

DEPARTMENT OF B.VOC

Livestock production and Management

Programme Outcomes :

Vocational Education is education that prepares the students for specific job role in various sectors in livestock production and management organization. It trains the students from a trade, technician or professional position in R & D organizations for specific job roles.

The program outcomes are the skills and knowledge which the students have at each exit level/at the time of graduation. These outcomes are generic and are common to all exit levels mentioned in the program structure.

- i. Students with vocational training can find work in several state and central government organizations, non-profit groups, and academic institutions and in private sectors as well.
- ii. This program prepares students for specific types of occupations and frequently for direct entry into the market.
- iii. After completion of this program students will have enough competences, to get benefit from market opportunities.
- iv. This program would enable students to update their knowledge and professional skills for entering the work force executing income generating activities or occupying better positions
- v. At each exit level of this program, students will be able to
 - a) Apply knowledge of general education subjects and skill development subjects to the conceptualization of livestock production and management.
 - b) Livestock production and management appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

- c) Conduct and undertake investigations of problems of including design of processing technology in livestock production and management interpretation of data in order to provide valid conclusions.
- d) Create, select and apply appropriate processing technology/techniques, resources, modern processing tools in order to improve the quality, safety in livestock production and management.
- e) Communicate effectively on minimal processing activity and value addition to the farmers/producers/grower at large, such as being able to comprehend and write effective reports, design documentation and make effective presentations.
- f) Demonstrate understanding of the social, health, safety, legal and cultural issues and the consequent responsibilities relevant to livestock production and management.
- g) Understand and commit to professional ethics and responsibilities and norms/regulation for manufacturing of livestock production & management.
- h) Understand the impact of livestock production and management in a societal context and demonstrate technical know-how and understanding of livestock production and management, quality for sustainable development.

Exit Options: Bachelor of Vocation (B. Voc.) is launched under the scheme of University Grants Commission for skill development based on higher education leading to Bachelor of Vocation (B. Voc.) Degree with multiple exits as Diploma/Advanced Diploma under the National Skill Qualification Framework (NSQF). The B. Voc. programme incorporates specific job roles and their National Occupational Standards along with broad based general education.

1. B. Voc. Programme has been designed as per National Skill Qualification Framework emphasizing on skill based education.

2. LEVELS OF AWARD:

- i) The certification levels shall lead to certificate/Diploma/Advanced Diploma/ B. Voc. Degree in livestock production and management.

Award	Duration	Corresponding NSQF level
Certificate in Livestock Production and Management	6 Months	4
Diploma in Livestock Production and Management	1 Year	5
Advanced Diploma in Livestock Production and Management	2 Years	6
B. VOC. Degree in Livestock Production and Management	3 Years	7

Programme Specific Outcomes

After successful completion of the 1st year, the student shall be able to perform the following skills.

1. Student will be able to know Fundamentals of Livestock production and management, Animal nutrition and feed technology & Fodder production and management.
 2. Student will obtain knowledge Livestock production and management, Avian production management & Applied nutrition
- **Self-Employment and Employment Opportunities:** On successful completion of the course the candidates can either get employed, or become a self-employed / performer in any one of the following fields.
 1. To develop different Livestock production and management Farms.
 2. To works in different Livestock production and management Farms

➤ Skills to be acquired after completion of 2nd Year :

After successful completion of the 2nd year, the student shall be able to perform the following skills.

1. Livestock production and management-II
2. Avian production management
3. Applied nutrition
4. Livestock and poultry breeding

5. Commercial poultry production and hatchery management-I
 6. Milk and meat hygiene
- **Self-Employment and Employment Opportunities:** On successful completion of the course the candidates can either get employed, or become a self-employed / performer in any one of the following fields.
 1. Students will get job in poultry production and hatchery
 2. Can start its own poultry production and hatchery.

➤ **Skills to be acquired after completion of 3rd Year :**

After successful completion of the 3rd year, the student shall be able to perform the following skills.

