

**ISTANBUL UNIVERSITY VETERINARY FACULTY OF EDUCATION**

**1st YEAR**

First Semester

Code	Name of the course	CR	ECTS
151	Medical Physics	2	5
153	Chemistry	3	5
155	Medical Biology	5	5
157	Anatomy I	8	9
159	Ataturk Principles and Evolution History I	2	2
161	Turkish Language I	2	2
163	English I	2	2
<b>Total</b>		<b>24</b>	<b>30</b>

Second Semester

Code	Name of the course	CR	ECTS
150	Anatomy II	10	14
152	Biometry	2	4
154	Genetics	2	4
156	Histology of Veterinary Medicine	2	2
158	Ataturk Principles and Evolution History II	2	2
160	Turkish Language II	2	2
162	English II	2	2
<b>Total</b>		<b>22</b>	<b>30</b>

**2nd YEAR**

Third Semester

Code	Name of the course	CR	ECTS
251	Embriyology	2	3
253	Histology I	3	5
255	Physiology I	6	7
257	Biochemistry I	5	7
259	General Microbiology	4	6
	Elective Course	2	2
<b>Total</b>		<b>22</b>	<b>30</b>

Fourth Semester

Code	Name of the course	CR	ECTS
250	Histology II	5	5
252	Physiology II	5	5
254	Biochemistry II	5	5
256	Immunology and Serology	4	4
258	Animal Breeding and Husbandry I	4	4
260	Feeds and Feed Technology	4	5
	Elective Course	2	2
<b>Total</b>		<b>29</b>	<b>30</b>

**3rd YEAR**

Fifth Semester

Code	Name of the course	CR	ECTS
351	Bacteriology and Mycology	5	5
353	Parasitology I	6	6
355	Pharmacology I	5	5
357	General Patology	3	4
359	Radiology	2	3
363	Topographic Anatomy	2	2
365	Clinical Practice (Surgery and Internal Medicine)	4	3
367	Surgery Examination Methods	2	2
369	Internal Examination Methods	2	2
	Elective Course	2	2
<b>Total</b>		<b>33</b>	<b>34</b>

Sixth Semester

Code	Name of the course	CR	ECTS
350	Virology	3	3
352	Animal Nutrition and Nutritional Diseases	4	4
354	Animal Breeding and Husbandry II	5	5
356	Parasitology II	6	5
358	Pharmacology II	3	4
360	Anesthesia and Reanimation	2	2
362	Clinical Practice (Surgery and Internal Medicine)	4	5
	Elective Course	2	2
<b>Total</b>		<b>29</b>	<b>30</b>

**4th YEAR**

Seventh Semester

Code	Name of the course	CR	ECTS
451	Special Pathology I	6	6
453	Surgery	4	6
455	Obstetrics and Gynecology I	3	5
457	Internal Medicine I	3	5
459	Food Hygiene and Control	4	4
461	Clinic, Pathology and Food Practices	6	4
<b>Total</b>		<b>26</b>	<b>30</b>

Eighth Semester

Code	Name of the course	CR	ECTS
450	Special Pathology II	6	6
452	Orthopedics And Foot Diseases I	3	4
454	Obstetrics and Gynecology II	4	5
456	Internal Medicine II	3	4
458	Reproduction and Artificial Insemination I	2	3
460	Milk Science and Tecnology	2	2
462	Veterinary Forensic Medicine	1	1
464	Clinic, Pathology and Food Practices	6	5
<b>Total</b>		<b>27</b>	<b>30</b>

**5th YEAR**

Nineth Semester

Code	Name of the course	CR	ECTS
551	Population Genetics	2	2
553	Internal Medicine III	4	4
555	Meat Inspection and Technology	4	4
557	Managerial Economics of Animal	2	2
559	Toxicology	4	4
561	Orthopedics And Foot Diseases II	3	4
563	Reproduction and Artificial Insemination II	2	2

Tenth Semester

Code	Name of the course	CR	ECTS
	Clinical Practise (Intern)	40	30
550	Poultry Disease Practice Group		
552	Food Hygiene and Tecnology Group		
554	Animal Breeding Group		
556	Clinical Laboraturay Diagnosis		

565	Poultry Diseases	3	3
567	Clinic and Food Practice	5	5
<b>Total</b>		<b>29</b>	<b>30</b>

<b>Total</b>		<b>40</b>	<b>30</b>

## FIRST SEMESTER

NAME of the COURSE : <b>MEDICAL PHYSICS</b>			Course Code: 151
ECTS Credits: 5	1 <sup>st</sup> year- 1 <sup>st</sup> semester	Undergraduate	Required
hours:per week 2 per semester 28	Lectures: 2	Tutorials:	Language of the Course Turkish
Contact: Assoc. Prof. Dr. M. Erman OR			

### *Aims and Objectives*

The main aim of this course is to enable students with the basic medical physics and their usage in veterinary medicine.

### *Course Contents*

- Introduction to medical physics
- 1. Scientific method and basic essential
  - - system and behavior equation
  - - cybernetics
- 2. biophysic context ve branches
- 3. important mathematical concepts in medical physics
  - - rate- proportion
  - - direct and inverse proportion
  - - funtion concepts
  - - derivative- integral
  - - trigonometric functions
  - - exponential functions
  - - logarithm functions
- Heat and fever
- 1. thermoterapie
- 2. thermo regulation
- 3. koterazation
- 4. helioterapie
- 5. aeroterapie
- 6. antimatrie
- Wave motion
- 1. 1. monochromatic wave equation
- 2. 2. electromagnetic waves
- X-rays
- Other diagnostic methods
- 1. ultrasound
- 2. heart stimulus and transmission

### *Assessment Methods*

Midterm mark evaluated by homework (%30), quiz (%30) and midterm (%40) which are calculated by the arithmetic mean of the seson marks. The passing garade is calculated by midterm mark (%50) and final exam (%50) which are calculated by the arithmetic mean of the seson marks.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Veterinary Medical Physics - Assoc. Prof. Dr. M. Erman OR  
Veterinary Medical Physics Practise- Assoc. Prof. Dr. M. Erman OR

NAME of the COURSE: <b>CHEMISTRY</b>			Course Code: 153
ECTS Credits: 5	1 <sup>st</sup> year- 1 <sup>st</sup> semester	Undergraduate	Required
Hours: per week 3 per semester 42	Lectures : 2	Tutorials: 1	Language of the Course: Turkish
Contact: <b>Prof.Dr. N. Uzunoren</b>			

### ***Aims and Objectives***

A basic course with emphasis on relationship of the properties to atomic and molecular structures. Fundamental principle and theories organic chemistry, classification of organic compounds, the characteristic reactions of various functional groups. Also this course includes a basic discussion of function of constituents of living cells, with special attention to enzymatic catalysis, role of nucleic acids, lipids, carbohydrates. It is designed to fit the needs of students who are taking biological sciences, pharmacology, toxicology, food sciences and public health.

### **Course Contents:**

- Atoms and molecules (the Lewis approach)
- Types of chemical bonding (valence, orbital, ionic, hydrogen, covalent bonding theories)
- Electro negativity and bond polarity
- Acids and bases
- pH as the measure of concentration of  $H_3O^+$
- Solutions and concentrations
- Properties of organic compounds
- Classification of organic compounds
- Saturated linear and nonlinear hydrocarbons
- Unsaturated linear and nonlinear hydrocarbons
- Aromatic hydrocarbons
- Alcohols, ethers, aldehydes, ketones, carboxylic acids and esters
- Amino acids and proteins
- Nucleic acids
- Lipids
- Carbohydrates

### **Assessment Methods**

### **Prerequisite/Recommended**

### **Text Book / Recommended Reading**

1. Atkins, P.W., Beran, J.A. (1990): General Chemistry Scientific American, Inc. New York
2. Matthews, P., (1995) Advanced Chemistry 1,2 Cambridge University Press
3. Bodner, G., M. Pardue H., L. (1995): Chemistry An Experimental Science John Wiley and Sons Inc.
4. Stoker, H., S. Walker, E., B. (1995): Fundamentals of Chemistry General, Organic, Biological. Allyn and Bacon
5. Hill J.W., Klob, D., K. (1992): Chemistry for Changing Times. Seventh Ed. Prentice Hall, New Jersey.

NAME of the COURSE: <b>MEDICAL BIOLOGY</b>			Course Code: 155
ECTS Credits: 5	1 <sup>st</sup> year- 1 <sup>st</sup> semester	Undergraduate	Required
Hours:	Lectures: 3	Tutorials : 2	Language of the Course: Turkish
Contact : Prof.Dr. Hüsniye DOĞRUMAN, Prof.Dr. Tuncay ALTUĞ			

### **Aims and Objectives**

Structure of cell. Life functions in the cell. Metabolic reactions in a living system. Theories and principles of evolution. Relations between living things and environment, behaviors of the livings. Instinctive and learning behaviors.

### **Course Contents**

- Introduction to medical biology, history of biology and its relation between other sciences.
- Organisation of things, what is living thing? Metabolism reproduction, growth, action, hemeostasis etc.
- Organisation of living thing. Organic and inorganic compounds.
- Structure of the cell. Cell organelles and their structures.
- Structure of the cell. Life functions in the cell.
- Metabolic reactions in a living system. Photosynthesis, etc
- Metabolic reactions in a living system. Internal respiration.
- Life functions in living things. Homeostasis and hormones.
- Differentiation in the multicellular living things, structure and formation of tissues.
- Classification of living things. Systematically the animal kingdom
- Theories and principles of evolution
- Relations between living things and environment, behaviors of the livings. Instinctive and learning behaviors.

### **Assessment Methods**

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Biology. The Unity and Diversity of Life. Sixth Edition. Cecie Starr and Ralph Taggart. Wadsworth Publishing Company Belmont California.  
2-Biology. Fourth Edition. Neil A. Campbell. University of California, Riverside. The Benjamin/Cummings Publishing Company, Inc.

NAME of the COURSE : <b>ANATOMY I</b>			Course Code: 157
ECTS Credits:9	1 <sup>st</sup> year- 1 <sup>st</sup> semester	Undergraduate	Required
hours: per week 8 per semestr 112	Lectures: 4	Tutorials: 4	Language of the CourseTurkish
Contact: Prof.Dr.K.Oya KAHVECİOĞLU			

### Aims and Objectives

Teaching basics of terminology and anatomy.  
Based on given courses students should be able to identify bones .

### Course Contents

- Introduction
- Osteology
- a) The vertebral column
- b) Bones of the thoracic limb
- c) Bones of the pelvic limb
- d)The skull
- Syndesmology
- a) Joints and ligaments of the vertebrae
- b) Articulations of the thoracic limb
- c) Articulations of the pelvic limb
- d) Articulations of the skull
- Myology
- a) Muscles of the thoracic limb
- b) Muscles of the pelvic limb
- c) Muscles of the thorax and abdominal
- d) Muscles of the head
- e) Muscles of the neck
- 

### Assessment Methods

During the courses in Anatomy 1, the topics are osteology, myology and arthrology in domestic animals. These topics are shown comparatively. Main attention is given to their functional aspects. Students should acquire sufficient knowledge to pass a written exam at the end of the first semester.

During practical courses the main aim is to show the student what is given teorically. Make them inspect the bones of domestic animals and to recognize the bones and the species they belong to. In myology and artrology courses students themselves makes the dissections in custody of an research assistant. Approximately 20 students are trained by one research assistant an done tutor. At the end of semester students should pass an oral exam.

Midterm grade is found by the evaluation of written midterm exam (40%), laboratory performance (15%) and quizzes (40%) and general impression (5%). The arithmetic mean of midterm grade and final written exam, which must be equal or greater then 50, is accepted as passing grade.

