

# CURRICULUM

Technical School Leaving Certificate

## Livestock Production /Animal Health (18 months program)



Council for Technical Education and Vocational Training  
**CURRICULUM DEVELOPMENT  
DIVISION**

Sanothimi, Bhaktapur  
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## **Introduction**

Nepal Government, Ministry of Education implemented the letter grading system in SLC from 2072 B.S. The door of TSLC programme is open for those students who have appeared in SLC exam and achieved any GPA and any grade in each subject. Focusing on such students the curriculum of TSLC of 29 months and 15 months have been converted into 18 months to create uniformity among different TSLC programme.

This curriculum is designed for lower level human resources in the field of Livestock Production / Animal health services equipped with knowledge, skills and attitude necessary for this level of technicians so as to meet the demand of such technician in the country.

## **Title**

The title of this program is ‘**Technical School Leaving Certificate in Livestock Production/Animal Health**’.

## **Aim**

The aim of the programme is to produce Livestock Production /Animal Health Junior Technical Assistant (JTA) to provide services to the people & livestock sector of country. At the end of their training they may go for job at government, non-government, private sector or own business.

## **Objectives**

After completing this curricular program, the students will be able:

1. to keep livestock, poultry, fish as their own enterprise or they can go for job to the government, semi government, private or public sector
2. to explain sign and symptoms as well as preventive measures of common diseases of kept animals
3. to produce hygienic milk, meat and other production from livestock, poultry and fish
4. to cultivate fodder and grass for livestock
5. to develop scheme for livestock enterprise
6. to run livestock farm as a assistant

## **Program Description**

This curriculum is based on the job required to be performed by a livestock sector in Nepal. It especially provides the knowledge and skills focussing on Livestock Production and Management, Poultry Production, Dairy Science, Animal Nutrition, Animal health as provisioned by the government of Nepal. It also deals with Extension and Communication and Entrepreneurship skills for to start their own business.

## **Course Duration**

This course will be completed within 18 months (40 hrs/week X 39 weeks a year = 1560 hrs.) class plus 6 months (40 hrs/week X 24 weeks = 960 hrs. on the job training (OJT).

## **Entry criteria:**

Individuals with following criteria will be eligible for this program:

- SLC with any grade and any GPA (Since 2072 SLC).
- SLC appeared (Before 2072 SLC)
- Pass entrance examination administered by CTEVT

**Group size:**

The group size will be maximum 40 (forty) in a batch.

**Medium of Instruction:**

The medium of instruction will be in English and/or Nepali language.

**Pattern of Attendance:**

The students should have minimum 90% attendance in theory classes and practical/performance to be eligible for internal assessments and final examinations.

**Instructors' Qualification**

- The program coordinator must be a bachelor degree holder in animal science/ B.V.Sc. or diploma degree in veterinary science with minimum of 5 years teaching experience after completion of the diploma degree.
- The faculties must be a diploma's degree holder with having 2 years practical based experiences.
- The demonstrator should have TSLC level degree in veterinary science or LP/AH with minimum of practical based 2 years' experience.

**Teacher and Student Ratio**

- Overall at institutional level: 1:10
- Theory: 1:40
- Practical: 1:10
- Minimum 75% of the teachers must be fulltime

**Instructional Media and Materials**

The following instructional media and materials are suggested for the effective instruction and demonstration.

- Printed media materials (assignment sheets, handouts, information sheets, individual training packets, procedure sheets, performance check lists, textbooks etc.).
- Non-projected media materials (display, models, photographs, flip chart, poster, writing board etc.).
- Projected media materials (opaque projector, overhead transparencies, slides etc.).
- Audio-visual materials (audiotapes, films, slide-tape programs, videodiscs, videotapes, multimedia etc.).
- Computer-based instructional materials (computer-based training, interactive video etc.)

**Teaching Learning Methodologies**

The methods of teaching for this curricular program will be a combination of several approaches. Such as:

- Theory: lecture, discussion, assignment, group work.
- Practical: demonstration, simulation, role play, observation, guided practice and self-practice.

## Evaluation Details

- The marks distribution for theory and practical tests will be as per the marks given in the course structure of this curriculum for each subject. Ratio of internal and final evaluation is as follows:

S.N.	Particulars	Internal Assessment	Final Exam	Pass %
1.	Theory	50%	50%	40%
2.	Practical	50%	50%	60%

- There will be three internal assessments and one final examination in each subject. Moreover, the mode of assessment and examination includes both theory and practical or as per the nature of instruction as mentioned in the course structure.
- Every student must pass in each internal assessment to appear the final exam.
- Continuous evaluation of the students' performance is to be done by the related instructor/ trainer to ensure the proficiency over each competency under each area of a subject specified in the curriculum.
- The on-the-job training is evaluated keeping 500 as full marks. The evaluation of the performance of the student is to be carried out by the three agencies; the concerned institute, industry/organization where the student worked and the CTEVT Office of the Controller of Examinations. The student has to score 60% for successful completion of OJT.

## Grading System

The grading system will be as follows:

### Grading

Distinction  
First division  
Second division  
Third division

### Overall marks

80% or above  
75% to below 80%  
65% to below 75%  
Pass aggregate to below 65%

## Certificate Awarded

The council for technical education and vocational training will award certificate in “**Technical School Leaving Certificate (JTA) in Livestock Production/Animal Health**” to those students who successfully complete the requirements as prescribed by the curriculum.

## Job Opportunity

The graduate will be eligible for the position equivalent to Non-gazetted 2nd class/level 4 (technical) as Junior Technical Assistant (JTA) in the field of Livestock Production /Animal health.

## Course Structure

### (TSLC in Livestock Production /Animal Health)

S.N	Subjects	Nature	Hours/ Week	Theory & Practical hours			Full Marks		
				T	P	Total	T	P	Total
1.	Extension and Community Development	T+P	6	48	186	234	30	120	150
2.	Entrepreneurship Development	T+P	4	32	124	156	20	80	100
3.	Animal Health I	T+P	6	48	186	234	30	120	150
4.	Animal Health II	T+P	6	48	186	234	30	120	150
5.	Livestock Production and Management I	T+P	4	32	124	156	20	80	100
6.	Livestock Production and Management II	T+P	6	48	186	234	30	120	150
7.	Animal Nutrition and Fodder production	T+P	4	32	124	156	20	80	100
8.	Dairy and dairy product	T+P	4	32	124	156	20	80	100
		<b>Total</b>	<b>40</b>	<b>320</b>	<b>1240</b>	<b>1560</b>	<b>200</b>	<b>800</b>	<b>1000</b>
<b>On the Job Training</b>									
On -the -Job Training (OJT)			Practical			960	500		
<b>Grand total</b>						<b>2520</b>	<b>1500</b>		

**T = Theory, P = Practical**

## Animal Health I

**Total Hours: 234 hrs**

**Theory: 48 hrs**

**Practical: 186 hrs**

### **Description:**

This course provides skills and knowledge related to the structure and functions of the different organs/ body system; assist to diagnose and treat common systematic diseases and ailments of farm animals and birds. It also provides basic knowledge and skills of clinical examination, first aids, and postmortem findings, disposal of dead birds, sterilization and administration of drugs.

### **Objectives:**

Upon completion of this course students will be able to:

1. Identify different organs of body system
2. Explain function of different organs/ systems
3. Assist to treat diseases and ailments of different body systems
4. Differentiate healthy and sick animals
5. Assist to perform clinical examination of animals and birds
6. Administer drugs
7. Assist in PM examination
8. Identify locally available medicinal plant and their use

S.N	Tasks Statements	Related Technical Knowledge	Time (Hrs)
1	Define anatomy of farm animals	Definition of anatomy Anatomical terms Definition of physiology Importance of studying anatomy and physiology of farm animals	3
2	Identify parts of skeletal system of farm animals	Definition of skeleton Classification of bones: according to the shape and location Teeth and dentition, aging by dentition Well labeled diagram of skeleton of cow and chicken General function of skeletal system List of major diseases and ailments related to the system	3
3	Introduce arthritis in animals	Introduction, causes, sign and symptoms and prevention of arthritis	3
4	Treat simple fracture of limbs	Introduction, causes, symptoms, treatment of fracture by using splint and plaster of Paris bandage.	4
5	Explain muscular system of animals	Definition of muscular system Types of muscles: Skeletal, smooth and cardiac muscles and their functions	2
6	Treat simple fresh wound	Definition, type, treatment of simple fresh wound Suturing and suturing techniques	7

7	Explain myositis	Definition, type, management of myositis case Suturing and suturing techniques	2
8	Identify parts of respiratory system of animal and birds	Introduction of respiratory system Well labeled diagram of the respiratory organs : mammals and birds	2
9	Introduce pneumonia	Introduction, causes, symptoms and prevention pneumonia	3
10	Explain circulatory system of animals	Introduction of circulatory system Heart: structure and function Blood vessels: structure and function Circulation of blood Blood: composition and function List of major diseases and ailments related to the system	3
11	Introduce anemia	Introduction, causes, sign and symptoms and prevention anemia	3
12	Collect blood sample	Site of blood collection from different animal species, purpose of blood sample collection, anticoagulants, blood collection techniques, smear preparation, serum separation, dispatch of samples	5
13	Identify parts of male reproductive system	Introduction of reproductive system Well labeled diagram of reproductive organs of a bull Study of slaughter house specimen Function of major organs List of major diseases and ailments related to the system	5
14	Identify parts of female reproductive system of a cow/hen	Well labeled diagram of reproductive organs of a cow and hen,; function of major organs Study of slaughter house specimen List of major diseases and ailments related to the system	5
15	Explain causes of infertility	Introduction, different causes, symptoms and prevention of infertility in farm animals; counseling to the farmers	4
16	Assist correction of dystocia	Introduction, causes, types ,sign and symptoms, correction techniques of dystocia, precaution to be taken	5
17	Assist correction of prolapsed uterus/vagina	Introduction, causes, correction techniques, precaution to be taken	6
18	Assist correction of retained placenta	Introduction, causes, correction techniques, precaution to be taken	6
19	Introduce abortion	Introduction and causes of abortion, precaution to be taken	3
20	Identify parts of digestive system of ruminants	Introduction of digestive system Well labeled diagram of ruminant digestive system Function of major organs List of major diseases and ailments related to the system	5



21	Treat bloat / tympany	Introduction, causes, types ,sign and symptoms, treatment of tympany/bloat	3
22	Identify parts of digestive system of non-ruminants	Well labeled diagram of non- ruminant digestive system Function of major organs List of major diseases and ailments related to the system	4
23	Identify parts of digestive system of a fowl	Well labeled diagram of the digestive organs of a fowl Function of major organs	3
24	Treat indigestion / impaction	Introduction, causes, sign and symptoms, treatment of indigestion /impaction	3
25	Treat diarrhea/dysentery	Introduction, causes, sign and symptoms, treatment of diarrhea/dysentery	3
26	Explain colic	Introduction, types, causes, sign and symptoms, treatment of colic	2
27	Identify parts of urinary system	Introduction of urinary system Well labeled diagram of urinary system Function of major organs Major diseases and ailments related to the system	4
28	Introduce urolithiasis	Introduction, cause and treatment of urolithiasis	4
29	Differentiate haematuria / haemoglobinuria	Introduction, cause and treatment haematuria/ haemoglobinuria	3
30	Explain nervous system(NS)	Introduction of nervous system Well labeled diagram of neuron Classification of neuron: according to structure- unipolar, bipolar, multipolar; according to function- sensory , motor, mixed neuron Central NS, Peripheral NS, Autonomic NS General function of NS Major diseases and ailments related to the system	5
31	Introduce paralysis	Introduction, causes and treatment of paralysis	2
32	Explain structure of mammary gland	Mammary gland of a cow Well labeled diagram of mammary gland and milk ducts Disease related to mammary gland	3
33	Explain structure of eye/ ear	Well labeled diagrams	5
34	Explain conjunctivitis	Introduction, cause and treatment of conjunctivitis	4
35	Explain ootitis	Introduction, cause and treatment of ootitis	4
36	Introduce health/ disease	Definition of health and disease Differentiation between healthy and sick animal Classification of disease: based on cause of disease, based on duration , based on intensity and spread of disease, based on organ or system affected Importance of prevention versus treatment	5