1. Epidemiology and zoonoses
 2. Meat science
 3. Pet animal breeding and management
 4. Veterinary Clinical Medicine
 5. Animal Welfare, Ethics
 6. Environment and environmental hygiene
 7. Livestock entrepreneurship
- **Self-Employment and Employment Opportunities:** On successful completion of the course the candidates can either get employed, or become a self-employed / Entrepreneur in any one of the following fields.
 1. Student can start own livestock production Student can start own business

➤ **Course Outcomes**

Course: 101 Livestock Production Management I

After successfully completing this course, students will be able to:

1. Students study Identification of various breeds of
 - a. cattle,
 - b. buffalo,
 - c. sheep
 - d. goat

student study . Familiarization with body points of animals. Approaching, handling and restraining

- a. cattle,
 - b. buffalo,
 - c. sheep
3. To develop different Livestock production and management Farms.
 4. To work in different Livestock production and management Farms

Course : 102 Animal nutrition and feed technology

After successfully completing this course, students will be able to:

On successful completion of the course the candidates can either get employed, or become a self-employed Preparation and processing of samples for chemical analysis - herbage, faeces, urine and silages.

3. Weende's System of analysis - Estimation of dry matter, total ash, acid insoluble ash, crude protein, ether extract crude fibre, nitrogen free extract, Calcium and phosphorus in feed samples.
4. Demonstration of detergent methods of forage analysis.
5. Qualitative detection of undesirable constituents and common adulterants of feed.
6. Demonstration of laboratory ensiling of green fodders. Silage pit preparation.
7. Demonstration of conducting digestion trial in ruminants. Calculation of nutritive value of different feed stuffs in terms of digestible crude protein (DCP), total digestible nutrient (TDN), Nitrogen retention (NR) and starch equivalent (SE). Calculation of requirements of nutrients in terms of DCP, TDN and metabolisable energy (ME) for maintenance, growth, and other types of production like meat, milk, wool, reproduction and work.
8. Formulation of rations for different categories of livestock under different conditions.
9. Demonstration of the methods for improving the nutritive quality of straws and other crop residues.
10. Formulation of rations for feeding of livestock during scarcity periods. Visit to feed factories

Course : 103 Fodder production and management

After successfully completing this course, students will be able to:

Students study of grasslands and fodders in-livestock production.

Students identify Agronomical practices for production of leguminous and non-leguminous fodders in different seasons.

Student study Soil and water conservation and irrigation drainage for fodder production. Farm, power and agro-energy. Farm machinery and equipment Harvesting and post-harvest techniques for fodder preservation.

Course :-111: Livestock Production Management-II

After successfully completing this course, students will be able to:

- Student study** Identification of Indian and exotic breeds of swine; handling of swine; Routine inspection. Identification of diseases, examination and control of parasites, vaccination, Identification of pregnant animals. Care during pregnancy, isolation and care of farrowing sows, care of pig lings, Castration, culling, tooth cutting.
2. Calculation of profits and preparation of feasibility reports and projects for piggery. Layout plans of swine houses; routine operations of swine farms. Marketing of swine. Feeding of swines. Preparation of swines for show and judging.
 3. student Identification of body parts and handling of laboratory animals. Housing system and space requirements for laboratory animals. Weighing, sexing and weaning of laboratory animals. Marking for identification of laboratory animals for purpose of their individual recording. Computation and compounding of balanced diet for laboratory animal mainly Mice, Rats, Guinea -pigs and Rabbits.
 4. Feeding schedule of laboratory animals for high breeding efficiency. Maintenance of breeding records of laboratory animals. Prophylactic measures against common disease of lab animate. Hygienic care and control of parasites (routines).

Course –112 Avian Production Management

After successfully completing this course, students will be able to:

1. . Students will get job in poultry production and hatchery
2. Can start its own poultry production and hatchery.

Course -113: Applied Nutrition

After successfully completing this course, students will be able to:

1. student study the Calculation of requirements of nutrients in terms of DCP, TDN and ME for maintenance, growth, reproduction and other types of production like egg and meat.
2. Formulation of rations for poultry and swine with conventional and unconventional feed ingredients.
3. Principles of compounding and mixing of feeds.

Course -201: Livestock and Poultry Breeding

After successfully completing this course, students will be able to

1. Student study the Breeding methods for the improvement of dairy cattle and buffaloes crossbreeding, sire evaluation, field progeny testing, open nucleus breeding system (ONBS), sheep, goat, swine and poultry; Breed development; Conservation of germplasm, Current livestock and poultry breeding programmes in the state and country.
2. Description and measurement of economic traits of Livestock & poultry.
3. Standardization of performance records, Computation of selection differential, generation interval and expected genetic gain; Construction of selection index; Sire indices.
4. Measurement of inbreeding and relationship coefficients; Estimation of heterosis.