### Prerequisite/ Recommended

### Text Book / Recommended Reading

Domestic Animals Anatomy (Prof.Dr.Tayyip Çalışlar)  
Veterinary Anatomy 1 (Prof.Dr.Nejdet Dursun)  
Veterinary Anatomy 1 Locomotory System (Prof.Dr.Ali Bahadır, Doç.Dr.Hüseyin Yıldız)

## SECOND SEMESTER

NAME of the COURSE : <b>ANATOMY II</b>			Course Code: 150
ECTS Credits:14	1 <sup>st</sup> year-2 <sup>nd</sup> semester	Undergraduate	Required
hours: per week 10 per semester 140	Lectures: 4	Tutorials: 6	Language of the Course Turkish
Contact: Prof.Dr.K.Oya KAHVECIOGLU			

### Aims and Objectives

Based on given courses students should be able to identify organs as well as the species they belong to and to explain their functions.

### Course Contents

- Respiratory System
- Digestive System
- Angiology
- a) The Blood- Vascular System
- b) The Lymphatic System
- Urogenital System
- Endocrinology
- Sense Organs
- Anatomy of the chicken
- 

### Assessment Methods

- The topics are the Digestive System, Respiratory System, Urogenital System, Vessels and Circulatory System, Lymphatic System, Nervous System, Skin and Cutaneous Organs, Sensory Organs and Avian Anatomy. Students should acquire the basic knowledge to understand functional connections. Students should acquire sufficient knowledge to pass a written exam at the end of the second semester.
- Defined regions in eight preparations ( head, neck, trunk, for limb,hind limb, thoracic cavity, abdominal cavity, pelvic cavity) have to be dissected and explored.
- Approximately 20 students are trained by one research assistant and one tutor.
- At the end of semester students should pass an oral exam.
- Midterm grade is found by the evaluation of written midterm exam (40%), laboratory performance (15%), quizzes (40%) and general impression (5%). The arithmetic mean of midterm grade and final written exam, which must be equal or greater than 50, is accepted as passing grade.

### Prerequisite/ Recommended

### Text Book / Recommended Reading

Veterinary Anatomy 2 (Prof.Dr.Nejdet Dursun)  
Anatomy of the Domestic Animals (Prof.Dr.Tayyip Çalışlar)  
Systematic Anatomy of the Domestic Animals (Prof.Dr. Tayip Çalışlar)  
Anatomy of the Domestic Avians (Prof.Dr. Nejdett Dursun)  
Veterinary Aesthesiology (Prof.Dr.Metin Taşbaş)

NAME of the COURSE: <b>BIOMETRY</b>			Course Code: 152
ECTS Credits: 4	1 <sup>st</sup> year-2 <sup>nd</sup> semester	Undergraduate	Required
Hours : per week 2 per semestr 28	Lectures: 2	Tutorials :	Language of Course Turkish
Contact: Prof.Dr. Hıdır Demir, Prof.Dr. Halil Güneş			

### ***Aims and Objectives***

The aim of this lecture is to teach the basic statistical concepts, which will be needed in their professions and in the lectures of the forthcoming semesters.

### ***Course Contents***

- Introduction to statistics
- basic statistical concepts
- variation and distributions
- population parameters and sample statistics
- experimental designs
- control of hypothesis
- comparison of two groups (t-test)
- comparison of more than two groups ( $\chi^2$ - test and analyses of variance)
- correlation
- regression
- the use of computer programs in statistics

### **Assessment Methods**

Students are evaluated by midterm exam, quiz exam and final exam. The mark of final exam must be at least 50. Passing mark is calculated by the summation of marks from 30% of midterm exam, 20% of quiz exam and 50% of final exam.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Textbook is supplied from the Faculty

NAME of the COURSE: <b>GENETICS</b>			Course Code: 154
ECTS Credits: 4	1 <sup>st</sup> year-2 <sup>nd</sup> semester	Undergraduate	Required
Hours : per week 2 per semestr 28	Lectures: 2	Tutorials :	Language of the Course Turkish
Contact: Prof.Dr. Ahmet Altinel, Assoc.Prof.Dr. Harun Cerit			

### ***Aims and Objectives***

The aim of this lecture is to teach the basic genetic concepts, which will be needed in their professions and in the lectures of the forthcoming semesters.

### ***Course Contents***

- Introduction to genetics
- chromosome and gene
- mutations
- chromosome structure and chromosome number changes
- immunogenetics and the heritage of blood groups in animals
- sex determination in animals and the heritage of sex related factors in animals
- genetic basis of inherited diseases and lethal factors
- genetic maps

### **Assessment Methods**

Students are evaluated by midterm exam, quiz exam, seminar and final exam. The mark of final exam must be at least 50. Passing mark is calculated by the summation of marks from 15% of midterm exam, 15% of quiz exam, 20% of seminar and 50% of final exam.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Textbook is supplied from the Faculty

NAME of the COURSE : <b>HISTORY OF VETERINARY MEDICINE</b>			Course Code: 156
ECTS Credits: 2	1 <sup>st</sup> year 2 <sup>nd</sup> semester	Undergraduate	Required
Hours: per week 2 Per semester 28	Lectures: 2	Tutorials :	Language of the Course Turkish
Ass.Prof.Dr. Dr. Altan ARMUTAK			

### ***Aims and Objectives***

At the end of this course students are acquainted with historical aspects veterinary medicine development of veterinary profession.

### ***Course Contents***

- Introduction to Veterinary Medicine History
- Domestication of animals and Beginning of Relationship Between Human and Animal
- Veterinary Medicine in Ancient time.
- Veterinary Medicine in European Society during middle ages
- Veterinary Medicine and Islamic Civilization
- Veterinary Medicine in Renaissance - Reform and Modern Ages
- History of Veterinary Education at World
- Early Veterinary Medicine in Turkish Society
- Veterinary Medicine and Veterinary Education in Turkey
- Modern Veterinary Medicine

### **Assessment Methods**

During lectures with overhead-projection related picture, drawings and tables is shown.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

History of Veterinary Medicine (1978): Nihal ERK University of Ankara Publishing No: 352 Ankara pp.242  
 Medicine An Illustrated History (1987): Albert Lyons and Joseph Petrucelli. Abradale Press.Harry N.Abrams Inc.  
 100 Fifth Avenue.NewYork pp.616

## THIRD SEMESTER

NAME of the COURSE: <b>EMBRYOLOGY</b>			Course Code: 251
ECTS Credits: 3	2 <sup>nd</sup> year 3 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 2 Per semestr 28	Lectures : 2	Tutorials :	Language of the Course Turkish
Contact : Prof.Dr.Suzan DAĞLIOĞLU			

### *Aims and Objectives*

Embryology, development including gametogenesis, fertilization and gastrulation, implantation, placenta and its types, organogenesis. All this subjects are presented comperatively between various animal species.

### *Course Contents*

#### **Embryology**

- Gametogenesis
- Gametes and fertilization
- Cleavage stages
  - Cleavage in domestic animals
  - Cleavage in birds
- Genital cycle
- In vitro fertilization
- Embryo transfer
- Early stages of development in birds
  - Yolk sac
  - Amnion and chorion
  - Allantois
- Early stages of development in mammals

#### **Extraembryonic Membranes and Placentation**

- Placenta
- Placentas of domestic animals
- Function of the placenta
- Implantation
- Gestation periods
- Twinning

#### **Development of the Nervous System**

- Formation of the Neural Tube
- Early Development of the Spinal Cord
- Early Development of the Brain
- Maturation of Brain Regions
  - Myelencephalon
  - Metencephalon
  - Mesencephaln
  - Diencephalon
  - Telencephalon
- Ganglia
- Skin
- Hair
- Mammmary gland
- Eye
- Lens
- Comea
- Ear

## **Digestive System**

Pharynx and Pharyngeal Pouches

- Pharyngeal Pouches 1
- Pharyngeal Pouches 2
- Pharyngeal Pouches 3
- Pharyngeal Pouches 4
- Thyroid Gland

Gut tube

Development of the Foregut

- Esophagus
- Stomach
- Liver and Gall bladder
- Pancreas
- Cloaca

Development of the respiratory system

## **Cardiovascular System**

Blood and Arteries

Venous system and Lymphatics

Spleen

## **Derivates of the Intermediate Mesoderm: Reproductive Organs**

Gonadogenesis

Testis

Ovary

External Genitals

Female

Male

## **Derivates of the Intermediate Mesoderm: Urinary System, Adrenal Gland**

Urinary System

Pronephros, Mesonephros, Metanephros

Adrenal Gland

## **Assessment Methods**

During lectures with overhead-projection embryonic development is shown (picture, drawings and tables).

## **Prerequisite/ Recommended**

## **Text Book / Recommended Reading**

EMBRİYOLOJİ : 1997. O. Hassa, R. Aşti

NAME of the COURSE: <b>HISTOLOGY I</b>			Course Code: 253
ECTS Credits: 5	2 <sup>nd</sup> year 3 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 3 per semestr 42	Lectures : 2	Tutorials : 1	Langfuage of the Course Turkish
Contact: Assoc.Prof.Dr. H.Hakan BOZKURT			

## ***Aims and Objectives***

In this course general histology subjects are presented and stiffened in laboratory using a light microscope. Also morphological details of cell structures with assosiation of its metabolic events are presented. Handling microscopical preparation with confidence, finally to be able to correctly identify and describe cell and tissues with the correct histological terms and a recognize cells and tissues.

## ***Course Contents***

### **1. Cytology**

The cell

- • The structure of the cell
- • Cytoplasm
- • Membranous organelles
- • Nonmembranous organelles
- • Cytoplasmic inclusions

The nucleus

Cell division

Cell cycle

### **2. Epithelium**

Classification of epithelia

Covering epithelium

Glandular epithelium

Myoepithelium

Neuroepithelium

### **3. Connective tissue**

Classification of connective tissue

Connective tissue cells

Ground substance

Connective tissue fibers

### **4. Cartilage**

Hyaline cartilage

Elastic cartilage

Fibrocartilage

Perichondrium

### **5. Bone**

Structure of bone

Cells of bone tissue

Bone formation

### **6. Blood**

Plasma

Cells

Formation of blood cells (Hemopoiesis)

### **7. Muscular tissue**

Classification of muscular tissue

Skeletal muscle

Cardiac muscle

Smooth muscle

## **8. Nervous tissue**

- Neuron
- Supporting cells of nervous tissue
- Nervous fibers
- Synapses

### **Assessment Methods**

Lectures are carried out in conjunction with practicals. During practical work natural appearance of tissue and cells are demonstrated by means of a microscope-TV setup. A microscope and a slide collection are available for each student. In addition students are provided with instruction specifically prepared for slide collection. The TV-microscope setup is used to show characteristics of a particular importance and all slides and to demonstrate how to gain a diagnosis.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Genel Histoloji ( General Histology): 2001. M. Sađlam, R. Ađtı, A. Özer  
Histoloji Uygulama Atlası: 2000. S. Dađlıođlu, H. Bozkurt, İ. Çörekçi

NAME of the COURSE: <b>PHYSIOLOGY I</b>			Course Code: 255
ECTS Credits 7	2 <sup>nd</sup> year- 3 <sup>th</sup> Semester	Undergraduate	Required
Hours: per week 6 per semestr 84	Lectures: 4	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr. Ülker ÇÖTELİOĞLU, Prof.Dr. Mukaddes ÖZCAN, Assoc.Prof.Dr. Murat ARSLAN			

### **Aims and Objectives:**

The aim of this course is to provide basic knowledge on physiological functions and mechanisms for further Veterinary Medicine education. We aim to establish a permanent knowledge on blood tissue, circulation, nervous system, movement system and respiration system with slide presentations and animations during both theoretical and practical courses. Preparation of slide shows is currently supported with an interpretation and evaluation of current journal articles about physiology and applied physiology. Also one of our objectives is to heighten our practical course levels by the purchase of advanced technical equipment.

### **Course Content:**

1. Molecular and cellular basis of physiologic regulations
2. Physiology of blood and circulation
3. Nervous system physiology
4. The sense
5. Muscle and movement physiology
6. Respiratory system

### **Assessment Methods:**

1. Midterm Exams:
  - a. Theoretical and Practical quizzes (% 14)
  - b. Laboratory examination (%18)
  - c. Written midterm exam (% 18)
2. Written final exam (% 50)

The ratio of midterm and final exam must be equal or greater then 50.