37	Assist in clinical examination of animals	History taking Examination of sick animal: General inspection, physical examination, (temperature, pulse, respiration), examination of body parts (palpation, percussion, auscultation) Examination of environment	7
38	Assist to diagnose diseases	Causes of diseases Infectious: bacteria, virus, protozoa, parasites, fungus Non infectious: injury, malnutrition, poisoning, Metabolic disorders, polluted environment, systemic disorders. Zoometric, acute, chronic.	5
39	Explain resistance/immunity	Immunity: active immunity, passive immunity , disease susceptibility	3
40	Maintain healthy stock	Proper feeding, routine treatment against parasites, sanitation, rotation in grazing , isolation of sick animal, use of vaccines and biological	3
41	Identify common instruments used in veterinary practice	Identification, use and maintenance of most common veterinary instruments	6
42	Sterilize equipments	Definition, concept and methods of sterilization	4
43	Disinfect barn and poultry farm	Use of common antiseptics and disinfectants	4
44	Describe the role of veterinary drugs	Introduction Classification of vet drugs Common vet drugs available in local market Generic names versus brand names Safe use of chemicals and medicines	7
45	Make some formulary in laboratory	Method of preparation of tincture iodine, golden lotion, iodine ointment, eye lotion, turpentine liniment, boric acid ointment, zinc oxide ointment	4
46	Follow prescription	Introduction, writing a prescription Reading of prescription Recommended dosage Use of alternatives in case of unavailability of prescribed drugs	4
47	Store medicines	Read labels and follow directions Store medicines: protection from direct sun light, moisture, vermin Keeping old stock up/ outer face in store	2
48	Explain side effects of drugs	Allergic reactions of drugs Restriction of use of antibiotics in ruminants Antimicrobial resistance	2
49	Calculate dosage of drug	Determine approximate weight of animals Calculate the dosages of drugs, vaccines and biological. Concept of drug measurements ( $\mu\text{g}$ , mg, ml, L, g, I.U.); use of conversion table.	2

50	Administer drugs orally	Route of drug administration Feeding of tablet, bolus, powder, capsule, electuary, liquid with feed, grasses, water Drenching of liquid with drenching pipe/ drenching gun/ using stomach tubes Precaution to be taken during drenching	4
51	Administer drugs by injection	Cleaning syringes and needles, filling syringes, mixing medicines, intra-muscular, sub-cutaneous and intravenous injections.	8
52	Administer drugs locally	Use of ointment, lotion, liniments, pessaries, topical use of antiseptic, eye and ear drops.	2
53	Prepare for field trip	Medicines and equipment needed for field trips Prepare bag / backpack with necessary equipment and medicines for field trip	2
54	Perform first aid	Definition of first aid First aid for the following cases: fractures, burns, common poisonings, bleeding, acute clinical diseases	4
55	Assist to perform post-mortem (PM) of poultry	Principle, material required, procedure of PM examination	4
56	Explain PM of livestock	Principle, material required, procedure of PM examination	2
57	Assist to prepare PM report	Identification the internal organs, gross pathological lesions, preparation of brief report regarding findings Dispatch of samples/ specimen with PM report	2
58	Dispose specimens/ dead birds/ chemicals/ drugs / other wastes	Types of vet hospital waste/ Method of waste disposal	2
59	Explain Litchi heart disease of poultry	Introduction, method of diagnosis, treatment, prevention and control	3
60	Identify locally available medicinal plant	Morphology of locally used medicinal plant Plant parts used for medicinal purpose Used in commonly disease and disorder Methods of preparation Dose and frequency Precaution during	12
		<b>Total</b>	<b>234</b>

## Animal Health II

**Total hours : 234 hrs**  
**Theory : 48 hrs**  
**Practical : 186 hrs**

### **Description:**

This course provides skills and knowledge of identification of external parasites, internal parasites their eggs, etiology, symptoms diagnosis, treatment, prevention and control of parasitic, bacterial, viral, protozoa, fungal diseases of livestock and poultry.

### **Objectives:**

Upon completion of this course students will be able to:

1. Identify external parasites of livestock and poultry
2. Identify internal parasites of livestock and poultry
3. Explain etiology, symptoms, diagnosis and treatment of parasitic disease livestock and poultry
4. Explain etiology, symptoms, diagnosis and treatment of bacterial disease livestock and poultry
5. Explain etiology, symptoms, diagnosis and treatment of viral disease livestock and poultry
6. Explain etiology, symptoms, diagnosis and treatment of protozoal disease livestock and poultry
7. Explain etiology, symptoms, diagnosis and treatment of fungal disease livestock and poultry
8. Explain etiology, symptoms, diagnosis and treatment of metabolic disease livestock and poultry
9. Explain causes and treatment of common poisoning in livestock

S.N	Tasks Statements	Related Technical Knowledge	Time (hrs)
1	Introduce parasite and parasitology.	Parasite and parasitology Types of parasites: external and internal parasites Types of host : definitive host and intermediate host	3
2	Identify/treat external parasites	Introduction, types, general symptoms and treatment of lice, ticks, mite and leech infestation.	5
3	Introduce helminth parasites	Common helminth parasites of cattle, buffalo, horse, sheep, goat, pig, dog and poultry. Effects of helminths on host.	5
4	Identify/treat liver fluke	Introduction, morphology, lifecycle, diagnosis, treatment, prevention and control of liver fluke disease.	4
5	Identify/treat paramphistomum	Introduction, morphology, lifecycle, diagnosis, treatment, prevention and control of paramphistomiasis.	4
6	Explain/treat <i>moniziasis</i>	Introduction, morphology, lifecycle, diagnosis, treatment, prevention and control	5

7	Explain Gid (study)	Introduction, morphology, lifecycle, diagnosis, treatment, prevention and control	4
8	Explain pork tapeworm	Introduction, morphology, lifecycle, diagnosis, treatment, prevention and control	4
9	Explain hydatidosis	Introduction, morphology, lifecycle, diagnosis, treatment, prevention and control	4
10	Explain dog tapeworm	Introduction, morphology, lifecycle, diagnosis, treatment, prevention and control	4
11	Identify/treat small round worm	Introduction, general life cycle of small round worm Type of small round worms Symptoms, diagnosis, prevention and control	8
12	Handle simple microscope	Parts of Microscope, general cleaning and handling procedures	4
13	Collect sample, store and dispatch	Collection, storage and dispatch of blood, urine, feces, milk sample, skin scrapping from livestock and pet	6
14	Examine feces	Fecal examination by different techniques: direct smear, sedimentation, floatation method Identify helminthes eggs: trematodes, custodies, nematodes	10
15	Introduce/treat hemorrhagic septicemia disease	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
16	Introduce black quarter	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
17	Introduce anthrax	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
18	Introduce tetanus	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
19	Introduce tuberculosis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
20	Introduce foot rot	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
21	Assist to treat mastitis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
22	Introduce actinomycosis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
23	Introduce actinobacillosis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4

24	Introduce/treat calf scour	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
25	Introduce atrophic rhinitis of swine	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
26	Introduce/prevent foot and mouth disease	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
27	Introduce rinderpest	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
28	Introduce orf	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
29	Introduce ephemeral fever	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
30	Introduce swine fever	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
31	Introduce rabies	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
32	Introduce parvo – enteritis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
33	Introduce swine – influenza	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
34	Introduce peste des petits ruminant (PPR)	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
35	Introduce bird Flu	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
36	Introduce babesiosis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
37	Introduce/treat coccidiosis in calf	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5
38	Introduce/treat milk fever	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
39	Introduce ketosis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	5

40	Introduce fowl cholera	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	3
41	Introduce pullorum	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	3
42	Introduce chronic respiratory disease	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	3
43	Introduce fowl typhoid	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	3
44	Introduce Newcastle diseases	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	3
45	Introduce marek's disease	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	3
46	Introduce gumboro disease	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
47	Introduce infectious bronchitis	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
48	Introduce/treat coccidiosis in poultry	Introduction, etiology, mode of transmission, symptoms, diagnosis, line of treatment, prevention and control.	4
49	Prepare for vaccination camp	Definition and uses of vaccines Planning, organizing and running a vaccination campaign; maintain cold chain and vaccine handling, quality control	4
50	Prepare vaccination schedule of livestock pet / poultry	Vaccination schedule for livestock and pet Vaccination schedule for layers broilers and breeders	6
51	Explain burn	Introduction, types, causes, symptoms, first aid of burn	3
52	Explain yoke gall/Sore neck	Introduction, causes, symptoms, first aid of yoke gall	3
53	Explain vomiting	Introduction, causes, first aid of vomiting	3
54	Introduce government rules and regulations related to animal health	Government acts, rules, regulations and orders related to animal health and livestock production.	4
		<b>Total</b>	<b>234</b>

## Livestock Production and Management I

### Cattle/ Buffalo and Yak/ Chauri Production

Total Hours : 78 hrs  
Theory : 16 hrs  
Practical : 62 hrs

#### **Description:**

This part of course is designed to provide basic skills and knowledge of cattle and buffalo farming including breeds of cattle and buffalo, housing, care and manage of newly born calves, pregnant/lactating female, breeding bull, replacement stock for commercial farming and marketing of live animal and milk. It is **suggested** that school of high altitude should teach Yak & Chauri based.

#### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of cattle and buffalo farming in Nepal
2. explain different breeds of cattle / buffalo and yak/ chauri
3. design shed for commercial farming
4. care/ manage newly born calves, pregnant/lactating female, breeding bull, replacement stock
5. Explain cattle and buffalo breeding
6. Explain feeds and feeding of cattle / buffalo and yak/ chauri
7. Market live animal and milk

S.N	Skill	Related technical knowledge	Time (Hrs)
1	Introduce livestock farming	Introduction of animal husbandry Scope of livestock production in Nepal Role of livestock in National economy Present status, problem, prospect and strategy for Livestock production	2
2	Study animal behavior	Importance of study of animal behavior Feeding behavior Breeding behavior Behavior during sick Excitement by seeing strangers	1
3	Explain role of cattle / buffalo / yak/ chauri production in Nepal	History of cattle/ buffalo production Strategy of cattle and buffalo production in Nepal	1
4	Explain relationship between agriculture/forestry and livestock	Concept of agro forestry, interrelation between livestock and agriculture, silvipature, lease hold forest, role of community forest in livestock production	1
5	Explain social problems for cattle/buffalo& yak/chauri production	Social problems in cattle/buffalo farming Legal prohibition for slaughtering of cattle Socio environmental problems	1
6	Classify cattle / buffalo & yak/chauri breed on the basis of use	Zoological classification of cattle/buffalo Milch breed, Dual purpose, Draft purpose	1



7	Identify external body parts of cattle/buffalo & yak/chauri	Objectives to study external body parts Identification of body parts on live animal and with help of well labeled diagram of live animal	1
8	Identify local breeds of cattle	Breed characteristics of Pahadi, Achhami, Lulu, Chauri, Yak, Nak	1
9	Identify improved breeds of cattle	Breed characteristics of Milch breed-Jersey, Holstein, Brown Swiss, Red Sindhi, Sahiwal Dual Porpose: Hariyana, Nelore, Tharparkar Draft breed: Amritmall, Khilari, Hallikar	4
10	Identify local breeds of buffalo	Breed characteristics of Lime, Parkote	1
11	Identify improved breeds of buffalo	Breed characteristics of Murrah, Jafarbadi, Surti, Mehsana	2
12	Handle calf for treatment	Introduction Objectives of restraining Restraining by casting Restraining by catching Precaution to be taken	2
13	Restrain adult cattle by casting	Introduction of casting Purpose of casting Length and thickness of casting rope Casting methods: Burly method, Reef's method	2
14	Restrain buffalo by casting	Introduction of casting Length and thickness of casting rope Casting methods: Rope squeeze method	2
15	Restrain adult cattle/ buffalo by using Travis/Crate	Introduction Size of trevis: Length, height etc Preparation of Travis by local materials	1
16	Restrain by using locally made Damlo	Preparation of Damlo by using local material Casting by Damlo	1
17	Collect manure	Composition of cattle/buffalo dung as manure Importance of cattle/buffalo manure for improving soil quality/ fertility Methods of collection/ composting Demonstration of compost manure Protection from leaching and evaporation Application of manure	2
18	Castrate male calf by close method	Introduction of castration Importance of castration of bull Proper age of castration Handling during castration Tools, materials, equipments used in castration Precaution during castration Use of antiseptic Advice to the farmer	2

