

SWAMI RAMANAND TEERTH
MARATHWADA UNIVERSITY
NANDED.

SYLLABUS

Of

B.Sc. – I Year

(Semester Pattern)

DAIRY SCIENCE

Effective from June 2009

DAIRY SCIENCE

B.Sc. First Year General Outline of the course at B.Sc. I Year

Sr.No.	Class	Paper No.	Title of the Paper	Max. Marks
		Semister I		
01	B.Sc.FY	I Theory	Perspectives of Livestock Farming in India	60
		II Theory	Farm Animal Housing and Sanitation	60

Sr.No.	Class	Paper No.	Title of the Paper	Max. Marks
		Semister II		
02	B.Sc.FY	III Theory	Farm Animal Management	60
		IV Theory	Farm Animal Health Management	60

Annual Pattern

		V Practical	Practicals based on paper I, II, III & IV	60
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Workload –

- 1.Theory Paper - Three periods per week per paper
- 2.Practical Paper - One practical of three periods per week per batch.

B.Sc. First Year DAIRY SCIENCE

Objectives: -

The course is planned to acquaint the students with

- I. Farming aspects in livestock and poultry so as to prepare themselves for future prospectus
- II. Geographical distribution & trends in population growth
- III. Role in national economy
- IV. Their socio-economic aspects
- V. Adaptations and Livestock Farming in India
- VI. Sanitary and hygienic conditions in Animal farm
- VII. Establishment of Dairy Farm
- VIII. Study of various diseases and disorders in livestock
- IX. First Aid Measures
- X. Care and management of Farm Animals

SEMISTER I
Theory paper I

Title : Perspectives of Livestock farming in India

Sr.No.	Topics	No of Periods
01	Unit –I	12
	<ul style="list-style-type: none">• Introduction to livestock farming in India• Taxonomic classification of livestock• History of livestock domestication, Early history, Role of military farms, Development through five year plans. ICAR/FAO/UNDP, NDDDB/Est.of project directorate on cattle.• Agro-climatic zones and regions of India, Animal husbandry regions in India.	
02	Unit –II	10
	<ul style="list-style-type: none">• Animal adaptation and behavioural patterns.• Livestock distribution and trends in cattle, buffalo, sheep, goat, pig, poultry population.• Common terminologies used in Animal husbandry and Dairying.	
03	Unit - III	11
	<ul style="list-style-type: none">• Principles of animal management.• General management – functions and tools used in farm animal management.• Agriculture and Dairy farming systems in India.	
04	Unit – IV	12
	<ul style="list-style-type: none">• Resources and infrastructure for livestock industry in India.• Indian livestock, their production potential, role in national economy• Milk production, & utilization, regional and seasonal variation.• Role of co-operatives in livestock development.• Role of livestock in manpower employment, socio-economic development.	

SEMISTER I
Theory Paper II

Title – Farm Animal Housing and Sanitation

Sr.No.	Topics	No of Periods
01	Unit –I <ul style="list-style-type: none">• Establishment of dairy farm – selection of site, farm stead Different structures and their locations, housing materials, space requirements.	12
02	<ul style="list-style-type: none">• Unit –II• Establishment of dairy farm: Types of housing for dairy animals Types of housing, water supply, light and ventilation, protection from heat, cold, rain etc.	10
	<ul style="list-style-type: none">• Sheep, goat, poultry, pig housing.	
03	<ul style="list-style-type: none">• Unit –II I• Economic aspects of dairy farming, Capital outlay, capital classification, ways of raising capital, cost-benefit ratio,	10
	<ul style="list-style-type: none">• farm budgeting• farm records.	
04	Unit – IV <ul style="list-style-type: none">• Hygiene and sanitation – Definition, cleaning and sanitation of livestock houses and farm premises, disinfection. Maintenance of hygienic conditions on livestock farms.• Farm operation: collection, disposal and utilization of manure, sewage of farm waste, animal transportation.• First-aid measures.	13

SEMISTER II
Theory Paper - III
Title: Farm Animal Management

Sr.No.	Topics	No of Periods
01	Unit –I <ul style="list-style-type: none">• Zebu cattle, Tropical Cattle of European type, intermediate type, temperate dairy breeds.• General management practices – Grooming, drying-off, control of bad habits, castration, dehorning, deworming, trimming, shoeing, shearing, docking, dipping, identification marks.	10
02	Unit –II <ul style="list-style-type: none">• Cattle and buffalo management – calf raising, heifer management, management of pregnant, parturient, lactating and dry cows & buffaloes.• Summer management of buffalo.• Preparation of animals for different purposes.	15
03	Unit - III <ul style="list-style-type: none">• Sheep and Goat farming systems.• Management of lambs and kids.• Management of Pregnant, Parturient and lactating doe and ewe.• Management of Buck and Ram.• General Management practices to pigs.	10
04	Unit – IV <ul style="list-style-type: none">• Poultry farming in India, objectives, constraints, prospectus.• Poultry management – systems of poultry farming, housing, chick management, management of growers, layers, broiler, hatchery management.	10