### **Prerequisites/Recommended:**

It is recommended to get Anatomy, Biochemistry and Histology at the same semester.

### **Text Book / Recommended Reading:**

1. Handouts and course slide shows are supplied by the department,
2. Baki Yılmaz, Blood and Circulation Physiology,
3. Kemalettin Yaman, Text Book of Physiology,
4. Ahmet Noyan, Text Book of Physiology,
5. Guyton, Physiology.

NAME of the COURSE: <b>BIOCHEMISTRY I</b>			Course Code: 257
ECTS Credits 7	2 <sup>nd</sup> year- 3 <sup>th</sup> Semester	Undergraduate	Required
Hours: per week 5 per semestr 70	Lectures: 3	Tutorials : 2	Language of the Course Turkish
Contact: Prof. Dr. Suleyman Korkut TEKELI			

### ***Aims and Objectives***

The main aim of biochemistry is to teach the chemical structures and actions of living organisms at molecular level. With this aim, basic biochemical subjects are given such as minerals, vitamins, proteins, carbohydrates, lipids etc.

### ***Course Contents***

- Biophysical chemistry
- Minerals
- Carbohydrates
- Lipids
- Proteins
- Nucleic acids
- Enzymes
- Vitamins
- Hormones

### **Assessment Methods**

Each semester 2 quizzes are made both for teorical and practical lectures. The midterm mark is evaluated by midterm exam (20%), laboratory performance (15%) and arithmetic mean of the quizzes (15%). The passing grade is equal to the 50% of the midtr mark and 50% of the written final exam. The written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

“Biochemistry” written by L.Kalaycioglu, B.Serpek, M.Nizamlioglu, N.Baspinar and A.M.Tiftik  
Notes for practical lectures are supplied by Biochemistry Department

NAME of the COURSE : <b>GENERAL MICROBIOLOGY</b>			Course Code: 259
ECTS Credits: 6	2 <sup>nd</sup> year- 3 <sup>th</sup> Semester	Undergraduate	Required
hours:per week 4 per semestr 56	Lectures: 2	Tutorials: 2	Language of the Course Turkish
Contact: Prof.Dr. Atilla ILGAZ			

### **Aims and Objectives**

To give knowledge on general properties of bacterium and fungus and to acquire the basic ability of microbiological methods ( preparation, staining methods etc.) to the students .

### **Course Contents**

History of microbiology, Microbiology and microorganisms, Classification and Nomenclature of Bacteria, Morphology of Bacteria, Bacterial anatomy : External structure (cell wall, capsule, flagella, fimbria), Internal structure (cytoplasmic membrane, cytoplasm, nucleus, ribosomes, mesosomes, cytoplasmic granules, endospore), Chemical Structure of Bacteria, Nutrition, Growth of Bacteria, Aerobiosis, Enzymes, Metabolism, Genetic of bacteria, Variations in bacteria (Modification, Mutation), Bacteriophages, Genetic Exchange in Bacteria , Extrachromosomal Genetic Elements

### **Assessment Methods :**

Midterm mark is found by the evaluation of written midterm exam (40 %), laboratory performance (15%), quizzes (40%) and consideration of performance (5%) . Fifty percent of the midterm and 50% of the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

ILGAZ A., OZGUR N.Y., Textbook of General Microbiology, Istanbul University press, Veterinary Faculty Textbook no 104, Istanbul ,1999

## FOURTH SEMESTER

NAME of the COURSE: <b>HISTOLOGY II</b>			Course Code: 250
ECTS Credits:5	2 <sup>nd</sup> year 4 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 5 per semestr 70	Lectures : 3	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr.Suzan DAĞLIOĞLU			

### *Aims and Objectives*

In this course organ and system histology subjects are presented and stiffened in laboratory using a light microscope. Also morphological details of organ and system structures with association of its metabolic events are presented. Handling microscopical preparation with confidence, finally to be able to correctly identify and describe organ and system with the correct histological terms and a recognize cells and tissues.

### *Course Contents*

#### **1. Nervous System**

##### **Central Nervous System**

- Cerebrum
- Cerebellum
- Spinal cord

##### **Peripheral Nervous System**

- Peripheral nerve endings
- Terminations in skeletal muscle
- Terminations in smooth muscle

#### **2. The Cardiovascular System**

- Heart
- Arteries
- Veins
- Capillaries
- Lymphatic vessels
- Lymph nodes
- Thymus
- Spleen
- Tonsils

#### **3. Digestive System**

- Oral Cavity
  - Tongue
  - Tooth and supporting structures
  - Salivary glands
  - Pancreas
  - Liver
- Esophagus and Gastrointestinal Tract
  - Stomach
  - Ruminant stomach
  - Intestine

#### **4. Respiratory System**

- Pharynx
- Larynx
- Trachea
- Bronchi
- Alveoli

#### **5. Urinary System**

- Kidneys

Renal regulation  
Excretory passages

## **6. Genital System**

### **Male Genital System**

Testis  
Penis  
Accessory sex glands

### **Female Genital System**

Ovary  
Oviduct  
Uterus  
Vagina  
Vulva

## **7. Endocrine Organs**

Hypophysis  
Pineal gland  
Thyroid gland  
Parathyroid gland  
Adrenal glands

## **8. The Integumentary System**

Structure of the skin  
Oil glands  
Sweat glands  
Mammary glands  
Nails

## **9. Eye**

General structure of the eye  
External layers  
Retina  
Accessory structures of the eye

### **Ear**

External ear  
Middle ear  
Inner ear

## **Assessment Methods**

Lectures are carried out in conjunction with practicals. During practical work natural appearance of tissue and cells are demonstrated by means of a microscope-TV setup. A microscope and a slide collection are available for each student. In addition students are provided with instruction specifically prepared for slide collection. The TV-microscope setup is used to show characteristics of a particular importance and all slides and to demonstrate how to gain a diagnosis.

## **Prerequisite/ Recommended**

## **Text Book / Recommended Reading**

ÖZEL HİSTOLOJİ : 1999. A. Tanyolaç

NAME of the COURSE: <b>PHYSIOLOGY II</b>			Course Code: 252
ECTS Credits 7	2 <sup>nd</sup> year- 3 <sup>th</sup> Semester	Undergraduate	Required
Hours: per week 5 per semestr 70	Lectures: 3	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr. Ülker ÇÖTELİOĞLU, Prof.Dr. Mukaddes ÖZCAN, Assoc.Prof.Dr. Murat ARSLAN			

### **Aims and objectives:**

The aim of this course is to provide basic knowledge on physiological functions and mechanisms for further Veterinary Medicine education.

The student must be able to understand the underlying mechanisms of urine formation, concentration and micturation; reproduction differences within animal species, digestion pathway, absorption and excretion of feed. The student must also comprehend the adaptation of different wild and domestic animal species to the environment in which they live in. We aim to establish a permanent knowledge of these issues with slide presentations and animations during both theoretical and practical courses. Preparation of slide shows is currently supported with an interpretation and evaluation of current journal articles about physiology and applied physiology. One of our objectives is to heighten our practical course levels by the purchase of advanced technical equipment.

### **Content**

1. Body fluids and urinary system
2. Digestion physiology
3. Endocrinology, reproduction and lactation
4. Physiology of the metabolism,
5. Temperature and adaptation to environment

### **Assessment Methods:**

1. Midterm:
  - a. Theoretical and practical quizzes (% 14)
  - b. Laboratory exam (% 18)
  - c. Written midterm exam (% 18)
2. Written final exam (% 50)

The ratio of midterm and final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

Success on Physiology I is prerequisite, Anatomy, Histology and Biochemistry courses are recommended.

### **Text Book /Recommended Reading:**

1. Handouts and course slide shows are supplied by the department,
2. Kemalettin Yaman, Text Book of Physiology,
3. Baki Yılmaz, Hormones and Reproductive Physiology
4. Ahment Noyan, Text Book of Physiology,
5. Guyton, Physiology.

NAME of the COURSE : <b>IMMUNOLOGY AND SEROLOGY</b>			Course Code: 256
ECTS Credits: 4	2 <sup>nd</sup> year 4 <sup>th</sup> semester	Undergraduate	Required
hours:per week 4 per semestr 56	Lectures: 2	Tutorials: 2	Language of the Course Turkish
Contact: Prof.Dr. Hüseyin Yılmaz, Prof.Dr. Seyyal Ak			

### **Aims and Objectives**

To teach basic properties and interactions of immun system, and mechanism of serological tests.

### **Course Contents**

Introduction,history and general immunological items. The immun system. Antibodies and their structures. Functions of antibodies. The humoral, mucosal, primary and secondary immun response. The complement and acute phase of proteins. B and T cell receptors and MHC. Cytocines and the adhesion receptors. Innate immunity, phagoytosis, intracellular and eextracellular killing. Host defence and cellular immunity. The adaptive immun response. Immun response to infectious agents. Hypersensitivites and mechanisms. Immunodeficiencies, Immunosupression, Tolerans, Autoimmunity and autoimmun disease.

### **Assessment Methods :**

Midterm mark is found by the evaluation of written midterm exam (40 %),laboratory performance (15%), quizzes (40%) and consideration of performance (5%) .Fifty percent of the midterm and 50% of the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

ARDA M. et al., Immunology,Medisan press,Ankara,1998.

NAME of the COURSE : <b>ANIMAL BREEDING AND HUSBANDRY I</b>			Course Code: 258
ECTS Credits: 4	2 <sup>nd</sup> year- 4 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 4 per semestr 56	Lectures: 3	Tutorials : 1	Language of the Course Turkish
Contact: Prof.Dr. Mustafa ÖZCAN, Assoc.Prof.Dr. Alper YILMAZ			

### ***Aims and Objectives***

The aim of this lecture is to teach the morphologic and physiologic characteristics of farm animals and the production characteristics, which have economical value.

### ***Course Contents***

- The content and aim of animal breeding and husbandry
- production of animals and human nutrition
- animal breeding in Turkey
- the problems of animal breeding in Turkey and solutions
- the domestication of animals, species, breeds
- the production characteristics which have economical value
- the improvement of production characteristics
- methods of mating
- fertility, lactation milk yield and meat production
- the care and feeding of farm animal herds
- health controls in farm animals
- environmental factors in animal breeding
- animal welfare

### ***Assessment Methods***

Students are evaluated by midterm exam, quiz exam, seminar and final exam. The mark of final exam must be at least 50. Passing mark is calculated by the summation of marks from 25% of midterm exam, 15% of quiz exam, 10% of seminar and 50% of final exam.

### ***Prerequisite/ Recommended***

### ***Text Book / Recommended Reading***

Textbook is supplied from the Faculty

NAME of the COURSE : <b>FEEDS AND FEED TECHNOLOGY</b>		Course Code: 260
ECTS Credits: 5	2 <sup>th</sup> year- 4 <sup>th</sup> semester	Undergraduate
Hours: per week 4 per semestr 56	Lectures: 2 Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr.Haydar ÖZPINAR, Prof.Dr. Müjdat ALP, Prof.Dr. Neşe KOCABAĞLI, Prof.Dr. Recep KAHRAMAN, Assoc.Prof.Dr. Tanay BİLAL, Assist.Dr. İsmail KIRŞAN		

### **Aims and Objectives**

The aim of the course is to provide basic knowledge of feedstuffs and their effects on the metabolism of different animal species. The goal is that the students after successful completion of the course will have acquired: Necessary skills to independently carry out the most important chemical analyses necessary to characterise the nutritional value and hygienic status of feeds; a knowledge of the components used in energy and protein evaluation systems; an understanding of the importance of the hygienic quality of feeds with respect to nutritional value, microbial flora and toxins and how these are affected by different handling and processing procedures, harvesting, conservation and storage practices; an understanding of the principles in ration formulation, including least cost analyses, based on the nutritional value of feeds for different animal groups and their specific requirements .