Course- 202: Commercial Poultry Production and Hatchery Management-I

After successfully completing this course, students will be able to

- 1 Male and female reproductive system. Artificial insemination. Selection of breeder flock.
2. Working of hatchery Incubation requirement; incubators working, care. Hatchery layout and equipment's. Handling of eggs prior and during incubation. Candling. Fumigation.
3. Project reports of setting up a hatchery. Hatchery records and maintenance. Exposure to commercial broiler and layer farms-different system of housing.
4. Demonstration of litter and cage rearing systems. Feed equipment's and maintenance; hammer mill, mixture, pellet mill-types, principle of working, comparison of different types, premix preparations, quality control of raw materials. Feed mill operation.
5. Demonstration of different types of feeder, waterer, fogger, sprinklers etc. Maintenance of farm records. Medication-demonstration of routinely employed methods of administration.
6. Vaccination practice in general and demonstration of different routes of administration in particular.

Course -203: Milk and Meat Hygiene.

After successfully completing this course, students will be able to

1. Sanitary collection of samples for chemical and bacteriological examination. Grading of milk by MBR test for pasteurization and plant sanitation.
2. Microbiological examination of raw and pasteurized milk, milk products and water. Standard plate, coliform, faecal streptococcal, psychrophilic, mesophilic and thermophilic counts.
3. Detection of adulterants and preservatives in milk and milk products. Isolation and identification of organisms of public health significance from milk.
4. Visit to abattoirs, meat processing plants, marketing centers and food service establishments. Ante-mortem and post mortem inspection of food animals. Methods of slaughter (demonstration at the slaughter houses).
5. Demonstration of speciation of meat. Physical and bacteriological quality of meat and aquatic foods (fish). Demonstration of toxic chemical and microbiological residues in milk and meat

Course 211: Milk and milk Products Technology

After successfully completing this course, students will be able to

1. Sampling of milk, estimation of fat, solid not fat (S.N.F.) and total solids. Platform tests.
2. Cream separation.
3. Detection of adulteration of milk.
4. Determination of efficiency of pasteurization.
5. Microbiological quality evaluation of milk and milk products.
6. Preparation of milk products like curd, ghee, paneer/channa, khoa, ice-cream, milk beverages.

Course : 212: Abattoir Practices and Animal Products Technology

After successfully completing this course, students will be able to

Methods of ritual and humane slaughter, flaying and dressing of food animals including poultry. Carcass evaluation.

2. Determination of meat yield, dressing percentage, meat bone ratio and cut up parts.
3. Preparation of different abattoir byproducts.
4. Visit to leather processing unit and slaughterhouses/meat plants.
5. Wool sampling techniques, determination of fleece density, fiber diameter, staple length, crimp and modulation percentage, scouring/clean fleece yield

Course 213: Avian Pathology

After successfully completing this course, students will be able to

1. Post mortem examination and diagnosis of poultry diseases based upon clinical signs and gross lesions
2. Collection, preservation and dispatch of morbid materials in poultry diseases.
3. Clinical examination of blood, faeces and other tissues/fluids for poultry disease diagnosis
4. Submission of feed samples for analysis.
5. Study of gross specimens and histopathological slides of different diseases of poultry

Course 301: Epidemiology and Zoonoses

After successfully completing this course, students will be able to

1. Collection of epidemiological samples. Measurement of disease: determination of morbidity and mortality rates/ratios.
2. Generation of epidemiological protocols and reports. Demonstration of selected software programmes/models e.g. EPIZOO, HandiSTATUS and India-Admas-EPITRAK. Evaluation of vaccines and diagnostic tests.
3. Determination of Associations and risks: relative risk, Odd's ratio and attributable risk. Survey of an animal disease on a farm.
4. Field survey of zoonotic diseases. Concurrent isolation and identification of important pathogens of zoonotic importance from animal and human sources including foods of animal origin and their interpretation.
5. Study of rural environment and health status of rural community.

