SEMESTER WISE CREDIT HOURS DISTRIBUTION & DETAILED COURSE SYLLABUS
1st Year AHDP

SEMESTER WISE CREDIT HOURS DISTRIBUTION

Credit hour means the weekly unit of work recognized for particular course as per the course catalogue issued by the University. A theory lecture class of one hour per week shall be counted as one credit whereas a practical class of two or three hours duration per week shall be counted as one credit hour. Practice class (Farm) of two hours should be counted as one credit hour.

	Semester	Theory	Practical	Total Credit Hours	Practice (Farm) Non Credit
First Year	I	9	6	15	6
	II	9	6	15	6
			Total	30	12

DETAILED COURSE SYLLABUS

Semester I

Title of Subject	Course No.	Title of Course	*Credit Hours (Th+Pr) = Total*
Paper – I: Introductory Veterinary Anatomy	AHD-111	Introductory Veterinary Anatomy – I	2+1=3
Paper – II: Introductory Veterinary Physiology & Biochemistry	AHD-121	Introductory Veterinary Physiology & Biochemistry – I	2+1=3
Paper – III: Introductory Animal Management	AHD-131	Introductory Animal Management – I	2+2=4
Paper – IV: Animal Husbandry Extension	AHD-141	Animal Husbandry Extension - I	2+1=3
Paper – V: Introductory Animal Breeding and Genetics	AHD-151	Introductory Animal Genetics	1+1=2
		Total (Credit load)	**9+6 =15**
*Farm practices (Non-credit)	AHD-161	**Two hours daily**	**0+6**

Semester II

Title of Subject	Courses No.	Title of Course	*Credit Hours (Th+Pr) = Total*
Paper – I: Introductory Veterinary Anatomy	AHD-112	Introductory Veterinary Anatomy – II	2+1=3
Paper – II: Introductory Veterinary Physiology & Biochemistry	AHD-122	Introductory Veterinary Physiology & Biochemistry – II	2+1=3
Paper – III: Introductory Animal Management	AHD-132	Introductory Animal Management – II	2+2=4

Paper – IV: Animal Husbandry Extension	AHD-142	Animal Husbandry Extension – II	2+1=3
Paper – V: Introductory Animal Breeding and Genetics	AHD-152	Introductory Animal Breeding	1+1=2
		Total (credit load)	**9+6=15**
*Farm practices (non-credit)	AHD-162	**Two hours daily**	**0+6**

Paper – I: Introductory Veterinary Anatomy

Semester I

Name of the Course: Introductory Veterinary Anatomy-I
(General Loco motor & Integument System and General Histology)
Course No. AHD-111; Cr. Hrs. 3 (2+1)

Theory

1. Study of bones – Glossary of osteology, classification, work and identification of various bones of the body of cow, horse, dog, sheep, pig and poultry and comparison thereof.
2. Study of joints and hinges of the body.
3. Study of muscles and tendons of leg and neck.
4. Study of skin and others e.g. epidermis, dermis, hypodermis, sweat glands of skin, horn, claws, chestnut etc.

Practical

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

1. Study of bones –identification of various bones of the body of cow, horse, dog, sheep, pig and poultry and comparison thereof.
2. Study of joints and hinges of the body.
3. Study of muscles and tendons of leg and neck.
4. Study of skin and others e.g. epidermis, dermis, hypodermis, sweat glands of skin, horn, claws, chest nut etc.

Semester II

Name of the Course: Introductory Veterinary Anatomy-II (General Splanchnology)
Course No. AHD-112; Cr. Hrs. 3 (2+1)

Theory

1. Cell Structure, tissue structure
2. Digestive system–mouth, tonsils, pharynx, esophagus, ruminant and non-ruminant stomach, small intestine, large intestine, associated organs and digestive gland for digestion.
3. Respiratory system- nostril, nasal cavity, sinus, pharynx, larynx, trachea, lungs, thorax, pleura, respiratory physiology. Circulatory system–heart, blood arteries, veins, portal circulation, foetal circulation, lymphatic system.
4. Excretion system–structure of kidney, ureter, bladder, urethera, structure of nephrons etc.
5. Female genital system–ovary, uterine tube, uterus, vagina, vulva, blood arteries, and nerves related to genital system.
6. Male genital system–testis, Scrotum, epididimus, ductus deferens, penis, muscles, blood arteries, nerves related to genital system, accessory sex glands, secondary sex characters.
7. Structure of udder.