### **Course Contents**

- Forages and Hay
- Energy Feeds
- Protein Concentrates
- Feed Additives
- Silages
- Antinutritional Factors in Feeds
- Feed Technology
- Feed Evaluating System
- Feed Hygiene and Quality Control
- Feed Analysis Methods
- Weende Analysis System
- Mineral Analysis (Ca, P etc.)

### **Assessment Methods**

Midterm mark is found by the evaluation of written midterm exam (%50), laboratory performance (%20) and quizzes (%30). %50 of the midterm and %50 of the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

Biochemistry and physiology are recommended

### **Text Book / Recommended Reading**

Handouts are supplies by the Department

## FIFTH SEMESTER

NAME of the COURSE : <b>BACTERIOLOGY AND MYCOLOGY</b>			Course Code: 351
ECTS Credits: 5	3 <sup>rd</sup> year-5 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 5 per semestr 70	Lectures: 3	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr. N. Yakut Özgür			

### Aims and Objectives

To teach description , ethyology, epizootiyology , pathogenesis, symptoms , diagnosis and control strategies of bacterial and fungal animal diseases .To acquire knowledge of sampling and diagnostic methods for infectious diseases.

### Course Contents

Gram Positive Cocci (Streptococcal infections), Staphylococcal infections, Facultative Anaerobic Gram Negative Rods (Family I. Enterobacteriaceae: E.coli infections, Salmonella infections, Other Enterobacteria infections Family II . Vibrionacea : Aeromonas infections, Vibrio infections, Plesiomonas infections Family III . Pasteurellaceae : Pasteurella infections, Haemophilus infections, Actinobacillus infections), Gram Negative Aerobic-Microaerobic Rods and Cocci (Pseudomonas infections, Bordetella infections, Francisella infections, Brucella infections, Campylobacter infections) Gram positive non-spore forming bacteria (Listeria infections, Erysipelothrix infections. Actinomyces infections, Corynebacteria infections, Rhodococcus infections), Asido-resistance bacteria (Tuberculosis, Paratuberculosis), Gram Positive Spor forming Bacteria (Anthrax, Clostridial infections), Spirochetal Infections (Leptospirosis, Borreliosis), Mycoplasma infections, Rickettsia infections, Chlamydia infections, Prion (Scrapie, Bovine Spongiform Encephalopathy), Mycology (Cutan mycosis, Subcutan mycosis, Systemic mycosis), Mycotoxicosis.

### Assessment Methods :

Midterm mark is found by the evaluation of written midterm exam (40%),laboratory performance (15%), quizzes (40%) and consideration of performance (5%) .Fifty percent of the midterm and 50% of the written final exam must be equal or greater than 50.

### Prerequisite/ Recommended

Cours of general microbiology is recommended.

### Text Book / Recommended Reading

ARDA M. et al., Bacteriology and Micology, Medisan press, Ankara, 1997.

NAME of the COURSE: <b>PARASITOLOGY 1</b>			Course Code: 353
ECTS Credits: 6	3 <sup>th</sup> year – 5 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 6 Per semestr 84	Lectures: 3	Tutorials: 3	Language of the Course Turkish
Contact: Prof.Dr. Müfit TOPARLAK			

### **Aims and Objectives**

Introduction to Veterinary Parasitology: The course consist of the introduction to parasitology, description of the nature of parasitism, host-parasite interactions, morphology and biology of parasitic protozoa, helminths and arthropods, classification of parasites,and effects of parasites on hosts.

Veterinary Protozoology: Taxonomy, morphology, life cycle, distribution, methods of identification, diagnosis, treatment and control concerned with protozoa of veterinary importance in husbandry animals, pets and poultry.

### **Course Contents**

- introduction to parasitology,
- description of the nature of parasitism
- host-parasite interactions
- morphology and biology of parasites
- classification of parasites
- immune response to parasites
- morphology of protozoa
- Sarcomastigophora phylum
- Apicomplexa phylum
- Microspora phylum
- Myxozoa phylum
- Ciliophora phylum

### **Assessment Methods**

Written and practical exams.

### **Prerequisite/ Recommended**

The knowledge in zoology and biology are necessary.

### **Text Book / Recommended Reading**

Toparlak, M. Introduction to Veterinary Parasitology Textbook, 1999.

Tüzer, E.; Toparlak, M. Veterinary Protozoology Textbook, 1999.

NAME of the COURSE: <b>PHARMACOLOGY 1</b>			Course Code: 355
ECTS Credits: 5	3 <sup>th</sup> year – 5 <sup>th</sup> semester	Undergraduate	Required
hours: per week 5 per semestr 70	Lectures : 3	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr. Süleyman ŞENER, Prof.Dr. Oya KELEŞ, Assoc.Prof.Dr. Murat YILDIRIM, Assoc.Prof.Dr. Tülay BAKIREL			

### ***Aims and Objectives***

The aim of this course is to provide students with the scientific training and knowledge base geared towards making original contributions in the understanding of how drugs and other chemicals affect living processes. The objectives of this lecture are the correlation of pharmacology with related medical sciences, the reinterpretation of the actions and uses of drugs from the viewpoint of important advances in medicine, and the placing of emphasis on the applications of pharmacodynamics to therapeutics.

### ***Course Contents***

- General principles of veterinary pharmacology
- Pharmacodynamic (mechanisms of drug action and the relationship between drug concentration and effect)
- Pharmacokinetic (absorption, distribution, biotransformation, excretion)
- The interaction between drugs (pharmaceutic, pharmacokinetic, pharmacodynamic)
- Galenic Pharmacy
- Chemotherapy of Microbial Diseases ( Mode of action, therapeutic uses, toxicity and adverse effects)
- Chemotherapy of Parasitic Diseases (Anthelmintics, antiprotozoals, ectoparasitocides)
- Chemotherapy of Neoplastic Diseases

### **Assessment Methods**

Midterm mark is found by preliminary exam (40%), laboratory performance (30%) and arithmetic mean of the quizzes (30%). The passing grade is equal to the 50% of the midterm mark and 50% of the final exam. And the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended:**

### **Text Book / Recommended Reading**

General Veterinary Pharmacology book written by S.Şener and lecture notes are supplied by the department.

NAME of the COURSE: <b>GENERAL PATHOLOGY</b>			Course Code: 357
4 ECTS Credits	3 <sup>rd</sup> year- 5 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 3 per semestr 42	Lectures: 2	Tutorials: 1	Language of the Course Turkish
Contact: Prof.Dr. Aydın GÜREL, Assoc.Prof.Dr. S.Seçkin ARUN, Assoc.Prof.Dr. İbrahim FIRAT			

### **Aims and Objectives**

The course aims to enable the students to learn the basic pathophysiological principles of the diseases. The various types of abnormalities that may occur are grouped into categories sharing common features for purposes of study. Degeneration and death of cells, circulatory disorders common to any tissue, inflammation and repair, disturbances in growth and development of cancer together form the topics of general pathology. Thus, the objective in general pathology course is to teach the students the basic lesions and pathogenetic mechanisms associated with disease processes so that they can be applied later to the study of the lesions and diseases in the special pathology course.

### **Course Contents**

- Degeneration and Necrosis
- Circulatory Disturbances
- Inflammation and Repair
- Disturbances of Growth
- Neoplasia
- Necropsy findings

### **Assessment Methods**

Midterm grade is found by the evaluation of written midterm exam (%50), laboratory performance (%30) and quizzes (%20). The average grade of the midterm exam and final written exam must be equal or greater than 50.

### **Prerequisite / Recommended**

Anatomy, Physiology, Histology and Biochemistry are prerequisted.

### **Text Book / Recommended Reading**

Handouts are supplied by the Department

NAME of the COURSE: <b>TOPOGRAPHIC ANATOMY</b>			Course Code: 363
ECTS Credits: 2	3 <sup>th</sup> year – 5 <sup>th</sup> semester	Undergraduate	Required
hours: per week 2 per semestr 28	Lectures: 1	Tutorials: 1	Language of the Course Turkish
Contact: Assoc. Vedat ONAR			

### **Aims and Objectives**

With regard to Topographic Anatomy, students should be able to identify anatomical structures, to describe their relationship, especially in those body regions relevant to medical diagnostics and intervention.

### **Course Contents**

- Body regions
- Some important cerebral nerves and their anesthesia
- Epidural anesthesia
- Paravertebral anesthesia
- Important puncture places on Medulla spinalis
- Dentes
- Sinus paranasales and their trepanation places
- Topography and operations on head, neck and body
- Places where digestive organs are.
- Regiones abdominis
- Neuroctomia
- Anesthesia of feet on Ruminant
- Bursa synovialis
- Chosing places to inject on joints

### **Assessment Methods**

The topics are regions of the body and the Topographic Anatomy of the body's cavities in domestic mammals. The study of the Anatomy of the surface of the body of living animals should prepare the student for the clinical examination and medical and surgical intervention. Students should pass a written test at the and of the semester.

Midterm grade is found by the evaluation of written midterm exam (40%), laboratory performance (15%), quizzes (40%) and general impression (5%). The arithmetic mean of midterm grade and final written exam, which must be equal or greater then 50, is accepted as passing grade.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Veterinary Topographic Anatomy (Prof.Dr.Tayyip Çalışlar, Doç.Dr.Oya Kahvecioğlu, Doç.Dr.Rıfat Mutuş)

NAME of the COURSE : <b>INTERNAL EXAMINATION METHODS</b>		Course Code: 369	
ECTS Credits: 4	3 <sup>th</sup> year - 5 <sup>th</sup> semester	Undergraduate	Required
hours:per week 2 per semester 28	Lectures:	Tutorials: 2	Language of the Course Turkish
Contact: Prof. Dr. Tamer DODURKA, Prof.Dr. Tarık BİLAL, Assoc.Prof.Dr. Alev KAYMAZ, Assoc.Prof.Dr. Erman OR			

### Aims and Objectives

The main aim of this course is to enable students with the basic theoretical knowlege of the general examination metods.

### Course Contents

- General information
- symptoms
- diagnosis
- clinical examination metods
- examination of the skin
- examination of the lymphoid system
- examination of the body fever
- examination of the digestive system
- examination of the cardiovascular system
- examination of the respiratory system
- examination of the nervous system
- examination of the urinary system
- blood examinations

### Assessment Methods

Midterm mark evaluated by homework (%25), quiz (%25) and midterm (%50) which are calculated by the arithmetic mean of the seson marks. The passing garade is calculated by midterm mark (%50) and final exam (%50) which are calculated by the arithmetic mean of the seson marks.

### Prerequisite/ Recommended

### Text Book / Recommended Reading

Enterence To Veterinary İnternal Medicine- Prof.Dr.H.Yılmaz İMREN  
Clinical Examination Metods- Prof. Dr. Tarık BİLAL

## SIXTH SEMESTER

NAME of the COURSE : <b>VIROLOGY</b>			Course Code: 350
ECTS Credits: 3	3 <sup>rd</sup> year-6 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 3 per semestr 42	Lectures: 2	Tutorials : 1	Language of the Course Turkish
Contact: Prof.Dr. Seyyal AK			

### Aims and Objectives

To teach description , ethyology, epizootiyology , pathogenesis, symptoms , diagnosis and control strategies of viral animal diseases .To acquire knowledge of sampling and diagnostic methods for viral diseases.

### Course Contents

Structure and composition of viruses (morphology, chemical composition), Classification and nomenclature of viruses, Viral replication, Viral genetics and evolution, Cultivation and assay of viruses, The immun response to viral infections, Viruses of domestic animals (Parvoviridae, Adenoviridae, Papovaviridae, Herpesviridae, Picornaviridae, Rhabdoviridae, Calisiviridae, Togaviridae, Flaviridae, Ortomyxoviridae, Coronaviridae, Reoviridae, Birnaviridae

### Assessment Methods :

Midterm mark is found by the evaluation of written midterm exam (40 %),laboratory performance (15%), quizzes (40%) and consideration of performance (5%) .Fifty percent of the midterm and 50% of the written final exam must be equal or greater than 50.

### Prerequisite/ Recommended

### Text Book / Recommended Reading

Text book of virology is supplied by the department.