Course 302. Pet Animal Breeding and Management

After successfully completing this course, students will be able to

Breeds of dogs- international pedigree breeds and those commonly seen in India. Pedigree sheet and major breed traits. Detection of oestrus and Breeding of dogs. Selecting a breed to keep, selection of a pup

Feeding of dogs- nutritional requirements of important breeds and different age groups. Management of dogs-kennels, care of pups and pregnant bitch. Dog shows- preparation for the shows, kennel clubs, important characters for judgment.

Common diseases affecting dogs (bacterial, viral, parasitic, fungal, nutritional etc.) their clinical manifestations, diagnosis, treatment and control. Vaccination/ deworming schedules. Common surgical interventions in dogs- docking, ear cropping, nail cutting, sterilization. Common anaesthetics and anaesthesia in dogs.

Common breeds of cats, their habits, feeding, breeding and management. Common diseases of cats- their diagnosis, treatment and control. Common surgical interventions in cat. Common pet birds seen in India. Introduction to their caging, breeding, feeding, management, disease control and prevention.

Course 303 Veterinary Clinical Medicine -II

After successfully completing this course, students will be able to

1. Student study theDiagnosis and management of diseases caused by deficiency of iron, copper, cobalt zinc, manganese, selenium, calcium, phosphorus, magnesium, vitamin A, D, E, B. complex, K and C in domestic animals and poultry. Nutritional haemoglobinuria. Diseases of neonates. Diseases of skin, musculo-skeletal system, nervous system and sense organs of domestic animals. Management of common clinical poisonings. Rote of alternative/integrated/ethno veterinary medicine in animal disease management.
- 2.Clinical manifestation, diagnosis, prevention and control of infectious diseases, namely foot and mouth disease, rinderpest bovine viral diarrhoea, malignant catarrhal fever, Infectious bovine rhinotracheitis, enzootic bovine leucosis, ephemeral fever, blue tongue, sheep and goat pox, PPR, classical swine fever.

Course311: Livestock Economics and Marketing

After successfully completing this course, students will be able to

- 1.Book keeping; general entry, writing of journal and ledger, cash book (two and three column), purchase-safe and purchase-sale return registers, trading account, profit and loss accounts, income and expenditure accounts, balance sheet bills of exchange (bill of receivable and bill of payable), bank reconciliation statement,.
2. Economics of a dairy unit poultry, piggery, sheep and goat units.



Course 312: Veterinary Clinical Medicine –II

After successfully completing this course, students will be able to

Student study the Aetiology, clinical manifestations, diagnosis, differential diagnosis, treatment prevention and control of metabolic disorders/ production diseases. Milk fever, acute parturient hypocalcaemia in goats, sows and bitches, osteodystrophy fibrosa, lactation tetany in mares, downer cow syndrome, ketosis, hypomagnesaemia in cattle and buffalo, azoturia in equines, hypothyroidism and diabetes in dogs

Course 313: Commercial poultry production and hatchery management –II

After successfully completing this course, students will be able to

- 1. Health care-** Common poultry diseases: bacterial, viral, fungal, parasitic and nutritional deficiencies. Vaccination schedule for commercial layers and broilers: factors that govern vaccination schedule; vaccination principles type, methods, pre and post vaccination care. Medication: Types of administration-general principles and precautions with emphasis on administering medication through water and feed; commonly used drugs in poultry diseases. Disinfection: Types of disinfectants; mode of action; recommended procedure; precaution and handling.
 - 2. Economics-** Economics of layer and broiler production; Projects reports layer in different systems of rearing. Projects reports for broilers.-Feasibility studies on poultry rearing- in context of small units and their profitability. Designer meat and egg production. Export/import of poultry and poultry products.
 - 3. Breeder flock management-** Layer and broiler breeder flock management housing & space requirements. Different stage of management during life cycle; Light management during growing and laying period, Artificial insemination.
- Feeding:** Feed restriction, separate male feeding. Nutrient requirement of layer and broiler breeders of different age groups. Healthcare: vaccination of breeder flock; difference between vaccination schedule of broilers and commercial birds. Common diseases of breeders (Infectious and metabolic disorders)-prevention. Fertility disorder- etiology, diagnosis and corrective measures. Selection and culling of breeder flocks. Economic parameters on returns from breeders- for example saleable chick/hen/production cycle

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