Syllabus and subjects of the Bachelor's Degree
College of Veterinary Medicine
University of Fallujah

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Updated by

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Curriculum Summary for First Year Subject / First semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Biology / part 1	Units	2	1	3
		Hours	2	2	
2	General chemistry / part 1	Units	2	1	3
		Hours	2	2	
3	Anatomy / part 1	Units	2	1.5	3.5
		Hours	2	3	
4	Animal management / part 1	Units	2	1	3
		Hours	2	2	
5	Computer Science / part 1	Units	1	1	2
		Hours	1	2	
6	Democracy & Human Rights / part 1	Units	1	-	1
		Hours	1	-	
7	English Language	Units	1	-	1
		Hours	1	-	
8	Biosafety	Units	1	-	1
		Hours	1	-	

Total Subjects: 8 **Total Unit : 17.5** **Total Hours: 23**

Curriculum Summary for First Year Subject / Second semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Biology / part 2	Units	2	1	3
		Hours	2	2	
2	General chemistry / part 2	Units	2	1	3
		Hours	2	2	
3	Anatomy / part 2	Units	2	1.5	3.5
		Hours	2	3	
4	Animal management / part 2	Units	2	1	3
		Hours	2	2	
5	Poultry Management	Units	1	1	2
		Hours	1	2	
6	Crimes of Al-Baath Party	Units	1	-	1
		Hours	1	-	
7	Arabic Language	Units	2	-	2
		Hours	2	-	

Total Subjects: 8 **Total Units: 16.5** **Total Hours: 23**

Subject: BIOLOGY / PART 1

FIRST Year	FIRST Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction and definitions of terms	**2**
Origin of life	**2**
The cell	**2**
Taxonomy of Kingdoms	**2**
Phylum: Protozoa	**4**
Phylum: Platyhelminthes	**4**
Phylum: Nemathelminths	**4**
Phylum: Arthropoda	**2**
Phylum: Chordata	**8**
Total	**30**

PRACTICAL Subject	Hours
The Microscope	**3**
The Cell	**4**
Protozoa / Mastigophora	**3**
Protozoa / Sarcodena	**3**
Protozoa / Ciliphora	**3**
Protozoa / Sporozoa	**3**
Nematoda / Ascaris	**3**
Nematoda / Ancylostoma	**3**
Trematoda / Fasciola	**3**
Trematoda / Schistosoma	**3**
Cestodicksa / Taenia	**3**
Mosquitoes	**3**
Phylum: Chordata (dissecting)	**4**
Total	**30**

Subject: GENERAL CHEMISTRY / PART 1

FIRST Year | **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

GENERAL CHEMISTRY part 1 / Theoretical Subjects

THEORETICAL Subject	Hours
Atoms and electronic structure: Atoms and mass number, isotopes, quantum numbers and atomic orbitals, electronic configuration, periodic table, ionization energy, atomic radii, electro negativity, electron affinity.	**5**
Types of chemical bonds: Covalent, Coordinate covalent bonds, hydrogen bonding, hybridization theory (sp-, sp2-, sp3-hybridization), atomic formula and molecular mass.	**5**
Acid base theory: Definition of acids and bases, dissociation constant, pH value in different solutions (strong acids or strong bases, weak acid and weak bases).	**4**
Volumetric analysis: Titration of acids and bases, definition of titration, indicator, equivalent point, end point, standard solution, normal solution, molar solution. The equivalent weights in neutralization reactions, formula weight, calculation of the normality of concentrated acids, Buffer solutions, biochemical buffers.	**4**
Organic chemistry: Functional group, alkanes and cycloalkanes (nomenclature; synthesis and reactions). Alkenes (nomenclature, synthesis and reactions), Chemical test of	**4**
Alkynes and aromatic compounds: Synthesis, reaction and chemical test of alkynes. Benzene (nomenclature and electrophilic substitution), reaction of the side chain of alkyl.	**4**
Organichalides, ethers, alcohol and phenols: Nomenclature, synthesis and reactions, Chemical test of alcohols	**4**
Total	**30**

PRACTICAL Subject	Hours
Qualitative analysis of cations	**4**
Analysis of group (1) Ions. (Ag, Hg, pb).	**4**
Analysis of mixture of group (1) ions	**4**
Analysis of group (2) ions. (Cu, Cd, Bi, Hg).	**4**

Analysis of mixture of group (2) ions	**4**
Analysis of mixture of group (1) and group (2).	**4**
Titration, practice on titration with water.	**3**
Preparation of standard Na_2CO_3 solution	**3**
Total	**30**

Subject: ANATOMY / PART 1

FIRST Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2** Hours	**2** Units
Practical	**3** Hours	**1.5** Units
TOTAL	**5** Hours	**3.5** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**23**	**34**
Practical	**17**	**26**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction to anatomy	**2**
General osteology	**6**
Myology	**6**
General syndesmology (arthrology)	**6**
Endocrine glands	**4**
Sense organs	**6**
Total	**30**

PRACTICAL Subject	Hours
Bones of thoracic limb, joints, scapula of horse	**3**
Humerus and comparative anatomy	**3**
Radius and ulna with comparison	**3**
Carpal bones in horse and metacarpal and phalanges bones	**3**
Muscles of the shoulder griddle of the sheep	**3**
The lateral surface of shoulder muscles and arm in sheep	**3**
The medial surface of shoulder muscles and arm in sheep	**3**
Muscles of the forearm and manus (extensors and flexors)	**3**
Review	**3**
Practical examination	**3**

Arteries and nerves of the thoracic limb in sheep	3
Thoracic, lumbar vertebrae and sacrum in horse	3
Ribs and sternum in horse	3
The hoof in horse and claw of the ox	3
Urinary system (kidneys, ureter and urinary bladder)	3
Total	**45**

Subject: ANIMAL MANAGEMENT / PART 1

FIRST Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction to animal welfare	2
Animal wealth and its importance	4
Horses	8
Cattle	8
Sheep and Goats	8
Total	**30**

PRACTICAL Subject	Hours
External features of farm animals	4
Methods of approaching, restraint and casting of horses	3
Methods of approaching, restraint and casting of cattle, camel	3
Exam	1
Methods of approaching, restraint and casting of sheep	3
Vices of horses	1
Total	**30**

Subject: COMPUTER SCIENCE / PART 1

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**3**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction to digital world and computer system (generations)	**5**
Data representation in computer's memory	**5**
Numerical systems	**7**
Introduction to Windows	**8**
Definition of (task bar, start menu, icons)	**5**
Total	**30**

PRACTICAL Subject	Hours
Using computer	**10**
Practicing with GWBASIC instructions	**10**
Practicing with windows	**10**
Total	**30**

Subject: DEMOCRACY and HUMAN RIGHTS / PART 1

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**-**		**-**	
TOTAL	**2**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Democracy	**5**

Definition of democracy	**5**
Types of democracy	**5**
Classification of democracy	**5**
Evaluation of democracy	**10**
Total	**30**

Subject: English Language

FIRST Year	**FIRST Semester**

SUBJECT CREDITS

Theoretical	**1** Hours	**1** Units
Practical	**-**	**-**
TOTAL	**1** Hours	**1** Units

MARK DETAILS

	Course Exam Marks	**Final Exam Marks**
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	**Hours**
Introduction to the Veterinary Medicine Field.	**1**
Basics of medical terms are formed (prefix, root, suffix).	**2**
Spelling and pronouncing medical terms.	**1**
Define terms that are used to describe animal anatomy.	**1**
Meeting and Examining the animal, taking a case history.	**2**
Understanding Immunity and parasitology terms.	**1**
Defining Pharmacology Basic Measurement and Conversion Dosing Labeling and Administering Medication.	**1**
Terms used in veterinary dialogue in regards to positioning of animals and relationships between body parts.	**2**
Body parts of beef and dairy cattle, and sheep using veterinary medical terminology.	**1**
Terms used to describe animals sex, groups, parturition.	**1**
Terms associated with disease of the various body systems, pharmacology, surgery, and laboratory procedures.	**2**
Total	**15**

Subject: Biosafety

FIRST Year	FIRST Semester

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical	**-**		**-**	
TOTAL	**1**	Hours	**1**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction	1
Biological materials	1
Route of exposure to pathogens	2
Biosafety levels	1
antiseptic	1
Lab Practices and Safety Rules	2
Biosafety Cabinet	1
Exam	**1**
Personal protective equipment	1
Molecular biology and viral vectors	2
Medical waste & shipping and transportation	1
Laboratory security and emergency response	1
Total	**15**

Subject: BIOLOGY / PART 2

FIRST Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Living organisms	**2**
Comparison between Prokaryotic & Eukaryotic cells	**2**
Mitosis: Replication of Eukaryotic cells	**2**
Meiosis: Reduction division and Gametogenesis	**2**
Types of living tissues	**2**
Stem cells	**2**
Blood composition & Functions	**4**
General characters of Bacteria	**2**
General characters of Viruses	**2**
Introduction to Molecular Biology	**2**
Nucleic acid Types & Functions	**4**
Genes & Chromosomes	**2**
Genetic Engineering	**2**
Total	**30**

PRACTICAL Subject	Hours
Prokaryotic & Eukaryotic cells	**2**
Mitosis	**2**
Bacterial staining	**4**
Types of tissues	**8**
Blood film	**4**
How to use laboratory equipment's (Balance, Water bath, PH meter, Centrifuge, incubator, etc..)	**10**
Total	**30**

Subject: GENERAL CHEMISTRY / PART 2

Theoretical	**2** Hours	**2** Units
Practical	**2** Hours	**1** Units
TOTAL	**4** Hours	**3** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Aldehydes and Ketones: Nomenclature, synthesis and reaction, chemical test of aldehydes and aldehydes or ketones with Ch3- group.	**4**
Carboxylic acids and carboxylic acid derivatives: Nomenclature, synthesis and reaction of carboxylic acids	**4**
Anhydrides, esters and amides: Nomenclature, synthesis and reaction. Amines, Nomenclature, synthesis and reaction.	**4**
Biochemistry: Introduction, water (Physical and chemical properties). Carbohydrates: Mono-, di-, oligo- and polysaccharides, classification, cyclization and reactions of monosaccharide's.	**4**
- **Disaccharides** (Maltose, cellobiose, lactose, sucrose). - **Polysaccharides** (cellulose, starch, glycogen and chitin). - **Lipids, Fats and oils:** Selected fatty acids and their source, triglycerides.	**4**
Amino acids: The name and structures of amino acids, essential amino acids, synthesis and identification of amino acids.	**4**
Peptides: Structures, synthesis and biosynthesis of peptides. Proteins: Structure and classification of proteins, high structure of proteins.	**3**
Nucleic acids: DNA (deoxyribonucleic acids), RNA (ribonucleic acids). The structure of DNA, RNA, Partial and complete hydrolysis of DNA, hydrolysis of RNA.	**3**
Total	**30**