SEMISTER II
Theory Paper - IV
Title – Farm Animal Health Management

Sr.No.	Topics	No of Periods
01	Unit - I	10
	<ul style="list-style-type: none"> • Identification of sick animals. • Study of healthy conditions in animals. • Common terminologies used in animal treatment like ointment, purgatives & laxatives, tonics, lotions, emulsions, astringents, liniments, enema, disinfectant. • Classification of animal diseases. • Immunology – Definition, concept of immunity, types of immunity, antigen – antibody response, study of antibodies. 	
02	Unit –II	15
	<ul style="list-style-type: none"> • Diseases of economic importance in livestock [with reference to causative organisms, pathogenesis, etiology, symptoms, epidemiology, preventive and control measures] F.M.D., R.P., H.S., B.Q., Anthrax, Brucellosis, Mastitis. • Dystokia, Prolaps of uterus and vagina. • Metabolic disorders – Milk fever, Ketosis. • Deficiency diseases – Rickets. 	
03	Unit - III	10
	<ul style="list-style-type: none"> • Diseases of Calf – Pneumonia, calf scores, diarrhoea, Joint-ill and Naval-ill, Worm infestation • Parasitic and protozoan diseases – Theileriosis, Bobesiasis, Anaplasmosis, vibriosis, Trichomoniasis, Trypanosomiasis. • Effects and control of ecto and endoparasites of farm animals. 	
04	Unit – IV	10
	<ul style="list-style-type: none"> • Diseases of Sheep and Goat – P.P.R., Pox, Blue tongue. • Diseases of Pigs – Swine fever / Hog cholera. • Diseases of Poultry – Ranikhet, Coccidiosis, Salmonellosis, Marek's, Gumboro, Pox 	

Practical – Paper V

Practicals

1. Morphology of Cattle, buffalo and poultry.
2. Linear body measurements, body wedges and estimation of body weight.
3. Study of Cattle breeds.
Milch breeds – Sahiwal, Sindhi, Gir.
Dual Purpose breeds – Haryana, Ongale, Tharparkar, Kankrej, Deoni.
Draught breeds – Amritmahal, Kangayam, Khillar, Redkandhari, cross breeds,
Exotic breeds – H.F., Jersey, Brown Swiss.
4. Study of buffalo breeds.
Murrah, Nagpuri, Surti, Jaffarabadi, Mehsana.
5. Study of Sheep breeds.
Temperate Himalayan – Gaddi, Bhakarwal.
North Western Region –Chokla, Merwari.
Southern Region – Deccani, Nelore.
The Eastern Region – Chotta Nagpuri, Ganjam.
Exotic Breeds – Merino, Rambouillet.
6. Study of Goat Breeds
Jamunapari, Barbari, Beetal, Surti, Osmanabadi, Sangamneri, Bangal,
Exotic Breeds - Angora, Sannen, Alpine.
7. Study of Poultry Breeds.
8. Study of Pig breeds.
9. Study of Common appliances used on the animal farms.
10. Identification marks for farm animals and poultry.
11. Casting, restraining and handling of farm animals.
12. Cleaning and sanitation of farm premises.
13. Milking.
14. Dehorning
15. Recording, pulse, Temperature, Respiration, Heartbeat, Auscultation.
16. Preparation of drugs and medicines like Ointments, liniments, bolus, electuaries, drenching.
17. Injection and vaccination.
18. Pathological tests: Urine, Haematology: Mastitis.
19. Poultry housing equipments.

20. Grading of eggs.
21. Shearing and grading of wool.
22. Farm layouts.
23. Farm records.
24. Aging / Dentition
25. Bankable projects
26. Students visits: Vet. hospital, Goat and Sheep, Buffalo, Poultry farm, Hatchery and Dairy farm.

List of Equipments, materials for Practicals

Models/Charts /Photographs of Livestocks Breeds.

- Bull nose ring.
- Bull- leader.
- Bull-holder.
- Castrator.
- Muzzle.
- Casting rope.
- Dehorner.
- Branding Set.
- Tattooing set.
- Various types of tags.
- Leg bands, ring bands.
- Various types of brushes.
- Various types of sanitizers, disinfectants.
- Thermometer, Stethoscope.
- Digital balance.
- Equipments and materials for preparation of various drugs.
- Glucometer, Haemoglobinometer, glass wares and equipments for various pathological tests.
- Poultry house equipments, candling equipments.
- First-aid materials and equipments, drugs.
- Farm records.
- Housing models.
- Injection-vaccination equipments.

List of Reference Books: -

1. A text Book of Animal Husbandry by- G.C. Banerjee
2. Advances in Dairy animal Productions by- Mudgal
3. Animal Husbandry and Rural Development by- Kar
4. Commercial Poultry and broiler Farming by-Chauhan
5. Commercial Poultry Nutrition by-Lesson
6. Dairy cattle and Milk production by- Eckles
7. Disease of Animal Transmissible to man by-Thypliyal
8. Fundamentals of Animal Hygiene and
Epidemiology by- Thypliyal
9. Handbook Animal Diseases by - Bhattacharjee
10. Handbook of Poultry Feeding and
Management by – Banday
11. Instant veterinary Drug Index by – Dabax
12. Poultry Economics Projects by – Narhari
13. Poultry Diseases of Farmers by – Vegad and Suresh
14. Handbook of Veterinary Physicians by – Sapre
15. Rabbit farming and its Economics by – Thull
16. Swine production by – ICAR
17. Handbook of Animal Husbandry by – ICAR
18. Goat Productions by – FAO
19. Livestock and Poultry Production by – Singh & Moore
20. Animal Husbandry and Dairy Science by – Jagdish Prasad
21. Dairy Bovine Production by – C.K. Thomas & NSR Sastry
22. Treaties and Treatment Vol.I & II by – Srinivasn
23. Livestock Health and Housing by – David and Peter
24. Dairy Cattle Science by – Ensmiger
25. Veterinary Medicine by – Blood and Handerson
26. Principles and Practices in Diary farm
Management by – Jagdish Prasad
27. A Student Laboratory Manual of Veterinary
Physiology by – Sharma
28. A Handbook of Veterinary Physician by – V.A. Sapre