stuff, fodder and their selection. Proper methods of preparation of roughage, various methods of its preparation, visit to feed factory, dairy & poultry farms.

Course No. VP-221: Introductory Pharmacology (Credit Hours: 3+2=5)

Theory

Introduction to Pharmacology: Historical development, branches and scope of Pharmacology, Sources of drugs, Pharmacological terms and definitions. Principles of Drug Activity: Pharmacokinetics- absorption, biotransformation and excretion of drug; Local anaesthetics (analgesic); Neuromuscular blocking agents: Peripheral and central muscle relaxants. Drugs acting on digestive tract: stomachics, antacids, intestinal astringents, carminatives, antizymotics, emetics, anti-emetics, purgatives, choleraetics and cholagogues. Drugs acting on respiratory system: expectorants and anti-tissues, respiratory stimulants; bronchial dialators. Drugs acting on urinogenital system: diuretics, urinary alkalizers, acidifiers and antiseptics, fluid therapy ecbolics. Vitamins: only in relation to pharmacotherapeutic effects. Drugs acting on skin and mucous membrane. ANTIBACTERAL AGENTS: Classification, general principles in antibacterial chemotherapy, sulphonamides and their combination with trimethoprim; sulfones; nitrofurans. ANTIBIOTICS: Penicillins and cephalosporins, aminoglycosides, tetracyclines, chloramphenicol. Polyteptides etc.: antituerculosis agents; miscellaneous agents; methelamine, nalidixic acid etc. ANTIFUNGAL AGENTS: Topical and systemic agents including antifungal antibiotics. ANTHELMINTHICS: Drugs and against cestodes, trematodes, nematodes, drug tolerance, broad spectrum anthelminthics. ANTIPROTOZOAL AGENTS: Drugs used in trypanosomiasis, theilariasis, babesiasis, anaplamosis, malaia, coccidiossis, amoebiasis, giardiasis, trichomoniasis etc. ANTISEPTIC AND DISINFECTANTS: INDIGENOUS DRUGS: Source of alkaloids, glycosides, resins gums, tannins, fixed, and volatile oils; plant drugs with proven pharmacological and therapeutic efficacies in various animal and human ailments: popular indigenous drugs(antiseptics, antifungals, anthelminthics, arthropode repellants). GENERAL TOXICOLOGY; Definition scope of toxicology, Sources of poisoning, mode of action of poisons, Factors modifying the toxicity and Line of treatment of the poisoned cases.

Practical

Pharmacology : Fittings and apparatus, labeling, custody of poisons, weighing of drugs, pharmacy calculations, definition of pharmacological terms related to various systems, drug standards and regulations prescription writing; Pharmacy preparation: triple carb, antidiarrhoeal powder, dusting powder, iodine ointment with and without methyl salicylate: red iodide of mercury ointment, mistura alba, carminative mixture, ammonia liniment, turpentine liniment etc. Pharmacy Preparations: Potassium permanganate solution, lugol's iodine solution, trepan blue solution, gentian violet solution, tincture iodine benzoin co., boric acid ointment, zinc oxide ointment, ointment of salicylic acid with benzoic acid etc. Demonstration of toxic weeds and plants.

Course No. AR-221: Introductory Animal Reproduction-l (Credit Hours: 1+2=3)

Theory

Physiology of reproduction- Puberty, estrus cycle, sigh of heat, reproductive hormones, conception, gestation and parturition and their importance. Knowledge of instrument used during artificial insemination and their sanitization, Cryogenic jar and their maintenance, Artificial insemination- Collection, preservation and transportation of semen. Insemination by speculum/ per rectal route, use of frozen semen, details of insemination technique, preservation and usefulness of frozen semen. Precautions of handling of liquid nitrogen semen.

Practical

To get knowledge of reproductive organs. Live animal/reproductive organs. Obtained from slaughter house/ phantom box etc. per rectal examination reproductive organs. Artificial insemination- Thawing, preparation of A.I.gun, practice of artificial insemination. Study of semen quality. Study of morphology and motility of sperms. Maintenance of frozen semen, cryogenic jar and apparatus used in artificial insemination. Study of female genitalia; palpation technique. Heat detection in farm animal and companion animals.

Course No. AHC-221: Introductory Animal Health Care-I (Credit Hours: 2+2=4)

Theory

Sign of healthy and diseased animal-history, etiology, diagnosis, symptoms, treatment, death. General disease of different system of animals-disease of digestive system-stomatitis, pharyngitis, choke, simple indigestion, bloat, impaction of rumen, colic, constipation, enteritis, dysentery, traumatic recticulitis, traumatic pericarditis, intestinal obstruction, hepatitis, jaundice, liver cirrohosis etc. Disease of respiratory system- URL, epistaxis, pneumonia, drenching pneumonia, pleuricy bovine asthma etc. disease of urinary system-nephritis, urinary calculi, retention of urine, hematuria etc. Disease of reproductive system- mastitis, metritis, pyometra, dystocia, retention of placenta etc. Disease of nervous system- meningitis, encephalitis etc. Metabolic diseases- milk fever, downer cow syndrome, ketosis, hemoglobinurea, hypomagnaesmic tetany, vitaminosis-A, pica etc. Disease of skin, eye, ear and joints- dermatitis, eczema, scabies, conjunctivitis, otitis, rheumatism etc. Knowledge of instrument, use in laboratory or hospitals, methods of their sterilization. Definition of sepsis and asepsis. Suturing and treatment of wound, abscess. Sign and handling of simple fractures, sprain and dislocation, choke, prolapse of vagina, uterus and rectum. Assistance in anaesthesia and operation of animals. Suturing of skin and the instrument used thereof. Firing, tattooing, dehorning, docking.