PRACTICAL Subject	Hours
Standardization of HCl with standard solution of Na_2CO_3	**4**
Analysis of mixture of $NaHCO_3$ and Na_2CO_3	**4**
Iodometric titration: Standardization of $Na_2S_2O_3$ and determination of Cu in $CuSo_4$ solution.	**4**
Self-indicator titration: Standardization of $KMno_4$ solution, determination of Fe in $FeSO_4$ solution.	**4**
Precipitation titration: Determination of chloride by Maher	**4**
Determination of the strength volume of H_2O_2 solution.	**4**
Crystallization	**3**
Determination of melting point.	**3**
Total	**30**

Subject: ANATOMY / PART 2

FIRST Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**3**	Hours	**1.5**	Units
TOTAL	**5**	Hours	**3.5**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**23**	**34**
Practical	**17**	**26**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Common Integument	**5**
Urinary System	**6**
Male Genital System	**8**
Female Genital System	**7**
Mammary Gland	**4**
Total	**30**

PRACTICAL Subject	Hours
Comparative anatomy of the pelvic bone	**3**
Comparative anatomy of the femur	**3**
Comparative anatomy of the tibia and fibula	**3**
Tarsus and metatarsal bone in horse	**3**
Muscles of the sublumber, hip and in sheep	**3**
Muscles of the thigh in sheep	**3**
Flexor and extensor muscles of the pelvic limb in sheep	**3**
Review	**3**
Practical examination	**3**
Arteries and sacrolumbar plexuses and nerves of pelvic limb	**3**
Inguinal region and mammary gland in sheep	**3**
Male reproductive system in sheep (testis and scrotum)	**3**
Female reproductive system in sheep (ovaries, uterine tube and uterus)	**3**
The eye (tunics, muscles, nerves, chambers).	**3**
Review and Exam	**3**
Total	**30**

Subject: ANIMAL MANAGEMENT / PART 2

FIRST Year | SECOND Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
External features of farm animals	**8**
Methods of approaching, restraint and casting of horses	**6**
Methods of approaching, restraint and casting of cattle, camel	**6**
Exam	**2**
Methods of approaching, restraint and casting of sheep for	**6**
Vices of horses	**2**
Total	**30**

PRACTICAL Subject	Hours
Vices of cows	**2**
Mouth ages for different animals, signs of health: pulse and	**12**
Care of farm animals, grooming, washing, heating, clipping, drying	**6**
Exam	**2**
Sheep dipping	**4**
Shoeing of horses	**4**
Total	**30**

Subject: POULTRY MANAGEMENT

FIRST Year | **SECOND Semester**

Theoretical	**1**	Hours	**1**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**3**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Characters of poultry management	**1**
Terminology and poultry Classification	**2**
Biology of the chickens	**2**
Egg Structure and Hygiene	**1**
Artificial Hatching and Hatcheries	**1**
1st Exam	**1**
Brooding and rearing period	**2**
Factors affecting egg production	**1**
Nutrition and Rations Formation	**1**
Design of poultry Houses	**1**
Vaccination Management	**1**
2nd Exam	**1**
Total	**15**

PRACTICAL Subject	Hours
Phenotypic and molting	**4**
Distinguishing of layers' chicken	**2**
Egg Storage – Disinfection and Fumigation	**4**
Anatomy of an adult Hen	**4**
Demonstration of Hatcheries	**2**
Poultry Equipment	**2**
Types of poultry diets	**2**
Calculations of feed components in rations	**4**
Lighting Systems for poultry breeding	**2**
Disinfection of Hatcheries and equipment	**2**
Disinfection of poultry Houses	**2**
Total	**30**

Subject: Crimes of Al-Baath Party

FIRST Year	SECOND Semester

SUBJECT CREDITS

Theoretical	1	Hours	1	Units
Practical	**-**		**-**	
TOTAL	1	Hours	1	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
إنتهاكات الحقوق والحريات	15
أثر القمع والحروب على البيئة والسكان	5
الثقافة والاعلام وعسكرة المجتمع	5
	5
Total	**30**

Subject: ARABIC LANUAGE

FIRST Year	SECOND Semester

SUBJECT CREDITS

Theoretical	1 Hours	1 Units
Practical	-	-
TOTAL	1 Hours	1 Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	40	60
Practical	-	-
TOTAL	40	60

الساعات	الموضوعات النظرية
1	نشأة اللغة
1	نشأة اللغة العربية وخصائصها
1	معاني حروف الجر
1	الاخطاء الشائعة في الكتابة العلمية
1	العدد تذكيره وتأنيثه
1	التميز والحال
1	نشأة الشعر العربي
1	أثر القران الكريم في الشعر
1	اراء الرسول والخلفاء النقدية وموقف الاسالم من الشعر
1	الخطابة
1	دراسة ثالث نماذج خطابية من نهج البالغة
1	البالغة العربية
1	علم المعاني
1	علم البديع
1	علم البيان
15	المجموع

ΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨΨ

Curriculum Summary for Second Year Subject / First semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Anatomy / part 3	Units	2	1	3
		Hours	2	2	
2	Histology / part 1	Units	2	1.5	3.5
		Hours	2	3	
3	Physiology / part 1	Units	4	1	5
		Hours	4	2	
4	Biochemistry / part 1	Units	3	1	4
		Hours	3	2	
5	Animal nutrition / part 1	Units	2	1	3
		Hours	2	2	
6	Genetics	Units	2	-	2
		Hours	2	-	
7	English Language		1		1
		Units	1	-	
8	Computer Science / part 2	Units	1	2	2
		Hours	1	1	

Total Subjects: 8 **Total Units: 23.5** **Total Hours: 22**

Curriculum Summary for Second Year Subject / Second semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Anatomy / part 4	Units	2	1	3
		Hours	2	3	
2	Embryology	Units	1	-	1
		Hours	1	-	
3	Histology / part 2	Units	2	1.5	3.5
		Hours	2	3	
4	Physiology / part 2	Units	4	1	5
		Hours	4	2	
5	Biochemistry / part 2	Units	3	1	4
		Hours	3	2	
6	Animal nutrition / part 2	Units	2	1	3
		Hours	2	2	
7	Biostatistics	Units	2	1	3
		Hours	2	2	
8	Arabic Language	Units	2	0	2
		Hours	2	0	

Total Subjects: 8 **Total Units: 24.5** **Total Hours: 30**

Subject: ANATMOY / PART 3

SECOND Year | **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2** Hours	**2** Units
Practical	**2** Hours	**1** Units
TOTAL	**4** Hours	**3** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Digestive System General description of the digestive system and its embryological development. Mouth cavity and its content like the tongue and hard palate and soft palate with its muscles and cheeks and lips, blood and nerve supply of the tongue. Salivary glands, pharynx and its layers and muscles and openings. The hyoid apparatus (bones and muscles). Muscles of mastication. Course and relationship of esophagus and its structures. Classification of stomach, parts of the intestine, duodenum, jejunum, ileum. The caecum and its variations in farm animals. Colon and its variations in farm animals, rectum, anus. Accessory glands like the liver and its ligaments and lobation, gallbladder and the variations in farm animals. Pancreas and its variations. Peritoneum its reflexation in the abdominal cavity to fix the abdominal organs.	**20**
Respiratory System Introduction, nose, nasal cavity, nasopharynx, paranasal sinuses, larynx, trachea, lungs, thoracic cavity, pleura.	**10**
Total	**30**

PRACTICAL Subject	Hours
General description of the skull.	**3**
Cranial cavity, hyoid bone, mandible.	**3**
Skull comparative, Cervical vertebrae comparative	**6**
Dissection of oral cavity with its contents (compassion), muscles of hyoid bone, muscles and papillae of tongue.	**3**
Dissection of pharynx (divisions, muscles, openings, muscles of soft palate, muscles of mastication).	**3**
Viscera: esophagus. Stomach (comparative).	**3**
Viscera: small intestine (comparative). large intestine (comparative).	**3**

Viscera: liver and its ligaments (comparative).	**3**
Dissection of paranasal sinuses, nasal cavity (comparative).	**6**
larynx (laryngeal cartilages, laryngeal cavities, laryngeal muscles), blood and nerve supply to the larynx.	**3**
trachea, pleura, pulmonary ligament, lung comparative, trachea, bronchial tree. Dissection of thorax, thoracic fascia, muscles of thoracic wall, respiratory muscles, internal thoracic fascia	**3**
Review	**3**
Practical examination	**3**
Total	**45**

Subject: HISTOLOGY / PART 1

SECOND Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**3**	Hours	**1.5**	Units
TOTAL	**5**	Hours	**3.5**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**23**	**34**
Practical	**17**	**26**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Cytology	**4**
Blood and Myeloid Tissue	**4**
Nervous Tissue	**4**
Cartilage and Bone	**4**
Cardiovascular System	**4**
Lymphatic System	**4**
Respiratory System	**4**
Skin	**2**
Total	**30**

PRACTICAL Subject	Hours
Laboratory Guiding	**3**
Cytology	**3**
Epithelial Tissues	**3**

Connective Tissues	**3**
Muscular tissue	**3**
Bone and Cartilages.	**3**
Nervous tissue	**3**
Blood cells	**3**
Bone marrow	**3**
Lymph system	**3**
Cardiovascular system	**3**
Respiratory system	**3**
Skin	**3**
Review	**3**
Examination	**3**
Total	**45**

Subject: PHYSIOLOGY / PART 1

SECOND Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**4**	Hours	**4**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**6**	Hours	**5**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**32**	**48**
Practical	**8**	**12**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction to physiology and cell membrane	**3**
Nerve cell physiology	**3**
Muscle cell physiology	**3**
The autonomic nervous system physiology	**3**
Blood composition and physiology	**10**
Lymph composition and function	**1**
Cerebrospinal fluid composition and function	**1**
Cardiovascular system physiology	**8**
Respiration system physiology	**8**
Digestive system physiology	**20**
Total	**60**

PRACTICAL Subject	Hours
Introduction, Frog sciatic nerve and gastrocnemius muscle preparation	4
Simple muscle twitch and effect of temperature on muscle contraction	2
Effect of prolonged and strength stimulation on muscle contraction	2
Effect of repeat stimulation on muscle contraction	2
Frog`s heart	2
Extra systole and compensatory pause and Stannius ligatures	2
Blood pressure in man and effect of exercise.	2
Venous flow, venous pressure, reactive hyperemia, cold pressor test	2
RBC	2
WBC	2
Hb	2
ESR	2
PCV estimation	2
Wintrobe erythrocyte index	2
Total	**30**