Practical

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

1. Cell Structure, Tissue Structure
2. Digestive system–mouth, tonsils, pharynx, esophagus, ruminant and non-ruminant stomach, small intestine, large intestine, associated organs and digestive gland for digestion.
3. Respiratory system–nostril, nasal cavity, sinus, pharynx, larynx, trachea, lungs, thorax, pleura, respiratory physiology.
4. Circulatory system–heart, blood arteries, veins, portal circulation, foetal circulation, lymphatic system.
5. Excretion system–structure of kidney, ureter, bladder, urethera, structure of nephron etc.
6. Female genital system–ovary, uterine tube, uterus, vagina, vulva, blood arteries, and nerves related to genital system.
7. Male genital system–testis, scrotum, epididimus, ductus deferens, penis, muscles, blood arteries, nerves related to genital system, accessory sex glands and secondary sex characters.
8. Structure of udder.

Paper – II: Introductory Veterinary Physiology and Biochemistry

Semester I

Name of the Course: Introductory Veterinary Physiology and Biochemistry -I
Course No. AHD-121; Cr. Hrs. 3 (2+1)

Theory

1. General Physiology and Biochemistry of muscles i.e. smooth, cardiac, voluntary striated muscles.
2. General Physiology and Biochemistry of body fluids: Formation of blood cells, haemopoiesis, plasma, serum, blood pH, blood clot formation, various types of blood cells, lymph, cerebrospinal fluid, synovial fluid, macrophages and immunity.
3. General Physiology and Biochemistry of digestive system – Chemical structure of food viz. carbohydrate, fat, protein, minerals, vitamins, biochemical agents etc. Prehension, mastication, swallowing, gastric movements, physiology of small and large intestine, digestion in ruminants and non-ruminants and their comparative study, various enzymes used during digestion, absorption of feed ingredients, metabolism of protein, carbohydrate and fat. Digestive glands e.g. salivary glands, gall bladder, pancreas and their functions.
4. General Physiology and Biochemistry of respiratory system – Mechanism of respiration, respiratory action, dead space, artificial respiration, exchange of gases etc

Practical

1. Haematology laboratory : an introduction
2. Laboratory glass ware, equipments, microscope etc. : Basic knowledge
3. Collection of blood samples from various animals and birds
4. Anticoagulants
5. Separation of serum and plasma
6. Preservation of serum and plasma
7. Introductory study of blood cells
8. An Introduction to basic techniques: Enumeration of erythrocytes and leucocytes, Determination of PCV, ESR, Differential leukocyte count (DLC), Haemoglobin.

9. Study of digestive system of various animals using charts and models
10. Demonstration of collection of rumen liquor
11. Study of respiratory system of various animals using charts and models
12. Study of various types of muscles using chart and models

Semester II

Name of the Course: Introductory Veterinary Physiology and Biochemistry -II
Course No. AHD-122; Cr. Hrs. 3 (2+1)
Theory

1. General Physiology and Biochemistry of circulatory system- Cardiac cycle, conduction system of heart, nervous control of blood flow, shock (blood volume and pressure), Venous and lymphatic return, theory of vaccination and immunity in animals.
2. General Physiology and Biochemistry of urinary system- Physiology of kidney and nephron.
3. General Physiology and Biochemistry of female genital system- Puberty, oogenesis, ovulation, formation of corpus luteum, estrous cycle, hormones of female reproduction system, pregnancy and parturition.
4. General Physiology and Biochemistry of male reproduction system – Erection, ejaculation, hormones of male reproduction system, factors affecting working of testis, sex determination, spermatogenesis, spermatozoa, working of accessory glands.
5. General Physiology and Biochemistry of milk letdown - Structure of udder, milk secretion, galactopoesis, letdown of milk, formation of colostrum, milk fat and milk protein, agalactia.