NAME of the COURSE: <b>ANIMAL NUTRITION AND NUTRITIONAL DISEASES</b>			Course Code: 352
ECTS Credits 4	3 <sup>th</sup> year - 6 <sup>th</sup> semester	Undergraduate	Required
hours: per week 4 per semestr 56	Lectures: 2 Tutorials : 2		Language of the Course Turkish
Contact: Prof.Dr.Haydar ÖZPINAR, Prof.Dr. Müjdat ALP, Prof.Dr. Neşe KOCABAĞLI, Prof.Dr. Recep KAHRAMAN, Assoc.Prof.Dr. Tanay BİLAL, Res.Asst.Dr.İsmail KIRŞAN			

### **Aims and Objectives**

The overall goal is to create the basis for introduction of a sustainable nutrition of farm animals. This will be achieved by increasing the knowledge of the physiological and biochemical regulation of the metabolism and utilisation of nutrients for maintenance and production and furthermore to create new insights into the biological interactions and functions of individual nutrients with the purpose

- To optimise the use of resources
- To minimise the excretion of nutrients
- To optimise the health of the animals

### **Course Contents**

- Water and Nutrient Metabolisms (Carbohydrates, Protein, Fat etc)
- Vitamins and Minerals
- Beef Cattle Nutrition
- Dairy Cattle Nutrition
- Poultry Nutrition
- Dog and Cat Nutrition
- Horse Nutrition
- Sheep and Goat Nutrition
- Pig Nutrition
- Ration Formulations

### **Assessment Methods**

Midterm mark is found by the evaluation of written midterm exam (%50), laboratory performance (%20) and quizzes (%30). %50 of the midterm and %50 of the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

Biochemistry, physiology and feeds and feed technology are recommended

### **Text Book / Recommended Reading**

Handouts are supplied by the department

NAME of the COURSE: <b>ANIMAL BREEDING AND HUSBANDRY II</b>			Course Code: 354
ECTS Credits: 5	3 <sup>rd</sup> year - 6 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 5 per semestr 70	Lectures: 3	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr.Ahmet Altinel, Prof.Dr. Hıdır Demir, Prof.Dr. Halil Güneş, Prof.Dr. Mustafa Özcan, Assoc.Prof.Dr. Alper Yılmaz			

### ***Aims and Objectives***

The aim of this lecture is to teach the scientific breeding techniques in different farm animal species, herd management practices, principles of animal husbandry, farm construction principles, herd health applications

### ***Course Contents***

- the origins, morphologic and production characteristics of different species
- the establishment of annual production plans of a farm
- the management hygiene principles
- the designs and materials of animal breeding buildings according to the breeding aims and animal welfare
- herd health strategies in different species
- cattle breeding and husbandry
- poultry breeding
- sheep and goat breeding and husbandry
- horse breeding and husbandry

### **Assessment Methods**

Students are evaluated by midterm exam, quiz exam, seminar and final exam. The mark of final exam must be at least 50. Passing mark is calculated by the summation of marks from 25% of midterm exam, 15% of quiz exam, 10% of seminar and 50% of final exam.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Textbook is supplied from the Faculty

NAME of the COURSE: <b>PARASITOLOGY II</b>			Course Code: 356
ECTS Credits: 5	3 <sup>th</sup> year – 6 <sup>th</sup> semester	Undergraduate	Required
hours: per week 6 per semestr 84	Lectures: 3	Tutorials : 3	Language of the Course Turkish
Contact: Prof.Dr. Müfit TOPARLAK			

### **Aims and Objectives**

Veterinary Entomology: Taxonomy, morphology, life cycle, distribution, methods of identification diagnosis.,treatment and control concerned with arthropod parasites of veterinary importance in husbandry animals, pets and poultry.

Veterinary Helminthology: Taxonomy, morphology, life cycle, distribution, methods of identification, diagnosis, treatment and control concerned with helminth parasites of veterinary importance in husbandry animals, pets and poultry.

### **Course Contents**

- introduction to arthropods
- Crustacea
- Myriapoda
- Insecta
- Arachnida
- Pentastomida
- introduction to helminths
- Trematoda
- Cestoda
- Nematoda
- Annelida
- Acanthocephala

### **Assessment Methods**

Written and practical exams.

### **Prerequisite/ Recommended**

The knowledge in zoology and biology are necessary.

### **Text Book / Recommended Reading**

Toparlak, M.; Tüzer, E. Veterinary Helminthology Textbook, 2005.  
Tüzer, E.; Toparlak, M. Veterinary Entomology Textbook, 1999.

NAME of the COURSE: <b>PHARMACOLOGY II</b>			Course Code: 358
ECTS Credits: 4	3 <sup>th</sup> year – 6 <sup>th</sup> semester	Undergraduate	Required
hours: per week 3 per semestr 42	Lectures : 3	Tutorials :	Language of the Course Turkish
Contact: Prof.Dr. Süleyman ŞENER, Prof.Dr. Oya KELEŞ, Assoc.Prof.Dr. Murat YILDIRIM, Assoc.Prof.Dr. Tülay BAKIREL			

### ***Aims and Objectives***

The aim of this course is to study the effects of drugs and other chemicals on biological systems beginning from the molecular and cellular levels through to the whole animal.

### ***Course Contents***

- Central Nervous System Pharmacology
- Respiratory System Pharmacology
- Nutritional and Reticulo-Rumen Pharmacology
- Cardiovascular System Pharmacology
- Drugs affecting body fluids and electrolyte metabolism
- Autonom Nervous System Pharmacology
- Autacoids
- Endocrine system Pharmacology
- Anti-inflammatory drugs
- Antiseptics and disinfectants
- Local anesthetics

### **Assessment Methods**

Midterm mark is evaluated by preliminary exam (40%), arithmetic mean of the quizzes (40%) and report (20%). The arithmetic mean of midterm grade and final written exam, which must be equal or greater than 50, is accepted as passing grade.

### **Prerequisite/ Recommended**

Students who didn't register pharmacology I they can't allow to register pharmacology II.

### **Text Book / Recommended Reading**

Lecture notes are supplied by the department.

NAME of the COURSE : <b>ANASTESIA AND REANIMATION</b>			Course Code: 360
ECTS Credits: 2	Semester : 3 <sup>rd</sup> year-6 <sup>th</sup> semester	License	Required
hours: per week 2 per semestr 28	Lectures: 2	Tutorials:	Language of the Course Turkish
Contact: Assoc.Oktay DÜZGÜN			

### ***Aims and Objectives***

History of the anesthesia, introduction to anesthesia, patient evaluation and preparation, drug used for preanesthetic medication, general anesthesia, inhalation, anesthesia and inhalation anesthetic drugs, injectable anesthetics, recovery from anesthesia, anesthetic emergencies and complications, local anesthetic drugs and techniques, local anesthesia in ruminants, local anesthesia in horse, local anesthesia in dogs and cats, pain and pain control, veterinary reanimation, cardiopulmoner resuscitation.

### ***Course Contents***

- 1- 1- Pre-operative assesment
- 2- 2- Sedation, Premedication and Analgesia
- 3- 3- Injectable Anesthetics
- 4- 4- Inhalation Anesthesia
- 5- 5- Monitoring the Anesthetized Cat
- 6- 6- Anesthesia and Disease
- 7- 7- Accidents and Emergencies
- 8- 8- Perioperative Supportive Care

### **Assessment Methods**

Each lectures were evaluated by a Quiz examination (30%), and at the end of all lectures another writing examination was realised (70%). Midterm mark is found by the arithmetic mean of the written exams. Students with a written final exam superior at 50 and an average of 50 at the midterm mark were accepted "passed".

### **Prerequisite/ Recommended**

Principles of Surgery, Anatomy, Physiology, Pharmacology and Surgical instrumentation,

### **Text Book / Recommended Reading**

Handouts are supplied by the Department

NAME of the COURSE: <b>CLINICAL AND FOOD PRACTICES</b>		Course Code: 365,362,567
ECTS Credits:5	3 <sup>th</sup> , 4 <sup>th</sup> , 5 <sup>th</sup> years – 7 <sup>th</sup> , 8 <sup>th</sup> , 9 <sup>th</sup> semesters	Undergraduate Required
hours: per week 6 per semester 84	Lectures:                      Tutorials : 4, 6	Language of the Course: Turkish
Contact: Prof.Dr. Muammer Uğur, Prof.Dr. Bülent Nazlı, Prof.Dr. Kamil Bostan, Assoc.Prof.Dr. Harun Aksu, Asst.Prof.Dr. Ömer Çetin, Asst.Prof.Dr. Hilal ÇOLAK		

#### Aims and Objectives

It's aimed to give students the practice about food hygiene, laboratory techniques about microbiological, physico-chemical and sensorical, hygiene control of food plant, analysis of food materials.

#### Course Contents

Microbiological food analysis, Chemical food analysis, Meat products and analysis techniques, meat inspection techniques, slaughterhouses, milk analysis, dairy products and production techniques are carried on in student practice laboratory and in the other unities that support meat technology practice.

#### *Assessment Methods*

Students have to join all the practices and have to be succesful in all practices.

#### *Prerequisite/ Recommended*

#### *Text Book / Recommended Reading*

## SEVENTH SEMESTER

NAME of the COURSE: <b>SPECIAL PATHOLOGY I</b>			Course Code: 451
ECTS Credits 6	4 <sup>th</sup> year – 7 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 6 per semestr 84	Lectures: 4	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr. Aydın GÜREL, Assoc.Prof.Dr. S.Seçkin ARUN, Assoc.Prof.Dr. İbrahim FIRAT			

### Aims and Objectives

The objective of the course is to give the students the ability to recognize lesions in the live or dead animal, to understand their pathogenesis and through these to make rational conclusions and recommendations for treatment, control and prevention. For this goal, students are thought about pathological alterations in the digestive, respiratory, nervous, urinary and endocrine systems in the course of Special Pathology I The knowledge of these alterations provides the full understanding of the occurrence and evaluation of the diseases, thus constitute the bases of pathogenetic and therapeutic approach in clinical examinations.

### Course contents:

- • Diseases of the Digestive System
- • Diseases of the Respiratory System
- • Diseases of the Urinary System
- • Diseases of the Endocrine System
- • Diseases of the Nervous System
- •

### Assessment Methods

Midterm grade is found by the evaluation of written midterm exam (%50), laboratory performance (%30) and quizzes (%20). The average grade of the midterm exam and final written exam must be equal or greater than 50.

### Prerequisite / Recommended

General Pathology is prerequisted.

### Text Book / Recommended Reading

Handouts are supplied by the Department

NAME of the COURSE: <b>SURGERY</b>			Course Code: 453
ECTS Credits: 6	4 <sup>th</sup> year - 7 <sup>th</sup> semester	Undergraduate	Required/Selective
hours: per week 4 per semestr 56	Lectures: 4	Tutorials:	Language of the Course Turkish
Contact: Prof.Dr. Nuri ARIKAN, Assoc.Prof.Dr. Kürşat ÖZER			

### ***Aims and Objectives***

The main aim of this course is to enable to students with theoretical knowledge of general surgical considerations, suturing techniques, the wound and its management and basic surgical diseases.

### ***Course Contents***

General surgical considerations, suturing techniques, Cauterisation, Dressing and Bandages, Inflammation, Abscess, Necrosis, Congelatio, Burns, Insolation, Hyperthermia, Hernia, Stenosis, Dilatation-Ectasia, Diverticulum, Tumours, Cyst, Wound Management, Ulcus, Fistula, Surgical diseases of the skin, Phlegmon, Traumatic edema, Collection of blood seroma and hematoma, Bursitis, Muscular diseases, Surgical diseases of the tendon, Vessel diseases, Neuropathies, surgical diseases of the head, Surgical diseases of the neck, surgical diseases of the thorax, surgical diseases of the abdomen, Gastrointestinal system diseases, Urinary system diseases, Urinary system diseases, Ocular diseases.