Subject: BIOCHEMISTRY / PART 1

SECOND Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**5**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Cell chemistry Metabolic processes occur in cell organelles, Cell membrane components, Molecules transport through cell membrane.	4
Enzymes Mechanism of action, Kinetic, Regulation.	7
Vitamins Water soluble vitamins, Fat soluble vitamins.	10

Bioenergetic High-energy -p – compounds, Low-energy-p- compounds, Biologic oxidation, Respiratory chain.	**6**
Carbohydrate metabolism Digestion and absorption, Glycolysis. Krebs cycle, Pentose phosphate pathway, Gluconeogenesis, Glycogenolysis, Glycogenesis, Control of blood glucose.	**10**
Protein and Amino acids metabolism Digestion and absorption, Catabolism of amino acids, Transamination, Oxidative deamination, NH3 formation, NH3 excretion, Urea cycle.	**8**
Total	**45**

PRACTICAL Subject	Hours
General Instruction & Qualitative tests of carbohydrates	**4**
Testing of unknown carbohydrates	**2**
Glycogen	**2**
General reactions of proteins	**2**
Fibrous proteins	**2**
Glyoproteins	**2**
Albumin and Globulins	**2**
Phosphoproteins	**2**
Enzymes: Digested activity of salivary amylase	**2**
Effect of (pH) on the activity of salivary amylase	**2**
Effect of temperature on the activity of salivary amylase	**2**
Urine analysis: Physical properties of normal urine	**2**
Normal Constituents of Urine	**2**
Abnormal constituents of urine	**2**
Total	**30**

Subject: ANIMAL NUTRITION / PART 1

SECOND Year | **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction and importance of nutrition of farm animals.	**4**
The animal and its food.	**4**
Water and its functions, regulation and comparative use.	**4**
Energy Metabolism.	**4**
Carbohydrate Metabolism.	**5**
Protein and nucleic acids Metabolism.	**5**
Protein	**4**
Total	**30**

PRACTICAL Subject	Hours
How to use nutrition laboratory.	**4**
What is the feedstuffs approximate analysis?	**4**
How to make the samples and prepare it to use.	**4**
Determination of moisture in feed suffs, green roughages, milk, meat	**4**
Determination of ash	**4**
Determination of silica	**4**
How to make standard solution	**3**
Determination of crude protein.	**3**
Total	**30**

Subject: GENETICS

SECOND Year	FIRST Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical				
TOTAL	**2**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Development of Genetics and its theories.	**3**
Cell and chromosome behaviors	**3**
Mundelein Laws and its modification	**3**
Genetics and statistics in the analysis of genealogy	**3**
The interaction between genes	**3**
Multiple alleles and alleles false	**3**
Assigned sex and genetics associated with it	**3**
Link, transit and genetic maps	**3**
Chromosomal mutations	**2**
Chemical basis and engineering of heredity	**2**
Quantitative genetics and animal improvement	**2**
Total	**30**

Subject: English Language

SECOND Year	FIRST Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**-**		**-**	
TOTAL	**2**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction to the Veterinary Medicine Field.	1
Basics of medical terms are formed (prefix, root, suffix).	2
Spelling and pronouncing medical terms.	1
Define terms that are used to describe animal anatomy.	1
Meeting and Examining the animal, taking a case history.	2
Understanding Immunity and parasitology terms.	1
Defining Pharmacology Basic Measurement and Conversion Dosing Labeling and Administering Medication.	1
Terms used in veterinary dialogue in regards to positioning of animals and relationships between body parts.	2
Body parts of beef and dairy cattle, and sheep using veterinary medical terminology.	1
Terms used to describe animals sex, groups, parturition.	1
Terms associated with disease of the various body systems, pharmacology, surgery, and laboratory procedures.	2
Total	**15**

Subject: COMPUTER SCIENCE / PART 2

FIRST Year | **First Semester**

SUBJECT CREDITS

Theoretical	**1** Hours	**1** Units
Practical	**2** Hours	**1** Units
TOTAL	**3** Hours	**2** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Using bars in MS-WORD	10
Using bars in MS-POWERPOINT	10
Using bars in MS-EXCEL	10
Total	**30**

PRACTICAL Subject	Hours
Looking at MS-WORD interface	6

Application about menu bar	**1**
Application about format bar	**1**
Application about standard bar	**1**
Application about painting bar	**1**
Looking at MS-POWERPOINT interface	**5**
Application about using bars	**5**
Looking at MS-EXCEL interface	**5**
Application about using bars	**1**
Application about menu bar	**1**
Application about format bar	**1**
Application about standard bar	**1**
Application about painting bar	**1**
Total	**30**

Subject: ANATMOY / PART 4

SECOND Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**3**	Hours	**1**	Units
TOTAL	**5**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Lymphatic System Introduction, lymph, lymph vascular system. lymphatic tissue, lymph vessels, lymph capillaries, lymphatic tissue structures, solitary lymph nodules, tonsils, lymph nodes, lymph center, hemal nodes, lymph trunks and ducts, thymus, spleen	**12**
Nervous System Development of the brain. Central nervous system: brain, parts of the brain (spinal cord, cranial nerves, spinal nerves). Autonomic nervous system: sympathetic division, parasympathetic division. Meninges, cerebrospinal fluid.	**12**

Cardio Vascular System (Heart and Arteries) Introduction, heart and pericardium, pericardium, heart, the size and position and shape and location of heart, grooves of the heart, left and right atrium, left and right ventricle, blood supply of heart, nerve supply of heart, arteries; aorta, ascending aorta, brachiocephalic trunk, descending aorta, thorax aorta (branches), abdominal aorta (branches), blood supply of the thoracic limb, blood supply of the hind limb	**6**
Total	**30**

PRACTICAL Subject	Hours
Superficial dissection of face region (muscles, nerves, arteries, veins).	**3**
Deep dissection of face region (muscles, nerves, arteries, veins, parotido auricular region, buccal region, mental region).	**3**
The brain, cranial and spinal meninges, parts of brain, cranial nerves.	**3**
Dissection of neck region (lateral and ventral surfaces) including chief veins, nerves, arteries, muscles, thyroid gland, lymph nodes thymus.	**3**
Dissection of neck region (dorsal and lateral surfaces) including chief muscles and nerves.	**3**
Nerves in thoracic cavity (phrenic, vagus, sympathetic chain)	**3**
pericardium, cranial and caudal venae cavae, and venous azygous	**3**
Circulatory system: pericardium and the heart, chambers of the heart and the major vessels of the heart.	**3**
Aortic arch, common brachiocephalic trunk with its branches, thoracic aorta with its branches, diaphragm, respiratory muscles	**6**
Lymph centers in abdominal cavity, spleen.	**3**
Abdominal aorta with its branches, Dissection of abdominal wall (muscles and nerves). Terminal branches of abdominal aorta	**6**
Review and Examination	**6**
Total	**45**

Subject: EMBRYOLOGY

SECOND Year		SECOND Semester	
Theoretical	**1** Hours	**1** Units	
Practical			
TOTAL	**1** Hours	**1** Units	

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours

Introduction to embryology, phases of ontogenetic development, phase of gametogenesis	**1**
phase of Fertilization,	**1**
phase of cleavage, Implantation process	**1**
Formation of fatal membranes	**1**
Phase of Gastrulation and notochord formation	**1**
Mesoderm differentiation and neurulation process	**1**
Development of cardiovascular system	**1**
Development of nervous system	**1**
Development of brachial arches and pharyngeal pouches	**1**
Development of digestive system	**1**
Development of urinary system	**1**
Development of genital system	**1**
Development of respiratory system	**1**
Development of skeletal system	**1**
Development of lymphatic system	**1**
Total	**15**

Subject: HISTOLOGY / PART 2

SUBJECT CREDITS

Theoretical	**2** Hours	**2** Units
Practical	**3** Hours	**2** Units
TOTAL	**5** Hours	**4** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**20**
Practical	**13**	**40**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Digestive System	**6**
Urinary System	**5**
Endocrine System	**4**
Male Reproductive System	**6**
Female Reproductive System	**6**
Sensory Organs	**3**
Total	**30**

PRACTICAL Subject	Hours

Tongue structure, lingual papillae.	**3**
Salivary glands: parotid, sublingual, submaxillary, esophagus.	**3**
Fundic gland region of stomach, pyloric gland region of stomach, rumen, reticulum, omasum.	**3**
Small intestine: duodenum, jejunum, ileum, large intestine, recto anal canal.	**3**
Liver, gallbladder, pancreas.	**3**
Endocrine glands: hypophysis (pituitary gland)	**3**
adrenal gland (in human and horse), thyroid gland, parathyroid gland.	**3**
Urinary system: kidney, ureter, urinary bladder.	**3**
Male genital system: testis, epididymis, vas deferens.	**3**
Female genital system: ovary, corpus luteum, uterine tube (oviduct), uterus (secretory phase and proliferative phase).	**3**
Eye: cornea, retina.	**3**
Ear: cochlea, corti organ.	**3**
Mammary gland (active and in active).	**3**
Review	**3**
Examination	**3**
Total	**45**

Subject: PHYSIOLOGY / PART 2

SECOND Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**4**	Hours	**4**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**6**	Hours	**5**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**32**	**48**
Practical	**8**	**12**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Kidney and Urinary System	**14**
Endocrine System	**20**
Male and Female Reproductive System	**20**
Central Nervous System	**6**
Total	**60**

PRACTICAL Subject	Hours
Blood groups and coagulation time.	2
Measurements of respiratory volume-spirometry	2
Measurement of pulmonary ventilation and respiratory movements.	2
Salivary digestion.	2
Nervous system: reflex action in man (cutaneous and deep reflexes) and taste.	2
Eye reflexes	2
Response time.	2
Sensory physiology	2
Taste	2
Vision Estrous cycle in rat.	2
Hearing	2
Estrous cycle in rat.	2
Evaluation of seminal quality	2
Concentration of spermatozoa	2
Ovariectomy in rat	2
Total	**30**

Subject: BIOCHEMISTRY / PART 2

SECOND Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**5**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Plasma proteins	6
Lipid metabolism: Digestion and absorption, FA oxidation, FA synthesis, T.G synthesis, Cholesterol synthesis, Cholesterol esterification, Bile acids, Lipoproteins, Ketone bodies, Importance of acetyl CoA, Prostaglandins.	12

Nucleotids & nucleic acids: Structure, function, Purine & pyrimidine metabolism, DNA organization, replication, RNA synthesis.	7
Protein synthesis	6
Hormones: Action, Pituitary & hypothalamus hormones, Thyroid hormones, Adrenal hormones, Gonads hormones, Pancreas hormones.	10
Free radical and antioxidants	4
Total	**45**