Practical

Clinical Attendance, Administration of drugs, care and management of sick indoor and outdoor animal. Diagnose the disease by recording symptoms, temperature, pulse, respiration. Awareness and uses of surgical instrument. Sanitization/Sterilization of instrument used in hospital, first aid and bandaging of wounds etc. To prepare site for operation and to help veterinary doctor during operation. Demonstration of castration and other minor surgical procedures.

FIFTH SEMESTER

Course No. AHC-312: Introductory Animal Health Care-II (Credit Hours: 2+2=4)

Theory

Bacterial disease- anthrax, H.S., B.Q., Brucellosis, T.B., Actionmycosis, leptospirosis, salmonellosis, contagious, pleuropneumonia, calf pneumonia, tetsnus, entero toxaemin, bacillary haemoglobinura, nava ill, food rot. Viral diseases-R.P., F.M.D., Pox (cow pox, sheep pox, got pox, fowl pox etc.). Rabies, bovine malignan catarrh, mucosal disease complex, ephemeral fever, mycoplasma, African horse sickness, ranikhet, Marek's disease, pulloram disease, CRD. Fungal disease- Ring worm, Aflotoxicosis, Fungal mastitis. Parasitic disease- Protozoan diseases-Anaplasmosis, Theilariasis, Babesiosis, Surra, Leishmaniasis. Internal parasitic disease- Liver fluke, Amphistomiasis, Ascariasis, tapeworm. Parasites of digestive tract- schistosarcosis, coccidiosis. External parasitic disease- nasal granuloma, filarial, myiasis, mange, ticks, lice infestation. Toxicology- poison (types, effect, treatment etc.)-arsenic, lead, cyanide, nitrate, nitrite etc.

Practical

Identification of sick animals. Taking history of sick animals. Various methods for diagnosis of disease. Taking various specimen for diagnosis of various disease. Handling, preservation and transportation of samples for disease diagnosis. Clinical attendance. Methods of administration of drugs. Examination of fecal sample, examination of skin scraping, examination milk and milk tests, examination urine, preparation pus smear for laboratory diagnosis. Introduction to veterinary laboratory diagnosis.

Course No. AR-312: Introductory Animal reproduction-II (Credit Hours: 1+2=3)

Theory

Reproductive disease, anoestrus, sterility/ infertility, silent heat, repeat breeding and retention of placenta, pyometra, functional infertility, cystic ovary. Obstetrical problems and their management. Pregnancy diagnosis. Maintenance of artificial insemination and breeding records. Sexual health control and herd reproductive health programme. Parturition stages, care during and after parturition.

Practical

Approach to post operative care of animals operated too obstetrical cases/second. Endocrine control of reproduction in male domestic animal. Forms of male infertility. Factors affecting infertility in male. It diagnosis & primary treatment. Pregnancy diagnosis and differential diagnosis/second. Study of identification use various instruments & appliance/second. Artificial insemination - practice. Pregnancy diagnosis. Practical knowledge in case of retention of placenta, prolapse.

Course No. VPH-311: Introductory Veterinary Public Health (Credit Hours: 2+2=4)

Theory

Introduction: definition of veterinary public Health. Milk hygiene in relation to public health. Microbial flora of milk and milk products. Source of bacterial contamination of raw milk and method of control. Clean milk production: source of contamination during collection and transport and processing of milk and methods of

control. Hygiene control of dairy equipment and dairy products. Quality control of milk products. Milk hygiene practice in India and other countries. Milk borne diseases and methods of control. Definitions and objectives of zoonosis. Classification of zoonosis, Role of domesticated pets, various wild and cold blooded animals in transmission of zoonotic diseases. Mode of transmission of zoonotic diseases and Study of the important zoonotic diseases of the region . Methods of prevention, control and eradication of zoonotic disease. Socioeconomic condition and Human Health zoonosis.

Practical

Collection of milk samples for chemical and bacteriological examination. Grading of milk, on the basis of MBR test: preparation of sample for detection of antibiotic residues in milk and milk products. Preparation of sample for bacteriological examination of raw and pasteurized milk, product and water for processing plant viz. its S.P.C. coliform count, faecal streptococcal count, detection of adulteration and detection of preservatives in milk ; adulteration in ghee. Test of mastitic milk in relation to public health. Visit to primary health centres to study the common condition of rural population. Demonstration of water purification plant, sewage disposal system and carcass/fallen animal disposal methods.

