

Hand Book on
Academic Regulations-2016
For the Award of Diploma in
Veterinary Pharmacy / Livestock Extension



U.P. Pandit Deen Dayal Upadhyaya
Pashu Chikitsa Vigyan Vishwavidyalaya
Evam Go-Anusandhan Sansthan
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FOREWORD

The Livestock sector plays an important role in the agrarian economy of India. A large variety of livestock are available for draught power, milk, meat, eggs, wool etc and thus ensuring additional income to the livestock farmers. Further, livestock production in India is largely an output of small holders and more than 70 million rural households depend either directly or indirectly on livestock for their livelihoods. Improvement in livestock production is, therefore, an important pathway for increasing the income of marginal and small farmers and landless labourers, given the uncertainties of crop production.



The Veterinary Universities are the institutions of higher education which confer undergraduate, post graduate and Ph.D. degrees to students seeking to learn in the various subjects and disciplines of veterinary and animal science, but a large section of society, specially the small and marginal farmers and livestock owners may seek an intermediate level of education and practical training, which is exactly not the degree but almost adequate to enter into a profession of veterinarian or as a self employed livestock entrepreneur.

U. P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, Mathura takes pride being pioneer in initiation of Diploma programmes in Veterinary Pharmacy and Livestock Extension in the state of Uttar Pradesh. The Diploma programmes were started with the financial support under Rashtriya Krishi Vikas Yojna under the auspices of College of Veterinary science and Animal Husbandry in the year 2013. So far two batches have qualified for the diploma programme. All of them have been well received in the society and are serving the veterinary profession with their proven abilities.

Since the start of the programme, necessity of a handbook was felt which could spell the academic regulations in detail regarding the diploma courses. This handbook of academic regulations 2016 for the award of diploma in veterinary Pharmacy/Livestock Extension has come up as a useful tool. It incorporates all the rules and regulations on courses of study, academic

calendar, admission, enrollment and continuance of diploma students at the University, their mandatory attendance and residential requirements along with the minute details of the course curricula and syllabus etc. in one place. This will serve as an almanac for the students and teachers of the programme.

I congratulate Dr. Vikas Pathak, Chief Coordinator, Diploma Programme of this university, who has taken keen interest in preparation of these regulations, byelaws, course curricula etc. and getting them approved through the various academic bodies of the university and bringing out the same in this format. I have all the appreciation for the faculty and staff who have participated in successful bringing out of this manuscript.

I hope the publication will serve as a useful ready-reckoner for the Veterinary Diploma students, teachers and professionals.

K M L Pathak

(K.M.L. Pathak)

Vice-Chancellor

PREFECE

Veterinary education in India dates back to early 19th century. Since then various license, certificate, diploma and degree holders came out from various institutions located in different parts of the country to serve the cause of animal health and production. College of Veterinary Science and Animal Husbandry, Mathura came up as the first Veterinary College in Independent India to start with degree programme. This college has been awarding different degrees upto 1975 as a constituent college of Agra University, Agra; then Chandra Shekhar Azad University of Agriculture and Technology, Kanpur and from 2001 as the main constituent college of U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, Mathura-281001 (U.P.). Veterinary education has been strengthened over the period based on the recommendations of Dean's committee of Indian Council of Agricultural Research meetings and also Veterinary Council of India which came up with uniform course curriculum, code and conduct for practicing veterinarians in 1993. VCI has worked on assuring uniform veterinary education pattern in all the veterinary colleges of India.



In view of limited availability of qualified veterinary graduates, it is not possible for the government to make their services available in each and every village. Further veterinary doctors too require supportive staff to render technical services efficiently. Earlier there were no recognized qualifications recommended for such personnels to be appointed in the State Animal Husbandry Department. Therefore College of Veterinary Science and Animal Husbandry, Mathura started two years diploma courses in Veterinary Pharmacy and Livestock Extension from 2013 with the financial support from Government under Rashtriya Krishi Vikas Yojna, Government Of India.

I am happy to present this handbook compiled by Dr. Vikas Pathak, Chief Coordinator, Diploma Programme. The handbook of Academic Regulations-2016 for the award of Diploma in Veterinary Pharmacy and Diploma in Livestock Extension contains almost all the information required by a

candidate who is interested in pursuing the Diploma in Veterinary Pharmacy/Livestock Extension. I appreciate the sincere efforts put in by Dr. Vikas Pathak and his team in preparation of this handbook. I hope this will be useful to the students, parents and teachers.

Any suggestion for betterment and improvement of the contents and regulations are always welcome.

Satish K. Garg
Dean
C.V.Sc. & A.H.

From the desk of Chief Coordinator Diploma Programme

Mankind has been dependant on animals, largely for food and work since time immemorial. Even today, the farm animals besides serving to landless and marginal farmers as a major source of livelihood have entered into trade and industries as a big agribusiness. India occupies the prime position in the milk and egg production in the world. This has been possible due to serious and concerted efforts of livestock owners supported with the excellent veterinary services rendered to them. Advanced veterinary technologies, sera, vaccines and diagnostics which have come into the market are big life savers and health additives to our farm livestock and aid in increasing their productive and reproductive abilities. In order to administer these technical services to the animals from time to time, expert teams of vets and paravets are required. Advanced and specialized veterinary services are now available in some good hospitals and referral centers in and around cities and sub divisional towns but not in the villages which dwell more than 70 percent farm stocks. The pharmacists and livestock extension services are therefore an essential adjunct and asset to the veterinary professional services. The College of Veterinary Science & Animal Husbandry, Mathura, an eminent institute of India has taken a leap to train veterinary supportive staff who will be able to render primary veterinary services and first aid to suffering animals at farmer's door even in the far reaching areas including villages and thus save valuable animal lives. They can also assist in public health services and control of zoonosis, endemics and epidemics under the guidance of expert veterinary professionals. The two year diploma teaching and training programme was started at College of Veterinary Science & Animal Husbandry, Mathura in the year 2013. Since then the necessity was being felt to prepare a handbook which can give all details of qualification etc. for admission in the programme, mode of selection of candidates, enrollment, registration and continuance at the University, attendance requirement and the detailed break up of the study programme including examinations, declaration of results and award of Diploma. Detailed



syllabus given will serve as guideline to the students and teachers both, to focus their attention more accurately on study material.

This write up has been prepared with the basic need of its users in mind. I hope it will serve to vets and paravets both in planning and executing the whole programme of diploma in Veterinary Pharmacy/Livestock Extension.

I am thankful to all those who have helped me in the venture. I shall also be thankful to readers for their comments, if any for improvement of the text.

Vikas Pathak
Chief Coordinator
Diploma Programme

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Academic Regulations-2016

For the Award of Diploma in Veterinary Pharmacy / Livestock Extension

PART – I

PRELIMINARY

1. Short title and commencement: The Regulations for Diploma Programmes of U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan, Mathura for the award of the diploma in Veterinary Pharmacy/Livestock Extension may be called as “The Academic Regulations (Diploma) 2016” and shall come into force from the date of their approval by the Academic Council of the University.
2. Definitions: In the Diploma programme, regulations, unless the context otherwise require
 - i. “Academic Regulations (Diploma)” means the Academic Regulations of U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan, Mathura for the course of study in the University for the award of diploma for Veterinary Pharmacy/Livestock Extension.
 - ii. “Credit Hours” means the weekly unit of work recognized for any particular course as per the course curriculum of the University. A theory class of one hour per week shall be counted as one credit whereas, a practical class of two hours duration per week shall count as one credit hour.
 - iii. “Semester” means a period consisting of minimum 100 instructional days, excluding examination days and during a semester, a minimum of 16 lectures are required to be delivered for each credit hour of the course.
 - iv. “Syllabus” and ”curriculum” means the syllabus and curriculum for courses of study as specified by Academic Council of the U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, Mathura for the award of Diploma.