19	Calculate live weight by body measurement of cattle/buffalo& yak/chaori	Importance of body weight calculation Principle of body wt .calculation Methods of body measurements Calculation of live wt. by using formulas Tools and equipment used Live wt. estimation according to age, lifting weighing and other method.	2
20	Perform branding for identification	Introduction of branding Importance and principle of branding Handling method for branding Tools equipments used in branding Formula used for numbering Methods of branding Other temporary marking system if in used	1
21	Perform hoof trimming	Introduction of hoof trimming Importance and principle of hoof trimming Handling method of hoof trimming Tools equipments of hoof trimming Formula used for numbering Methods of hoof trimming	1
22	Provide minerals/salt for cattle /buffalo& yak/chaori	Importance of mineral & salt Signs and symptoms of mineral deficiency Methods of providing salt &minerals	1
23	Select breeding bull /female	Definition of selection for breeding purpose Importance of selection Principle of selection Selection criteria for male and female for breeding Importance of records for selection Criteria for selection	1
24	Defect heat by external sign	Oestrous cycle Importance of heat detection Age of puberty cattle/buffalo Signs and symptoms of heat in cattle/buffalo Appropriate time for mating/ AI	1
25	Detect standing heat on cow/ buffalo& yak/chaori	Use to detect heat by teaser Mounting to other animals	1
26	Care pregnant cattle/buffalo& yak/chaori	Introduction Feeding management Housing management Space requirement for female Sanitation of barn Maintaining health record Correction of health related problems Pregnancy diagnosis -Routine drenching management.	1

27	Provide care for breeding male bull	Introduction Feeding management Housing management Space requirement Sanitation Health care management Routine drenching against parasites	1
28	Care during parturition	Signs and symptoms of before parturition Space requirement Cleaning and sanitation of barn assisting during parturition time Precaution during parturition	2
29	Care newly born calf	Removal of mucous from nose Importance of colostrums feeding Assisting for colostrums feeding Assisting for breathing Assisting for walking/ moving Removing of navel Orphan management if necessary	2
30	Arrange for breeding management of cattle/buffalo& yak/chaury	Importance of breeding Sexual maturity of male and female Reproductive parts of male and female Spermatogenesis and oogenesis of cattle/buffalo Sensational effect Appropriate time of mating Arrangement of mating Methods of breeding of cattle/buffalo	2
31	Provide feed for cattle/buffalo& yak/chaury	Importance of feeding of cattle/buffalo Routine feeding time Amount/quantity of feed/day/time Feeding style Utilization of feed and water Requirement of feed and feeding standard	2
32	Provide preventive health care	List of ecto-endo parasite of cattle/buffalo. List of common diseases of cattle/buffalo Preventive measure of disease and parasite Vaccination schedule of cattle/buffalo Barn sanitation and disinfectant use for barn sanitation(See detail of parasite and diseases of cattle/buffalo)	2
33	Explain housing system of cattle/buffalo& yak/chaury	Types of Housing -Open yard, Intensive, Semi intensive Space requirement of different stages of animal Head to head and tail to tail system Provision of ventilation, door, windows Wall, roof and roofing type Floor system type and importance Provision of store, labour room, isolation room Fencing and its importance	2

34	Select the site for cattle/buffalo& yak/chaori farm	Objectives of site selection Criteria for site selection Factors considering in site selection	1
35	Calculate space requirement for cattle/buffalo & yak/chaori	Importance and scope Space requirement for breeding male Space required for breeding female Space required for replacement stock Space required for calving pen Space required for isolation pen Space required for store, manure pit etc	2
36	Arrange facilities for cattle/buffalo & yak/chaori farm	Electricity, lighting facility, water supply etc	1
37	Collect farm animal urine for manure	Composition of cattle urine its relation to environment Losses of nutrients due to sunlight Losses of nutrient due to leaching Methods of decomposition	1
38	Apply cattle urine as a source of soil nutrient and pesticide	Objective of dilution Source of pesticide & soil nutrient Soil & foliar application	1
39	Apply bio-gas slurry in to soil	Definition of bio-gas slurry Composition of bio-gas slurry Importance of bio-gas slurry Protection from bio-gas slurry Methods of application bio-gas slurry	2
40	Arrange tools/materials in cattle/buffalo farm	Arrange of feeding watering equipments Arrangement of market tools Arrangement of veterinary tools. Arrangement of handling tools/equipments methods of storage of tools equipments materials	2
41	Sale product	Preparation of marketable product Channel of marketing Demand of consumers Processing before marketing of product Quality occurrence Labeling if necessary Importance of billing system	2
42	Keep records of cattle/buffalo farm	Importance of record keeping Elements of records Types of farm records: Breeding, Production, Health, Feed, Calving	4
43	Explain Artificial Insemination (AI)	Introduction, History, Advantages and Disadvantages of AI	2
44	Explain Steps of AI	Semen collection, Examination, Dilution, Storage	4

45	Inseminate cow by AI method	Insemination techniques Sterilization and assembling of AI gun Thawing, loading and insemination	4
46	Detect proper time of AI	Breeding behavior, History taking from owner, Examination of vaginal mucosa	2
		<b>Total</b>	<b>78</b>

## Livestock Production and Management- I

### Sheep and goat Production

Total Hours : 78 hrs  
Theory : 16 hrs  
Practical : 62 hrs

#### **Description:**

This part of course is designed to provide basic skills and knowledge of sheep and goat farming including breeds of sheep and goat, housing, care and manage of newly born kids/lambs, pregnant/lactating female, breeding buck/ram, replacement stock for commercial farming and marketing of live animal and meat.

#### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of sheep and goat farming in Nepal
2. explain different breeds of sheep and goat
3. design shed for commercial farming
4. manage newly born kids/ pregnant/lactating female, breeding male, replacement stock
5. explain sheep and goat breeding
6. explain feeds and feeding of sheep and goat
7. market live animal, meat and wool

S.N	Skill	Related technical knowledge	Time (Hrs)
1	Explain scope of sheep/goat production in Nepal	History of sheep and goat production Scope and importance of sheep and goat production in Nepal	2
2	Identify external body parts of sheep/goat	Objectives to study external body parts Identification of body parts on live animal and with help of well labeled diagram of animal	1
3	Identify local breeds of goat	Characteristics of Kari goat, Terai goat, Sinhal goat, Chyangra	1
4	Identify improved breeds of goat	Breed characteristics of Jamunapari, Barberi, Sanen	4
5	Identify local breeds of sheep	Breed characteristics of Kage, Baruwal, Bhote, Lampuchhre	1
6	Identify improved breeds of sheep	Breed characteristics Merino, Ramboulet	2
7	Restrain sheep/goat for treatment/castration	Objectives of restraining Method of restraining Precaution to be taken	2
8	Collect manure	Composition of sheep/goat manure Importance of sheep/goat manure for improving soil quality/ fertility Methods of collection/ composting Application of manure	2

9	Castrate buck/ram by close method	Introduction of castration Proper age of castration Handling during castration Equipments used in castration Precaution during castration Use of antiseptic Advice to the farmer	2
10	Calculate live weight by body measurement of sheep/goat	Importance of body weight calculation Principle of body wt .calculation Methods of body measurements Calculation of live wt. by using formulas Live wt. estimation according to age, lifting weighing and other method.	2
11	Perform tagging for identification	Introduction of tagging Importance and principle of tagging Handling method for tagging Tools equipments used in tagging Formula used for numbering Methods of tagging Other temporary marking system if in used	1
12	Score condition of sheep/goat	Introduction Method of condition scoring	1
13	Provide minerals/salt for goat /sheep	Importance of mineral & salt Signs and symptoms of mineral deficiency Methods of providing salt & minerals	1
14	Select breeding male /female	Definition of selection for breeding purpose Importance of selection Principle of selection Selection criteria for male and female for breeding Importance of records for selection Criteria for selection	1
15	Defect heat by external sign	Oestrous cycle Importance of heat detection Age of puberty sheep/goat Signs and symptoms of heat in sheep/goat	1
16	Care pregnant sheep/goat	Introduction Feeding management Housing management Space requirement for female Sanitation of pen Maintaining health record Correction of health related problems Pregnancy diagnosis Routine drenching management.	1
17	Provide care for breeding male	Introduction Feeding management Housing management Space requirement Sanitation	1

		Health care management Routine drenching against parasites	
18	Care during parturition	Signs and symptoms of before parturition Space requirement Cleaning and sanitation of barn assisting during parturition time Precaution during parturition	2
19	Care newly born kids	Removal of mucous from nose Importance of colostrums feeding Assisting for colostrums feeding Assisting for breathing Assisting for walking/ moving Removing of navel Orphan management if necessary	2
20	Explain ten point technology of goat farming	Ten point technology prepared by Bandipur goat farm	2
21	Arrange for breeding management of sheep/goat	Importance of breeding Sexual maturity of male and female Reproductive parts of male and female Spermatogenesis and oogenesis of sheep/goat Sensational effect Appropriate time of mating Arrangement of mating Methods of breeding of sheep/goat	2
22	Provide feed for sheep/goat	Importance of feeding of sheep/goat Routine feeding time Amount/quantity of feed/day/time Feeding style Utilization of feed and water Requirement of feed and feeding standard	2
23	Make feeding rack from local materials	Introduction and Importance of feeding rack Size and height of feeding rack	4
24	Prepare mineral block for goat/sheep	Introduction and importance Ingredients required Feeding method of mineral block	4
25	Explain cultivation practice of fodder trees for sheep/goat	List of fodder trees Cultivation practices	2
26	Cultivate grasses for sheep/ goat	Annual/ Perennial/ Biannual grasses for pasture	4
27	Provide preventive health care	List of ecto-endo parasite of sheep/goat. List of common diseases of sheep/goat Preventive measure of disease and parasite Vaccination schedule of sheep/goat Sanitation and disinfectant for sanitation <b>(detail of parasite and diseases of sheep/goat in AH I and II)</b>	2



28	Make ecto-parasitocidals by using tobacco and other local material	Method of preparation of ecto paracial drugs by using local materials	2
29	Dip goat to control from external parasites	Dip tank: shape and size	4
30	Explain housing system of sheep/goat	Types of Housing Space requirement of different stages of animal Fencing and its importance	2
31	Select the site for sheep/goat farm	Objectives of site selection Criteria for site selection Factors considering in site selection	1
32	Calculate space requirement for sheep/goat	Importance and scope Space requirement for breeding male Space required for breeding female Space required for replacement stock Space required for kidding pen Space required for isolation pen Space required for store, manure pit etc	2
33	Arrange facilities for sheep/goat farm	Electricity, lighting facility, water supply etc	1
34	Arrange tools/materials in sheep/goat farm	Arrange of feeding watering equipments Arrangement of market tools Arrangement of veterinary tools. Arrangement of handling tools/equipments methods of storage of tools equipments materials	2
35	Sale product	Preparation of marketable product Channel of marketing Demand of consumers Processing before marketing of product Quality occurrence Importance of billing system	2
36	Slaughter sheep/goat	Introduction Methods of slaughtering Different parts used for meat, offal	6
37	Keep records of sheep/goat farm	Importance of record keeping Elements of records Types of farm records: Breeding, Production, Health, Feed, kidding	4
		<b>Total</b>	<b>78</b>

## Livestock Production and Management- II

### Poultry Production

**Total Hours : 78 hrs**

**Theory : 16 hrs**

**Practical : 62 hrs**

**Description:**

This part of course is designed to provide basic skills and knowledge of poultry farming including breeds of chicken, housing, care and manages of broiler and layer chicken for commercial farming and marketing of meat and eggs.

**Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of poultry farming in Nepal
2. explain different breeds of chicken
3. design poultry house for commercial farming
4. care/ manage chicks, grower and layers
5. care/ manage broiler chickens
6. explain poultry breeding
7. explain feeds and feeding of poultry
8. market meat and eggs

SN	Task statement	Related Technical knowledge	Time (hrs)
1	Explain scope of poultry production in Nepal	History of poultry production in Nepal Scope and importance of poultry farming Present status (statistics), problems and future prospect of poultry production in Nepal	2
2	Explain government policies for poultry farming/ hatchery industry in Nepal	Government policies, norms, rules and regulation for poultry industry Government and private chicken hacheries	1
3	Explain common terms used in poultry	Poultry, broiler, layer, pullet, capon, rooster, culling, moulting, starter, grower, finisher, cock, hen, chicks, geld,	1
4	Explain poultry breeds	Zoological classification	1
5	Identify external body parts of a chicken	Well labeled diagram of a chicken Live chicken	1
6	Explain Asiatic breeds	Breed characteristics of chicken : Asiatic-Brahma, Cohchin, Lngsan	2
7	Explain Mediterranean breeds	Mediterranean: Leghorn, Minorka	1
8	Explain English breeds	English: Australarp, Sussex	1
9	Explain American breeds	American: Rode Island Red, New Hampshire, Plymouth Rock	1
10	Identify commercial broiler chicken	Broiler: Vencob, Cob 100, Hubbard, Arboracre, Ross	1
11	Identify commercial layer chicken	Layer: Hyline brown, Lomann, Isha brown, Babcob, Saver star cross 579	1

12	Identify Nepali local chicken	Sakhini, Ghatikhuile, Pwankhulte	1
13	Identify commercial dual purpose breed of chicken	Giriraj	1
14	Explain housing system of poultry	Housing system: Free range, Semi intensive, Intensive( cage ,deep litter) Advantages and disadvantages of each system	3
15	Explain deep litter housing system of poultry	Advantages and disadvantages Litter management: Application of lime and bleaching powder Thickness of litter in summer and winter months Floor space requirements in different age group	2
16	Select site for poultry farm construction	Purpose of farming: Hatchery/ commercial Topography Availability of feeds/ medicine Workers/ technician availability Market accessibility Water and electricity supply Roads Availability of low cost construction materials	2
17	Explain poultry shed construction	Lay out diagram Purpose of construction( hatchery, layer, broiler farm);Small farm , Large scale farm Construction materials: Sand, gravel, cement, GI sheet, stone/ brick, local roofing materials Area calculation on basis of no. of birds and type	2
18	Identify the parts of digestive system of a fowl	Well labeled diagram Dissection of chicken Name and function of different parts	1
19	Identify the parts of reproductive system of a fowl	Well labeled diagram Dissection of chicken Name and function of different parts Process of egg formation in reproductive tract	1
20	Identify internal structure of a egg	Well labeled diagram Fresh egg Nutrient composition of egg Normal and abnormal eggs	1
21	Identify poultry equipments	Feeder, drinker, nest box, hover, perches, weighing balance, candler, debeaker, vaccinator, refrigerator, light source	1

22	Prepare for brooding	Installation of hover, height of brooder, chick guard, fitting light, temperature maintaining, litter placing, checking water sources, emergency light source, space calculation, proper ventilation, protection from chilling and air draft.	1
23	Care chicks ( 0-8 weeks)	Receiving chicks from reliable hatchery, maintaining bio-security, feeding chicks (L1 ration), incorporation of electrolytes, vitamin and antibiotics in feed or water in order to prevent early chick mortality, vaccination, record keeping( daily feed consumption, weight gain, medicine and vaccination, mortality)	3
24	Care grower (8-16 weeks)	Bio-security measure, feeding pullet (L2 ration), feed restriction, reducing artificial light, moulting, debeaking, vaccination, vitamin and antibiotics supplement, record keeping	3
25	Vaccinate birds	Vaccine and vaccination in poultry Vaccination schedule for layer chicken Vaccination method Precaution to be taken	1
26	Perform debeaking	Purpose of debeaking, age and method of debeaking Precaution to be taken	1
27	Deworm bird	Anthelmintics used in poultry, dose of anthelmintics, method of deworming( with feed/ water)	1
28	Care laying chicken (16 weeks and above)	Bio-security measure, feeding layer (L3 ration), increasing artificial light, culling and selection of layer and non- layer, vaccination, vitamin and antibiotics supplement, record keeping( daily feed consumption, egg production, medicine and vaccination, mortality, culling, sales record), comparison with performance record provided by the hatchery	3
29	Sale of layer after productive life	Age and stage of removal( sale) of layer Sale of culled birds	1
30	Keep local Nepali chicken	Breed of local chicken, market demand, price rate, taste, rearing method, advantage and disadvantage of keeping local chicken, feeds and feeding	2
31	Protect bird from hot/ chilled weather	Summer management and winter management of poultry bird	2
32	Differentiate layer vs non layer	Characteristics of layer and non layer chicken	2
33	Collect eggs	time of collection, method of collection, storage of eggs	1

34	Sort eggs for sale	Broken eggs, abnormal eggs( double yolk egg, yolkless egg, extra-large and small eggs, thin shelled egg)	1
35	Sale eggs	Packing., storage, transportation of eggs Marketing of eggs	1
36	Keep account	Calculation of cost of production, profit and loss analysis, feed cost, medicine cost, labor cost, rent, electricity cost, maintenance and repair	3
37	Care broiler chicks (starter)	Receiving chicks from reliable hatchery, maintaining bio-security, feeding chicks (B1 ration), incorporation of electrolytes, vitamin and antibiotics in feed or water in order to prevent early chick mortality, vaccination, record keeping( daily feed consumption, weight gain, medicine and vaccination, mortality)	3
38	Care broiler finisher	Maintaining bio-security, feeding broiler (B2 ration), incorporation of electrolytes, growth promoter and antibiotics in feed or water, vaccination, record keeping( daily feed consumption, weight gain, medicine and vaccination, mortality)	2
39	Market broiler chicken	Live bird marketing Price fixing Reason of price fluctuation Marketing channel for broiler Slaughtering technique Freezing of meat	2
40	Manage poultry manure	Collection, disposal and conservation of poultry manure, quality of manure , differentiation of layer and broiler manure on the basis of plant nutrients, sale of manure, application method	1
41	Explain feeds/feeding of chicken	Layer ration: L1, L2, L3 ration Broiler ration: B1 and B2 Breeder ration Nutrient content of different type of ration Use of locally available feed ingredients Time of storage of ration	2
42	Explain hatchery management	Hatchery, parent stock, sources of parent stock, breeding and feeding management of parent stock, ratio of male and female	3
43	Explain concept of AI in bird	Definition of AI, advantage and disadvantage, semen collection from rooster, technique of AI in bird	3
44	Introduce common diseases/ parasites of poultry birds	Common diseases and parasites of poultry ( detail study in animal health II)	1

45	Explain concept of duck farming	Common breeds, feeding, breeding, rearing and diseases of duck	3
46	Explain concept of quail farming	Common breeds, feeding, breeding, rearing and diseases of Japanese quail	2
47	Prepare scheme for poultry farming	Component of scheme preparation, scheme for broiler farm, layer farm, breeder farm, large and small scale poultry farm, banking procedure for loan	2
		<b>Total</b>	<b>78</b>

## Swine Production

**Total Hours : 78 hrs**  
**Theory : 16 hrs**  
**Practical : 62 hrs**

### **Description:**

This part of course is designed to provide basic skills and knowledge of pig farming including breeds of swine, housing, and care and manage of piglet, sow, breeding boar fattening pig for commercial farming and marketing of meat and piglets.

### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of swine farming in Nepal
2. explain different breeds of swine
3. design pig sty for commercial farming
4. care/ manage piglets, sow, gilt, breeding boar and fattening pig
5. Explain swine breeding
6. Explain feeds and feeding of swine
7. Market meat and piglets

S.N.	Skill	Related technical knowledge	Time (hrs)
1	Explain Importance of pig farming in Nepal	Introduction of pig farming Scope and importance of pig farming in Nepal Socio economic and cultural aspect of pig farming	2
2	Explain present status/ prospect of pig production in Nepal	Role of government to improve pig farming Government and private pig farms in Nepal Possibilities of pig farming in Nepal	2
3	Explain social problems regarding pig farming	Points to be considered before establishment of pig farming Social problems in pig farming Environmental problems	1
4	Define terminologies used in swine production:	Terminologies used in swine production: Sow, boar, piglet, gilt, farrowing, litter, pork, ham, geld, runt, flushing, steaming up	1
5	Classify pig species	Zoological classification of pig	1
6	Identify external body parts of a pig	Purpose of study of external body parts Identification of body parts by well labeled diagram and live animal	2
7	Identify the suitable breeds for commercial piggery	Breed characteristics of improve breed: Landrace, Yorkshire, Hampshire, Tamworth, Duroc Jersey, Pakhribas Cross	3
8	Identify local breeds of pig	Characteristics of local breed: Hurra, Chwanche	1
9	Study behavior of pigs	Importance of study common behavior Feeding behavior Body movement Behavior on heat period	2

		Behavior on pregnancy Behavior during farrowing Behavior in sick period Excitement at strange places	
10	Handle/ restrain pig	Objectives of restraining/ handling pig Handling of small piglets Method of restraining of adult boar and sow Handling sow in heat and pregnant time Handling of sick pig Precaution to be taken during handling	4
11	Collect/ dispose manure	Nutrient composition of dung Demonstration of methods of collection Protection from leaching and evaporation Environment pollution Application of manure Selling of manure	1
12	Castrate male piglet by open method	Definition of castration Purpose of Castration Proper age for castration Handling of piglet during castration Tools, materials, equipments required for castration Precaution to be taken during castration Use of antiseptic Advices to the farmers.	4
13	Calculate live weight by body measurement formula for pig	Purpose of body weight calculation Different formula used for estimation of live body weight Measuring length and hearth girth Calculation of live wt. by using formula Tools and equipment used Estimation of live wt. according to age, lifting and weighing by balance	2
14	Identify pig by ear noticing method	Introduction of ear noticing Handling method for ear noticing Equipments needed for ear noticing Numbering technique Methods of ear noticing Other identification system: naming...	2
15	Perform teeth clipping	Age for teeth clipping Purpose of teeth clipping Methods of handling during teeth clipping Tools and equipment used Precaution to be taken during teeth clipping	2
16	Inject iron for piglet	Importance of iron in piglet Piglet anemia Signs and symptoms Proper age for iron injection Dose of iron dextrin Methods of iron injection to piglets Other sources of iron supplement in piglets	3



17	Select breeding boar	Importance of selection Principle of selection Selection methods: Individual selection, Progeny testing, Pedigree selection	1
18	Select sow/ gilt for breeding purpose	Importance of selection Principle of selection Selection methods: Individual selection, Progeny testing, Pedigree selection	2
19	Explain reproduction in swine	Reproductive organs of sow and boar Function of different organs Hormonal roles on reproduction	2
20	Defect heat by external symptoms of sow	Estrous cycle of swine Puberty and sexual maturity in pig Signs and symptoms of heat in saw Detection of heat and appropriate time for mating.	2
21	Explain housing system of pig	Types of Housing -Open yard type -Closed type Ventilation, door, windows, fencing Wall system: type and importance Roof and roofing type and importance Floor system type and importance Feeding trough, waterer, gutter, manure yard. Store, labour room, isolation room, farrowing box Fencing and its importance Lay out plan	2
22	Select the site for piggery	Criteria for site selection Factors to be considered for site selection	1
23	Calculate space requirement for different age and stages of pig	Space requirement for fattening Space required for open system Space required for Breeding boar and sow Space required for farrowing crate Space required for isolation pen Space required for store, manure pit etc	1
24	Arrange facilities for piggery	Provision of electricity for light and heat Provision of fresh water supply	1
25	Arrange tools/materials in piggery	Arrange of feeding, watering equipments Provision of weighing/ measuring tools/ restraining materials Provision of first aid box Storage of tools and equipments	2
26	Repair /maintain piggery	Maintaining fence Repairing of permanent structure (House, Tools, equipments etc)	1
27	Care pregnant sow	Feeding ; daily feed requirement, steaming up Space requirement for pregnant sow Sanitation of pig sty Pregnancy diagnosis Weight gain during pregnancy	2

		Isolation at the time of farrowing Routine de-worming	
28	Care breeding boar	Feeds and Feeding requirements Housing Management- space requirement Sanitation of sty Health care management Routine drenching	2
29	Care sow during/ after farrowing	Signs and symptoms of farrowing Preparation of farrowing place Cleaning and sanitation of farrowing crate Provision of guard rail Dystocia management Precaution to be taken during farrowing	3
30	Provide post natal care of piglet	Removal of mucous from nose Providing bedding material Protection from chilling in winter Importance colostrums feeding Assisting for breathing Removing of umbilicus cord Special care of runt and weak piglets Orphan management if necessary	2
31	Care piglet before weaning	Space requirement Creep area Feeds for piglets and creep feeding Weaning of piglets	2
32	Provide preventive health care	Ecto and endoparasites of pig. List of common diseases of pig Vaccination schedule of pig Sanitation and disinfectant in piggery <b>(Details of parasites and diseases of pig- see in Animal Health I and II)</b>	4
33	Assist to find market demand/ supply of piglet	Number and capacity of piggery in local areas Price of piglet Weaning age	2
34	Sale product(meat)	Marketing channel Local, national and international market Project work to find out actual sales of meat and live pigs in terms of amount and quantity/number	4
35	Keep records of piggery	Breeding record, Sales record, Health record, Feeding record and Labor record	4
36	Keep account of pig production	Daily transaction, Profit and loss, Financial analysis Scheme preparation	5
		<b>Total</b>	<b>78</b>

## Rabbit, Dog and Laboratory Animals (Optional I)

**Total Hours : 78 hrs**

**Theory : 16 hrs**

**Practical : 62 hrs**

### **Description:**

This part of course is designed to provide basic skills and knowledge of rabbit, dog and laboratory animal production including breeds, breeding, housing, care and management and marketing. Here are three optional modules out of three training institute can choose one for detail practical study according to there resources or need. It is suggested that training center should inform about chosen module to CTEVT for examination point of view.

### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of rabbit, dog and laboratory animal in Nepal
2. explain different breeds of rabbit, dog and laboratory animal
3. design housing and shelter for rabbit, dog and laboratory animal
4. care/ manage rabbit, dog and laboratory animal
5. explain breeding rabbit, dog and laboratory animal
6. explain feeds and feeding of rabbit, dog and laboratory animal
7. market rabbit, dog and laboratory animal

S. N	Task/skill	Related technical knowledge	Time (Hr)
<b>Rabbit production</b>			
1	Explain scope of rabbit production in Nepal	Introduction and classification of rabbit Scope of rabbit production Economic importance of rabbit	2
2	Explain breed characteristic of rabbit	Characteristics of meat type breed Characteristics of fur breed	3
3	Explain housing requirement of rabbit	Housing type Space requirement Site selection Equipment necessary inside housing Hutch and organizing run Nest box	3
4	Explain feeds/feeding of rabbit	Requirements of nutrient for different age and stages of rabbit Nutrient requirements for fur production Nutrient requirement for meat production Nutrient requirement for lactating mother Method of feeding and water supply for rabbit	3
5	Handle rabbit	Methods of handling Precaution during handling	1
6	Manage breeding of rabbit	Breeding behavior of rabbit Age for breeding Sexing of rabbit	1

7	Manage mating	Mixing male and female Coitus stimulation Precaution	1
8	Care pregnant rabbit	Signs of pregnancy Care of pregnant Handling during pregnancy Gestation period of rabbit	1
9	Care newly born kitten	Removal of kitten Prevention from enemies Chances of refusal of kitten by mother in case of touching by man at birth Bedding materials used	1
10	Care lactating female	Feeding lactating female Nutritive and palatable food for female	1
11	Wean young from mother	Weaning and its importance Age of weaning Feeding and care after weaning	1
12	Care rabbit kept for meat/ fur production	Proper feeding Daily care and management Cleaning and sanitation of pen Protection from enemies	2
13	Provide health care service for rabbit	Prevention, control and treatment of: Coccidiosis, Liver fluke, Ear mange, Metritis	2
14	Remove fur	Technique of removal Storage of fur Marketing of fur Quality of fur	2
15	Slaughter rabbit for meat purpose	Methods of handling before killing Slaughtering techniques Dressing methods Preparation of meat Keeping quality Nutritive value of rabbit meat	2
16	Keep records	Types of record: breeding, production, feeding, weigh gain, financial, health records Analysis of records	2
<b>Pet animal (Dog)</b>			
17	Introduce dog as a pet animal	History of dog keeping as companion animal Dog behavior	1
18	Explain scope pet animal	Scope and importance of dog as pet animal	2
19	Classify dogs on the basis of usage	Popular breed of dogs: Dog breeds kept as a friend of children Dog breeds kept as home guard Dog breeds utilized as household workers	2
20	Explain the breed character of dog	Doberman Mastiff Alsatian Boxer, Mungral	2

21	Handle dog	Importance of handling dogs Methods of handling Use of mouth cover Handling by owner Precaution during restraining	1
22	Provide routine care for dog	Tools equipment used for care of dogs Bathing method Catch care Exercise for dog Training of dog Teeth care	2
23	Castrate male dog	Principle and procedure of castration	3
24	Explain spaying in female	Principle and procedure of spaying	4
25	Provide preventive care for dog	Routine deworming schedule Vaccination against Rabies, Distemper, Parvoenteritis, Parainfluenza, Leptospirosis, Hepatitis	3
26	Perform physical examination of dog	History taking Inspection Examination of body part	2
27	Explain construction of kennel for dog	Kennel space Bedding materials Routine cleaning and sanitation of kennel	2
28	Arrange for dog breeding	Oestrus cycle of dog Mating behavior Heat period of dog False pregnancy Accidental pregnancy	2
29	Care for pregnant dog	Pregnancy diagnosis Feeding requirement during pregnancy Kennel management Problems during pregnancy (Morning sickness)	1
30	Care puppy	Nursing management of puppy	1
31	Explain about concept of kennel club	Scope and importance of kennel clubs Minimum requirement to establish a kennel club Preparation of a model of kennel club Services to be provided by a kennel club Example of kennel clubs in Nepal	2
32	Explain common diseases of dog	Signs symptoms control treatment of Distemper, Parainfluenza, Parvo enteritis and Rabies ,Hepatitis, Parasites and parasitic diseases	6
33	Keep record	Breeding, Vaccination and Health records	2

<b>Lab animal</b>			
34	Explain importance of laboratory animals	Purpose keeping lab animal Different use of lab animal	2
35	Explain characteristics of laboratory animal	Characteristics of Guinea pig, Mouse, Rabbit kept as lab animal	4
36	Explain care of laboratory animals	Feeding, housing, breeding, daily care and management of lab animal	4
37	Keep record	Feeding, Breeding, Vaccination and Health records	2
	<b>Total</b>		<b>78</b>

## Fish Production (Optional II)

**Total Hours : 78 hrs**

**Theory : 16 hrs**

**Practical : 62 hrs**

### **Description:**

This part of course is designed to provide basic skills and knowledge of fish culture including species identification, breeding, rearing and transportation of brood fish and fingerlings. It gives basic skills of the control of diseases, parasites as well as protection of cultivated fishes from enemies and predators. It also provide a basic concept of rearing Rainbow trout and a popular Magur fish

### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of fish culture in Nepal
2. explain different species of fish cultivated in Nepal
3. design pond for fish culture
4. transport, rear and stock fingerling with less chances of mortality
5. breed fish by natural way as well as artificially
6. control diseases and parasites of fish
7. market fish and fingerlings

SN	Skill / Task List	Related Technical Knowledge	Time (Hr)
1	Classify fish species	Introduction of fish and fish culture Zoological classification of fish Differentiation between fish culture and aquaculture	2
2	Explain scope of fish farming in Nepal	History of fish farming in Nepal Scope of fish culture in Nepal Economic importance of fish	2
3	Explain method of fish culture	Pond fish culture, Cage culture, Riverine fish culture, Pen culture Running water vs stagnant water fish culture Fish farming zone of Nepal	3
4	Identify external body parts of fish	External body parts of fish with function of each parts	2
5	Identify common fish species found in Nepal	<b>Indigenous species</b> Indian major carps: Rohu, Bhakur, Naini Locally popular fish: Asala, Katle, Buduna, Jalkapur Weed/ predatory fish: Magur, Bhoti, Shinghi, Barari <b>Exotic species</b> Chinese carps: Big head carp, Silver carp, Grass carp Common carps: German carp, Israeli carp Rainbow trout fish	10
	Select site for fish farming	Conditions required for fish farming Source of water/ water temperature	2

6		Drainage facility, Soil type Accessibility of road, market, labour, fingerlings supply	
7	Explain method of construction of fish pond	Lay out plan Dike, Core trench, Spill way, Embankment, Inlet, Outlet, Area of pond, Carrying capacity	2
8	Explain types of fish pond	Incubator/ hatchery Nursery pond, Rearing pond, Breeding pond	2
9	Maintain/repair fish pond	Different problems of fish pond Maintenance of dike height/slope Cleaning of fish pond, application of fertilizer/lime in pond	2
10	Maintain water quality of pond	pH, turbidity, water temperature, dissolved oxygen level, water level	1
11	Explain type of fish culture	Monoculture, Polyculture, Monosex culture Integrated fish culture: Paddy cum fish culture, Duck cum fish culture, Pig cum fish culture etc Stocking density in each type Advantage and disadvantage of each type	3
12	Explain fish breeding	General concept of fish breeding and fingerling production Conditions required for fish breeding Natural and artificial breeding	2
13	Select brood fish	Characteristics of brood fish Differentiation of male and female brood fish Age of breeding for different species of cultivated fish	1
14	Explain natural breeding of common carp	Monosex culture, selection of brood fish, water temperature, season of breeding, male and female ratio, Kakabon preparation, spawning, hatching, feeding of hatchlings	2
15	Explain artificial breeding of Indian major carps/Chinese carps	Selection of brood fish, age and weight of brood fish, male female ration, hypophysation, injection time/ dose of pituitary extract/ injection of ovaprim and dose rate, spawning, breeding hapa, incubator, water sprinklers, feeding of hatchlings	4
16	Transport fry/fingerlings	Ordering fingerlings; Sources of fingerlings Method transportation of fingerlings Stocking density and method of stocking Precaution to be taken during transport and stocking time	2
17	Rear fry/ fingerlings	Management of nursery pond; Feeding of fry and fingerlings Protection from enemies; Symptom of dissolve O <sub>2</sub> deficiency Assessment of growth rate	2



18	Rear fish for table purpose	Management of rearing pond Feeding of artificial feeds for fast growth Natural food, Protection from enemies Symptom of dissolve O <sub>2</sub> deficiency Assessment of growth rate	2
19	Rear brood fish	Management of breeding pond Transportation of brood fish Protection from enemies Symptom of dissolve O <sub>2</sub> deficiency Growth rate and symptoms of maturity	2
20	Explain concept of rearing Magur fish	General concept, sources of fingerling, rearing, stocking density, growth rate, feeding habit and marketing	2
21	Explain concept of rearing Rainbow trout fish	General concept, sources of fingerling, rearing technique, requirement of running water, water quality, race way management, water temperature, stocking density, growth rate, feeding habit and marketing	2
22	Explain concept of rearing fish in aquarium	General concept, purpose, type of fishes kept in aquarium, sources of fingerling, feeding habit and marketing	2
23	Identify natural feed in pond	Feeding habits of different fishes Phytoplankton and zooplankton Importance of fertilizer in fish pond	2
24	Prepare feed for fish from locally available ingredients	Natural and artificial food Feeding requirement for different stages and types of fish Mixing of different ingredients for fish ration Feeding time, Feeding behavior	4
25	Explain different weed fishes	Weed fishes: <i>Puntius</i> sps., <i>Channa</i> sps, Control of Weed fishes	2
26	Explain predatory fishes/enemies	List of predatory fishes: <i>Wallago attu</i> , <i>Clarius batrachus</i> , <i>Heteropneutis fosillis</i> , <i>Anguila bengalensis</i> Fish enemies: Snake, Frog, Crocodile, Otter Control of predatory fishes and enemies	2
27	Control common fish diseases parasites	Common fish diseases: Icthiothyriosis, White spot disease, Fin rot, Gill rot, Argulosis, Gyrodactylus, Datylogyrus Sign and symptoms, control and treatment.	6
28	Harvest fish	Stage of harvesting, Methods of harvesting Using Nets: Drag net, Scoop net, Maji Jal Care and maintenance fish nets Fishing hook, Harvesting by removal of water Harvesting by poisoning	2
29	Market fish	Time of harvesting fish Marketing channel and fish market, Pricing Customer behavior and marketing policy	1

30	Keep records	Record of feed, production, costs, sales, health Analyzing record for management purposes	3
31	Develop and annual calendar	Elements of a fish farming calendar for fish farming	2
		<b>Total</b>	<b>78</b>

## Horse and Mule Production (Optional III)

**Total Hours : 78 hrs**

**Theory : 16 hrs**

**Practical : 62 hrs**

### **Description:**

This part of course is designed to provide basic skills and knowledge of horse and mule production including housing, care and management, breeding and health care of riding horse and pack animals.

### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of horse and mule in Nepal
2. design housing/ shelter for horse and mule
3. care/ manage different stages and age of horse and mule
4. Explain feeds and feeding

<b>S N</b>	<b>Task/skill</b>	<b>Related technical knowledge</b>	<b>Time (hrs)</b>
1	Explain scope of horse/ mule in Nepal	Introduction of horse and mule Scope and importance of horse and mule in Nepal Use of horse/mule in Nepal Statistics horse/mule in Nepal Terminology used in horse/mule	2
2	Select horse/mule	Purpose of selection Selection criteria for horse/mule Method of selection	3
3	Identify external body part of horse/mule	Importance of study external body parts Identification of external body parts	2
4	Explain breed characteristics of horse/mule	Importance of study of breed character Body structure based character Colour based character Behavior based character Size based character Draft based character	5
5	Study behavior of horse/mule	Purpose of study Feeding behavior Body movement Behavior during Pregnancy Behavior during foaling	2
6	Handle horse/mule	Purpose of restraining Method of handling: by casting, by using twitch, by lifting of limb, by using anesthetics Precaution during handling	4
7	Restrain animal using casting rope	Purpose of casting Size of rope (length and thickness) used for casting a horse Preparation for casting Precaution during casting	3
8	Manage manure of	Proper method of management	2

	horse/mule	Precaution during management	
9	Castrate male horse by open method	Meaning of castration Advantage of castration Proper age for castration Casting animal Materials required: anesthetics with dose rate, surgical instruments, bedding materials Surgical procedure Post operative care	4
10	Estimate body weight of horse/mule	Estimate body weight by observation for calculation of dosage of drug	2
11	Detect heat of mare	Importance of detection of heat Estrus cycle Age of puberty Sign and symptoms of heat Mating time and mating behavior	2
12	Care pregnant mare	Feeding of pregnant mare Housing and space requirement Cleaning and sanitation Preventive health care	2
13	Care newly born foal	Removal of mucous from nose Bedding material Assistance for walking and suckling Feeding colostrums Removal of navel	3
14	Care post parturient mare	Feeding of mare Housing and space requirement Cleaning and sanitation Preventive health care	3
15	Care riding/ race horse/pack animal	Feeding of riding horse/mule Feeding requirements of horse/ mule Housing and space requirement Cleaning and sanitation Preventive health care	3
16	Fit saddle	Purpose and method of fitting a saddle	3
17	Place a pack frame for loading pack animal	Purpose and method of placing a pack	3
18	Assist in training a riding/pack animal	Purpose and method of training	4
19	Care equipments of work animal	Care of Pack, harness, saddle, bridle	3
20	Explain digestion in horse	Digestive system of horse Role of digestion in caecum	4
21	Trim hoof of horse/mule	Purpose of hoof trimming Precaution during hoof trimming Handling of animal for hoof trimming Procedure of trimming hooves	2
22	Perform sole fitting	Purpose of sole fitting Shape and size Fitting sole/ nailing of sole	3

23	Age animal by dentition	Purpose of aging Technique of aging	2
24	Explain housing for horse/mule	System of housing Space requirement for foal, stallion, mare, breeding male and female	4
25	Explain special disease of horse/mule	Spasmodic colic sign and symptoms Laminitis sign and symptoms Pole-evil sign and symptoms Thrush of sole sign and symptoms Making thrush powder and use	6
26	Care foot of horse	Anatomy of horse foot Sole of horse (frog), care to prevent laminitis	2
	<b>Total</b>		<b>78</b>

## Animal Nutrition and Fodder Production

**Total Hours : 156 hrs**

**Theory : 32 hrs**

**Practical : 124 hrs**

### **Description:**

This course is designed to provide basic skills and knowledge necessary for feeds and feeding of animals and cultivation of fodder and pasture required to feed livestock and poultry

### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of animal nutrition and fodder production in Nepal
2. explain nutrients required for different animal species and poultry birds
3. classify feed stuffs
4. cultivate fodder and grasses
5. produce and manage pasture
6. assist to formulate ration for livestock and poultry
7. conserve fodder and forage for lean season
8. calculate dry matter and total feeds required for animals

S.N	Skill	Related technical knowledge	Time (hrs)
1	Define Animal Nutrition	Definition of animal nutrition and related terminology used in animal nutrition: Nutrition, Nutrient, Ration, Feed, Dry matter, DE, ME,	2
2	Classify nutrients	Water, Carbohydrate, Protein, Fat, Mineral, Vitamin	2
3	Explain function of water in animal body	Source of fresh clean water Function of water Dehydration / rehydration Water requirements in hot summer, for milk producing animal, animal in draft purpose, general requirements /day	2
4	Explain the role of carbohydrate in animal body	Introduction Source of carbohydrate Function of carbohydrate Deficiency symptoms Requirements	2
5	Explain the role of protein in animal body	Introduction Type of protein Amino acids: essential amino acid Source of protein Function of protein Deficiency symptoms Requirements	3

6	Explain the role of fat/lipid in animal body	Fat and Lipid Essential fatty acid Source of fat Function Deficiency symptoms Energy requirements	2
7	Explain the role of vitamins in animal body	Introduction Type of vitamins: Fat soluble and water soluble vitamins Source and functions of different vitamins Deficiency symptoms Requirements	3
8	Explain the roles of minerals in animal body	Introduction Micro minerals: Fe, Co, Cu, Se, I, Zn Macro minerals: Ca, P, Na, K, Mg, Cl Sources and functions of minerals Mineral deficiency symptoms Requirements	4
9	Explain the digestion process of ruminant and non- ruminant animal	Microbial digestion in ruminants Enzymatic digestion in non-ruminants Microbial activities in rumen/ caecum	3
10	Determine nutrient requirement for animals	Concept of NRC and ARC standard Nutrient requirements for layer / broiler chicken Nutrient requirement for pigs Nutrient requirement for dairy cattle and buffalo Nutrient requirements for sheep and goat Nutrient requirements for horse and mule	4
11	Classify the feed stuffs	Roughage: dry roughage and succulent roughages Concentrate: energy rich, protein rich Feed supplements: mineral and vitamin supplements Feed additives: antibiotics, preservatives, antifungal	4
12	Identify locally available feed ingredients	Feed ingredients: energy rich, protein rich	3
13	Formulate ration for different animal species	Importance of balance ration Feed formulation for poultry Feed formulation for dairy cattle and buffalo Feed formulation for pig	6
14	Calculate dry matter for cattle and buffalo	Dry matter requirements for cattle and buffalo Calculation of green fodder Calculation of the dry fodder Calculation of energy rich concentrate Calculation of protein rich concentrate	4

15	Process feed ingredients	Introduction of feed processing Husking, wilting, drying, soaking, grinding, ensiling, chopping, roasting , pelleting	4
16	Explain the importance of crop/ animal by-product in animal rate	Introduction of byproduct Crop by products: rice polish, wheat bran, molasses, oil cakes, brewery extract Animal by- products: fish meal, meat meal, blood meal, feather meal, bonemeal dairy by-products	4
17	Design yearly feeding plan	Importance of feeding plan Locally available feed stuff	2
18	Collect fodder/forage grass ( herbarium collection)	Herbarium collection method and importance	4
19	Classify grass	Annual, biennial , perennial grasses Leguminous and non leguminous greases and fodder	3
20	Explain factor nutritive value of feeds stuff	Live stock supplies and breed Feeding method, -Level of feeding Protein and fiber ratio Physiological condition of animal	4
21	Cultivate perennial leguminous grasses	Cultivation practice of Stylo, Kudzu, Desmodium,	3
22	Cultivation of annual legume grass	Cultivation practice of Beseem, Vetch	2
23	Cultivation of perennial non legume grasses	Cultivation practice of Napier, Setaria Molasses, Paspalum, Rye grass	5
24	Cultivate the annual forage grass	Cultivation practice of oat	2
25	Follow mixed cropping system	Maize, cowpea and soyabean Oat and berseem	2
26	Explain importance of grass for livestock farming	Importance of green grass Fodder trees for livestock Nutritive value of fodder	2
27	Identify multipurpose fodder trees found in local area	Introduction of multipurpose tree Importance of multipurpose trees Local, Botanical, English name of fodder and grasses Nutritive value of locally available multipurpose tree	3
28	Establishing fodder nursery in school farm	Introduction of nursery Site selection Lay outing for nursery Arrangement of irrigation drainage, path Fencing Soil preparation for seed bed Plastic bag Nursery tools and equipments	5
29	Propagate fodder trees by vegetative methods	Propagation by cutting Propagation of layering Propagation of budding	4



		Propagation of grafting Planting of cutting Media preparation for layering	
30	Cultivate local fodder tree	Badahar-Kutmiro Nivaro, Tanki, Pakhuri, Kharsu, Ipilipil, Dabadabe, Kimbu	8
31	Propagate by reproductive method	Preparation of media Reliable source of seed Seed collection time and storage Dormancy breaking process if necessary Germination test Soiling of seed Preparation of plastic bag Preparation of soil mixture Filling of soil mixture in plastic Plantation method Daily care and management Inoculation	5
32	Transplant fodder trees	Site selection for transplanting Preparation of pit for transplant Transplantation of seedling	4
33	Provide care for fodder trees	Manuring, irrigation, weeding, lopping techniques of fodder trees	2
34	Identify main plant parts stage of fodder trees used for feeding	Parts of grass and trees Identify nutritive stage and part of plant	2
35	Lope fodder	Lopping method; Lopping season Lopping time (morning/ day)	2
36	Feed/grass fodder	Preparation grass fodder before feeding Frequency of feeding Time for feeding	2
37	Introduce pasture management	Definition of pasture Importance and scope of pasture land Range land management Annual legume/non legume; Perennial Classification of pasture on the basis of climatic/geographical region	2
38	Improve pasture land	Rejuvenation, Renovation, Renewal	2
39	Explain problems of pasture improvement	Problem of pasture improvement Lack of coordination between stakeholders Lack of inputs: seed, fertilizer, irrigation Lack of technical knowledge Government rules and regulation	2
40	Manage local/improved pasture	Management of local and improved pasture Factors for improving pasture	2
41	Explain the method of increasing productivity of pasture	Methods of increasing productivity of pasture: sowing, planting, fertilizer application and irrigation, gap filling Grazing system	2
42	Explain factors responsible for the deterioration of	Factors of pasture deterioration: Soil condition, heavy rain, over grazing,	2

	nutrient content in pasture	growth of unwanted plants, lack of fertilizer application	
43	Apply fertilizer / manure in pasture land	Deficiency symptoms of NPK and other soil nutrients Application of NPK: foliar spray, fertilizer application in soil, application of organic manure	2
44	Explain gazing system	Grazing system; Productivity of pasture Live stock unit; Carrying capacity	2
45	Explain plant poisoning in pasture	Poisonous plants Signs and symptoms of plant poisoning Local treatment method Poisonous parts of plants	2
46	Explain Fodder conservation	Introduction of fodder conservation Importance of fodder conservation Method of fodder conservation; Dry conservation Wet conservation	2
47	Make Hay	Definition of hay Principles of hay making Selection of fodder/forage for hay making Characteristics of good quality hay	3
48	Make silage	Definition of silage; Principle of silage making Advantage of silage; Method of silage making Characteristics of good silage	4
49	Explain types of silo	Silos: trench silo, bunker, tower silo, pit silo	3
50	Explain the storage of crop residues	Importance of crop residues for livestock feeding Storage of rice straw, oat straw, millet straw etc	2
51	Improve the nutritive value of crop residues	Urea treatment Treatment of salt, molasses Soaking	2
52	Prepare mineral block	Material requires for making mineral block: Salt, Red soil, Egg shell, wheat four millet floor	2
53	Make fodder calendar	Importance of fodder calendar Alternative arrangements during scarcity period/season	2
		<b>Total</b>	<b>156</b>

## Dairy and Dairy Products

**Total Hours : 156 hrs**

**Theory : 32 hrs**

**Practical : 124 hrs**

### **Description:**

This course is designed to provide basic skills and knowledge necessary for clean, hygienic milking and milk handling as well as the processing of milk to make milk products.