Course No. LPM-311: Introductory Animal Management-III (Credit Hours: 2+1=3)

Theory

Economic importance of poultry, development of poultry industry in India, different breeds and varieties of chicken, ducks and turkeys; terms used in poultry science; how egg is formed - structure of eggs. Formation yolk, albumen and shell; selling of poultry and effect of culling on egg production, incubation of hatching of eggs, selection of hatching eggs, handling and care of hatching eggs, natural and artificial breeding, brooders. Season for breeding; different systems of housing of poultry; floor space requirements construction details of poultry houses and hatcheries, cost of construction, construction of budget poultry sheds for small, medium and large operators; layout plants for poultry farm of various sizes, poultry equipments: incubators, brooders, debeakers, trapnets, feeders and waterers etc. Care and management of chicks, pullets and cockerels, care and management of broilers and layers, feeds and feeding of broilers and layers, poultry farm records; commercial hatcheries and its role in poultry development; random, sample tests; preparation of poultry for show; poultry judging; disinfection of incubators, brooders, farm implement and poultry houses. Disposal of poultry wastes. Utility of poultry manure. Economy in poultry production- Cost of production of table and hatching eggs, broiler meat. Day-old-chick-Preparation of project reports for broiler, layers, hatchery. Cockrel and Japanese Quail farms. Role of avian farms in a mixed farm unit. Vaccination, deworming, detecting deficiencies and combating them etc.

Practical

Handing of poultry. External body part, identification of species, breeds and varieties of poultry. Reproductive and digestive systems of chicken, structure and a composition of eggs and meat, poultry judging, selection and selling of poultry, candling of eggs evaluation of quality, presence off blood and meat spots etc; measuring the strength of eggs, grading of eggs and management of incubators, sexing of chicks, brooding of chicks feeders, waterers, trap nests and poultry farm and hatchery equipments; different systems of housing and lay out plants for poultry farms of different sizes, feeds and feeding of broilers and layers, systems of feeding,

slaughter and dressing of poultry, different methods of preservation of eggs and meat; health care and management of chicks, ducklings and turkey care and management of broilers and layers during summer and winter. Record keeping of poultry farm (including accounts). Preparation of feasibility reports for small and medium poultry farms. Preparation of projects reports for the same. Model scheme for a large poultry farm.

Course No. VSUR-311: Minor Veterinary Surgery (Credit Hours: 2+1=3)

Theory

Introductions, history, classification and development of Veterinary Surgery. General Surgical principles, preoperative and post-operations. Importance of sutures, suturing materials and different knots asepsis-antisepsis, their application in Veterinary Surgery. Knowledge of instrument, used in laboratory or hospitals and materials used in surgery. Methods of their sterilization. Inflammation, abscess, tumours, cysts, haemorrhage, haematoma, necrosis, gangrene, burn and scald, surgical affections of muscles, etc. and their treatment, Wound: classification, symptoms-diagnosis and treatment; complications and their preventions. Surgical infections and their preventions and their management. Sign and handling of simple fracture, sprain and dislocation and other affections of joints. Different kinds of bandages, its application. Sign and handling of choke, prolapsed of vagina, uterus and rectum. Assistance in anaesthesia and operation of animals. Suturing of skin and the instrument used thereof. Firing, tattooing dehorning, castration with burdizzo castrator.

Practical

Introduction to the layout of operation theatre, common equipments, surgical instrument. Restraint, positioning, bandaging, catheterizations etc. Operations theatre routines. Preparation of surgical pack, sterilization. Familiarization with various suture materials, sutures. Tying surgical knots, double hand, single hand etc. tension sutures; bowel and uterine sutures. Demonstration of surgical operation-control of haemorrhage, suturing etc. Demonstration of live surgery or recorded operations. Firing, tattooing, dehorning, docking, castration with burdizzo castrator.

યુનિવર્સિટી ગીત

હો સર્વભૂતહિતે રતાઃ, જીવસૃષ્ટિ સકલ સમાહિતા,
હો કામધેનુ હી કલ્પદ્રુમ, કલ્યાણ શ્રેય સમર્પિતા. ॥૧॥

સબ ગાય કે ગોપાલ હો, પશુપતિ નહીં પશુગ્વાલ હો,
પાલન સંવર્ધન હો પ્રેમસે, વૃદ્ધિ બલ આરોગ્યતા. ॥૨॥

દહીં, દૂધ, મખ્ખન કી નદી, હો વિશ્વમેં અપની સદી,
કપિલા સમી ગીર ગાય હૈ, આંચલભરી અપરાજિતા. ॥૩॥

સાગર ભરા ભંડાર હૈ, જો રાષ્ટ્ર કા આધાર હૈ,
મછુઆર, મોતી, મત્સ્ય સબ, સૌભાગ્ય કી હૈ સંહિતા. ॥૪॥

સબ કર્મ મેં કૌશલ્ય હો, આલસ્ય કા ના શલ્ય હો,
ના મનોદીર્બલ્ય હો, ઔર જ્ઞાન કી હો સુલભતા. ॥૫॥

"सर्वभूतहिते रताः"

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