Practical

1. Study of circulatory system of various animals using charts and models.
2. Study of cardiac cycle using charts.
3. Study of urinary system.
4. Study of kidney using charts and models.
5. Study of male reproductive system using charts and models.
6. An introduction to semen evaluation: Assessment of motility of spermatozoa, total spermatozoa count and Live and dead spermatozoa count.
7. Study of female reproductive system using charts.
8. Behavioural signs of oestrus in different species.
9. Study of gestation length of various animals.
10. Study of functional morphology of udder.
11. Demonstration of milk let down by using model.
12. Basic knowledge of hormones for pregnancy diagnosis in animals.

Paper – III: Introductory Animal Management

Semester I

Name of course: Introductory Animal Management-I
Course No. AHD 131; Cr Hrs 4 (2+2)
Theory

1. General management of domestic animals.
2. Economic importance of animals and their products.
3. Identification of various body parts of domestic animals and poultry.
4. Information of various breeds habitat, characteristics features of Cattle, Buffalo,

Sheep, Goat. Camel, Pig, and Poultry of Rajasthan state, information of exotic breeds.

5. Animal management- general information like handling of animal and their control, use of nose ring and bull holder etc.
6. Ageing of Cattle, Buffalo, Sheep, Goat, Camel and-Horse.
7. Weighing methods of animals.
8. Methods of identification of domestic animals by branding, tattooing, ear-tagging and ear- notching etc.
9. Normal temperature, pulse and respiration of animals.
10. Vaccination schedule for domestic animals and poultry.

Practical

Practical introductory study of following using charts, models and basic laboratory facilities and farm practices.

1. Handling and restraining of animals by taking around animal house and veterinary hospitals.
2. Weighing and identification of animals
3. Castration of male calf and dehorning of calf.
4. Detection of normal body temperature, respiration and pulse. Familiarization of various body parts of domestic animals.

Semester II

Name of Course: Introductory Animal Management-ll

Course No AHD; Cr Hrs 4(2+2)

Theory

1. Different type of housing of domestic animals viz. Cow, Sheep, Goat, Horse, Camel and Poultry. Lacunae of animal house in village and their remedies.
2. Care and management of cow- during and after parturition, parturition at separate, sanitize chamber, prevention from milk fever, sign and symptoms of parturition, shedding of placenta and post-parturient care.
3. Care and management of dry cow- reason for drying of cow (non- milking), various methods of drying, management of pregnant cow.
4. Care and management of calf before and after birth, their identification, castration, dehorning and prevention from disease.
5. Care and management of dairy bull, training, housing, exercise for breeding etc.
6. Production of milk- purpose, method, pathogenic agent and prevention thereof.
7. Hygiene care and sanitation of animal houses, dispose of animal excreta and other wastes, disposal methods of solid and liquid manure and recycling of manure and its use.
8. General management of broiler and layer.

Practical

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

1. Ideal animal house- visit and study thereof.
2. To visit poultry farm and study thereof.
3. Methods of disinfection of animal house and milking utensils.
4. Care and management of calf, pregnant cow, lactating cow.
5. Methods of milking of animals

PAPER –IV: Animal Husbandry Extension

Semester I

Name of the Course: Animal Husbandry Extension-I
Course No. AHD-141; Cr. Hrs. 3 (2+1)
Theory

1. Economic importance of animal husbandry in state.
2. Characteristics of formal, non-formal and informal education.
3. Introduction to animal husbandry extension education.
4. Role of extension education in animal husbandry development.
5. Basic knowledge of Community development.
6. Steps of extension teaching.
7. Teaching methods in extension.
8. Leadership and their classification.
9. Role of leaders in animal husbandry extension.
10. Identification of key communicators in rural area.
11. General information of various animal husbandry extension programmes.
12. Goushala development programme.
13. Introduction of animal fairs and exhibitions.
14. Preparation of animal for show.