PART – II

COURSE OF STUDY

1. Description: Diploma courses for Veterinary Pharmacy/Livestock Extension shall comprise the courses for study consisting of the curriculum and syllabus provided in these regulations and spread over a minimum of two academic years, respectively.

2. Academic year and Semester Calendar:

The academic year shall ordinarily be from first week of August to July unless otherwise specified by the University Registrar. It shall be divided into two semesters of 100 days of teaching excluding examinations. The Academic calendar of each academic year shall be issued by Chief Co-ordinator, Diploma Programme before the onset of the Academic year.

PART – III

SELECTION AND ADMISSION

1. Admission to Diploma Courses

Admission to Diploma programmes shall be made through Pre-Diploma Test (PDT) or any other test specified by the academic council and/or counselling / interview, payment of prescribed fees and registration for I semester unless otherwise changed by the Academic Council. The academic year shall be from first week of August to July or specified by the University Registrar. No candidate shall be admitted to the Diploma course unless he/she has passed the entrance test (Pre-Diploma Test).

2. Selection of Students

- i. To be eligible for sitting in the competitive entrance examinations for seeking admission in Diploma programmes, candidate must have passed the 10+2 or intermediate from U.P. Board or equivalent with Physics, Chemistry, Biology including a practical test in each of these and English with 45% aggregate marks for General and OBC candidates and 35% aggregate marks for SC/ST candidates.

- ii. The selection of students to a diploma programmes shall be on merit of the candidate in entrance test (Pre-Diploma Test), however, it is essential that the candidates of Unreserved and other backward classes (OBCs) should have secured at least a minimum of 45%, while those belonging to SC and ST categories 35% marks in the PDT.

3. Reservation of Seats for Admission

The reservation policy of the Government of Uttar Pradesh and notified by university Registrar in prospectus issued shall be followed.

4. Time of Admission

Admission to diploma programmes shall be made at the commencement of the first semester of each academic year, unless otherwise changed by the Academic Council.

5. Counseling

Counselling of the diploma students shall be done on the specified date as mentioned in the prospectus of the year/notified by the University Registrar.

PART – IV

ENROLLMENT, REGISTRATION AND CONTINUANCE

1. Enrollment

Students freshly admitted to diploma programmes will be enrolled on the date of counselling as notified by the Registrar of the University.

2. Registration

Registration shall consist of the following steps:

- i. After getting the five registration cards signed from the concerned Instructor(s), the student shall deposit the university fees and other dues.
- ii. After depositing the fee, the student shall deposit the duly filled in and signed registration cards in the office of the Chief Co-ordinator, Diploma Programme on the same day.

NOTE: No registration will be allowed In Absentia.

3. Registration of Fresh Students

Registration of fresh student for the first semester of the diploma programme is a part of admission procedure and shall be done on the prescribed date as notified by the Registrar in the prospectus. Admission of new student failing to register in the prescribed manner on the assigned date is liable to be cancelled; however, Registrar of the University may allow the student for late registration up to six days only on the medical ground with late registration fee of Rs. 100 per day.

4. Registration of Continuing Students

Registration of the continuing students in subsequent semester(s) shall be on the date and time notified by Dean, College of Veterinary Science & Animal Husbandry/Chief Co-ordinator, Diploma Programme. However, Dean, College of Veterinary Science & Animal Husbandry can allow a continuing student for the late registration up to six days with a late registration fee at the rate of Rs. 50 per day. Students failing to register within 6 days shall not be allowed registration in that particular semester.

5. Suspension of Registration

The registration of any student may be suspended by the Dean, College of Veterinary Science & Animal Husbandry on the recommendation of the Chief Co-ordinator, Diploma Programme and/or disciplinary committee. A Student whose registration has been suspended as above will have to vacate the hostel and leave the campus if such a measure is deemed necessary by the University authorities in the interest of academic discipline and peace of the campus.

6. Cancellation of Registration

The Dean, College of Veterinary Science & Animal Husbandry may cancel the registration of any student or group/batch/classes of students who indulge in acts of indiscipline, misconduct, violation of the rules and regulations of the University, strikes, absence from class(es) without permission or without any valid reason or in cases the Dean, College of Veterinary Science & Animal Husbandry has reasons to believe that their continuance in the institution would not be in the interest of the University.

7. Dropping from the University-

Discontinuation of studies by any diploma student will be permissible only on justified grounds after the completion of first semester examination. The student may be allowed by Dean College of Veterinary Science & Animal Husbandry to seek re-admission in the subsequent year(s) subject to the condition that the total period of withdrawal shall not exceed two semesters in which he/she had withdrawn.

PART – V

ATTENDANCE REQUIREMENT

1. Record and Computation of class attendance

Each instructor shall maintain a record of the student's attendance in each course taught by him/her in each semester. Class attendance shall be sent to the Chief Coordinator in the first week of the ensuing month by the instructor and also be notified on the notice board. The percentage attendance of a student in a course in a semester shall be computed on the basis of the total number of lectures and practical classes attended by him/her and those actually scheduled between the date of commencement of instruction and the date of closing of instruction, irrespective of the date of his/her registration and/or the duration of leave duly granted to him/her.

2. Minimum class attendance

Each student shall be regular in attending classes and shall be required to have a minimum of 75% attendance, both in theory and practical separately, in each course in each semester with 10% relaxation by the Dean, College of Veterinary Science & Animal Husbandry on the recommendation of Chief Co-ordinator, Diploma Programme under the circumstances such as medical leave, emergency (casualty) etc. Vice chancellor may accord concession for fraction of one percent failing to minimum required attendance, failing which he/she will not be allowed to appear in the semester examination and he / she shall be declared failed in that subject. Such candidate will not be eligible for compartmental examination.

3. Benefit of Attendance

Regular teaching shall start from the next day after the scheduled date of registration and attendance will be counted from that day till seven days preceding the date of commencement of Semester Examination. The students who are required to abstain from the classes due to their participation in sports, athletics, NCC/NSS camp and other extra-curricular activities at inter-collegiate, Inter University, Inter State or National level shall be counted as present for the purpose of calculation of percentage of attendance on submission of certificate from Dean and DSW subject to maximum of 10 days in a semester.

Chief Coordinator, Diploma Programme shall notify the eligibility of students to appear in the examination seven days before the commencement of the semester examination and notice to this effect shall be displayed on the notice board of the college.

A student who has completed attendance requirement and fails to appear in the practical or theory examination or in both shall be treated as failed and will be eligible for compartmental examination.

PART – VI

RESIDENTIAL REQUIREMENTS FOR THE AWARD OF DIPLOMA

For the award of diploma, the minimum residential requirements and the maximum permissible time limit for the completion of diploma shall be as under:

Diploma	Minimum Semester	Maximum semester
DVP	4	8
DLE	4	8

The semester(s) washed out on account of withdrawal, dropping by the student of his/her own, failure to register in time, medical grounds, use of unfair means or dropped for any other reasons whatsoever described above, shall be counted towards the maximum permissible time limit of semesters.

NOTE: If the student fails to complete his/her programme successfully within the maximum time limit prescribed for the programme as above, he/she shall

no longer be a student of this University and diploma certificate will not be issued to such candidate.

PART – VII

PROGRAMME OF STUDY

The programme of study would be as notified by the Chief co-ordinator, Diploma Programme duly approved by the academic council.