### **Assessment Methods**

In every semestral period students have two quiz, one mid-term exam and one final exam. For to determine the average mark, of the mid-term 30% of quiz mark and 70% of the mid-term exam are used. At last 50% of the mid-term average mark is added with 50% of the final exam and this total mark shows if the student passed. The total mark has to be over 50, according to total mark 100.

### **Prerequisite/ Recommended**

Propedeutics, topographic anatomy, anesthesiology, radiology.

### **Text Book / Recommended Reading**

Handouts are supplied by the department.

NAME of the COURSE: <b>OBSTETRICS AND GYNECOLOGY I</b>			Course Code: 455
ECTS Credits: 5	4 <sup>th</sup> year- 7 <sup>th</sup> semester	Undergraduate	Required
Hours per week 3 per semestr 42	Lectures 3	Tutorials :	Language of the Course Turkish
Contact: Prof.Dr.Adem Şenünver, Prof.Dr. Huriye Horoz, M.Ragıp Kılıçarslan, Assoc.Prof.Dr. Hayri Ekici, Assoc.Prof.Dr. İsmail Kırşan, Assoc.Prof.Dr. Çağatay Tek, Asst.Dr. Güven Kaşıkçı			

### **Aims and Objectives**

The aim of this lecture is to give knowledge about the development and the physiology of the genital tract and pregnancy, to give the ability of the care and the intervention during pregnancy, parturition and postpartum period.

### **Course Contents**

- Anatomy of the Reproductive System
- Physiology of Reproduction in Female Animals
- Endocrinology of Reproduction in Female Animals
- Pregnancy Diagnosis, Abnormalities of Pregnancy and Pregnancy Termination
- Parturition and the Care of Parturient
- Dystocia
- Obstetrical Surgeries

### **Assessment Methods**

Midterm mark is found by quize (30%) and the written midterm exam (70%). Passing grade is found by the arithmetic mean of the midterm mark and final exam.

### **Prerequisite/ Recommended**

After 3<sup>th</sup> year

### **Text Book / Recommended Reading**

Handouts are supplied by the Department

NAME of the COURSE : <b>INTERNAL MEDICINE I</b>			Course Code: 457
ECTS Credits: 5	4 <sup>th</sup> year – 7 <sup>th</sup> semester	Undergraduate	Required
Hours:per week 3 per semester 42	Lectures: 3	Tutorials:	Language of the Course Turkish
Contact: Prof. Dr. Tamer DODURKA, Assoc.Prof.Dr. Remzi GÖNÜL			

### ***Aims and Objectives***

The main aim of this course is to enable students with the basic theoretical knowlegeof the general cure methods and internal diseases.

### ***Course Contents***

- General cure methods
- Infectious diseases
- Peditry
- Diseases of the digestive system
- Diseases of the respiratory system

### **Assessment Methods**

Midterm mark evaluated by homework (%25), quiz (%25) and midterm (%50) which are calculated by the arithmetic mean of the seson marks. The passing garade is calculated by midterm mark (%50) and final exam (%50) which are calculated by the arithmetic mean of the seson marks.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Carnivor İnternal Medicine- Prof.Dr.H.Yılmaz İMREN  
Ruminant İnternal Medicine- Prof.Dr. Yusuf GÜL

NAME of the COURSE: <b>FOOD HYGIENE AND TECHNOLOGY</b>			Course Code: 459
ECTS Credits:4	4 <sup>th</sup> year – 7 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 4 per semester 56	Lecturers: 4	Tutorials :	Language of the Course Turkish
Contact: Prof.Dr.Özer Ergun, Prof.Dr. Muammer Ugur, Prof.Dr. Bülent Nazli, Prof.Dr.Kamil Bostan, Assoc.Prof.Dr Harun Aksu, Assist.Dr.Hilal Çolak			

### **Aims and Objectives**

It's aimed to give students food materials and nutritional properties, microbial, viral and parasitic contamination of food materials, chemical pollution, factors that affected food hygiene, food processing and preservation techniques, GMP and HACCP systems, cleaning and disinfection techniques and hygiene of food products and drinking water.

### **Course Contents**

- Content of this lecture is foodstuffs and nutrition, food contamination, food-borne diseases, food spoilage, microbial growth factors, food storage, hygiene and sanitation in food plants, cleaning and disinfection methods in food establishments, hygiene control and HACCP system, hygiene of meat and poultry meat, egg hygiene, milk hygiene, hygiene of drinking water and seafood hygiene.

### **Assessment Methods**

Midterm mark is found by preliminary exam (30%), arithmetic mean of the quizzes (10%) and the other facilities (laboratory performances, seminars etc.) (10%). The passing grade is equal to the 50% of the midterm mark and 50% of the final exam. And the written final exam must be equal or greater than 50.

Prerequisite/ Recommended

Text Book / Recommended Reading : Food Hygiene (M. Ugur, B. Nazli, K. Bostan)

## EIGHTH SEMESTER

NAME of the COURSE: <b>SPECIAL PATHOLOGY II</b>			Course Code: 450
6 ECTS Credits	4 <sup>th</sup> year – 8 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 6 per semestr 84	Lectures: 4	Tutorials : 2	Language of the Course Turkish
Contact: Prof.Dr. Aydın GÜREL, Assoc.Prof.Dr. S.Seçkin ARUN, Assoc.Prof.Dr. İbrahim FIRAT			

### Aims and Objectives

The objective of the course is to give the students the ability to recognize lesions in the live or dead animal, to understand their pathogenesis and through these to make rational conclusions and recommendations for treatment, control and prevention. For this goal, students are thought about pathological alterations in the hematopoietik, lymphoid, vascular, musculoskeletal systems and genital systems in the course of Special Pathology II. The knowledge of these alterations provides the full understanding of the occurrence and evaluation of the diseases, thus constitute the bases of pathogenetic and therapeutic approach in clinical examinations.

### Course Contents

- Diseases of the Heamatopoietic and Lymphoid Systems
- Diseases of the Heart and Vascular System
- Diseases of the Musculoskeletal System
- Diseases of the Female and Male Genital Systems

### Assessment Methods

Midterm grade is found by the evaluation of written midterm exam (%50), laboratory performance (%30) and quizzes (%20). The average grade of the midterm exam and final written exam must be equal or greater than 50.

### Prerequisite / Recommended

Special Pathology I is prerequisted.

### Text Book / Recommended Reading

Handouts are supplied by the Department

NAME of the COURSE : <b>ORTHOPEDICS AND FOOT DISEASES-I</b>			Course Code: 452
ECTS Credits: 4	4 <sup>th</sup> year-8 <sup>th</sup> semester	License	Required
hours: per week 3 per semester 42	Lectures: 2	Tutorials:	Language of the Course Turkish
Contact: Prof.Dr. SERHAT ÖZSOY, Assist.Dr. Mustafa AKTAŞ, Rep.Asst.Dr.Kemal ALTUNATMAZ			

### Aims and Objectives

History of the musculoskeletal system and neurological diseases, introduction to joint and neurological diseases, patient evaluation and preparation, pathway for a good anamnesis, drugs used for medication, general operations techniques, diseases development, new processes and techniques.

### Course Contents

**PART-I:** Musculoskeletal system diseases:

I-Joint diseases: Non inflammatory joint disease, Degenerative joint disease (DJD), Traumatic joint diseases, Neoplastic joint diseases, Inflammatory joint diseases, Infectious joint diseases, Non infectious joint diseases, Immun mediated joint diseases, Osteochondrosis (OD).

II- Various orthopedic diseases:Open fractures, Gunshot wounds, Osteomyelitis.

III-Nutrition related bone diseases: Metabolic bone diseases (MBD), Hypertrophic osteodystrophy (HOD), Panosteitis, Nutritional hyperparathyroidismus, Rickets – Rachitisme.

IV- Long bones neoplasias,V- Muscles and tendons; Ligaments sprain and strains, Myopathies.

VI- Medulla spinalis diseases; Neurologic examination, Front limb neurologic diseases, Hind limb peripheral neurologic diseases

**PART II:** Fracture healing, Principles of fracture therapy, Intramedullar pins its applications, External fixation, Bone plate and Bone screw, Diagnosis of fracture, Reduction of fractures, Osteotomie, Arthrodesis, Bone grafts, Nonunion, delayed union and malunion, Fractures of skull, mandible, Fractures and dislocations of front limb, Fractures and dislocations of hind limb, Growth deformities, Disorders of knee joint, Legg-Calve-Perthes, Hip Dysplasia

### Assessment Methods

Each lectures were evaluated by a Quizz examination (30%), and at the end of all lectures another writing examination was realised (70%). Midterm mark is found by the arithmetic mean of the written exams. Students with a written final exam superior at 50 and an average of 50 at the midterm mark were accepted “passed”.

### Prerequisite/ Recommended

Surgical instrumentation, Principles of surgery, Surgical pathology and anatomy

### Text Book / Recommended Reading

Handouts are supplied by the Department

1-A Guide to Canine and Feline Orthopaedic surgery, H.R.Denny,S.J.Butterworth,4th ED.2000

2-Small Animal Orthopedics M.L.Olmstead, 1995.

NAME of the COURSE: <b>OBSTETRICS AND GYNECOLOGY II</b>			Course Code: 454
ECTS Credits: 5	4 <sup>th</sup> year- 8 <sup>th</sup> semester	Undergraduate	Required
Hours per week 4 per semestr 56	Lectures 3	Tutorials :	Language of the Course Turkish
Contact: Prof.Dr.Adem Şenünver, Prof.Dr. Huriye Horoz, M.Ragıp Kılıçarslan, Assoc.Prof.Dr. Hayri Ekici, Assoc.Prof.Dr. İsmail Kırşan, Assoc.Prof.Dr. Çağatay Tek, Asst.Dr. Güven Kaşıkçı			

### ***Aims and Objectives***

It was aimed in this lecture to give the ability to diagnose and treat the diseases and disorders of the female reproductive organs and the mammary gland.

### **Course Contents**

- Diseases of Reproductive System
- Diseases and Disorders Associated with Pregnancy, Parturition and Lactation
- Infertility
- The Mammary Gland
- Surgeries of the Genital Tract

### **Assessment Methods**

Midterm mark is found by quize (30%) and the written midterm exam (70%). Passing grade is found by the arithmetic mean of the midterm mark and final exam.

### **Prerequisite/ Recommended**

After 3<sup>th</sup> year

### **Text Book / Recommended Reading**

Handouts are supplied by the Department

NAME of the COURSE : <b>INTERNAL MEDICINE II</b>			Course Code: 456
ECTS Credits: 4	4 <sup>th</sup> year – 8 <sup>th</sup> semester	Undergraduate	Required
hours:per week 3 per semester 42	Lectures: 3	Tutorials:	Language of the Course Turkish
Contact: Prof. Dr. Tamer Dodurka, Prof.Dr. Abdulkadir UYSAL, Assoc.Prof.Dr. M.Erman OR, Assoc.Prof.Dr. Utku BAKIREL			

### ***Aims and Objectives***

The main aim of this course is to enable students with the basic theoretical knowledge of the general cure methods and internal diseases.

### ***Course Contents***

- Skin Disease
- Metabolic And Nutritional Diseases
- Diseases Of The Cardiovascular System
- Blood And HematopoeticSystem Diseases

### **Assessment Methods**

Midterm mark evaluated by homework (%25), quiz (%25) and midterm (%50) which are calculated by the arithmetic mean of the seson marks. The passing grade is calculated by midterm mark (%50) and final exam (%50) which are calculated by the arithmetic mean of the seson marks.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Ruminant İnternal Medicine- Prof.Dr. Erol Alaçam, Prof.Dr. Mehmet ŞAHAL  
Small AnimalDermatology- Prof.Dr. Kazım BÖRKÜ, Prof.Dr. Kürşat TURGUT  
Carnivor İnternal Medicine- Prof.Dr.H.Yılmaz İMREN  
Ruminant İnternal Medicine- Prof.Dr. Yusuf GÜL

NAME of the COURSE: <b>REPRODUCTION AND ARTIFICIAL INSEMINATION I</b>			Course Code: 458
ECTS Credits: 3	4 <sup>th</sup> year- 8 <sup>th</sup> semester	Undergraduate	Required
hours: per week 2 per semester 28	Lectures: 2 Clinical work: 6 hours/week1	Tutorials:	Language of the Course Turkish
Contact: Prof.Dr.İ.Kamuran İleri			

### ***Aims and Objectives***

The aim of the course is to educate the students in the fields of general reproduction, male and female reproductive organs and their work, reproductive endocrinology, spermatogenesis and oogenesis, genital health and in vitro procedures about gametes.