PRACTICAL Subject	Hours
Photometric Analysis of Biochemical Molecules	2
Photometric Analysis of Biochemical Molecules	2
Determination of Serum Total Protein	2
Determination of Serum Total Protein Using Standard Curve	2
Determination of Serum Inorganic Phosphate	2
Determination of Serum Calcium	2
Determination of Serum Total Cholesterol	2
Determination of Serum Total Lipids	2
Determination of Serum Creatinine	2
Determination of Serum Uric Acid	2
Determination of Serum Bilirubin	2
Enzymatic Method for Determination of Glucose	2
Determination of Serum Amylase Activity	2
Determination of Serum urea	2
Determination of serum transaminase	2
Total	**30**

Subject: ANIMAL NUTRITION / PART 2

SECOND Year SECOND Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Trace elements, functions and deficiency symptoms.	6

Vitamins, functions and deficiency symptoms.	6
Evaluation of food: digestibility, Energy content of foods and partition	6
Methods of expressing the energy value of foods.	6
Feeding maintenance and growth: Ruminants, Rabbits, Poultry.	6
Total	**30**

PRACTICAL Subject	Hours
Determination of ether extract	4
Determination N.F.E by chemical method.	4
Determination N.F.E by calculated method.	4
Determination of gross energy by chemical method	4
Determination of gross energy by calculated method	4
Determination of gross energy by bomb calorimeter	4
The digestion trials: How to make standard ration for farm animals	6
Total	**30**

Subject: BIOSTATISTICS

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Definition statistics and statistical symbols	4
Descriptive study of the data	2
Mediate measures (concentration)	2
Dispersion and differences measurements	2
Simple regression and correlation	2
Principles of probability	4
Discrete probability distributions	2
Continuous probability distributions	4
Hypotheses Testes	2
Z test	2
t test	2
X^2 test	2

	Total	30

PRACTICAL Subject	Hours
Definition statistics and statistical symbols	4
Descriptive study of the data	2
Mediate measures (concentration)	2
Dispersion and differences measurements	2
Simple regression and correlation	2
Principles of probability	4
Discrete probability distributions	2
Continuous probability distributions	4
Hypotheses Testes	2
Z test	2
t test	2
X^2 test	2
Total	**30**

Subject: ARABIC LANUAGE

SECOND Year **Second Semester**

SUBJECT CREDITS

Theoretical	2 Hours	2 Units
Practical	-	-
TOTAL	2 Hours	2 Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	-	-
TOTAL	**40**	**60**

الساعات	الموضوعات النظرية
2	الاحرف المشبه بالفعل
2	الافعال الخمسة والاسماء الخمسة
2	الفاعل ونائب الفاعل
2	المفعول به والمفعول المطلق والمفعول لأجله
2	الحال والنعت
1	
1	
1	

1	
15	المجموع

Curriculum Summary for Third Year Subject / First semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Helminthology	Units	3	1	4
		Hours	3	2	
2	Pharmacology / part 1	Units	3	1	4
		Hours	3	2	
3	General microbiology	Units	3	1	4
		Hours	3	3	
4	Immunology	Units	2	1	3
		Hours	2	2	
5	General pathology	Units	3	1.5	4.5
		Hours	3	3	
6	Toxicology	Units	2	-	2
		Hours	2	-	

Total Subjects: 6 Total Units: 21.5 Total Hours: 28

Curriculum Summary for Third Year Subject / Second semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Protozoa and Arthropoda	Units	3	1	4
		Hours	3	2	
2	Pharmacology / part 2	Units	3	1	4
		Hours	3	2	
3	Veterinary Clinic / part 1	Units	-	1	1
		Hours	-	2	
4	Special microbiology	Units	3	1	4
		Hours	3	2	
5	Virology	Units	2	1	3
		Hours	2	2	
6	Systemic pathology	Units	3	3	4.5
		Hours	3	3	

Total Subjects: 6 Total Units: 20.5 Total Hours: 27

Subject: HELMINTHOLOGY

THIRD Year | **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**5**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction & Definitions of Terms Effects of parasites on their hosts	**2**
Transmission of parasite infestation, life cycle, Immunology	**3**
Phylum: Nematoda / **Families:** Scarodidae, Hetrakidae, Subuluridae, Oxyuridae, Rhabditidae, Strongyloides, Trichonematidae, Ancylostomatidae, Trichostrongylidae, Dictyocaulidae, Metastrongyloidae, Trichuridae, Trichinellidae, Spriuroidae, Fillariidae.	**20**
Phylum: Platyhelminthes / **Families:** Taeniidae, Anoplocephaliadae, Thysanosonidae, Davaineidae, Dipylidiidae, Hymenolepididae, Mesocestoidae, Diphllobothriidae.	**12**
Phylum: Trematoda / **Families:** Fasciolidae, Dicrocoelidae, Parmaphistomatidae, Schistosomatidae.	**8**
Total	**45**

PRACTICAL Subject	Hours
Laboratory diagnosis of parasitism	**2**
Fasciola hepatica, Life cycle, *Fasciola gigantica*	**2**
Dicrocoelium dendriticum, *Metagonimus yokcagaw*, Paramphistomatidae (3 genuses)	**2**
Schistoma (male, female) In copulation. eggs of *S.mansoni*, and *S. japonicum* and cercaria	**3**
Moniezia expansa, (Mature egg, scolex), M. bendeni. Avitellina (mature and gravid), Thysaniezia (mature and gravid)	**3**

Raillietina (mature and gravid) Scolex of *R. tetragona*, *R. echinobothrida*, *R. cesticillus* *Dipylidium caninum* (mature and gravid), *Hymenolepis nana*	**3**
Taenia spp (eggs, mature, gravid and scolex) of *T. pisiformis* proto scolex of *Coenurus cerebralis*	**3**
Echinococcus granulosus, protoscolex of Hydatid cyst *Mesocestoides lineatus* (mature and gravid), Spirometra (mature)	**3**
Parascaris equorum, Toxocara canis, Oxyuris equi, Ascaridia galli, Hetrakis gallinarum, Subulura brumptii	**2**
Strongylidae copulatory bursa, *Strongylus vulgaris*, *S. equines* *Chabertia ovina*, *Ancylostoma caninum*, Bunostomum sp	**2**
Haemonchus contortus (male and female), Ostertagia (3 sp) *Dictyocalus filarial* (male)	**3**
Habronema (male and female), Thelazia, *Setaria digiata* (female) *Trichinella spiralis* (larval stage), *Trichuris trichura*	**2**
Total	**30**

Subject: PHARMACOLOGY / PART 1

THIRD Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3** Hours	**3** Units
Practical	**2** Hours	**1** Units
TOTAL	**5** Hours	**4** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
General principles of pharmacology (pharmacokinetic and pharmacodynamics)	**10**
Drugs acting on the autonomic and somatic nervous systems	**8**
Drug acting on central nervous system	**9**
Drugs acting on gastrointestinal function	**7**
Drugs acting on the cardiovascular system and blood	**5**
Drugs affecting renal function and fluid electrolyte balance	**3**
Drugs affecting the respiratory system	**3**
Total	**45**

PRACTICAL Subject	Hours
General principles and definition	2
Drug form	2
Metrology	2
Dose calculation and dilution	2
Lab animal technique, handling, different dosing and sampling	2
Effect ionization on absorption	2
Analysis of alanine	2
Effect of rout of administration on rate of absorption	2
Effect of autonomic drugs on isolated rabbit duodenum	2
Effect of autonomic drugs on eye	2
Effect of autonomic drug & hormones on isolated uterus from animals	2
Diuretics	2
Review and seminars	2
Examine	4
Total	**30**

Subject: GENERAL MICROBIOLOGY

THIRD Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**3**	Hours	**1**	Units
TOTAL	**6**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction and History of Microbiology	4
Bacterial Cell Structure and Function	5
Bacterial Classification	4
Bacterial Nutrition and Growth	4
Sterilization and Disinfection	4
Antibiotics and Chemotherapeutic Agents	4
Bacterial Genetics	4
Bacterial Virulence	4

Normal Flora and Probiotics	**4**
Rickettsia and Chlamydia	**4**
Mycoplasma	**4**
Total	**45**

PRACTICAL Subject	Hours
General Laboratory Instructions	**2**
Microscopes	**2**
Sterilization and Disinfection	**2**
Culture Media for Bacterial Growth	**2**
Bacterial Nutrition and Growth	**2**
Colony Morphology	**2**
Pure Culture Techniques	**2**
Bacterial Motility	**2**
Bacterial Morphology	**2**
Bacterial Staining Techniques	**2**
Bacterial Count	**2**
Antibiotics Tests	**2**
Biochemical Tests	**2**
Mycology	**4**
Total	**30**

Subject: IMMUNOLOGY

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Principle of immunity and immune response (specific and nonspecific)	**2**
Immunoglobulin: Structure, variation, Function and synthesis	**4**
Immunology of T and B cells	**4**
Complement: Nature, Function and pathways	**2**

Cell mediated immunity, antigen recognition by T cells	**2**
Immunological tolerance	**2**
Types of Hypersensitivity, Mechanisms	**4**
Auto-immunity	**2**
Transplantation	**2**
Principle of immune genetics	**2**
Immunoanaphylaxis reaction	**2**
Immunity of infection	**2**
Total	**30**

PRACTICAL Subject	Hours
Introduction to immunology labs	**2**
Lab animals	**2**
Preservation of antigens and antibodies	**4**
Separation of immunoglobulin	**2**
Complement test	**2**
Precipitation test	**2**
Agglutination test	**2**
Neutralization test	**2**
Separation of lymphocytes from blood and lymph nodes	**4**
Preparation of antigens	**4**
Leukocytes	**2**
Phagocytosis	**2**
Total	**30**

Subject: GENERAL PATHOLOGY

THIRD Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**3**	Hours	**1.5**	Units
TOTAL	**6**	Hours	**4.5**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction	**1**

Degenerative changes and Necrosis / Acute Cellular Degeneration / Gout Degeneration and Gangrenous necrosis (Gangrene types).	**8**
Disturbance of Pigmentation (Jaundice/ Types and causes and formation of hemosiderin, melanin, and calcification/ types and causes)	**3**
Disturbance of growth (atrophy, hypertrophy, hyperplasia, hypoplasia, metaplasia, aplasia, congenital anomalies)	**3**
Disturbance of Circulation (Congestion and hemorrhage/ types and causes, thrombus and emboli: types and causes, infarction, embolism, edema / types and causes)	**6**
Inflammation (definition, causes, types of inflammatory cells, types of inflammation)	**8**
Healing and repair	**2**
Inmmunopathology	**6**
Tumors (definition/ theories of origin, classification/ differentiation between benign and malignant tumors/ histological characters of tumors/ method of transmission)	**8**
Total	**45**