PART – VIII

EXAMINATION AND PREPARATION OF RESULTS

1. The examination shall be to assess whether the student has been able to achieve a level of competence. For academic assessment, evaluation of practical aspects of the curriculum should receive much greater emphasis leading to separate examinations.
2. At the end of semester, there will be only internal examination. The theory examination will be conducted by the Controller of Examination (COE) and question paper for each course will be submitted by the course instructor through Chief Coordinator to COE at least 15 days before the commencement of examination.
3. The theory question paper in internal examination should be of 50% objective (40 min) and 50% subjective (80 min) and to be of two hours duration.
4. The evaluation will be made on percentage basis.
5. The practical examination will be conducted within one week of completion of theory examination.
6. The marks obtained in theory and practical examinations will be entered separately in the transcript of the students against each course.
7. Evaluation of answer sheets/books of semester examination: The answer sheet/books shall be evaluated by the internal examiners. The answer sheets shall be collected and sent to the Chief Coordinator on the same day. The internal examiner will evaluate the answer books and marked answer

books will be shown to the concerning student. The marks obtained in the theory and practical will be entered in the prescribed mark sheets and ensure that the result reaches to the Controller of Examinations within 5 days from the date of conduct of respective examination through Chief Coordinator, Diploma Programme.

8. Pass percentage

- i. Minimum marks to get through in a course is 40%, failing which the student has to appear only one time in compartment examination to be held within 15 days of declaration of result of semester. For this he/she has to submit an application along with compartment examination fees of Rs. 500.00 (Rs. Five hundred only) per course. A student can appear in compartment examinations for maximum of six courses in a year.
- ii. A student can repeat a maximum of 6 courses in a year. If a student fails to pass seven or more courses in I Year he/she will not be promoted to II Year and he/she has to repeat whole of the course curriculum for I year. If the student fails in six or less than six courses in a year he/she will be promoted to II year. In such course he/she will be allowed to repeat the courses (maximum of 6 credits hrs) in the subsequent semester along with the courses of the semester in which he/she has enrolled. However in any case student cannot take more than 23 credit hrs in a semester.
- iii. There will be no provision of any grace marks or re-totalling even if a student fails by any marks.

9. Marks allocation, grading, calculation of Grade Point Average and Overall Grade Point Average

- i. Each course will be of 100 marks. If the course consists of theory and practical portions then the distribution of theory and practical marks will be of 50 marks each. If the course contains only theory or only practical then it will carry 100 marks.
- ii. For passing a particular course the student has to obtain 40% marks in both the components separately.
- iii. Marks in decimals 0.5-0.99 will be rounded to next higher digit. Marks in decimals 0.01-0.49 will be ignored.

Grading and grade point average

- a. Grade Point (GP) in a course will be the total marks obtained by a student out of 100 divided by 10
- b. Credit Point (CP) in a course will be GP multiplied by the credit hours
- c. Total Credit Points= Sum of credit points secured
- d. Grade Point Average= Sum of the Total Credit Points earned divided by the sum of credit hours.

Calculation of overall grade point average

For calculation of OGPA, the following shall be the formula/procedure;

- a. The marks awarded in a course out of 100 will be divided by 10. The points so secured will be multiplied by number of credit hours of that particular course. The points earned will be zero if the marks obtained in either of components of course (Theory or Practical) are less than 40 percent.
- b. The OGPA will be equal to the points secured divided by credit hours
example a student secures 73 marks out of 100 in a three credit course (2+1/1+2/3+0/0+3) and 68 marks in 2 credit course, the OGPA will be calculated as follows.

$$73/10=7.3 \times 3=21.9$$

$$68/10=6.8 \times 2=13.6$$

$$\text{Total points secured}=21.9+13.6=35.5$$

$$\text{OGPA}=35.5/5=7.1$$

10. Division and Honours

- i. Pass : OGPA of 4.000 to 4.999
 - ii. Pass with second division: OGPA of 5.000 to 5.999
 - iii. First division: OGPA of 6.000-7.999
 - iv. First division with distinction: OGPA of 8.000 and above
- * Students holding first, second and third positions in various diploma programmes will be provided a merit certificate indicating the rank of the student.

11. Preparation of Results

- i. Tabulation of the results shall be done from the award list of the examiners by the office of the COE.
- ii. Tabulation work should be completed within five days from last date of the receipt of last award list from examiners.

12. Declaration of results

The office of COE will do the collation of the results and declare the semester results before the commencement of next semester.

13. Transcript/Mark sheet

All the marks obtained in theory and practical examination(s) will be entered in the computer and hard copy will be pasted on register(s) in the office of the COE separately and the semester mark sheet of the students will be prepared by the office of COE at the end of each semester. COE will issue the semester mark sheet to all the students with a copy of the same to Chief Co-ordinator, Diploma Programme while the Composite Academic Transcript will be issued on the completion of diploma programme with the latest photograph of the student pasted on transcript.

14. Re-totalling/Scrutiny/ Re-evaluation

- i. No re-totalling or scrutiny of marked answer books will be allowed.
- ii. No re-evaluation of marked answer books will be allowed.

15. Character Certificate

After the completion of diploma programme, Dean, College of Veterinary Science & Animal Husbandry will issue the character certificate to the concerned student on the recommendation of the Chief Co-ordinator, Diploma Programme.

16. Hostel Rules

Existing university hostel rules will be applicable to both boys & girls students residing in the University hostels.

PART – IX

CURRICULUM OF DIPLOMA PROGRAMMES

Diploma awarded by College of Veterinary Science and Animal Husbandry, DUVASU, Mathura are :

- a) Diploma in Veterinary Pharmacy
- b) Diploma in Livestock Extension

The prescribed syllabus/courses along with credit hours for each course shall be as under:

Course Curriculum

Semester wise Course Curriculum for Diploma in Veterinary Pharmacy

Course No.	Name of the course	Credit Hours
Semester I		
DVP-111	Anatomy of Livestock and Poultry	0+2
DVP-112	Introduction to Livestock Management	1+2
DVP-113	Introduction to Livestock Breeds and Economic traits	2+1
DVP-114	Basics of Animal Nutrition and Health	2+1
DVP-115	Basics of Animal Physiology	2+1
DVP-116	Elementary Microbiology	1+1
	Credit Hours	8+8
Semester II		
DVP-121	Fundamentals of Computer and its Application	0+2
DVP-122	Basics of Clinical Pathology	1+2
DVP-123	Elementary Parasitology	2+1
DVP-124	Fundamentals of Pharmacology	1+2
DVP-125	Introduction to Clinical Biochemistry	2+1
DVP-126	Introduction to Gynaecology and Obstetrics	2+1
	Credit Hours	8+9

Semester III

DVP-211	Basics of Clinical Veterinary Medicine	2+1
DVP-212	Introduction to Andrology and Artificial Insemination	2+1
DVP-213	Introduction to Animal Husbandry Extension	1+1
DVP-214	Preliminary Surgical Procedures and Care	1+2
DVP-215	Community Veterinary Pharmacy	2+1
DVP-216	Basic Concepts of Pharmacy and Toxicology	2+1
	Credit Hours	10+7

Semester IV – Hands on Trainings

DVP-221	Veterinary Pharmacist Jurisprudence	1+0
DVP-222	Practical Laboratory Diagnosis	0+3
DVP-223	Clinical Pharmacy	0+3
DVP-224	Veterinary Hospital Pharmacy	0+3
DVP-225	Farm Management Practices	0+3
DVP-226	Exposure to Polyclinics	0+3
	Credit Hours	1+15
	Total Credit Hours	27+39=66