### **Objectives:**

Upon completion of course, the students will be able to:

1. describe the scope and importance of dairying in Nepal
2. explain milk and its composition
3. perform milking
4. produce hygienic milk
5. perform quality control tests
6. process raw milk
7. prepare common milk products
8. prepare chhana based sweets
9. prepare khoa based sweets
10. market milk and milk products

SN	Task statement	Related Technical knowledge	Time (hrs)
1	Explain the scope of dairy industry in Nepal	History of dairy development, scope and importance, constraints, present dairy policies , major dairy industries in Nepal, role of DDC, NDDB, private dairy and dairy cooperative in dairy development, present status of milk production- demand and supply ratio of milk, statistics of dairy animals	3
2	Explain the composition of milk	Definition of milk Composition of milk: Water, Fat, Protein, Lactose, Minerals, Vitamins, Phospholipids, Cholesterol Pigments, enzymes etc	3
3	Explain the factors affecting the composition of milk	Factors affecting the composition of milk: species, breed, individuality, stage of lactation, age of animal, seasonal variation, disease and udder infection, Nutrition, interval of milking, day to day variation, portion of milking and time of milking, milk yield, feeding, excitement, drug and hormone, condition of cow at calving	4
4	Explain the properties of milk	Physical state of milk, color, odor, specific gravity, specific heat, boiling point, refractive index, viscosity, freezing point, Ph and acidity, adhesive properties, effect of heat on milk.	3

5	Identify dairy equipments	Dairy equipments used in dairy farm, equipments used in chilling center, equipment used in dairy plants	4
6	Clean dairy equipments	Dairy detergents, method of cleaning	4
7	Sanitize dairy equipments	Sanitization, chemical sanitizers	3
8	Prepare animal for hygienic milking	Cleaning and sanitization milking barn, cleaning of utensils, cleaning of milch animal, personal hygiene of workers.	3
9	Milk animal	Hand milking: stripping, full hand milking, knuckling Machine milking	5
10	Collect milk	Establishment of milk collection center, site selection, management of collection center, measurement, platform test, pricing and payment	5
11	Explain chilling of milk	Role temperature in bacterial growth, chilling process, bulk milk tank cooler, plate chiller, dairy equipments required in chilling center	3
12	Transport milk	Transportation of milk from dairy farm to chilling center, chilling center to dairy plant.	3
13	Perform organoleptic test	Principle, procedure, result and interpretation of test	1
14	Perform COB test	Principle, procedure, result and interpretation of test	1
15	Perform alcohol test	Principle, procedure, result and interpretation of test	1
16	Perform acidity test	Principle, procedure, result and interpretation of test	5
17	Perform methylene blue reduction (MBR) test	Principle, procedure, result and interpretation of test	5
18	Perform Fat test	Principle, procedure, result and interpretation of test	5
19	Perform SNF /TS test	Principle, procedure, result and interpretation of test	4
20	Explain the role of bacteria in the making milk products	Common bacteria used in making Dahi, yoghurt, butter and cheese	2
21	Explain milk borne diseases	Milk borne diseases: bovine origin, human origin	3
22	Prepare for milk processing	Grading and sampling, Weighing, pre-heating	3
23	Pasteurize milk by batch pasteurizer	Definition of pasteurization, LTLT method	3
24	Pasteurize milk by HTST method	HTST method of pasteurization	3
25	Homogenize milk	Principal and procedure of homogenization of milk	3

26	Standardize milk	Definition, method of standardization :reconstitution, toning, recombination, Pearson square method	3
27	Perform adulteration test	Principle, procedure, result and interpretation of the adulteration of starch, sugar, soda, hydrogen peroxide, formalin and common salt	8
28	Separate cream	Definition of cream, uses, types, composition and nutritive value of milk, cream separator, method of cream separation, standardization of cream.	5
29	Make ice-cream	Definition, nutritive value, composition, properties, types, ingredients used in making ice-cream, procedure of making ice-cream(ice cream-mix preparation, aging, freezing, hardening, packaging), storage, distribution, over run calculation, production cost.	4
30	Prepare starter culture	Definition, types, making procedure, preservation and quality of starter culture	3
31	Make dahi/ yoghurt	Definition, nutritive value, production procedure, market quality, packing and storage, keeping quality.	5
32	Make butter	Definition, nutritive value, production procedure, market quality, packing and storage, defect in butter, production cost.	3
33	Make ghee	Definition, nutritive value, production procedure (traditional method, butter method, cream method), market quality, packing, storage, defect in ghee, production cost	5
34	Explain cheese making procedure	Definition, classification, nutritive value, composition, making procedure, packing and storage	3
35	Make chhana	Definition, nutritive value, uses, making procedure, packing, storage, and production cost.	5
36	Make paneer	Making procedure, packing, storage.	4
37	Make chhana based sweets	Procedure of making rasgolla, cham cham, Sandesh, Rasmalai	7
38	Make khoa	Definition, nutritive value, uses, making procedure, packing, storage, and production cost.	7
39	Make khoa based sweets	Procedure of making peda, lalmohan, gulabjamun, pustakari, gundh pak.	9
40	Market milk/ milk products	Packing, distribution, advertisement and marketing strategy of milk/ milk products	3
		<b>Total</b>	<b>156</b>

## Entrepreneurship Skills

**Total Hours : 156 hrs**

**Theory : 32 hrs**

**Practical : 124 hrs**

### **Description:**

This course is designed to provide basic skills and knowledge necessary for entrepreneurship development and basic management skills.

### **Objectives**

Upon completion of course, the students will be able to:

1. perform basic skills for management of livestock and poultry farms
2. prepare scheme for small livestock enterprises
3. market animal products
4. keep record properly
5. forecast/ predict risk before starting a business

<b>S N</b>	<b>Skill</b>	<b>Related technical knowledge</b>	<b>Time (Hrs)</b>
1	Define economic terms	Basic terminologies related to economics: agriculture economics, farm management, goods and services, utility, value, price, wealth, money, income, profit, loss, revenue, product, input Role of agriculture in Nepalese economy	5
2	Show the relationship between total, average and marginal products	Total products Average products Marginal products Interrelationship	8
3	Explain production function	Land, labor, capital Entrepreneur	8
4	Calculate cost relationship of a firm	Calculation of total cost, fixed cost, variable cost Calculation of average variable cost, average fixed cost, average total cost and average marginal cost	8
5	Explain law of diminishing return	Law of diminishing return	3
6	Gather farm management information	Farm record system Farm inventory Net-worth Deciding upon level of input, level of production and combination of input & product	3
7	Explain farm planning/budgeting	Principle of farm planning and budgeting Importance of farm planning and budgeting Steps of farm planning and budgeting Methods of farm planning and budgeting	6
8	Identify sources of credits	Sources of loan: Individual lending, Institutional loan: Bank and other financial institutions	5

9	Explain types of banks	Types of bank: Central bank, Commercial bank, Industrial bank Development bank, Finance and cooperatives	5
10	Explain loan procedures	Types of loan, Loan procedure, Priority sector loan, Industrial sector loan, Secured Loan Long term loan, Short term loan, Collateral for loan, Completion of loan application forms, Loan payment schedule	4
11	Explain banking systems	Explain rules of bank regarding payment of loans Calculation of simple interest for loan payment Procedure for obtaining loan from bank and other sources (ADB, Rural Dev. Bank, Women's Dev. Office etc.)	6
12	Perform bank transaction	Cash deposits and withdrawals: Fixed deposit account Saving account Current account Cheque issues and withdrawal system, demand draft, debit and credit card	6
13	Prepare livestock/ agriculture farm plan	Scheme / farm plan preparation Capital Investment: Fixed capital investment, running capital Cost of production: fixed cost, variable cost Financial analysis: Gross income and expenditure, net profit/loss, break even point	6
14	Make a simple yearly production plan based on market analysis	Components of a yearly production plan, including time tables and budgets (expenses expected, income expected) Decision - making regarding a particular product, based on a market analysis (including seasonal variations) Preparation of a cash flow chart based on production plan	5
15	Explain assets/ property	Definition of asset Calculation methods	3
16	Complete a simple farm/ business inventory	Review of inventory procedure Keeping records Calculating profit / loss	4
17	Design a marketing plan	Designing a marketing plan, including storage, packaging, transportation, labor needed, taxes etc.	4
18	Supervise workers / direct work on the farm or enterprise	Supervision of workers	4
19	Describe the qualities of a successful entrepreneur	Introduction to principles of small business Entrepreneurs' qualities Functions of entrepreneurs Importance of creativity	5

20	Describe types of enterprise	Types of small business: Private, partnership, cooperatives, joint stock company; advantages and disadvantages of each	6
21	Differentiate risk and uncertainly	Introduction and types of risk/ uncertainty Describe how risk and uncertainly can affect decision-making. Risk calculation Concept of decision-making - how is it done Probability of success - can all succeed?	6
22	Perform a project work on a simple marketing analysis	Basic concepts of business management Types of market and marketing, Marketing strategies, Four P's rules of marketing strategy, Marketing research, Market survey guidelines	6
23	Keep records	Keeping inventory Maintaining necessary records on regular basis (labor, livestock, feed consumption, seeds used, fertilizer, Perform a simple inventory and record Keep records of production and marketing costs Keep simple account	6
24	Perform market study	Introduction, Market study, Description of product, Complication of the product, Location of firm, Market area, Main consumer, Total demand Market share, Production level, Sales promotion	10
25	Prepare production plan	Production Plan, Production process, Fixed capital, Depreciation, Repair maintain, Source of equipment, Planned capacity, Future capacity, Purchasing of equipments	8
26	Calculate current expenses	Raw materials, Cost of raw materials, Availability of raw materials, Pre operating expenses, Availability of labor, Facilities for labor, Overhead expenses, Per unit cost	8
27	Calculate financial aspects of a livestock/ poultry farm	Total capital, Loan requirement, Collateral for loan Selling price of the product Calculation of loss and profit Loan payment table Calculation or in term of investment Calculation break even point	8
		<b>Total</b>	<b>156</b>



## Extension and Community Development

**Total Hours: 234 hrs**

**Theory: 48 hrs**

**Practical: 186 hrs**

**Description:**

This course provides skills and knowledge related to basic skill of extension and communication, community development, group formation, farmers training, approaches of extension used in different time,

**Objectives:**

Upon completion of this course students will be able to:

1. explain extension and communication methods
2. conduct need assessment of farmers
3. assist to run farmers training
4. assist to form farmers group
5. conduct simple field trial
6. communicate with farmers
7. assist for evaluation, follow-up and monitoring of farmers program
8. assist to leader farmer

SN	Task	Related Technical Knowledge	Time (Hr)
1	Compare formal and non formal education	Meaning and types of education Objectives of education Comparison of formal, informal and non-formal education	3
2	Define extension education	Principle of extension education Objective of extension education Importance of extension education Philosophy of extension education	6
3	Explain teaching learning process	Extension teaching methods Effective teaching plan Effective learning in extension Method of teaching of adult farmer Law of learning	4
4	Explain extension approach of Nepal from past to now	Different kinds of extension approaches used in Nepal Training and Visit systems Conventional extension approach Group approach IRD extension approach, Farming systems approach Tuki system approach Farmer to farmers Approach (Farmers field school)	4
5	Develop visual aids	Poster Chart Pamphlets	8

		Graph Leaflets & their uses	
6	Assist to run demonstration plot in farmers field	Method demonstration Result demonstration Farmers Field Trail PPVT Motivation method Selection of farmer Layout	5
7	Explain functions of electronic audio visual aids	Function & parts of LCD Projector, OHP etc.	2
8	Prepare organogram of MOA	Role of each component Role of DAO Role and duty of JT/JTA Role of leader farmer	2
9	Communicate with farmers	Definition of communication Elements of communication Barriers of communication Diffusion process Adoption & innovation process Individual communication Group and mass communication	8
10	Explain importance of a group	Definition of group Philosophy of group formation Objectives of group formation Importance of group formation	2
11	Prepare a training cycle	Definition of training Importance of farmers' training Training cycle	2
12	Explain need assessment	Definition of need assessment Importance of need assessment Different methods of need assessment (RRA &PRA)	4
13	Prepare action plan of your work	Introduction of program planning Role & nature of program planning Principle & scope of program planning Behavioral objectives of program planning Steps of program planning Evaluation of program planning Monitoring of program planning	4
14	Define community development	Definition of community development Objective of community development	2
15	Conduct training needs assessment	Methods of performing training needs assessment Base line data collection for training need assessment	4
16	Assist community / user group in formation of objectives	Principle of objective formulation Guideline of objective formulation	2