PRACTICAL Subject	Hours
Solutions and fluids used in fixation and preservation of tissue samples used as preservative samples.	**6**
Methods of processing and preparation of tissue for microscopically examination.	**6**
Methods of embedding and preparation of tissue blocks.	**6**
Methods of cryostat for frozen sections.	**6**
Methods of reaction and special tissue stains.	**7**
Frozen section microtome for pathological detection of fat and enzymes.	**7**
Practical training in examination and diagnosis of many pathological conditions as histological section, lintin slides, digital photos and fixed samples (gallery samples).	**7**
Total	**45**

Subject: TOXICOLOGY

THIRD Year	FIRST Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical				
TOTAL	**2**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Concepts & terminology of toxicology	2
Toxicokinetics	2
Antidotes and general treatment of poisoning	2
Diagnostic aspects of toxicology	2
Insecticides	3
Herbicides	2
Toxic metals	2
Mycotoxins	2
Feed-associated toxicants	2
House-hold & industrial products	2
Toxic plants	3
Bio toxins	2
Environmental pollution with toxicants	2
Pharmaceuticals poisoning	2
Total	**30**

Subject: PROTOZOA AND ARTHROPODA

THIRD Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3** Hours	**3** Units
Practical	**2** Hours	**1** Units
TOTAL	**5** Hours	**4** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Phylum: Protozoa / **Families**: Trypanosomatidae, Trichomonadae, Plasmodiidae, Babesiidae, Theileriidae , Monocercomonadidae, Eimeriidae, Sarcocystidae, Cryptosporidiidae.	**30**
Phylum: Arthropoda / **Families**: Ioxdidae, Argasidae, Sarcoptidae, Psoroptidae, Tabanidae, Culicidae, Psychodidae,,Simuliidae, Oestridae, Calliphoridae, Anthomyidae, Cimicidae, Haematopinidae, Linognathidae, Superfamilies, Ischnocera, Amblycera	**15**
Total	**45**

PRACTICAL Subject	Hours
Trypanosoma brucei, *T.equiperdium*, *T.evansi*, *T.cruzi*, Leishmania (Amastigete), *Trichomonas vaginalis*, *Entamoeba histolytica*(trophozoite)	**4**
Eimeria (life cycle), Sarcocystis, *Toxoplasma gondii*, Cryptosporidium	**4**
Plasmodium gallinaceum, *Babesia canis*, *B. motasi*	**4**
Theileria, Anaplasma, Hard ticks, Hyalomma, Rhipicephalus, Boophilus, larva, Soft tick (*Argas persicus*)	**4**
Demodex folliculorum, *Dermanyssus gallinae*, Psorptes, Sarcoptes	**4**
Menacanthus straminus, *Haematopinus suis*, *Ctenocephalides canis*, *Xenopsylla cheopis*, *Cimex lectularis*	**4**
Anopheles, Culex, (male + female) pupa and larva, Simulium adult and Larva	**4**
Oesteridae, *Oestrus ovis*, *Hypoderma bovis*, *Gastrophilus intestinalis*	**2**
Total	**30**

Subject: PHARMACOLOGY / PART 2

THIRD Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**5**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Antibacterial drugs	**9**
Antifungal drugs	**2**
Antiviral drugs	**2**
Antineoplastic drugs	**2**
Antinematodal, Anticestodal and Antiprotozoan	**5**
Dermatopharmacology, Ectoparasiticides.	**3**
Antiseptics and Disinfectants	**3**
Endocrine pharmacology	**5**
Autocoids and anti-inflammatory	**5**
Metabolic therapy	**3**
Growth promoter	**3**
Herbal medicine	**3**
Total	**45**

PRACTICAL Subject	Hours
Nature and source of drugs	**2**
Writing of prescription	**2**
Pharmaceutical preparation for farm animals and poultry	**2**
Despising of drugs lotion and solution	**2**
Despising of drugs ointment and cream	**2**
Despising of drugs antacid and laminate	**2**
Analgesic of drugs	**2**

Log dose response relationships (ED_{50} , LD_{50}, TI)	**2**
Sensitivity test of antibiotic	**2**
Organophosphate poisoning in rats or mice	**2**
Determination of blood cholinesterase activity	**2**
Cyanide poisoning	**2**
Aspirin toxicity (comparison with acetaminophen)	**2**
Review and seminars	**2**
Examine	**2**
Total	**30**

Subject: VETERINARY CLINIC part 1

THIRD Year **SECOND Semester**

SUBJECT CREDITS

Theoretical		
Practical	**2** Hours	**1** Units
TOTAL	**2** Hours	**1** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**-**	**-**
Practical	**40**	**60**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction	**2**
Inspection, Palpation, Percussion and Auscultation	**2**
Examination of Body Temperature	**2**
Examination of Arterial Pulse	**2**
Examination of Respiration	**2**
Examination of Lymph nod	**2**
Examination of Mucous membranes	**2**
Examination of Respiratory System	**2**
Examination of Cardiovascular System: Heart, Jugular vein	**2**
Examination of Digestive System: Rumen, Liver, Pain reflex	**2**
Examination of Urinary System	**2**
Examination of Skin	**2**
Examination of Reproductive System (Udder + Genital System)	**2**
Route of Administration of Drugs	**2**
Allergic Tests (Diagnostic Tests) and Revising	**2**
Total	**30**

Subject: SPECIAL MICROBIOLOGY

THIRD Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**5**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Staphylococcus	**3**
Streptococcus	**3**
Corynebacterium	**2**
Listeria	**1**
Bacillus	**2**
Clostridium	**6**
Actinomyces and Nocardia	**2**
Actionbacillus	**1**
Pasteurella	**2**
Haemophillus	**1**
Moraxella and bordetlla	**2**
Pseudomonas (Burkholderia)	**2**
Leptospira	**1**
Campylobacter	**2**
Brucella	**3**
Spharophorus	**1**
Enterbacteriacae	**8**
Mycobacterium	**3**
Total	**45**

PRACTICAL Subject	Hours
Staphylococcus	**2**
Streptococcus	**2**

Corynebacterium	**4**
Rhodococcus, Listeria	**2**
Bacillus	**2**
Clostridium and Anaerobic Condition	**4**
Mycobacterium	**2**
Pasteurella	**2**
Pseudomonas (Burkholderia)	**2**
Leptospira	**2**
Brucella	**2**
Enterbacteriacae	**4**
Total	**30**

Subject: VIROLOGY

THIRD Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction and Discovering of Viruses	**1**
General Characteristics of Viruses, Nature and Structure	**1**
Morphology and Chemistry of Viruses	**2**
Virus Classification and Taxonomy	**1**
Virus Multiplication and Propagation (replication)	**3**
Viral genetics and Interaction Between Viruses	**2**
Interferon and Viral Interference	**1**
Viral Vaccines and Antiviral Drugs	**2**
Bacteriophages	**1**
Effect of Physical and Chemical Agents on Viruses	**1**
Laboratory Diagnosis of Viral Infection	**2**
Picornavirus and Caliciviridae	**2**
Orthomyxoviridae	**2**

Paramyxoviridae and Retroviridae	**2**
Reoviridae and Birnaviridae	**1**
Rhabdoviridiae and Bornaviridae	**1**
Bunyaviridae and Coronaviridae	**1**
Poxviridae, Herpesviridae	**2**
Adenoviridae and Parvoviridae	**1**
Papovaviridae and Papillomaviridae	**1**
Total	**30**

PRACTICAL Subject	Hours
Collection and Preservation of Viral Samples	**2**
Isolation and Preservation of Viruses	**4**
Propagation of Viruses in Egg Embryo	**4**
Propagation of Viruses in Tissue Culture	**6**
Haemagglutination Test of ND Virus	**2**
Haemagglutination Inhibition Test of ND Virus	**2**
Neutralization Test for ND Virus	**2**
Methods of Virus Titration	**4**
Physical Character of Viruses	**2**
Chemical Character of Viruses	**2**
Total	**30**

Subject: SYSTEMIC PATHOLOGY

THIRD Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**3**	Hours	**1.5**	Units
TOTAL	**6**	Hours	**4.5**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Diseases of Respiratory system/ Upper respiratory tract/ Lung/ Pleura	**6**
Diseases of Cardiovascular system	**5**
Diseases of haemopoetic and lymphatic tissues	**3**

Diseases of digestive system	**8**
Disease of urinary system	**4**
Disease of Male and Female genital system	**3**
Diseases of Muscol- Skeletal system	**4**
Diseases of Nervous system	**3**
Disease of Endocrine	**3**
Diseases of skin and accessory	**3**
Diseases of eye and special organ	**3**
Total	**45**

PRACTICAL Subject	**Hours**
Histopathological practice for examining of upper respiratory tract .	**5**
Histological section and fixed gross samples of endocarditis and myocarditis and pericarditis caused by bacteria and parasites.	**5**
Pathological affections of aorta and other blood vessels (gross and histopathological section)	**5**
Pathological affection of digestive system including gingivitis and other mucosal epithelial affection (foot and mouth diseases, and wooden tongue).	**5**
Gastroenteritis, parasitic affection of stomach, intestinal obstruction, coccidiosis (gross and histopathological practice).	**5**
Liver necrosis, liver cirrhosis, abscess, parasitic infection of liver and bile duct and gill bladder. Microscopic slides of pathological infection of kidney urethras and urinary bladder. Hematueria in farm animals.	**4**
Microscopic slides of metritis and salphangitis, suppurative metritis, mastitis testis and urinary tract	**8**
Microscopic slides of bone infection, and cartridge, joints, osteomalaysia, vitamin D deficiency, skin infection, myocytic and parasitic infection of skin.	**4**
Microscopic slides from general diseases cases.	**4**
Total	**45**

Curriculum Summary for Fourth Year Subject / First semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Morbid anatomy / part 1	Units	1	1	2
		Hours	1	2	
2	Female fertility and genital diseases	Units	2	1	3
		Hours	2	2	
3	Veterinary clinic / part 2	Units	-	2	2
		Hours	-	4	
4	Poultry diseases /part 1	Units	2	1	3
		Hours	2	2	
5	Surgery / part 1	Units	3	1	4
		Hours	3	2	
6	Infectious diseases / part 1	Units	2	-	2
		Hours	2	-	
7	Clinical pathology / part 1	Units	1	1	2
		Hours	1	2	
8	Internal medicine / part 1	Units	3	-	3
		Hours	3	-	
9	Epidemiology	Units	1	-	1
		Hours	1	-	

Total Subjects: 9 Total Units: 22 Total Hours: 29

Curriculum Summary for Fourth Year Subject / Second semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Morbid anatomy / part 2	Units	1	1	2
		Hours	1	2	
2	Veterinary obstetrics	Units	2	1	3
		Hours	2	2	
3	Veterinary clinic / part 3	Units	-	2	2
		Hours	-	4	
4	Poultry diseases /part 2	Units	2	1	3
		Hours	2	2	
5	Surgery / part 2	Units	3	1	4
		Hours	3	2	
6	Infectious diseases / part 2	Units	3	-	3
		Hours	3	-	
7	Clinical pathology / part 2	Units	1	1	2
		Hours	1	2	
8	Internal medicine / part 2	Units	3	-	3
		Hours	3	-	