Semester wise Course Curriculum for Diploma in Livestock Extension

Course No. Name of the course Credit Hours

Semester I

DLE-111	Introduction to Anatomy of Livestock and Poultry	0+2
DLE-112	Introductory Livestock Production and Management	1+2
DLE-113	Basic concept of Animal and Poultry Breeding	2+1
DLE-114	Introduction to Animal Nutrition	2+1
DLE-115	Basics of Animal Physiology	2+1
DLE-116	Basics of Livestock Microbiology	2+1
	Total Credit Hours	9+8

Semester II

DLE-121	Introduction to Computer and its Application	0+2
DLE-122	Introduction to Livestock Product and its Processing	1+2

DLE-123	Basics of Livestock Parasitology	2+1
DLE-124	Introductory Pharmacology	1+2
DLE-125	Fodder Production I	0+3
DLE -126	Poultry Production	0+3
	Total Credit Hours	4+13

Semester III

DLE -211	Basics of Livestock Medicine	2+1
DLE -212	Introductory Gynaecology and Obstetrics	2+1
DLE -213	Introduction to Animal Husbandry Extension Education	1+2
DLE -214	Elementary Surgical Procedures	1+2
DLE -215	Introduction to Reproductive Disorders of Livestock	1+1
DLE -216	Fodder Production II	0+3
	Total Credit Hours	7+10

Semester IV – Hands on Trainings

DLE -221	Extension Activities in Animal Husbandry including survey, data collection and analysis	0+2
DLE -222	Acquaintance to Veterinary Hospital	0+3
DLE -223	Practical Training in Clinical Practice	0+3
DLE -224	Acquaintance to Dairy Farm	0+3
DLE -225	Acquaintance to Poultry/ Goatry/Piggery / Stud Farm	0+3
	Total Credit Hours	0+14
	Gross Credit Hours	20+45

Course Curriculum (Syllabus) details for the Diploma in Veterinary Pharmacy

Semester I

Anatomy of Livestock and Poultry (DVP-111) (0+2)

Introduction to the structures of skeletal system, digestive system, respiratory system, uro - genital system, circulatory system and superficial lymph nodes, nervous system including the sense organs.

Introduction to Livestock Management (DVP-112) (1+2)

THEORY

Terminology related to Cattle, Buffalo, Sheep, Goat, Equine, Camel and pig management, their classification based on utility. Knowledge about exotic and cross bred cows. Care of animals during and after parturition, housing of animals, calf rearing, care of new born calf, routine management practices like grooming, washing, dipping, casting and shearing, exercising, castration, dehorning and debudding. Raising and feeding of farm animals. Signs of health in different animals. Care of sick animals. Milking management. Control of animal vices. Importance of poultry farming and backyard poultry in rural India. Elementary knowledge of incubation and hatchery management, Management of chicks, growers and layers. Poultry housing and feeding. Vaccination against livestock and poultry diseases.

PRACTICAL

External body parts of different animals. Methods of approaching and handling of animals. Milking farm animals. Methods of age judging, grooming, identification, debudding, drenching of animals, casting and restraining of farm animals. Feeding of dairy animals. Methods of recording temperature, pulse and respiration, Record keeping and routine farm operations like incubation and hatching, fumigation, candling, wing banding, leg banding, brooding of chicks; litter management, feed mixing cavitations, debeaking and record keeping. Bio-security measures to prevent the contagious diseases in poultry farming, compost making, cleaning and disinfection of animal house.

Introduction to Livestock Breeds and Economic Traits (DVP-113) (2+1)

THEORY

Introduction to various breeds of cattle, buffalo, sheep, goat, horse, camel, pigs and poultry. Concepts of their classification with economic characters. Various types of livestock records with their importance. Procedures and objectives of culling. Schemes of livestock improvement in country. Breeding – definition and importance. Variation, sources of variation, implication. System of breeding, in-breeding, close breeding, line breeding, out breeding and cross breeding.

PRACTICAL

Identification of breed characters. Maintenance of records including breeding records related to farm and dairy animals. Judging of animals. Procedures for the culling of livestock and poultry. Visit to cattle breeding farms. Analysis of breeding records of different livestock farms. Procedures for the culling of livestock and poultry. Methods of selection of dairy animals and breeding bulls.

Basics of Animal Nutrition and Health (DVP-114)

(2+1)

THEORY

Composition of animal body and Plants. Nutritional terms and definitions. Carbohydrates their digestion, absorption and metabolism in ruminants. Protein and amino acids, their digestion, absorption and metabolism in ruminants. Lipids and their importance. Importance of vitamins, their deficiency symptoms. Feed additives in ration of livestock, antibiotics, hormonal compounds and others growth stimulants. Probiotics, their uses and abuses. Mineral elements- their functions and deficiency symptoms. Toxic plants. Elementary description of nutrients and their requirements for maintenance, growth, reproduction, lactation, egg production, wool production and work production. General principles of feeding and common practices for different categories of livestock. Preparation, preservation and storage of hay and silage. Common feed and fodder, their classification and identification. Nutritional deficiency diseases and feeding schedules for farm animals, pets and poultry under stress/ diseases/ deficiency conditions.

PRACTICAL

Elementary knowledge of computation of ration for different types of livestock and poultry. Familiarization of various feed stuff, fodder and their selection. Silage and hay making. Elementary knowledge about common nutritional deficiency diseases

Basics of Animal Physiology (DVP-115)

(2+1)

THEORY

Elementary knowledge of physiological functions of various organs of livestock and poultry. Clinical relevance of physiological parameters. Functional anatomy of digestive tract of monogastric and ruminant animals, prehension, mastication, deglutition, movements of stomach, small intestine and large intestine. Rumination. Defecation. Physiological functions of various organs of animals and poultry. General function of blood, blood cells, plasma and serum. General physiology of urinary system, general physiology of male and female reproductive system, let down of milk.

PRACTICAL

Recording of various physiological parameters of domestic animals and

poultry. Estimation of haemoglobin. Counting of RBC, WBC and ESR in blood. Interpretation of physiological parameters. Collection of blood samples from various animals and poultry. Preservation of defibrinated blood. Counting of rumen mobility. Physiological constituents of urine - estimation of titrable acidity in urine.

Elementary Microbiology (DVP-116)

(1+1)

THEORY

Microscopy. Morphology and structure of bacteria, shape, size and arrangement of bacteria, morphological variations. Cultivation of bacteria, Isolation of bacteria in pure culture, cultural characteristics on solid medium, aerobic and anaerobic cultivation and identification of bacteria. Sources of infections. Methods of transmission of infections. Sterilization, disinfection, Introduction to fungi. General properties of virus, source of infection, methods of transmission of infection. Bacterial, fungal and viral diseases.

PRACTICAL

Microscopy and routines slide preparation and staining, Preparation and Sterilization of reagents and media. Cultural and morphological characteristics of bacteria and fungi, Sterilization, disinfection, evaluation of disinfectants, asepsis, etc., Equipment and its sterilization. Antibiotic sensitivity test. Sterility testing of pharmaceuticals.

Semester II

Fundamentals of Computer and its Application (DVP-121)

(0+2)

Basics of computer including components of a computer. Types of computers, Hard ware and soft ware. Types of memories, control units. Inputs and outputs. Execution of a Programme; data types, simple programmes, Use of computer in Epidemiology, use of computer in farm, use of computer in Veterinary Hospital. Graphics. Computer basics- key board, function keys, escape key, control key, shift key, underscore key, enter key, cursor, backspace, end, home, Pg up, Pg dn etc. Simple operations/ programmes. Saving of data. Entering biological data into computer. Access data, analysis using data base, Retrieving data for printing, print controls. Anova formulation, Basics of networking.