Practical

1. Preparation of a poster for display in extension activity.
2. Preparation of a chart for display in extension activity.
3. Elementary knowledge of farm publication for extension work.
4. Difference between tribal, rural and urban community.
5. Leadership qualities for field extension work.
6. Identification of local leaders for field extension work.
7. Primary knowledge for organization of mass meeting at village level.
8. Writing of Advisory letter to the animal owner.
9. Writing of Circular letter to the animal owner.
10. Essential exercise for exhibition.
11. Different livestock fairs organized in Rajasthan state.
12. Major factors responsible for low production.
13. Visit to dairy farm/ ideal village.

Semester II

Name of the Course: Animal Husbandry Extension-II
Course No. AHD-142; Cr. Hrs. 3 (2+1)
Theory

1. Important terms use in extension education.
2. History of animal husbandry development programmes.
3. Animal husbandry developmental activities.
4. Peculiar points related to poultry, sheep, goat and swine production.
5. Animal husbandry administration in Rajasthan and their functions.
6. Role of LSA in veterinary organizations.
7. Important managemental practices on animal farm.
8. Information about milk recording, herd registration and bull registration.
9. Essential information on Artificial Insemination & its importance.
10. Fundamental of breeding programme for improving animal production.
11. Concept of breeding policy.

12. Vaccination and vaccination schedules.
13. Farmers training and group discussion.
14. Introduction about various scientific techniques.
15.

Practical

1. Introduction to audio-visual aids.
2. Principle of an audio-visual aids.
3. Advantages of an audio-visual aids.
4. Introduction to various teaching aids.
5. Some information on gendering and breeding of domestic animals.
6. Important records maintained in veterinary hospitals.
7. Importance of records keeping.
8. Record keeping at dairy farm.
9. To conduct group discussion.
10. Different projects running in RAJUVAS Bikaner.
11. Transfer of technology for animal husbandry development.
12. Preparation of project report for dairy unit.
13. Visit to animal health camps/livestock fair.

PAPER – V: Introductory Animal Breeding and Genetics

Semester I

Name of the Course: Introductory Animal Genetics
Course No. AHD-151; Cr. Hrs. 2 (1+1)
Theory

1. Heredity and variation – definition and classification etc.
2. Chemical basis of DNA – structure and transformation of DNA
3. Basic concepts of genetics and reproduction
   a. Cell division – mitosis and meiosis
   b. Linkage and crossing over
   c. Mendelian principles of inheritance – monohybrid and dihybrid inheritance
   d. Modification in monohybrid and dihybrid mendelian ratio
   e. Number and types of chromosomes in livestock and poultry
   f. Multiple alleles
   g. Mutation – its types, effects and mutagenic agent
4. Sexual heredity
   a. Homologous, heterologous
   b. Sex determination
   c. Sex linked, sex influenced and sex limited inheritance

Practical

1. Gametogenesis, cell structure
2. Problems based on monohybrid and dihybrid inheritance
3. Basic statistical principles – estimation of mean, variance, standard deviation and standard error

Semester II

Name of the Course: Introductory Animal Breeding
Course No. AHD-152; Cr. Hrs. 2 (1+1)
Theory

1. Breeding rules

a. Inbreeding – types, uses, genetic and phenotypic effects
b. Out breeding - types, uses, genetic and phenotypic effects
c. Selective breeding
d. Livestock breeding strategies in Rajasthan
e. Selection and culling
f. Basis and types of selection

2. Techniques to improve performance
3. Importance and maintenance of pedigree record, progeny record and breeding record

Practical

1. Estimation of inbreeding coefficient
2. Estimation of relationship coefficient
3. Pedigree and breeding records
4. Basic computer operative principles

Farm Practice (Non-Credit Course)
Course no. AHD 161; Cr. Hrs. (0+6) First semester and AHD 162; Cr. Hrs (0+6) Second Semester

Hands on training and demonstration on proper housing, rearing and hygiene practices and maintenance of domestic / Farm animals like cattle, sheep, goat, pigs, horse, camel and poultry etc.