9	Zoonotic diseases	Units	2	-	2
		Hours	2	-	

Total Subjects: 9 **Total Units: 24** **Total Hours: 31**

Subject: MORBID ANATOMY / PART 1

FOURTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**3**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Bovine diseases: Tuberculosis, Leptospirosis, Contagious bovine pleuro pneumonia, Colibacillosis, Shipping fever, Cattle plague, Bovine malignant catarrhal, Foot and mouth disease, Bovine viral diarrhea, Actinobacillosis, Actinomycosis, Theileriosis, Anaplasmosis, Babesiosis, Lumpy skin disease	**9**
Ovine disease: contagious ecthyma, Sheep pox, Foot root, Black leg, Lamb dysentery, Anthrax, Listeriosis, Enterotoxaemia, Black disease	**6**
Total	**15**

PRACTICAL Subject	Hours
Introduction & P.M report	**4**
Post mortem technique for large animals	**4**
PM technique for lab animals	**4**
Data show of Bovine diseases: Tuberculosis, Leptospirosis, Contagious bovine pleuro pneumonia, Colibacillosis, Shipping fever, Cattle plague, Bovine malignant catarrhal, Foot and mouth disease, Bovine viral diarrhea, Actinobacillosis, Actinomycosis, Theileriosis, Anaplasmosis, Babesiosis, Lumpy skin disease	**12**

Data show of Ovine disease: contagious ecthyma, Sheep pox, Foot root, Black leg, Lamb dysentery, Anthrax, Listeriosis, Enterotoxaemia, Black disease	**6**
Total	**30**

Subject: FEMALE FERTILITY and GENITAL DISEASES

FOURTH Year		FIRST Semester	
Theoretical	**2** Hours	**2**	Units
Practical	**2** Hours	**1**	Units
TOTAL	**4** Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Female puberty and maturity	**1**
Physiology of the female reproductive system	**2**
Female reproductive hormones	**2**
Estrus cycle	**2**
Seasonality	**1**
Ovulation	**1**
Luteolysis	**1**
Infertility and sterility	**6**
Reproduction in buffalo cows	**4**
Reproduction in mares	**4**
Reproduction in she camels	**2**
Reproduction in ewes and does	**2**
Reproduction in bitch and queen	**2**
Total	**15**

PRACTICAL Subject	Hours
Anatomy of the female reproductive system	**2**
Estrus signs and detection	**4**
Vaginal examination	**2**
Rectal palpation	**6**
Clinical uses of hormones	**2**
Female infertility and sterility	**6**
Abnormalities of the female reproductive system	**2**

Intrauterine therapy	**2**
Reproductive performance	**2**
Records	**2**
Total	**30**

Subject: VETERINARY CLINIC / PART 2

FOURTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical		
Practical	**4** Hours	**2** Units
TOTAL	**4** Hours	**2** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**-**	**-**
Practical	**40**	**60**
TOTAL	**40**	**60**

PRACTICAL Subject	Hours
Examination of animals, diagnosis and treatment of Surgery cases receive by Veterinary Teaching Hospital or field visits.	**10**
Examination of animals, diagnosis and treatment of Obstetric cases receive by Veterinary Teaching Hospital or field visits.	**10**
Examination of animals, diagnosis and treatment of Poultry diseases receive by Veterinary Teaching Hospital or field visits.	**10**
Examination of animals, diagnosis and treatment of Fish diseases receive by Veterinary Teaching Hospital or field visits.	**10**
Examination of animals, diagnosis and treatment of Internal Medicine diseases receive by Veterinary Teaching Hospital or field visits.	**10**
Examination of animals, diagnosis and treatment of Clinical Pathological cases receive by Veterinary Teaching Hospital or field visits.	**10**
Total	**60**

Subject: POULTRY DISEASES / PART 1

FOURTH Year | **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction about diseases and poultry industry	**4**
Bacterial diseases	**10**
Mycoplasma and Chlamydia diseases	**6**
Viral diseases	**10**
Total	**30**

PRACTICAL Subject	Hours
Introduction about poultry industry in relation to diseases	**2**
management of poultry house and their effected on diseases	**2**
Method for killing chickens prepared for post mortem	**2**
Learning student about how to write case report	**2**
Comparative anatomy of bird (gross lesions and samples collection)	**2**
E. coli infection	**2**
Diseases caused by Salmonella	**2**
Coryza/ fowl cholera and spirochetosis	**2**
Necrotic and ulcerative enteritis	**2**
Mycoplasma diseases	**2**
Newcastle, Maerks disease, leukosis, avian encephalomyelitis	**2**
IB, IBD, IH, ILT	**2**
Avian pox, Stunting syndrome, EDS, HHS	**2**

Introduction about poultry industry in relation to diseases	2
Requirement of management of house and their effected on diseases	2
Total	**30**

Subject: SURGERY / PART 1

FOURTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**5**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction and classification of Surgery	3
Sterilization	3
Response to trauma	3
Wound classification	3
Heamastasis	3
Abscess	3
Ulcer	3
Tumors	3
Affection of the bursa, joints	3
Affection of tendon	3
History on anesthesia	3
Classification of anesthesia	3
Local anesthesia	3
Regional anesthesia	3
Pre-anesthetic consideration	3
Total	**45**

PRACTICAL Subject	Hours
Introduction to surgical theater	4
Instrumentation	4
Preparation of surgical packs	4

Preoperative examination	4
Sutures and ligatures	4
Local anesthesia	4
Regional anesthesia	4
Examination	2
Total	**30**

Subject: INFECTIOUS DISEASES / PART 1

FOURTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical				
TOTAL	**3**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Enzootic abortion in sheep	2
Glanders	2
Epizootic lymphangitis	2
Strangles	2
Contagious bovine pyelonephritis	2
Caseous lymphadenitis of sheep	2
Ulcerative lymphangitis	2
Brucellosis	2
Listerosis	2
Leptospiros	2
Anthrax	2
Salmonllosis	2
Colibacillosis	2
Footrot and Mastitis	2
CCPP and CBPP	2
TB and john's disease.	2
Actinomycosis and Actinobacillosis	2
Oral and laryngeal necrobacillosis	1
Winter dysentery of cattle	1
Diseases caused by Hemophilus and Moraxella spp	1

Pasteurellosis and HS	1
Black leg	1
Black disease	1
Tetanus	1
Enterotoxaemia	1
Botulism	1
Bacillary hemoglobinuria	1
Braxy	1
Total	**45**

Subject: CLINICAL PATHOLOGY / PART 1

FOURTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**3**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction (terminology and concepts)	2
Clinical haematology (leukocytes and erythrocytes)	2
Bone marrow examination	1
Platelets function abnormalities & diagnosis of bleeding disorders	1
Clinical biochemistry, Basic principles, total portion,	1
Ketones, urea, enzymology, mineral levels.	1
Metabolic profile testing and S.1. unit.	1
Liver function test	2
Kidney function test	2
Water electrolytes and acid - base imbalance	1
Disturbances of adrenal, pituitary, thyroid and parathyroid glands	1
Total	**15**

PRACTICAL Subject	Hours
Collection of different samples.	2
Erythrocytes count	2
Reticulocytes count	2

Packed cell volume and Hb determination	**2**
Leukocytes parameters (TLC)	**2**
Leukocytes parameters (DLC)	**2**
ESR determination	**2**
Platelets function abnormalities	**2**
Bleeding and clotting time	**2**
Blood smear examination	**2**
Lymph smear examination	**2**
Clinical biochemistry, Total portion, Ketones and urea.	**4**
Enzymology and mineral levels.	**2**
Urine examination (physical, chemical and microscopic)	**2**
Total	**30**

Subject: INTERNAL MEDICINE / PART 1

FOURTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical				
TOTAL	**3**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction	**3**
General systemic states	**3**
Digestive system: Principles of alimentary tract dysfunction	**6**
Manifestation of alimentary tract dysfunction	**3**
Diseases of the buccal cavity and associated organs, Stomatitis, Pharygeal obstruction, Pharyngeal paralysis, Esophagitis, esophageal obstruction	**6**
Diseases of the forestomachs of ruminants	**12**
Diseases of the stomach and intestine	**6**
Equine colic	**6**
Total	**45**

Subject: Epidemiology

FOURTH Year		FIRST Semester
Theoretical	**1** Hours	**1** Units
Practical		
TOTAL	**1** Hours	**1** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction (Definitions, Objectives of epidemiology and preventive medicine, Uses of epidemiology and Types of epidemiology)	1
Occurrence of disease (Basic concepts of disease quantification, Measures of morbidity: Prevalence, Incidence, Relationship between prevalence and incidence and Measures of mortality).	1
Diseases Transmission and Determinants (Mode of disease transmission, Susceptibility, Clinical vs. subclinical diseases, Endemic, epidemic, pandemic, and outbreaks and Diseases determinants)	2
The economics of animal diseases	1
Data collection and management	1
Sampling and sample size (Sampling methods and Sample size importance and calculation)	1
Study Design (Prospective vs. Retrospective, Observational studies: Descriptive, Cross-sectional, Case-control, Cohort, Experimental studies: Field trials and Randomized controlled trials (clinical trials).	2
Measures of association (Absolute risk, Relative risk, Relative odds (odds ratio), Attributable	3

risk, Hazard ratio, Association vs. causation, Bias, confounding, and interaction.	
Survey and Surveillance	**1**
Control and Eradication of Diseases	**1**
Assessing validity and reliability of diagnostic tests (serological epidemiology)	**1**
Total	**15**

Subject: MORBID ANATOMY / PART 2

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**3**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Equine disease: Strangles, Glanders, Shigellosis, Epizootic lymphangitis, Ulcerative lymphangitis, Equine infectious anemia, Equine influenza	**6**
Canine and Feline disease: Rabies, Canine distemper, Canine viral hepatitis, Feline parvovirus (Panleukopenia).	**6**
Lab animal disease: Tyzzer's disease, Coccidiosis in rabbit, External parasite	**3**
Total	**15**

PRACTICAL Subject	Hours
Data show of Equine disease: Strangles, Glanders, Shigellosis, Epizootic lymphangitis, Ulcerative lymphangitis, Equine infectious anemia, Equine influenza	**10**

Data show of Canine and Feline disease: Rabies, Canine distemper, Canine viral hepatitis, Feline parvovirus (Panleukopenia).	**10**
Data show of laboratory disease: Tyzzer's disease, Coccidiosis in rabbit, External parasite	**10**
Total	**30**