Basics of Clinical Pathology (DVP-122)

(1+2)

THEORY

Introduction to Pathology- definitions. Common terminologies of Pathology- health, disease, etiology, pathogenesis, symptoms, sign, lesions, diagnosis, incubation period, prognosis morbidity, mortality, autopsy and biopsy. Causes of diseases. Developmental disturbances, anomalies and monsters. Disturbances of circulation. Disturbances of cell metabolism,

necrosis, gangrene and post-mortem changes. Disturbances in growth. Inflammation: definition, etiology, classification and cardinal signs. Immune reactions, hypersensitivity and auto-immunity.

PRACTICAL

Gross study of pathological specimens and recognition of gross pathological lesions. Post-mortem techniques and collection of morbid materials, techniques of preservation and dispatch. Steps of post-mortem examination of dead animals. Post-mortem examination of large animals and small animals. Techniques of post-mortem examination of medico-legal cases. Diagnosis on the basis of post-mortem lesions. Blood collection; Smear making and staining; Basic microscopy. Complete blood count, Urine examination.

Elementary Parasitology (DVP-123)

(2+1)

THEORY

Introduction of Parasitology, Classification of parasitology, Types of parasites, Introduction of endo- and ecto-parasites. Economic importance of parasitic diseases of livestock and poultry; Prevention, control and treatment of diseases caused by protozoa, trematodes, cestodes, nematodes and arthropods in livestock; Parasites of zoonotic importance and their control. Important insects, Ticks and Mites of Livestock, their life cycle, mode of transmission and control measures.

PRACTICAL

Identification and Demonstration of endo- and ecto-parasites; Collection of samples, Preparation of slides from skin, faeces and blood. Faecal examination and demonstration of eggs/oocysts of parasites. Blood and skin scraping examination. Preparation of blood smears, their staining and examination of slides for haemoprotozoan parasites. Methods of collection, fixation, preservation and mounting of protozoan parasites.

Fundamentals of Pharmacology (DVP-124)

(1+2)

THEORY

Definitions of Pharmacology, Pharmacy, Chemotherapy, Therapeutics, Toxicology, Posology, Metrology etc. Sources and nature of drugs. Routine Pharmaceutical processes. Various dosage forms with suitable examples. Principles of compounding and dispensing of drugs preparations. Different methods of administration of drugs. Pharmacy- Weights and measures, Apothecary and metric system; Household measures; Prescription reading – parts of prescription and commonly used Latin abbreviations in prescription writing; Therapeutic classification of Indigenous formulations (country medicine), antiseptics and disinfectants in Veterinary Practice – Definition, examples and therapeutic uses in animals. Antibacterial, antifungal, anthelmintics, antiprotozoal agents their classification and uses.

PRACTICAL

Identification of common drugs. Labelling and storage of common drugs.
Compounding and dispensing of pharmacy preparations

Introduction to Clinical Biochemistry (DVP-125) (2+1)

THEORY

Biochemistry of carbohydrates, lipids and proteins and their classification, structure, function and properties. Metabolism in ruminants and non-ruminants. Biochemical processes in conditions of health and disease as respiration, renal function, stress, shock and digestive disorders. Diagnostic biochemistry- role of blood sugar, ketone bodies, blood urea nitrogen, uric acid in disease diagnosis and enzymes for detection of tissue affections/organ affections.

PRACTICAL

Preparation and standardization of acids and alkalis. Determination of pH, preparation of buffers, colorimetric and electrometric determination of pH, qualitative and quantitative tests and identification of carbohydrates, fat and proteins. Various tests to be conducted on clinical samples. Urine analysis, estimation of blood sugar, estimation of serum, total cholesterol, serum bilirubin determination, blood urea estimation, glucose tolerance test and any other relevant tests.

Introduction to Gynaecology and Obstetrics (DVP-126) (2+1)

THEORY

Structure and function of reproductive organs of livestock and poultry. Estrous cycles and reproductive patterns of domestic animals, signs of heat, gestation periods, signs of parturition in domestic animals. Principles and constraints of pregnancy diagnosis, assistance in obstetrical cases. Transport of materials from abortions. Nomenclature of gynaecological and obstetrical conditions. Introduction to infertility and its common causes in livestock. Artificial Insemination –collection, preservation and transport of semen.

PRACTICAL

Rectal palpation of reproductive organs and pregnancy diagnosis. Sterilization of glass wares/laboratory wares used in Intrauterine medication. Use of vaginoscope. Preparation of packs for obstetrical cases. Assistance to parturient animals. Care of new born.

Semester III

Basics of Clinical Veterinary Medicine (DVP-211) (2+1)

THEORY

Identification of diseased animals on the basis of gross physical examinations. Various methods of examinations and detection of

abnormalities including physiological parameters. Methods of injection of drugs, sera, vaccine etc. Use of canula, passing of stomach tube, probang, teat syphon and other instruments for treatment, General agents responsible for causing diseases-Bacteria, Viruses, Fungi and Parasites; systemic diseases, metabolic diseases and diseases of skin. General principles of prevention and control of diseases; Utilization and disposal of carcasses; Elementary clinical diagnostic methods, history and general examination.

PRACTICAL

Identification of sick animals, handling and transportation of samples for disease diagnosis; Cleaning of slides, glass wares and other laboratory equipments; Techniques of staining and preparation of blood smears ; Care and use of microscopes; Collection and processing of blood, urine, faeces, skin scraping and milk for examination. Collection, preservation, fixation and dispatch of morbid material for laboratory examination.

Introduction to Andrology and Artificial Insemination (DVP-212) (2+1)

THEORY

Growth, puberty, sexual maturity, libido. Factors affecting maturity and sex drive in bulls. Sexual behaviour in males. Forms of male infertility. General considerations. Factors affecting infertility in male, its treatment and diagnosis. Diseases, abnormalities and malformations of male genitalia, their diagnosis and treatment of coital injury and infections. Introduction, history, development, advantages and limitations of A.I. Methods of semen collection in various species; technique of A.I. Factors affecting quality and quantity of semen. Tests for evaluation of semen; extension of semen; preservation of semen at different temperatures, storage and shipment of semen. Semen metabolism. Biochemistry of semen.

PRACTICAL

Preparation of artificial vagina., collection of semen, evaluation, dilution, preservation techniques at different temperatures. Freezing of semen. Insemination techniques using liquid and frozen semen. Planning and organization of A.I. centre. Selection, care, training and maintenance of breeding bulls for A.I., recording systems. Care, sterilization, storage and upkeep of equipments used for artificial insemination.

Introduction to Animal Husbandry Extension (DVP-213) (1+1)

THEORY

Animal Husbandry Extension and rural welfare. Community development and rural sociology. Principle and objectives of veterinary and animal husbandry extension. Qualities of extension workers. Extension teaching methods. Extension programmes. Motivation in extension. Scope of animal husbandry extension. Dairying as an instrument of change in rural India. Communication process. Concept of communication response, empathy, homophily, heterophily, fidelity, perception, communication system.

PRACTICAL

Uses and principles of various audio visual equipments. Use of written literatures. Group discussion and methods of demonstrating various animal husbandry techniques to livestock owners. Need analysis and awareness campaign on different animal husbandry practices. Identification of key communicators. Methods of motivating individuals for various programmes. Principles and uses of LCD, projector and preparation PPT presentation. Organizing vaccination camps, farmers' meets, exhibition at village level. Report writing.