### ***Course Contents***

- Abattoire material examination.
- ...Semen collection devices examination.
- Semen collection.
- Male genital health examination.
- Spermatological tests (Macroscopical and microscopical).
- In vitro fertilization laboratory.
- Microscopical observation of gametes
- In vitro fertilization media preperation

### **Assessment Methods**

Each student has to give a preliminary exam (50%), a quiz (30%) and prepare a work (20%) total of which affects the passing grade at a level 50%. Then the final exam makes the 50% proportion of the passing grade with the condition of getting at least 50 marks.

For clinical applications, each student has to be successful in the obligatory applications and processes

### **Prerequisite/ Recommended**

Genital anatomy, genital histology and embriology, genital physiology

### **Text Book / Recommended Reading**

Handouts and textbook are provided by the department

NAME of the COURSE: <b>MILK SCIENCE AND TECHNOLOGY</b>		Course Code: 460	
ECTS Credits: 2	4 <sup>th</sup> year – 8 <sup>th</sup> semester	Undergraduate	Required
<b>hours: per week 2 per semester 28</b>	Lectures: 2	Tutorials :	Language of the Course: Turkish
Contact: Prof.Dr.Özer Ergun, Prof.Dr. Muammer Ugur, Prof.Dr. Bülent Nazli, Prof.Dr.Kamil Bostan, Assoc.Prof.Dr Harun Aksu, Assist.Dr.Hilal Çolak			

### ***Aims and Objectives***

It's aimed to give students information about properties of milk, processing of milk and production of dairy products.

### ***Course Contents***

Content of this lecture is milk science, processed milk, pasteurization and sterilization in milk, condensed milk, milk powder production, yogurt technology, butter and ice-cream production, cheese science and technology.

### ***Assessment Methods***

Midterm mark is found by preliminary exam (30%), arithmetic mean of the quizzes (10%) and the other facilities (laboratory performances, seminars etc.) (10%). The passing grade is equal to the 50% of the midterm mark and 50% of the final exam. And the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Milk & milk products technology (O. Ergun. T. Inal)

NAME of the COURSE : <b>VETERINARY FORENSIC MEDICINE</b>		Course Code:462	
ECTS Credits:	4 <sup>th</sup> year , 8 <sup>th</sup> semester	Undergraduate	Required
hours:per week 2 per semester 28	Lectures: 1	Tutorials:	Language of the Course Turkish
Contact: Prof. Dr. Tamer DODURKA, Assoc.Prof.Dr. M.Erman OR			

### Aims and Objectives

The main aim of this course is to enable students with the basic theoretical knowlege of the general forensic science metods in animals.

### Course Contents

- Courts
- Information about our law system
- Expert
- Veterinary surgeon as a court expert
- Expert report
- Veterinary surgeon accountability
- Prescription mistakes
- Toxications
- Notice obligatory animal diseases
- Animal health and surveillance
- Law of obligations

### Assessment Methods

Midterm mark evaluated by homework (%25), quiz (%25) and midterm (%50) which are calculated by the arithmetic mean of the seson marks. The passing garade is calculated by midterm mark (%50) and final exam (%50) which are calculated by the arithmetic mean of the seson marks.

### Prerequisite/ Recommended

### Text Book / Recommended Reading

Veterinary Forensic Medicine-Doç. Dr. M. E. OR

## NINTH SEMESTER

NAME of the COURSE : <b>POPULATION GENETICS</b>			Course Code: 551
ECTS 2	5 <sup>th</sup> year - 9 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 2 per semester 28	Lectures : 2	Tutorials :	Language of the Course Turkish
Contact: Prof.Dr. Halil Güneş, Assoc.Prof.Dr. Alper Yılmaz			

### Aims and Objectives

The aim of this lecture is to teach the genetic improvement methods in some animal species with practical applications of genetic parameter estimates.

### Course Contents

- The genetic structure of the population
- the effects of selection on gene frequency
- gene frequencies of inbreeding
- quantitative characteristics
- variation in quantitative characteristics
- similarities between relatives
- phenotypic and genetic parameters
- basic principles of selection
- methods of selection,
- crossbreeding and inbreeding
- genetic improvement methods in some animal species

### Assessment Methods

Students are evaluated by midterm exam, quiz exam and final exam. The mark of final exam must be at least 50. Passing mark is calculated by the summation of marks from 30% of midterm exam, 20% of quiz exam and 50% of final exam.

### Prerequisite/ Recommended

### Text Book / Recommended Reading

Textbook is supplied from the Faculty

NAME of the COURSE : <b>INTERNAL MEDICINE III</b>			Course Code: 553
ECTS Credits: 3	5 <sup>th</sup> year – 9 <sup>th</sup> semester	Undergraduate	Required
hours:per week 3 per semester 42	Lectures: 4	Tutorials:	Language of the Course Turkish
Contact: Prof. Dr. Tamer DODURKA, Prof.Dr. Abdülkadir UYSAL, Assoc.Prof.Dr. Remzi GÖNÜL			

### ***Aims and Objectives***

The main aim of this course is to enable students with the basic theoretical knowledge of the general cure methods and internal diseases.

### ***Course Contents***

- Diseases Of The Urinary System
- Diseases Of The Nervous System
- Diseases Of Muscles
- Clinical Immunology
- Endocrin System Diseases
- Toxications

### **Assessment Methods**

Midterm mark evaluated by homework (%25), quiz (%25) and midterm (%50) which are calculated by the arithmetic mean of the seson marks. The passing grade is calculated by midterm mark (%50) and final exam (%50) which are calculated by the arithmetic mean of the seson marks.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Carnivor Internal Medicine- Prof.Dr.H.Yılmaz İMREN  
Ruminant Internal Medicine- Prof.Dr. Erol Alaçam, Prof.Dr. Mehmet ŞAHAL  
Carnivor Internal Medicine- Prof. Dr. Tarık BİLAL  
Equine Internal medicine- Prof. Dr. Tarık BİLAL  
Ruminant Internal Medicine- Prof. Dr. Tarık BİLAL

NAME of the COURSE: <b>MEAT INSPECTION AND TECHNOLOGY</b>			Course Code: 555
ECTS Credits: 4	5 <sup>th</sup> year – 9 <sup>th</sup> semester	Undergraduate	Required
hours: per week 4 per semester 56	Lecturers: 4		Language of the Course: Turkish
Contact: Prof.Dr. Muammer Uğur, Prof.Dr. Bülent Nazli, Prof.Dr. Kamil Bostan, Assoc.Prof.Dr. Harun Aksu, Asst.Prof.Dr. Ömer Çetin			

### **Aims and Objectives**

It's aimed to give students inspection of food animals, meat inspection techniques, slaughtering techniques, meat-borne diseases and other related zoonoses, legislation about meat, meat products and food animals, production of some meat products.

### **Course Contents**

Content of this lecture is nutritional properties of meat, slaughter of meat animals, aging of meat, storage techniques, changing of meat during the aging and storage, abnormal post mortal changes of meat, additives of meat products, fermented sausage technology, salami and sausage production, smoked tongue and jelly tripe production, traditional meat products and tinned food.

### **Assessment Methods**

Midterm mark is found by preliminary exam (30%), arithmetic mean of the quizzes (10%) and the other facilities (laboratory performances, seminars etc.) (10%). The passing grade is equal to the 50% of the midterm mark and 50% of the final exam. And the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

#### *Text Book / Recommended Reading*

Meat and Meat Products Technology (M. Uğur, B. Nazli, K. Bostan)  
Slaughterhouse science (T. Inal, B. Nazli)

NAME of the COURSE: <b>MANAGERIAL ECONOMICS OF ANIMAL BREEDING</b>			Course Code: 557
ECTS Credits: 2	5 <sup>th</sup> year- 9 <sup>th</sup> semester	Undergraduate	Required
Hours: per week 2 per semester 28	Lectures: 2	Tutorials :	Language of the Course Turkish
Contact: Assist.Dr. Ferhan Kaygısız			

### ***Aims and Objectives***

By the help of this lecture the students learn the knowledge to run the farm animal managements appropriate to the principles of the science of economy.

### ***Course Contents***

- economics
- macro economical analyses
- national income
- money, supply, demand
- consumer balance
- price mechanisms
- price determination
- management
- providing of production factors in managements
- finance
- planning of production and marketing

### **Assessment Methods**

Students are evaluated by midterm exam, quiz exam, seminar and final exam. The mark of final exam must be at least 50. Passing mark is calculated by the summation of marks from 20% of midterm exam, 15% of quiz exam, 15% of seminar and 50% of final exam.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Textbook is supplied from the Faculty

NAME of the COURSE : <b>TOXICOLOGY</b>			Course Code: 559
ECTS Credits: 4	5 <sup>th</sup> year – 9 <sup>th</sup> semester	Undergraduate	Required
hours: 2h/week (teorical) 2h/week (practical)			in Turkish
Contact: Prof.Dr. Süleyman ŞENER, Prof.Dr. Oya KELEŞ, Assoc.Prof.Dr. Murat YILDIRIM, Assoc.Prof.Dr. Tülay BAKIREL,			

**Aims and Objectives :** The aim of this course is to teach the harmful effects of drugs and other chemicals on biological systems. General toxicology deals with evaluation criteria regarding toxicity, sources of the toxins, mode of action, rules of diagnostics as well as general and special therapeutical measures. Special toxicology deals with all forms of intoxication which can be expected in veterinary medicine and their symptoms and pathogenesis and therapies.

#### Course Contents

- General Toxicology
- Poison
- Toxicity
- Absorption, Distribution and Elimination (Toxicokinetic)
- Poisoning
- Toxicologic Evaluation: The Determination of Security and Risk
- Specific Toxicology
- Metallic Poisons
- Pesticides
- Poisonous plants
- Mycotoxins
- Gases, Vapours and Others
- Venemous Animals
- Radioactive Materials
- Food Additives and Contaminants
- Poisonous Fungus
- Chemical Warfare Agents
- Ecotoxicology : Industrial Chemical Materials And Enviromental Wastes
- Doping And Euthanasia

**Assessment Methods:** The midterm mark is evaluated by preliminary exam (40%), laboratory performance (30%) and arithmetic mean of the quizzes (30%). The passing grade of them is equal to the 50% of the midterm mark and 50% of the final exam.and the written final exam must be equal or greater than 50.

#### **Prerequisite/ Recommended:**

**Text Book / Recommended Reading :** Toxicology book written by S.Şener and M. Yıldırım

NAME of the COURSE: <b>REPRODUCTION AND ARTIFICIAL INSEMINATION II</b>			Course Code: 563
ECTS Credits: 2	5 <sup>th</sup> year 9 <sup>th</sup> semester	Undergraduate	Required
hours: per week 2 per semester 28	Lectures: 2 Clinical work 6 hours/ week	Tutorials:	Language of the Course Turkish
Contact: Prof.Dr.İ.Kamuran İleri			

### ***Aims and Objectives***

The objective of the course is to enable the students to collect, evaluate, dilute, freeze and store semen from species, detect oestrus and make insemination, breeder selection, diagnose and treat male and female infertility and embryo transfer.

### ***Course Contents***

- Abattoire material examination of genitals
- Laboratory evaluation of semen
- Laboratory work for freezing of semen
- Treatment of infertility
- Embryo transfer techniques

### **Assessment Methods**

Each student has to give a preliminary exam (50%), a quiz (30%) and prepare a work (20%) total of which affects the passing grade at a level 50%. Then the final exam makes the 50% proportion of the passing grade with the condition of getting at least 50 marks.