Subject: VETERINARY OBSTETRICS

FEMALE FERTILITY and DISEASES / Theoretical Subjects

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2** Hours	**2** Units
Practical	**2** Hours	**1** Units
TOTAL	**4** Hours	**3** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Fertilization	**1**
Physiology of pregnancy	**2**
Maternal recognition of pregnancy	**1**
Length of gestation period	**1**
Maintenance of pregnancy	**1**
Pregnancy diagnosis	**2**
Problem of pregnancy	**5**
Parturition	**3**
Normal uterine involution	**1**
Uterine defense mechanism	**2**
Dystocia	**5**
Puerperal diseases	**6**
Total	**30**

PRACTICAL Subject	Hours
Implantation and embryo development	2
Fetal membrane	2
Position of uterus during pregnancy	2
Rectal palpation	4
Method of pregnancy diagnosis	4
Induction of abortion and parturition	2
Normal Presentation, Position and Posture	2
Abnormal Presentation, Position and Posture	4
Obstetrical instruments	2
Obstetrical maneuvers	2
Fetotomy	2
Caesarian section	2
Total	**30**

Subject: VETERINARY CLINIC / PART 3

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical		
Practical	**4** Hours	**2** Units
TOTAL	**4** Hours	**2** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**-**	**-**
Practical	**40**	**60**
TOTAL	**40**	**60**

PRACTICAL Subject	Hours
Examination of animals, diagnosis and treatment of Surgery cases receive by Veterinary Teaching Hospital or field visits.	10
Examination of animals, diagnosis and treatment of Obstetric cases receive by Veterinary Teaching Hospital or field visits.	10
Examination of animals, diagnosis and treatment of Poultry diseases receive by Veterinary Teaching Hospital or field visits.	10
Examination of animals, diagnosis and treatment of Fish diseases receive by Veterinary Teaching Hospital or field visits.	10
Examination of animals, diagnosis and treatment of Internal Medicine diseases receive by Veterinary Teaching Hospital or field visits.	10

Examination of animals, diagnosis and treatment of Clinical Pathological cases receive by Veterinary Teaching Hospital or field visits.	**10**
Total	**60**

Subject: POULTRY DISEASES / PART 2

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2** Hours	**2** Units
Practical	**2** Hours	**1** Units
TOTAL	**4** Hours	**3** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Malnutrition diseases	**8**
Mycotic diseases	**6**
Parasitic diseases	**8**
Diseases of Pet birds and zonosis	**4**
Diseases of Turkey, Pigeon, Quails	**4**
Total	**30**

PRACTICAL Subject	Hours
Malnutrition of diseases	**4**
Method for killing chickens prepared for post mortem	**2**
method used for vaccination to protect the bird from viral diseases, information about vaccine used unevenly and practical application on rout of vaccine	**2**
Parasitic diseases	**2**
Drug used for treatment of poultry diseases, method of administration, methods for calculation the quantity in winter and summer	**2**
Mycotic diseases	**2**

Field visiting to layers, parents stock, knowing the important diseases that affecting this farm and method of control	4
Bacteriological and serological method and collection of blood, method of preservation, for the purpose of diagnosis used locally and internationally	4
diseases of seabird, wild birds and prey birds (Eagles and Hawks)	4
Methods of treatment	2
Visiting to scientific central lab in veterinary medicine college	2
Total	**30**

Subject: SURGERY / PART 2

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**5**	Hours	**4**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**30**	**45**
Practical	**10**	**15**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Premeditation and muscle relaxant	3
Stages of general anesthesia	3
Volatile and non-volatile anesthetic agents	3
Anesthesia of lab Animals and birds	3
Anesthetic accidents	3
Anesthetic accidents treatment	3
X-ray	3
Radiation hazard and protection	3
Diagnostic and procedures of radiology	3
Processing of X-Ray	3
Fracture classification	3
Lameness	3
Affection of hoof	3
Laser in surgery	3
Endoscopic surgery	3
Total	**45**

PRACTICAL Subject	Hours
General anesthesia	6
X-ray	6
Orthopedics surgery	6
Tendon surgery	2
Intra articular injection	2
Laser and endoscopic surgery	4
Docking	2
Examination	2
Total	**30**

Subject: INFECTIOUS DISEASES / PART 2

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical				
TOTAL	**3**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Diseases caused by Viruses	15
Diseases caused by Fungus	15
Diseases caused by Parasites	15
Total	**45**

Subject: CLINICAL PATHOLOGY / PART 2

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**3**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Clinical parasitology	4
Rumen fluid examination	1
Clinical microbiology	2
Milk Examination	2
Antimicrobial sensitivity test	1
Clinical immunology	3
Transudate and exudate	1
Water electrolytes and acid - base imbalance	1
Total	**15**

PRACTICAL Subject	Hours
Fecal examination	4
Skin scraping examination	2
Clinical microbiology	4
Milk Examination (physical and chemical)	4
Milk Examination (Bacterial)	2
Antimicrobial sensitivity test	4
Rumen fluid examination	2
Serological test	4
Tests of detection of toxic substances.	4
Total	**30**

Subject: INTERNAL MEDICINE / PART 2

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical				
TOTAL	**3**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks

Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Diseases of Liver	**9**
Diseases of Nervous system	**15**
Diseases of Respiratory system	**15**
Diseases of Skin	**6**
Total	**45**

Subject: ZOONOTIC DISEASES

FOURTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2** Hours	**2** Units
Practical		
TOTAL	**2** Hours	**2** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

FOURTH Year **SECOND Semester**

THEORETICAL Subject	Hours
Introduction to the zoonosis	**1**
Principles of zoonosis recognition	**1**
Principles of zoonosis control and prevention	**1**
Viral zoonosis: FMD, Bovine popular stomatitis, Cow pox, Orf, pseudocow pox	**1**
Argentin Hemorrghic fever, Crimean - Congo Hemorrghic fever, Ebola Hemorrghic fever, Rift valley fever, Viral hepatitis type, vitamin deficiency A, B, C, D, E.	**1**
Eastern, Venezuelan and Western equine encephalitis	**1**
Louping - ill, Mad cow disease	**1**
Rabies , California encephalitis, Colorado tick fever	**1**

West Nile fever, Yellow fever, Nairobi sheep disease	**1**
Influenza (swine and equine)	**1**
Newcastle disease, Psittacosis, Q fever	**1**
Bacterial zoonosis, Anthrax, Listerosis, Leptospirosis, Lepracy	**1**
Botulism, Brucellosis, Campylobacterosis	**1**
Tuberculosis	**1**
Closterdium perfringes food poisoning, Streptocuccosis, Staphylococuccosis	**1**
Colibacillosis, Vibriosis	**1**
Salmonllosis, Shigellosis	**1**
Cat scratch disease, Rat bit fever, Plague.	**1**
Tetanus, Clostridial histotoxic infection	**1**
Glanders and corynbacterium infection	**1**
Parasitic zoonosis, Arthropod infection and tick paralysis	**1**
Cestoda infection: Coenuriasis, Taeniasis.	**1**
Echinococcosis, Diphyllobothriasis.	**1**
Trematode infection:Fascioliasis, Dictoceliasis	**1**
Nematode infection: Ascariasis, Capillariasis, Filariasis, Thelaziasis, Trichinosis	**1**
Cutanous larva migrans, Visceral larva migrant	**1**
Protozoa infection: Toxoplasmosis, Cryptosporidiosis, Giadiasis, Sarcocytosis, Babesiosis, Balantidiasis, Lishmaniasis, Trypanosomiasis	**2**
Fungal infection: Dematomycosis, Actinomycosis, Blastomycosis, Candidiasis, Histoplasmosis, Ring worm, Nocardiosis.	**2**
Total	**30**

Curriculum Summary for Fifth Year Subject / First semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Fish diseases	Units	2	1	3
		Hours	2	2	
2	Male fertility and diseases	Units	1	1	2
		Hours	1	2	
3	Veterinary clinic / part 4	Units	-	7	7
		Hours	-	14	
4	Internal medicine / part 3	Units	3	-	3
		Hours	3	-	
5	Meat hygiene	Units	2	1	3
		Hours	2	2	
6	Surgery / part 3	Units	2	1	3
		Hours	2	2	

Total Subjects: 6 Total Units: 21 Total Hours: 32

Curriculum Summary for Fifth Year Subject / Second semester

No.	Subjects	Credits	Theoretical	Practical	Total
1	Reproductive biotechnology	Units	1	1	2
		Hours	1	2	
2	Veterinary clinic / part 5	Units	-	6	6
		Hours	-	12	
3	Veterinary Ethics	Units	1	-	1
		Hours	1	-	
4	Internal medicine / part 4	Units	3	-	3
		Hours	3	-	
5	Milk hygiene	Units	2	1	3
		Hours	2	2	
6	Veterinary forensic pathology	Units	1		1
		Hours	1		
		Units	2	1	3

7	Surgery / part 4	Hours	2	2	
8	Research projects	Units	1	-	1
		Hours	1	-	
9	Summer clinic	Units	-	3	3
		Hours	-	6	

Total Subjects: 9 **Total Units: 23** **Total Hours: 35**

Subject: FIAH DISEASES

FIFTH Year FIRST Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction of Ichthyology and Fish Pathology	**2**
Prevention and health control	**4**
Infectious diseases	**8**
Parasitic diseases	**10**
Non infectious diseases	**6**
Total	**30**

PRACTICAL Subject	Hours
Introduction in fish breeding and diseases	**2**
External appearance for fish and anatomy	**2**
Physical and chemical property of pond water	**2**
Pond's designed	**2**
Fish feeding, breeding, and types of ponds	**2**
Sample taken and preservation	**2**
Practical examination	**2**
Practical tests and bacterial culture in fish	**2**

Parasitic tests and diagnosis methods in fish	2
Practical fishing and field fish exam	2
Diagnostic and pathological slides show	2
Methods with practical apply	2
Practical work on pathological samples for diagnosis	2
Pond's fertilization and it's methods	2
Final Practical examination	2
Total	**30**

Subject: MALE FERTILITY and Diseases

FIFTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**3**	Hours	**2**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Male puberty and maturity	1
Hormonal control of male reproductive system	1
Spermatogenesis	1
Composition of semen	1
Sperm metabolism	1
Method of semen collection	1
Method of semen evaluation	2
Method of semen dilution	2
Method of semen storage	1
Artificial insemination and Sperm transport	1
Infertility in males	3
Total	**15**

PRACTICAL Subject	Hours
Anatomy of the male genital system	2

Breeding soundness	**2**
Semen collection	**4**
Semen evaluation (macroscopically: volume, color, microscopically: mass and individual motility)	**4**
Semen evaluation (Live/dead and abnormality percentage)	**2**
Semen dilution	**2**
Semen storage (Liquid and frozen)	**4**
Insemination techniques	**4**
Infertility in males	**6**
Total	30