Preliminary Surgical Procedures and Care (DVP-214)

(1+2)

THEROY

Classification and development of veterinary surgery, general surgical principles. Pre-operative and Post-operative care and management, Importance of sutures and suturing material. Introduction to common terms used in surgery. Sterilization in surgical practice. Introduction to superficial surgical ailments (Abscess, Fistula, Sinus, Wounds, Gangrene Cyst Burn and Scald), Haematoma, Tumor, Hernia. Surgical affection of muscles and their treatment. Wound: classification; symptoms-diagnosis and treatment. Sign and handling of simples fracture, dislocation and other affections of joints, dental care, hoof management, First aid management of fracture, bloat, haemorrhage and post operative management. Application and use of various antiseptics, lotions, ointments and tinctures in surgical practice.

PRACTICAL

Identification of various surgical instruments. Physical restraint of animals for surgery. Preparation of pack for autoclaving and sterilization. Familiarization with various suture materials and sutures. Operation room discipline. Dressing of wounds and bandage. Burdizzo castration, Tattooing, Dehorning, Preparing animals for surgery. Application of counter irritants, heat, cold fomentation. Different kinds of bandages and their applications.

Community Veterinary Pharmacy (DVP-215)

(2+1)

THEORY

Definition and applications of epidemiology and preventive medicine. Ecological concepts of epidemiology. Disease process and its spread. Pattern of disease distribution in the community. Investigation of an epidemic. Etiology, epidemiology, pathogenesis, transmission, clinical findings, diagnosis, prevention, control and eradication of diseases of livestock and poultry. Zoonotic diseases and its importance. Regulations regulating handling, import and export of biomaterials. Environmental- introduction, definition, importance. Components of environment interaction with organism. Animal ecology. Global and Indian environment – past and present status. Environmental pollution and pollutants. Air, sewage and hazardous waste management. Impact of different pollutants on humans,

plants, organisms and environment. Source of water supply, contamination and its prevention.

PRACTICAL

Collection, preservation and dispatch of material (blood, urine, faeces, skin scrapings/biopsy, other body fluids etc.) for laboratory examination. Culture and sensitivity of isolates, demonstration/ identification of fungi and other pathogens. Screening of livestock through tests, mass diagnostic campaigns. Vaccination and other disease prevention and control programmes in the field. Demonstration of water purification plant, sewage disposal plants, carcass and fallen animal disposal methods.

Basic Concepts of Pharmacy and Toxicology (DVP-216)

(2+1)

THEORY

Introduction to pharmacy. Pharmacy: Fittings and apparatus, labelling, custody of poisons, weighing of drugs, compounding of preparation, meteorology: systems of weights and measures; Pharmacy calculations, pharmaceutical process, incompatibilities, sources and composition of drugs pharmaceutical preparations. Indigenous Drugs: Sources of alkaloids, glycosides, resins, gums, tannins, fixed and volatile oils; plant drugs with proven pharmacological and therapeutic efficacies in various livestock and poultry ailments; popular indigenous drugs (antiseptics, anti-fungals, anthelmintics, arthropod repellents). Definition and terminology of toxicology. Sources of poisoning, mode of action of poisons. Factors modifying the toxicity and line of treatment of the poisoned cases.

PRACTICAL

Pharmacy Preparations: Potassium permanganate solution, Lugol's iodine solution, trypan blue solution, Gentian violet solution, tincture iodine, tincture benzoin co., boric acid ointment, zinc oxide ointment, ointment of salicylic acid with benzoic acid, triple carb, ant-diarrheal powder, dusting powder, iodine ointment with and without methyl salicylate; red iodide of mercury ointment, mistura alba, carminative mixture, ammonia liniment, turpentine liniment etc. Demonstration of toxic weeds and plants; detection of arsenic, antimony, lead, mercury, nitrates and nitrites, fluoride etc. Detection of alkaloids, glycosides, tannins, resins etc. Demonstration of insecticidal toxicity and their treatment. Demonstration of drug toxicity.

Semester IV- Hands on Trainings

Veterinary Pharmacist Jurisprudence (DVP-221)

(1+0)

Origin and nature of pharmaceutical legislations in India, its scope and objectives. Evolution of the "Concept of Pharmacy" as an integral part of the Health care system. Principles and significance of professional ethics. Pharmacy Act, 1948. The Drugs and Cosmetic Act, 1940. The powers of Inspectors, the sampling procedures and the procedures and formalities in

obtaining licenses under the rule. Facilities to be provided for running a pharmacy effectively. General study of the schedules with special reference to schedules C,C1,F,G,J,H,P and X and salient features of labelling and storage conditions of drug. Poison Act 1919 (as amended to date). Provisions in the Indian Penal Code, 1860 (45 of 1860), relating to animals. Provincial and Central Acts relating to animals. Glanders and Farcy Act 1899 (13 of 1899), Dourine Act 1910 (5 of 1910), Prevention of Cruelty to Animals Act, 1960 (59 of 1960). Laws relating to offences affecting Public Health. Laws relating to poisons; Laws relating to adulteration of drugs. Livestock Importation Act. Evidence, Liability and Insurance.

Practical Laboratory Diagnosis (DVP-222) (0+3)

Collection, preservation and processing of the biological samples for diagnosis of animal diseases. Clinical examination of blood and urine of diseased animals and principles of interpretation of results. Importance of clinical pathology in confirmation of disease, and their value as legal evidence. Diseases that can be confirmed/ substantiated through haematological examination. Diseases that can be confirmed through urine and other body fluid examination. Analyzing and correlating with clinical findings and interpreting the results.

Clinical Pharmacy (DVP-223) (0+3)

Introduction to Clinical Pharmacy practices- definitions and scope. Drug interactions, Drugs in clinical toxicity, bioavailability of drugs. Pharmacy preparation and their application in the veterinary hospital. Common terminology used in veterinary practices. Prescription writing for country medicines.

Veterinary Hospital Pharmacy (DVP-224) (0+3)

Maintenance of various records of veterinary hospital. Preparation and compilation of various reports of hospitals. Data recording and analysis. Acquaintance to instruments and their management and utilization. Maintenance of various medicines, preparations and their uses. Drug distribution system. Animal housing and sanitation. Handling of sick animals; Medication; Post-operative management of surgical patients, Vaccination; Semen handling; Artificial insemination and Pregnancy diagnosis etc.

Farm Management Practices (DVP-225) (0+3)

Preparation and maintenance of dairy records. Routine work of dairy farms and keeping of records. Preparation and compilation of various reports and performa.

Exposure to Poly Clinics (DVP-226) (0+3)

Recording of temperature, pulse and respiration. Methods of drug administration. Practice of compounding and dispensing various drugs. Use

of trocar and canula, stomach tube and probang. Intra-mammary infusions. Dressing of wounds. Preparation of commonly used ointments, tinctures, lotions/solutions etc. Acquaintance with various gynaecological and surgical instruments with their uses: Sterilization of instruments etc.: Demonstration of gynaecological and surgical problems; Preparation and handling of surgical pack; Introduction to X-ray procedure; Collection of clinical material for laboratory examination; Burdizzo castration of calf, sheep and goat.

Course Curriculum (Syllabus) details for the Diploma in Livestock Extension

Semester I

Introduction to Anatomy of Livestock and Poultry (DLE-111) (0+2)

Introduction to skeletal system, digestive system, respiratory system, urogenital system, circulatory system and superficial lymph nodes, nervous system including sense organs.

Introductory Livestock Production and Management (DLE-112) (1+2)

THEORY

Terminology related to Cattle, Buffalo, Sheep, Goat, Equine, Camel and Swine management. Their classification based on utility, knowledge about exotic and cross breeds cow, Care of animals during and after parturition, housing of animals, calf rearing, care of new born calf, Routine management practices like grooming, washing, dipping, casting and shearing, exercising, castration, dehorning and debudding. Raising and feeding of farm animals. Signs of health in different animals. Care of sick animals. Milking management. Control of animal vices. Importance of poultry farming and backyard poultry in rural India. Elementary knowledge of incubation and hatchery management, Management of chicks, growers and layers. Poultry housing and feeding. Vaccination against livestock and poultry diseases.

