**T.C**

**MUNZUR UNIVERSITY**

**VOCATIONAL SCHOOL OF PERTEK SAKİNE GENÇ**

**Department of Veterinary Medicine / Laboratory and Veterinary Assistance Services**

**Program Course Contents**

**I. Term Courses;**

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Atatürk's Principles and History of Turkish Revolution I** | **Z** | **2** | **0** | **2** | **2** |
| Definitions of the terms of revolution and history. World revolutions and the place of the Turkish revolution in them, the characteristics of the Turkish Revolution, the Armenians under the Ottoman Empire, the Ottoman Empire in the First World War and the results of the war, the Armistice of Mudros and the occupation of the Empire. Beginning of the National Struggle. Atatürk's place and goal in the National Struggle. Amasya Circular-National congresses. Istanbul-Anatolia relations, opening and first works of the Turkish Grand National Assembly. Prevention of internal revolts. Wars on the eastern front. National fronts (Kuvay-i Milliye). The first international agreements made by the Turkish Grand National Assembly on the western front. The Lausanne Peace Treaty. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Turkish Language I** | **Z** | **2** | **0** | **2** | **2** |
| What is language? The place and importance of the language as a social institution in the life of the nation, language-culture relations, the place of the Turkish language among the world languages, the development of the Turkish language and its historical periods, the current situation of the Turkish language and its spreading areas, the sounds in Turkish and its classification, the phonetic features of Turkish and phonetics, syllables, spelling rules and their application, punctuation marks and their application. Turkish affixes and their application. General information about the composition. Plan and application to be used in composition writing. Conjugation of nouns and verbs in Turkish, forms of expression in composition and its application. Usage of adverbs and prepositions in Turkish. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Foregin Language I** | **Z** | **2** | **0** | **2** | **2** |
| Am / is/ are-my/your/his/her-Everydayobjects-Numbers-Hello and goodbye am/ is/ are: questions and negatives-Possessive’s-Family-Opposites Present Simple 1. He /she /it- Questions and negatives. What time is it? Present Simple 2: I/you / we / they- Leisureactivities-Socialexpressions. There is /are- Prepositions- some / any – this /that- Furniture-Directions 1. Can / can’t /could / couldn’t – was – were. Past Simple 1. regularVerbs – Irrregular verbs—special occasions Count and uncountnouns- I like / I’dlike – much – many – food – Polite requests Comparatives and Superlatives- have got- Present Continuous- whose? – clothes. Going to future- Infinitive of purpose. Present Perfect + ever, never, yet, just. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Basic Information Technologies** | **Z** | **1** | **2** | **2** | **3** |
| The basics (DOS, WINDOWS). Word processing. Using database. Structure and types of office software, Page structure and use of printers, Presentation preparation. Graphics applications (CAD). Using information networks: Internet (E-Mail, WWW, HTML Programming, JAVA). |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **General Mathematics** | **Z** | **2** | **0** | **2** | **2** |
| Students' use of numbers, number sets and defined operations in solving problems, understanding the idea of comparison-arranging-ordering and the main subjects of the course; concepts such as numbers, ratio and proportion, algebra, functions and equations and inequalities. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Microbiyology** | **Z** | **3** | **1** | **3,5** | **5** |
| Microbiology definition and scope. History. Cell chemistry. Microorganism groups and classification. Anatomical and chemical structures, nutrition, development and reproduction of bacteria. Classification and naming of bacteria according to their morphological and physiological characteristics. Genetic characters of bacteria. Bacteria and living organisms. Bacterial diseases in cattle, ovine and poultry. Bacterial analysis methods. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Laboratory Techniques and Principles I** | **Z** | **2** | **2** | **3** | **5** |
| Rules to be considered while working in the laboratory; Glass and plastic materials used in the laboratory; Material cleaning in the laboratory; Sterilization and disinfection; Measurement and measurement units; Pure water systems; Introduction and use of oven, sterilizer, autoclave, water bath; Mixers, heater and cooler systems used in the laboratory; Centrifuge and centrifugation; Types of scales and their use; Ph concept and measurement; Types of microscopes and their properties; Classical light microscopy and its use. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Anatomy** | **Z** | **3** | **0** | **3** | **5** |
| Definition of anatomy, general parts, basic concepts, Cell, anatomical terms, Skeletal system, joints, Muscles, Circulatory system, Endocrine system, Respiratory system, Digestive system, Excretory system, Reproductive system, Nervous system, Topographic anatomy. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Zootechnics** | **Z** | **2** | **0** | **2** | **3** |
| Introduction to zoology, basic components of living things and organic molecules, cell biology, nucleic acids and chromosomes, cell cycle, fertilization and embryonic development, reproductive biology, participation, nutrition and energy metabolism, ecology, living world, animal kingdom. Pet types (Cattle, Sheep, Goat, Horse, Cat, Dog etc.) |