Subject: VETERINARY CLINIC /PART 4

FIFTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical				
Practical	**14**	Hours	**7**	Units
TOTAL	**14**	Hours	**7**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**-**	**-**
Practical	**40**	**60**
TOTAL	**40**	**60**

PRACTICAL Subject	Hours
Examination of animals, diagnosis and treatment of Surgery cases receive by Veterinary Teaching Hospital or field visits.	**35**
Examination of animals, diagnosis and treatment of Obstetric cases receive by Veterinary Teaching Hospital or field visits.	**35**
Examination of animals, diagnosis and treatment of Poultry diseases receive by Veterinary Teaching Hospital or field visits.	**35**
Examination of animals, diagnosis and treatment of Fish diseases receive by Veterinary Teaching Hospital or field visits.	**35**
Examination of animals, diagnosis and treatment of Internal Medicine diseases receive by Veterinary Teaching Hospital or field visits.	**35**
Examination of animals, diagnosis and treatment of Clinical Pathological cases receive by Veterinary Teaching Hospital or field visits.	**35**
Total	**210**

Subject: INTERNAL MEDICINE / PART 3

FIFTH Year	FIRST Semester

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical				
TOTAL	**3**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Metabolic Diseases: Milk fever, Downer cow syndrome, Hypomagnesemia tetany, Pregnancy toxemia, Ketosis, Post parturient Hb urea, Azotouria.	**25**
Nutritional Diseases: - Vitamin deficiency: D, A, E, K, C and B vitamins. - Mineral deficiency: Ca, P, Cu, Iodine, Mn, Zn and Osteomalacia.	**20**
Total	**45**

Subject: MEAT HYGIENE

FIFTH Year	FIRST Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units

TOTAL **4** Hours **3** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
The food animals	2
Anatomy, meat composition and quality	2
Meat plant construction and equipment	2
Preservation of meat	2
By- product treatment, Plant sanitation, From farm to slaughter	2
Human slaughter, Meat hygiene practice, Red meat inspection	2
Poultry slaughter and inspection	2
Exotic meat production	2
Chemical residues in meat, Food poisoning	2
Occupational injuries and infection	2
Bacterial Viral, and Mycotic diseases	2
Diseases caused by arthropod parasites	2
Diseases caused by helminthes	2
Metabolic diseases	2
Nutritional disorders & Environmental pollutants	2
Total	**30**

PRACTICAL Subject	Hours
Poultry slaughterhouse	2
Poultry carcasses: pathological cases, examination and judgments	2
Poultry carcasses portioning	2
Meat quality	2
Examining the head and judgments	2
Examining the carcasses and judgments	2
Examining the viscera and judgments	2
Comparative anatomy of carcass organs	2
Specifications of meat, fats of animals	2
Bleeding	2
Acidity and abnormal odors, jaundice	2
Egg examination	2
Canned food examination	2
Meat microbiology	4

Total	**30**

Subject: SURGERY / PART 3

FIFTH Year **FIRST Semester**

SUBJECT CREDITS

Theoretical	**2** Hours	**2** Units
Practical	**2** Hours	**1** Units
TOTAL	**4** Hours	**3** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Digestive system: Affection of salivary gland	2
Affection of tongue	2
Affection of teeth	2
Affection of esophagus	2
Affection of stomach	2
Affection of small intestine	2
Affection of digestive accessory organs	2
Facial paralysis	2
Respiratory system: Affection of upper tract	2
Affection of larynx and guttural	2
Affection lungs and trachea	4
Affection of chest wall	2
Cardiovascular system: cardiac anomalies	2
Pericarditis	2
Total	**30**

PRACTICAL Subject	Hours
Oesophagotomy	4
Tracheotomy	4
Intestinal surgery	6
Enterotomy	4
Castration	4
Gastrotomy	4
Mammectomy	4
Total	**30**

Subject: REPRODUCTIVE BIOTECHNOLOGY

FIFTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**1** Hours	**1** Units
Practical	**2** Hours	**1** Units
TOTAL	**3** Hours	**2** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**20**	**30**
Practical	**20**	**30**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Ultrasonography-general information	1
Ultrasonography in large animals	1
Ultrasonography in small animals	1
Estrus synchronization in bovine	1
Estrus synchronization in ovine and caprine	1
Controlling the age of puberty	1
Superovulation	1
Embryo Transfer	2
Laparoscopic intrauterine insemination	1
Methods of oocyte collection and maturation	1
In vitro fertilization	1
Sperm sexing (Gender selection)	1
Cloning and splitting of embryo	1
Suppress of reproductive activity	1
Total	**15**

PRACTICAL Subject	Hours
Clinical application of ultrasonography	4
Estrus synchronization	2
Controlling the age of puberty	2
Superovulation	2
Embryo transfer	2
Intrauterine insemination	2
Methods of oocyte collection and maturation	2
In vitro fertilization	4
Sperm sexing (Gender selection)	2
Cloning and splitting of embryo	2
Suppress of reproductive activity	2
Ovariectomy and castration	4
Total	**30**

Subject: VETERINARY CLINIC /PART 5

FIFTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical				
Practical	**12**	Hours	**6**	Units
TOTAL	**12**	Hours	**6**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**-**	**-**
Practical	**40**	**60**
TOTAL	**40**	**60**

PRACTICAL Subject	Hours
Examination of animals, diagnosis and treatment of Surgery cases receive by Veterinary Teaching Hospital or field visits.	30
Examination of animals, diagnosis and treatment of Obstetric cases receive by Veterinary Teaching Hospital or field visits.	30
Examination of animals, diagnosis and treatment of Poultry diseases receive by Veterinary Teaching Hospital or field visits.	30
Examination of animals, diagnosis and treatment of Fish diseases receive by Veterinary Teaching Hospital or field visits.	30

Examination of animals, diagnosis and treatment of Internal Medicine diseases receive by Veterinary Teaching Hospital or field visits.	**30**
Examination of animals, diagnosis and treatment of Clinical Pathological cases receive by Veterinary Teaching Hospital or field visits.	**30**
Total	**180**

Subject: VETERINARY ETHICS

FIFTH Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**1** Hours	**1** Units
Practical		
TOTAL	**1** Hours	**1** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Veterinarians Medical Doctor Duties	**1**
Ethics of Veterinarians	**1**
Veterinary job Licenses	**1**
Veterinary Medicine clinic	**1**
Veterinary Medical Services	**1**
Veterinary Medical consultant burses	**1**
Order for giving consultant	**1**
Graduating consultant of veterinaries	**1**
Job Ethics	**7**
Total	**45**

Subject: INTERNAL MEDICINE / PART 4

FIFTH Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**3**	Hours	**3**	Units
Practical				
TOTAL	**3**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Cardiovascular system	**10**
Blood and blood forming organs	**15**
poisonous material	**10**
Urinary system	**10**
Total	**45**

Subject: MILK HYGIENE

FIFTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Introduction	**1**
Mammary gland and milk biosynthesis	**4**
Milk and chemical composition of raw milk	**4**
Physical composition of raw milk	**2**
Exam	**1**
Microbiological of dairy milk	**4**
Safety and quality of dairy products	**2**

Milk from farm to plant	2
Hygiene by design	2
Pathogenic of raw milk	4
Milk spoilage	4
Total	**30**

PRACTICAL Subject	Hours
Milk specific gravity	5
Determination of fat and total solids in milk	5
Adulteration of milk	5
Antibiotic residues in milk	5
Mastitis tests	5
Determination of aflatoxins in milk	5
Total	**30**

Subject: VETERINARY FORENSIC PATHOLOGY

FIFTH Year **SECOND Semester**

SUBJECT CREDITS

Theoretical	**1**	Hours	**1**	Units
Practical				
TOTAL	**1**	Hours	**1**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical		
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Death, cause of general death, syncope, asphyxia	3
Drowning, sudden death, death from starvation, death from cold, death from effect of heat, death from electric current	3
Burns and it's types	3
Wounds and it's types	3
Toxin and it's types	3
Total	**15**

Subject: SURGERY / PART 4

FIFTH Year	SECOND Semester

SUBJECT CREDITS

Theoretical	**2**	Hours	**2**	Units
Practical	**2**	Hours	**1**	Units
TOTAL	**4**	Hours	**3**	Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**27**	**40**
Practical	**13**	**20**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
Hernia	2
Treatment of Fistula whether	2
Affection of male genital system	2
Affection female genital system	2
Treatment Pneumovagina	2
Affection of penis and prepuce	2
Preparation of teaser	2
Castration	2
Urinary system: Affection of kidney	2
Affection of ureter	2
Affection of urinary bladder	2
Affection of urethra	2
Affection of teat and udder	2
Ear surgery	2
Eye surgery	2
Total	**30**

PRACTICAL Subject	Hours
Teat fistula	4
Nephrectomy	4
Ovariohysterectomy	4
Cystotomy and Cystectomy	4
Urethrostomy and Urethrotomy	4
Splenectomy	4
Rumenotomy	3

Ophthalmic surgery	3
Total	**30**

Subject: RSEARCH PROJECTS / PART 2

FIFTH Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical	**1** Hours	**1** Units
Practical		
TOTAL	**1** Hours	**1** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**40**	**60**
Practical	**-**	**-**
TOTAL	**40**	**60**

THEORETICAL Subject	Hours
conducting a clinical research project, writing a report and defending it before an examining committee.	**15**
Total	**15**

THEORETICAL Subject	Hours
Research methods and hypothesis testing	**2**
Defining problems	**1**
Designing study	**1**
Data management	**2**
conducting a clinical research project, writing a report and defending it before an examining committee.	**9**

Total	**15**

Subject: SUMMER CLINIC

FIFTH Year | **SECOND Semester**

SUBJECT CREDITS

Theoretical		
Practical	**6** Hours	**3** Units
TOTAL	**6** Hours	**3** Units

MARK DETAILS

	Course Exam Marks	Final Exam Marks
Theoretical	**-**	**-**
Practical	**40**	**60**
TOTAL	**40**	**60**

Practical Subject	Hours
Examination of animals, diagnosis and treatment of Surgery cases receive by Veterinary Teaching Hospital or field visits.	**8**
Examination of animals, diagnosis and treatment of Obstetric cases receive by Veterinary Teaching Hospital or field visits.	**8**
Examination of animals, diagnosis and treatment of Poultry diseases receive by Veterinary Teaching Hospital or field visits.	**8**
Examination of animals, diagnosis and treatment of Fish diseases receive by Veterinary Teaching Hospital or field visits.	**8**
Examination of animals, diagnosis and treatment of Internal Medicine diseases receive by Veterinary Teaching Hospital or field visits.	**8**

Examination of animals, diagnosis and treatment of Clinical Pathological cases receive by Veterinary Teaching Hospital or field visits.	**8**
Total	**48**