PRACTICAL

External body parts of different animals. Methods of approaching and handling animals. Milking farm animals. Methods of ageing, grooming, identification, debudding, drenching of animals, casting and restraining of farm animals. Feeding of dairy animals. Methods of recording temperature, pulse and respiration, Record keeping and Routine farm operations like

incubation and hatching, fumigation, candling, wing banding, leg banding, brooding of chicks, litter management and record keeping. Bio-security measures to prevent the contagious diseases in poultry farming, compost making, cleaning and disinfection of animal house.

Basic Concept of Animal and Poultry Breeding (DLE-113)

(2+1)

THEORY

Breeding–definition and importance. Variation, sources of variation, implication. Concepts of animal breeding and its techniques for optimum production. System of breeding, inbreeding, close breeding, line breeding, out breeding and cross breeding. Genetic structure of population. Classification of breeds with economic characters of breeds with economic characters of livestock and poultry. Various types of livestock and poultry records with their importance. Procedures and objectives of culling. Schemes of livestock improvement in the country.

PRACTICAL

Visit to a cattle breeding farm. Study of breeding records at farm. Analysis of breeding records of different livestock farms. Maintenance of records in livestock and poultry. Judging of animals. Procedures for culling of livestock and poultry. Method of selection of dairy animals and breeding bulls.

Introduction to Animal Nutrition (DLE-114)

(2+1)

THEORY

Composition of animal body and plants, Nutritional terms and definitions. Carbohydrates their digestion, absorption and metabolism in ruminants, Proteins and amino acids- their digestion absorption and metabolism in ruminants, Lipids and their utility. Importance of vitamins, their deficiency symptoms, feed additives in ration of livestock, antibiotics and hormonal compounds and others growth stimulants. Probiotics their use and abuse. Mineral elements and their function and deficiency symptoms. Toxic plants. Elementary description of nutrients and their requirements for maintenance, growth, reproduction, lactation, egg and wool production and work performance. General principles of feeding and common practices of feeding for different categories of livestock. Preparation, preservation and storage of hay and silage. Common feed and fodder, their classification and identification. Feeding of farm animals, pets and poultry under stress/ diseases/ deficiency conditions.

PRACTICAL

Elementary knowledge of computation of ration for different types of livestock and poultry. Familiarization of various feed stuff, fodder and their selection. Silage and hay making. Preparation of concentrate, identification of roughages, crops, trees, cereals as animal feed. Visit to feed factory, dairy and poultry farms,

Basics of Animal Physiology (DLE-115) (2+1)

THEORY

Elementary knowledge of physiological functions of various organs of livestock and poultry. Clinical relevance of physiological parameters. Functional anatomy of digestive tract of monogastric and ruminant animals, prehension, mastication, deglutition, movements of stomach, small intestine and large intestine. Rumination. Defecation. Physiological functions of various organs of animals and poultry. General function of blood, blood cells, plasma and serum. General physiology of urinary system, general physiology of male and female reproductive system, letdown of milk.

PRACTICAL

Recording of various physiological parameters of livestock and poultry. Collection of blood samples from various species of animals and bird(s). Preservation of blood. Haematology. Counting of rumen motility. Physiological constituents of urine. Estimation of titrable acidity in urine. Estimation of haemoglobin. Counting of RBC and WBC in blood.

Basics of Livestock Microbiology (DLE-116) (2+1)

THEORY

Microbiology of unicellular organisms and their classification. Microscopy. Morphology and structure of bacteria. Cultivation of bacteria, Isolation of bacteria in pure culture, cultural characteristics on solid medium, aerobic and anaerobic cultivation and identification of bacteria. Distribution of bacteria and other microbes. Sources of infections. Methods of transmission of infections. Sterilization, Disinfection, Introduction to fungi. General properties of virus, source of infection, methods of transmission of infection, bacterial, fungal and viral disease.

PRACTICAL

Microscopy and routine slide preparation and staining, Equipments and Sterilization, Disinfection, Evaluation of disinfectants, Asepsis, etc. Preparation of reagents media, sterilization and cultural characters of bacteria and fungi.

Semester II

Introduction to Computer and its Application (DLE-121) (0+2)

What is a computer? Components of a computer (anatomy of a P.C.). Types of computers. Types of memories, control unit. Inputs and outputs. Execution of a Programme; data types, simple programmes, use of computer in farm; use of computer in Veterinary Hospital. Computer basics; key board, function keys, escape key, control key, shift key, underscore key, enter key, cursor, back space, end, home, Pg up, Pg down etc. Simple operations/

programmes. Saving your data. Entering biological data into computer. Access data, analysis using data base, retrieving data for printing, print controls.

Introduction to Livestock Products and its Processing (DLE-122) (1+2)

THEORY

Handling, storage, distribution and preservation of meat, poultry, eggs, wool, skin and hide. Milk definition and its composition; Factors affecting composition and quality of milk; Elementary knowledge about nutritive value of meat, milk and eggs. Source of bacterial contamination of milk and clean milk production. Milk collection. Legal standards of milk. Packaging and distribution of milk.

PRACTICAL

Candling and grading of eggs. Samples collection of meat, milk and eggs. platform tests for milk; pH estimation by indicator paper; Estimation of specific gravity, total milk solids (TS) and solids not fat (SNF) in milk; Determination of adulterants and preservations in milk. Visits to dairy, milk plants, leather and meat industry

Basics of Livestock Parasitology (DLE-123) (2+1)

THEORY

Introduction of parasitology in animal science. Classification of parasites. Types of parasitism. Economic importance of parasitic diseases of livestock. Introduction of endo- and ecto-parasites; Prevention, control and treatment of diseases caused by protozoa, trematodes, cestodes, nematodes and arthropods in livestock; Parasites of zoonotic importance. Important insects, ticks and mites of livestock, their life cycle, mode of transmission and control measures,

PRACTICAL

Demonstration of endo- and ecto-parasites; Faecal examination and demonstration of eggs/oocysts of parasites. Blood and skin scrapings examination. Preparation of blood smears, their staining and examination of slides for haemoprotozoan parasites. Methods of collection, fixation, preservation and mounting of protozoan parasites.

Introductory Pharmacology (DLE-124) (1+2)

THEORY

Definitions of terms Pharmacology, Pharmacy, Chemotherapy, Therapeutics and Toxicology. Methods and formulation of drug delivery and measurements, Sources and nature of drugs. Routine Pharmaceutical processes. Various dosage forms with suitable examples; Principles of compounding and dispensing of drugs preparations; Different methods for administration of drugs; Pharmacy weights and measures and metric system; Household measures; Prescription reading – parts of prescription

and commonly used Latin abbreviations in prescription writing; Therapeutic classification of Indigenous formulations (country medicine), antiseptics and disinfectants in Veterinary Practice – Definition, examples and therapeutic uses in animals. Antibacterial, antifungal, anthelmintics, antiprotozoal agents their classification and uses.

PRACTICAL

Identification of common drugs. Labelling and storage of common drugs. Compounding and dispensing of pharmacy preparations.