17	Motivate farmers to participate in training	Concept of participatory training Discuss how people learn especially rural people (learning versus doing)	2
18	Prepare plan for farmers training	Selection of training methods and materials depending upon the target groups (illiterate versus literate) Arrangements of accommodation, foods and transportation for trainees	4
19	Select trainees	Helping community to select appropriate trainees Characteristics of appropriate trainees	2
20	Prepare posters for training	Materials and methods required for poster preparation Shape, size, color and content of the posters	4
21	Prepare a lesson plan	Different models of lesson plan Elements of lesson plan Practical lesson plan Theoretical lesson plan	4
22	Run practical sessions	Venue and places for skill training Appropriate size of participants for practical session Arrangement of all necessary tools and equipments/instruments Conducting field trips Extra-curricular activities	4
23	Prepare training materials	Preparation of flipcharts Preparation of transparencies Preparation of charts Preparation of drawings and posters Drama, role plays, display etc Preparation of teaching games	4
24	Run theory sessions of the training	Preparation of class in the training programs Using mobile projector	2
25	Use checklist for the evaluation of trainees	Elements of checklist of training evaluation Models of checklist	1
26	Assist in reporting of training program activities	Elements of report writing Reports writing skill of training activities	3
27	Follow up trainees	Purpose of follow-up (encouragement, review, monitoring etc.) Follow up format (e.g. VAHWs, NFE facilitators, Leader farmers)	4
28	Explain Farmer to Farmer Extension (FtF) Approach	Definition Scope and need Basic elements of FtF Experienced leader farmer and their role in FtF Role of DLS, DoA and DADO, DLSO in FtF FtF in practice Identification of experience leader farmer	2

29	Explain the role/ responsibility of farmers committee	Structure of committee Proposal analysis Agreement of budget for Farmers Field School	1
30	Mobilize farmers group	Role of group for technology transfer Stages of group Steps of group development Attitude of group member Conflicts of group member Conflict management Creation of demand	2
31	Explain role of experience leader farmer	Definition of ELF Characteristics of ELF Relation with service provider Responsibility of ELF Agreement between ELF and committee	1
32	Explain steps of Farmers Field School (FFS)	Definition History of FFS, importance, objectives Steps of running farmers field school Methods of running FFS Planning Monitoring Evaluation of FFS	2
33	Prepare plan for training	Objective setting Program planning Preparation of lesson plan Running practical and theory classes Evaluation criteria Use of audio visual aids Sequential presentation of skill and knowledge	2
34	Explain skill needed for ELF	Communication skill Effective listening Acceptance of feed back Consideration at time of presentation	1
35	Explain adoption process	Definition of adoption Steps of adoption process Factors affecting adoption process Motivation factor for adoption process	1
36	Explain monitoring process followed by ELF	Group discussion Demonstration Field visit	1
37	Monitor/evaluate FtF approach	Method & activates of monitoring followed by ELF & institute Method & activates of evaluation followed by ELF & institute Method & activates of fallow-up followed by ELF & institute	2

38	Run farmers field school on the basis of need	Selection of topic according to farmers choice Preparation for run FFS Coordination with concern agencies Logistic management	5
39	Evaluate impact of FFS	Evaluation from farmers side Use of check list	2
40	Assist farmers to conduct Farmer led experiments (FLE)	Objectives and importance of FLE Why FLE Layout of experimental plot Observation Data collection and record keeping Share results to farmers	4
41	Explain the involvement of institution for community development	Role of institution in community development Concept of community development Present status of participation Basic requirements in participatory program Right based approach	2
42	Collect baseline information	Introduction and importance of baseline information Procedures of baseline information collection Developing a baseline information collection form	4
43	Prepare a project proposal	Basic elements of project proposal Goal Objectives Outputs Activities Inputs	4
44	Prepare a progress report of program	Purpose of progress report Subject matter of effective progress report Types of progress report	2
45	Explain participatory planning	Introduction of participatory planning, monitoring and evaluation (PPME) Why participatory approach? Participatory Planning Participatory Monitoring Participatory Evaluation	2
46	Define group approach to extension	The "group approach" to extension Criteria of group formation Various types of groups: User groups, Commodity groups, Reference groups (natural groups) Different roles of groups: Technology transfer Training Management of common recourses Empowerment	2

47	Assist to form group	Group characteristics (size, caste, ethnicity, group dynamics) Wealth ranking in group formation to assess different socioeconomic factors Advantages and disadvantages of heterogeneous versus homogeneous groups	2
48	Assist group to select leaders	Roles of group leaders Necessary criteria for selection of leader Methods of leader selection Characteristics of a good leader Helping to select leaders and volunteers	2
49	Encourage members to participate in group discussions activities	Factors of encouragement of members to participate in group discussions and activities	3
50	Facilitate to run the group meeting	Principles of running a meeting Agenda Allowing discussion Moderating discussion Making decisions	2
51	Conduct follow- up	Different methods of follow-up Importance of follow-up Different methods of fallow-up	4
52	Mobilize the farmers to use locally available resources	Identification method of local resources Types of resources available to local groups which are properly registered e.g. forest user groups, drinking water schemes group	2
53	Assist group to plan its policies and activities	Paperwork with government agencies Technical skills for paper works	2
54	Assist to manage group welfare funds	Process to obtain loans Process of handling fund Common financial and other resources	2
55	Report group activities to sub-center or office	Demonstration of simple reporting techniques	2
56	Explain group dynamic	Definition of group dynamic Role of change agent for group dynamic	2
57	Explain community needs assessment	Definition of community need assessment Different methods of community need assessment: PRA, RRA, PLA Selection of appropriate method Importance of community needs assessment	4
58	Explain of Participatory Rural Appraisal (PRA)	Definition of Participatory Rural Appraisal (PRA) Philosophy of PRA Principle of PRA Importance of PRA Scope of PRA (In this part of curricula student MUST do one PRA)	4

59	Explain of Participatory Learning Approach (PLA)	Definition of Participatory Learning Approach (PLA) Philosophy of PLA Principle of PLA Importance of PLA Scope of PLA	2
60	Explain tools used in PRA	Different tools used in PRA techniques	2
61	Prepare time line	Time line & its importance	2
62	Prepare Seasonal calendar	Cropping time & season	2
63	Prepare cropping/livestock patterns	Irrigation facilities Livestock components Cropping	2
64	Prepare land-use systems,	Making maps of land - use Making maps of land / farms / social	2
65	Prepare matrix making	Methods of ranking	2
66	Discuss problems of community	Problem identification through PRA approach Problem census Problem solving Group technique Group discussion	2
67	Identify need of target groups	Felt and unfelt need of community/family	2
68	Prepare reports	Methods of preparing report	3
69	Plan future work	Planning based on the results and the resources available	1
70	Attend meeting	Basic concept of meeting (agenda, discussion, decision-making) Meetings with cooperating agencies (e.g. VDC) Reporting minutes of meetings	2
71	Collect the demand from farmers	Demand collection of Seeds, seedlings and grasses, and improved breeds of animals How to order, distribute and inventory supplies How to fill-up a basic request form from both the NGO side and the government side What is an inventory and how it is performed	4
72	Assist farmer to run trails	Types of trails Selection criteria's of farmer for running trails Terminologies used in trail (replication, plot, layout, randomization, sampling etc)	4
73	Assist for demonstration	Selection criteria's of farmer for running demonstration Method and result demonstration Farmers field trail	4

74	Distribute supplies	Arranging to provide the seeds, seedlings, grasses and animals requested Inventory of supplies	4
75	Prepare service center program	Activities of government, semi-government, non- government and private organizations: Ideas regarding how they can work together and complement each other for the development of the country	3
76	Prepare plan for work in field with farmers (e.g. plan for vaccination activities, etc.)	Annual calendar and how it is put together Preparation of a sample annual calendar based of farmers' needs and demands & on the basis of resources available Preparation of work schedules according to a given format	4
77	Assist in evaluating activities	Study of an actual evaluation format used y an NGO and / or a government organization	4
78	Follow-up distributed supplies	Follow-up and evaluate trainees / motivators (see training module also) Study of an actual "follow-up" program used by an NGO for motivators or trainees Study of the actual follow-up required after distribution of minikits by government workers	4
79	Maintain daily diary	Diary keeping: why it is done, and how it is done; using examples How to write a basic report	2
80	Write a report to assist community	Writing a report regarding funds collected for farmers' groups Writing a report regarding use of improved livestock Writing a report regarding farm activities (crops, orchard, vegetable, livestock) Reporting results of harvesting (yield) Reporting activities of pocket areas	4
81	Keep Records	Statistics regarding use of improved breeding stock, Financial matters: income and expense, Statistics of agriculture and livestock farms: Activities accomplished, Emergency report & reporting	4
		<b>Total</b>	234



## **On the Job Training (OJT)**

**Full Marks: 500**

**Practical: 24 weeks/960Hrs**

### **Description:**

On the Job Training (OJT) is a 6 months (24 weeks/144 working days) program that aims to provide trainees an opportunity for meaningful career related experiences by working fulltime in real organizational settings where they can practice and expand their classroom based knowledge and skills before graduating. It will also help trainees gain a clearer sense of what they still need to learn and provides an opportunity to build professional networks. The trainee will be eligible for OJT only after attending the final exam. The institute will make arrangement for OJT. The institute will inform the CTEVT at least one month prior to the OJT placement date along with plan, schedule, the name of the students and their corresponding OJT site.

### **Objectives:**

The overall objective of the On the Job Training (OJT) is to make trainees familiar with firsthand experience of the real work of world as well as to provide them an opportunity to enhance skills. The specific objectives of On the Job Training (OJT) are to;

- apply knowledge and skills learnt in the classroom to actual work settings or conditions and develop practical experience before graduation
- familiarize with working environment in which the work is done
- work effectively with professional colleagues and share experiences of their activities and functions
- strengthen portfolio or resume with practical experience and projects
- develop professional/work culture
- broaden professional contacts and network
- develop entrepreneurship skills on related occupation

### **Activity:**

In this program the trainees will be placed in the real work of world under the direct supervision of related organization's supervisors. The trainees will perform occupation related daily routine work as per the rules and regulations of the organization. In addition to the above, trainees must participate on at least one animal health campaign (parasite control, infertility camp, etc) /vaccination campaign / livestock exhibition within the OJT period.

### **Potential OJT Placement site:**

The nature of work in OJT is practical and potential OJT placement site should be as follows;

- District Livestock Development Offices
- Livestock and animal health related research station
- Veterinary hospitals /Clinics
- Veterinary related NGOs and INGOs
- Veterinary labs, Dairy Farms, Cooperative related Livestock
- Livestock Farms
- Animal breeding center
- Veterinary institute
- Livestock related organization
- Cooperatives related to livestock services

**Requirements for Successful Completion of On the Job Training:**

For the successful completion of the OJT, the trainees should;

- submit daily attendance record approved by the concerned supervisor and minimum 144 working days attendance is required
- maintain daily diary with detail activities performed in OJT and submit it with supervisor's signature
- prepare and submit comprehensive final OJT completion report with attendance record and diary
- secured minimum 60% marks in each evaluation

**Complete OJT Plan:**

SN	Activities	Duration	Remarks
1	Orientation	2 days	Before OJT placement
2	Communicate to the OJT site	1 day	Before OJT placement
3	Actual work at the OJT site	24 weeks/144 days	During OJT period
4	First-term evaluation	one week (for all sites)	After 6 to 7 weeks of OJT start date
5	Mid-term evaluation	one week (for all sites)	After 15 to 16 weeks of OJT start date
6	Report to the parental organization	1 day	After OJT placement
7	Final report preparation	5 days	After OJT completion

- First and mid-term evaluation should be conducted by the institute.
- After completion of 6 months OJT period, trainees will be provided with one week period to review all the works and prepare a comprehensive final report.
- Evaluation will be made according to the marks at the following evaluation scheme but first and mid-term evaluation record will also be considered.

**Evaluation Scheme:**

Evaluation and marks distribution are as follows:

S.N	Activities	Who/Responsibility	Marks
1	OJT Evaluation (should be three evaluation in six months –one evaluation in every two months)	Supervisor of OJT provider	300
2	First and mid- term evaluation	The Training Institute	200
	<b>Total</b>		<b>500</b>

**Note:**

- Trainees must secure 60 percent marks in each evaluation to pass the course.
- If OJT placement is done in more than one institution, separate evaluation is required from all institutions.

**OJT Evaluation Criteria and Marks Distribution:**

- OJT implementation guideline will be prepared by the CTEVT. The detail OJT evaluation criteria and marks distribution will be incorporated in the guidelines.
- Representative of CTEVT, Regional offices and CTEVT constituted technical schools will conduct the monitoring & evaluation of OJT at any time during the OJT period.