For clinical applications, each student has to be successful in the obligatory applications and processes

### **Prerequisite/ Recommended**

Genital anatomy, genital histology, embryology and physiology.

### **Text Book / Recommended Reading**

Handouts and textbook are provided by the department

NAME of the COURSE: <b>POULTRY DISEASES</b>			Course Code: 565
ECTS Credits: 3	5 <sup>th</sup> year-9 <sup>st</sup> semester	Undergraduate	Required
Hours: per week 3 per semester 42	Lectures: 2	Tutorials : 1	Language of the Course Turkish
Contact: Prof.Dr. Seyyal Ak			

### **Aims and Objectives**

To teach description , ethyology, epizootiyology , pathogenesis, symptoms , diagnosis and control strategies of poultry diseases .To acquire knowledge of sampling and diagnostic methods for poultry diseases.

### **Course Contents**

Principles of disease prevention, Premises, feed and water hygiene,, Routes of infections and transmission, Disinfectants and disinfestans, Active and passive immunity, Vaccination, Principles of diagnosis of poultry diseases, Treatment of poultry diseases. Bacterial infections (Pullorum Disease, Powl Typhoid, E.coli infections, Mycoplasmosis, Tuberculosis), Viral infection (Newcastle Di, Infectious Bursal Disease, Infectious Bronchitis, Laryngotracheitis, Marek's Diseases, İnfected Anaemia, Lenfoid Leucosis) and Fungal infections and Mycotoxicosis.

### **Assessment Methods :**

Midterm mark is found by the evaluation of written midterm exam (40 %),laboratory performance (15%), quizzes (40%) and consideration of performance (5%) .Fifty percent of the midterm and 50% of the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

ARDA M. et al., Poultry Diseases, Medisan press, Ankara, 2002.



## ELECTIVE COURSES

NAME of the COURSE: <b>ETHOLOGY</b>			Course code: 269
ECTS Credits: 2	3 <sup>th</sup> year – 6 <sup>th</sup> semester	Undergraduate	Selective
Hours: per week 2 per semester 28	Lectures: 2	Tutorials:	Language of the course Turkish
Contact: Prof.Dr. Ülker ÇÖTELİOĞLU , Prof.Dr. Mukaddes ÖZCAN, Assoc.Prof.Dr. Murat ARSLAN			

### Aims and Objectives

The aim of this course is to understand animal behavior, how they function individually and in groups.

The knowledge of behavior of different species, including pet, equine and cattle, swine....etc. is taught in combination with neurologic and endocrinologic mechanisms. Upon completion of this course the student must be able to define social order, differentiate among instinct and the learned behavior that results from training, understand the mechanism pathways of sensory systems by which the animal receives stimuli, describe how behavioral traits of different species would influence the design of facilities, list behavioral problems in livestock, poultry and horse breeding and those of pets. The student should also be able to comprehend and evaluate the effects of domestication, especially for cats and dogs.

### Content

1. History and aim of ethology
2. Relations between behavior and nervous system
3. Importance of endocrine regulation on behavior
4. Effects of environmental factors on behavior
5. Acquired behavior models of learning
6. Learning and memory, intelligence, development of behavior
7. Foetal and postnatal behavior
8. Nursing and maternal behavior
9. Digestive behavior
10. Social behavior
11. Species behavior patterns

### Assessment Methods:

1. Midterm written exam (% 30)
2. Quizzes (% 20)
3. Final written exam (% 50)

The ratio of midterm and final exam must be equal or greater than 50.

### Prerequisites/ Recommended:

Endocrinology and neurology knowledge is recommended

### Text Book / Recommended Reading:

1. Handouts and course slide shows are supplied by the department
2. Fahrünisa Cengiz, Etholoji
3. Daniel Mills and Kathryn Nankervis, Equine Behavior: principles & Practice
4. M.C.G. Davies Morel, Equine Reproductive Physiology, Breeding and Stud Management
5. National Geographic Society, The Marvels of Animal Behavior
6. James L. Gould, Carol Grant Gould, Olağandışı Yaşamlar
7. Carlson R.N. Physiology of Behavior

NAME of the COURSE: <b>BIOTECHNOLOGY</b>			Course Code: 271
2 ECTS Credits	2 <sup>nd</sup> year – 3 <sup>th</sup> semester	Undergraduate	Selective
Hours: per week 2 per semester 28	Lectures: 2		Language of the Course Turkish
Contact: Prof. Dr. Suleyman Korkut TEKELI			

### ***Aims and Objectives***

The aim of this lecture is to teach development and means of biotechnology, understanding structures of genetic materials and learning principles of DNA technology.

### ***Course Contents***

- Development and means of biotechnology
- What are DNA, Gene and chromosome?
- The main structure of genetic material.
- Transport of genes and transgenic animals
- Arrangement of genes' activity
- Gen mutation, repairment of DNA movable elements.
- Principles of recombinant DNA technology

### **Assessment Methods**

The midterm mark is evaluated by midterm exam (30%), arithmetic mean of the quizzes (20%). The passing grade is equal to the 50% of the midterm mark and 50% of the written final exam. The written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Lecture notes are supplied by the department

NAME of the COURSE: <b>LABORATORY ANIMALS</b>			Course Code: 267
2 ECTS Credits	2 <sup>nd</sup> year – 3 <sup>th</sup> semester	Undergraduate	Selective
Hours: per week 3 per semester 42	Lectures: 2	Tutorials : 1	Language of the Course Turkish
Contact: Prof.Dr. Tuncay ALTUĞ			

### ***Aims and Objectives***

Laboratory Animals lecture is given in third semester. What is an experiment animal ? Which animals are used in experiments ? In which areas are they used ? Thing should be known about experiment animals. Biologic and production, qualities of rats and mice. Biologic and production, qualities of guinea pigs. Biologic and production, qualities of hamsters. Biologic and production, qualities of rabbits.

### ***Course Contents***

- 1- Thing should be known about experiment animals II Systematical qualities (race concept and its importance), Anatomic and behaviour qualities.
- 2-Special animal production techniques
- 3- Inbreedisation, cloning
- 4- Patogen-free animal production techniques.
- 5-Ethic A. General view of the concept 3R
- 6- Ethic B. Replacement, reduction, refinement
- 7- possible accidents that can be met during the production of animals and during studying
- 8- Biologic and production qualities of Rat, Guinea pigs, Hamsters and Rabbits

### **Assessment Methods**

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Principles of Laboratory Animal Science Ed.L.F.M. van Zutphen, V.Baumans, A.Cbeynen. Elsevier Science Publishers 2001

Öznur Poyraz Laboratuvar Hayvanları Bilimi Kardelen Ofset Ankara 2000

NAME of the COURSE: <b>EPIZOOTIOLOGY</b>			Course Code: 273
2 ECTS Credits	2rd year 3th semester	Undergraduate	Selective
Hours: per week 2 per semester 28	Lectures: 2		Language of the Course Turkish
Contact: Prof. Dr. Atilla ILGAZ, Prof. Dr. Hüseyin YILMAZ, Prof Dr. Seyyal AK, Prof. Dr. N. Yakut ÖZGÜR, Assoc. Prof. Dr. Nuri TURAN, Assoc. Prof. Dr. Mustafa HASÖKSÜZ			

### **Aims and Objectives**

To teach the importance of epizootiology and give basic information and frame of statistical methods .

### **Course Contents**

Definition and purpose of Epizootiology, Epizootiological items, Health and Disease, The causes of Disease, Determinants of Disease, Routes of infections, Spreads of agents in the body, Transmission of Infections, Types of Infections, Mode of Infections Sporadic, Endemic, Epidemic, and Pandemic Infections, Prevalance, and Incidence, Epizootiological studies, Preventetions of Disease, Control and Eradication Programmes

### **Assessment Methods :**

Midterm mark is found by the evaluation of written midterm exam (60%), quizzes(30%) and consideration of performance (10%) .Fifty percent of the midterm and 50% of the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

DİKER S., Text book of Epizootiology Ankara University press, Ankara, 1994.

NAME of the COURSE: <b>FISH DISEASES</b>			Course Code: 372
ECTS Credits : 2	3 <sup>th</sup> year- 6 <sup>th</sup> semester	Undergraduate	Selective
Hours: per week 1 per semester 14	Lectures: 1		Language of the Course Turkish
Contact: Prof. Dr. Atilla ILGAZ, Prof. Dr. Hüseyin YILMAZ, Prof Dr. Seyyal AK, Prof. Dr. N. Yakut ÖZGÜR, Assoc. Prof. Dr. Nuri TURAN, Assoc. Prof. Dr. Mustafa HASÖKSÜZ.			

### **Aims and Objectives**

To teach description , ethylogy, epizootiyology , pathogenesis, symptoms , diagnosis and control strategies of fish diseases

### **Course Contents**

Bacterial, viral and parasitic fish disease, and fish nutrition.

### **Assessment Methods :**

Midterm mark is found by the evaluation of written midterm exam (60%), quizzes(30%) and consideration of performance (10%) .Fifty percent of the midterm and 50% of the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

The text book is supplied by the department.

NAME of the COURSE: <b>HONEYBEE DISEASES</b>			Course Code: 366
ECTS Credits: 2	3 <sup>th</sup> year – 6 <sup>th</sup> semester	Undergraduate	Selective (multidisciplinary)
hours: per week 1 per semester 14	Lectures: 1		Language of the Course Turkish
Contact: Prof.Dr. Müfit TOPARLAK			

### **Aims and Objectives**

Honey bee behaviours, modern production systems, bee diseases ( parasitic, bacterial, mycotic and viral) and their treatments.

### **Course Contents**

- Varroosis
- Braulosis
- Acariosis
- Nosemosis
- Prophlaxis, diagnosis and treatment of parasitic, bacterial, mycotic and viral diseases.
- Management, apiary hive hygiene, the beekeepers' year

### **Assessment Methods**

Written or multiple choice test.

### **Prerequisite/ Recommended**

The knowledge in zoology and biology are necessary.

### **Text Book / Recommended Reading**

Akkaya, H.; Vuruşaner, C. Honey Bee Diseases and Pests Textbook, 1999.  
Akkaya, H. Bee Keeping Textbook, 2002

NAME of the COURSE : <b>ENVIRONMENT PUBLIC HEALTH AND VETERINARY MEDICINE</b>			Course Code: 374
ECTS Credits:2	3 <sup>th</sup> year- 6 <sup>th</sup> semester	Undergraduate	Selective
hours: per week 2 per semester 28	Lecturers: 2		Language of the Course Turkish
Contact: Assoc.Prof.Dr. Harun AKSU, Prof.Dr. Atilla ILGAZ, Assoc.Prof.Dr. Tülay BAKIREL, Assoc.Prof.Dr. Hayrettin AKKAYA			

### **Aims and Objectives**

It's aimed to give students about environmental science, waste material, pollution types, ISO standarts about quality and environment and legislations about food, veterinary medicine and environment.

### **Course Contents**

Content of this lecture is environmental pollution and public health, ISO standards for environment and food, food policy and authority, food legislations. This lecture is selective. It's a multidisiplinary lecture. Coordinator department is food hygiene and technology department. The other responsible departments are microbiology department, pharmacology and toxicology department and parasitology department

### **Assessment Methods**

Midterm mark is found by preliminary exam (30%), arithmetic mean of the quizzes (10%) and the other facilities (laboratory performances, seminars etc.) (10%). The passing grade is equal to the 50% of the midterm mark and 50% of the final exam. And the written final exam must be equal or greater than 50.

### **Prerequisite/ Recommended**

### **Text Book / Recommended Reading**

Dogruer, Y. : Veterinary Public Health. S.U.Vet.Fac., Konya, 2000  
Uğur, M.; Nazlı, B.; Bostan, K. : Food Hygiene. Teknik yayımları, İstanbul, 2003  
Oğan, H. : Food, Public Health and Related Rules. İstanbul, 1996  
Yücel, M : Environmental Problems. C.U.Agr.Fac.No:109, Adana, 2000.