Fodder Production I (DLE-125) (0+3)

Introduction to fodder production. Importance and management of grasslands and fodders in livestock production; agronomical practices for production of common cereal and leguminous fodders. Familiarization of production of common fodder crops including pastures and knowledge about common seasonal grasses. Importance of unconventional feeds and fodder in livestock. Preservation of forage – silage, hay making and haylage. Feeding of livestock during scarcity and management of cattle camps. Methodology of founder/ breeder/ certified seed production of fodder crops. Fodder production round the year. Green manure preparation, FYM and Nadep production procedures. Recycling of livestock waste including vermicompost, biogas.

Poultry Production (DLE-126) (0+3)

Introduction to poultry breeds. Management of poultry its diseases and their control. Poultry feeds and feedings. Backyard poultry production.

Semester III

Basics of Livestock Medicine (DLE-211) (2+1)

THEORY

Identification of diseased animals on the basis of gross and possible physical examinations. Various methods of examinations and detection of abnormalities including physiological parameters. Methods of administration of drugs, sera, vaccine etc. Use of canula, passing stomach tube, probang, teat syphon and other instruments for treatment. Introduction to various diseases caused by Bacteria, Viruses, Fungi and Parasites. Systemic diseases, metabolic diseases and diseases of skin. General methods for prevention and control of diseases. Utilization and disposal of carcasses; Basic clinical diagnostic methods, history recording and general examination.

PRACTICAL

Identification of sick animals, handling and transportation of samples for

disease diagnosis, Cleaning of slides, glass wares and other laboratory equipments. Techniques of staining and preparation of blood smears, skin scrapping, milk examination. Care and uses of microscopes. Collection and processing of blood, urine and faeces for examination. Collection, preservation, fixation and dispatch of morbid material for laboratory examination. Recording and interpretation of various physiological parameters of domestic animals and poultry

Introductory Gynaecology and Obstetrics (DLE-212)

(2+1)

THEORY

Structure and function of reproductive organs of cow, horse, dog, pig and poultry; Estrous cycles of domestic animals; Signs of heat in domestic animals; Gestation periods in domestic animals; Symptoms of parturition in cattle, buffaloes, sheep, goat and pigs; Advantage and limitations of the technique of Artificial Insemination. Artificial insemination–collection, preservation and transport of semen. Principles and constraints of Pregnancy Diagnosis.

PRACTICAL

Rectal palpation of reproductive organs and pregnancy diagnosis using phantom boxes and hands on experiences. Training of bulls; Preparation of artificial vagina for semen collection; Semen collection and evaluation ; Preparation of diluters and extension of semen ; Demonstration of semen freezing techniques; Artificial Insemination using liquid and frozen semen; Sterilization of glass wares/laboratory wares used in A. I. work.

Introduction to Animal Husbandry Extension Education (DLE-213)

(1+2)

THEORY

Extension and rural welfare; Community development and rural sociology; Principals and objectives of veterinary and animal husbandry extension; Qualities of extension worker; Extension teaching methods; Extension programmes. Duties of livestock extension officer as extension worker. Dairying as an instrument of change in rural India. Communication process; concept of communication response, empathy, homophily, heterophily, fidelity, perception, communication system.

PRACTICAL

Use and principles of various audio visual equipments. Use of written literatures. Group discussion and method of demonstrating various animal husbandry techniques to livestock owners. Need analysis and awareness campaign on different animal husbandry practices. Identification of key communicators. Methods of motivating individuals for various programmes. Use and principles of LCD, projector and preparation of power point presentations. Organizing of vaccination camps, farmers' meets, exhibition at village level. Report writing.

Elementary Surgical Procedures (DLE-214) (1+2)

THEROY

Classification and development of veterinary surgery; general surgical principles, Pre-operative and Post-operative care and management; Importance of sutures and suturing material Introduction to common terms used in Surgery. Sterilization in surgical practice. Introduction to superficial surgical ailments (Abscess, Fistula, Sinus, Wounds, Gangrene Cyst Burn and Scald) , Haematoma, Tumour, Hernia, Surgical affections of muscles etc. and their treatment. Wound: classification, symptoms-diagnosis and treatment. Handling of simples fractures, dislocation and other affections of joints, dental care, hoof management. First aid management of fracture, bloat, haemorrhage and post operative care. Application and uses of various antiseptics, lotions, ointments and tinctures in surgical practice.

PRACTICAL

Identification of various surgical instruments. Physical restraint of animals for surgery. Preparation of pack for autoclaving and various sterilization procedures. Preparation of surgical pack, familiarization with various suture materials. Operation room discipline; Dressing of wounds and bandage. Burdizzo castration, tattooing, dehorning, Preparing animals for surgery. Application of counter irritants, heat, cold fomentation. Different kinds of bandages and its application

Introduction to Reproductive Disorders of Livestock (DLE-215) (1+1)

THEROY

Introduction to genital organs of male and female of live-stock their reproductive patterns, structure and function; Transport of materials from abortions ; Assistance in obstetrical cases ; Preparation of packs for obstetrical operations ; Sterilization of instruments ; Preparation of animals ; Intrauterine medication ; Assistance to parturient animals. Care of new born. Primary care and management of various gynaecological and obstetrical conditions. Introduction to infertility and its common causes in male and female livestock. Reproductive disease, anoestrus, repeat breeding,

PRACTICAL

Intrauterine medication. Use of Vaginoscope. Preparation of packs for obstetrical cases; Preparation of different stains for semen evaluation and cytology; Assistance in obstetrical cases. Pregnancy diagnosis and differential diagnosis, Artificial insemination, identification and use of various instruments and their application,

Fodder Production II (DLE-216) (0+3)

Production of fodder crops. Collection and preservation of fodder. Cost calculation of fodder production. Familiarization with the backyard fodder

cropping and intercropping of fodder; livestock waste utilization and recycling. Calculation on the economic aspects of fodder cropping in the above situations. Preparation of cropping scheme/crop rotation for dairy fodder farm. Agencies involved in seeds, fertilizers, animal feeds and pesticides.production.

Semester IV – Hands on Trainings

Extension Activities in Animal Husbandry including survey, data collection and analysis (DLE-221) (0+2)

Communication with rural and urban groups for collecting information using Rapid Rural Appraisal and Participatory Rural Appraisal methods. Client management- history taking, follow up, appraisal, prognosis, announcing death of animal to the owner etc. Social survey, social sampling using various tools of data collection and data analysis. Organization of animal welfare camps and farmers meetings.

Acquaintance to Veterinary Hospital (DLE-222) (0+3)

Preparation and maintenance of hospital records. Routine work of hospital and keeping of records. Preparation and compilation of various reports and Performa. Vaccination schedules and methods of vaccination for livestock and poultry. Sanitation and maintenance of clinics.

Practical Training in Clinical Practice (DLE-223) (0+3)

Recording of temperature, pulse and respiration in disease conditions. Methods of drug administration. Practice of compounding and dispensing various drugs. Use of trocar and canula, stomach tube and probang. Intra-mammary infusions. Dressing of wounds. Collection of ruminal fluids. Use and indications of commonly used ointments, tinctures, lotions/solutions etc. Acquaintance with various gynaecological and surgical instruments with their uses. Sterilization of instruments etc. Demonstration of gynaecological and surgical problems. Preparation and handling of surgical pack. Introduction to X-ray procedure. Collection of clinical material for laboratory examination. Burdizzo castration of calf, sheep and goat.

Acquaintance to Dairy Farm (DLE-224) (0+3)

Preparation and maintenance of dairy records. Routine work of dairy farms and keeping of records. Preparation and compilation of various reports and Performa. Practices for hygienic milk production. Sampling.

Acquaintance to Poultry/ Goatry/ Piggery / Stud Farms (DLE-225) (0+3)

Preparation and maintenance of farms. Routine work of dairy farms and keeping of records. Preparation and compilation of various reports and Performa.



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