**II. Term Courses;**

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Atatürk's Principles and History of Turkish Revolution II** | **Z** | **2** | **0** | **2** | **2** |
| Renewal Movements in the Ottoman Empire, French Revolution and its reflections in the Ottoman Empire, Balkan and World Wars, National Struggle, Erzurum and Sivas Congresses, Proclamation of the Republic, Modernization and innovation movements, Atatürk's principles, the basic characteristics of the Republic of Turkey, the strategic position of the Republic of Turkey. Relations with its neighbors because of its neighbours, Atatürk's Turkish Foreign Policy (1923-1938), Repetition and summaries, evaluation. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Turkish Language II** | **Z** | **2** | **0** | **2** | **2** |
| To be able to comprehend the lexical structure of the Turkish language. To be able to recognize the types of written expression in daily life. To be able to comprehend the importance of punctuation in written expression. To be able to comprehend the importance of correct expression in personal and social communication. To be able to apply research, reading and knowledge skills. Comprehends the structural features, root and suffixes of Turkish. Knows noun and verb conjugations in Turkish. Makes planning and practice in composition writing. Comprehends the forms of expression and uses them in communication. Knows the types of written and oral expression. Understands punctuation and spelling rules. Comprehends expression disorders and uses Turkish correctly. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Foregin Language II** | **Z** | **2** | **0** | **2** | **2** |
| Am / is/ are-my/your/his/her-Everydayobjects-Numbers-Hello and goodbye am/ is/ are questions and negatives-Possessive’s-Family-Opposites Present Simple 1. He /she /it- Questions and negatives. What time is it? Present Simple 2: I/you / we / they- Leisureactivities-Socialexpressions. There is /are- Prepositions- some / any – this /that- Furniture-Directions 1. Can / can’t /could / couldn’t – was – were. Past Simple 1. regularVerbs– Irrregular verbs—special occasions Count and uncountnouns- I like / I’dlike – much – many – food – Polite requests Comparatives and Superlatives- have got- Present Continuous- whose? – clothes. Going to future- Infinitive of purpose. Present Perfect + ever, never, yet just. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Physıology** | **Z** | **3** | **1** | **3,5** | **4** |
| The functioning of the various cell, tissue, and organ systems that make up the organism in animals and the mechanism of the basic biological events that occur here. Structure and functions of the cell and cell membrane, functions of cell organelles, formation mechanism of impulse and action potential, contraction mechanism and properties in smooth, striated and cardiac muscle, Functional structure and functioning of central, peripheral and autonomic nervous system. Functions of sense organs, Effects of hormones produced by endocrine elements such as pituitary, thyroid, parathyroid, adrenal cortex and medulla, pancreas and gonads on body functions; Functions of blood and functions of erythrocytes, leukocytes, platelets, coagulation and immune mechanisms. Properties of blood flow in the vascular system and heart. Basic functions and physiological anatomy of the respiratory system. Mechanisms effective in elimination of metabolic wastes and urine formation in kidney. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Laboratory Techniques and Principles-II** | **Z** | **2** | **2** | **3** | **5** |
| Rules to be followed in laboratories, laboratory accidents and precautions to be taken. Introduction of tools, equipment, glassware and chemicals used in laboratories. Types of microscope and use of simple microscope, Centrifuges and centrifugation types. Solution, types of solutions, solution preparation. General chemical analysis. Explanation of physical analysis with examples. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Virology** | **Z** | **2** | **0** | **2** | **3** |
| Introduction to virology and general characteristics of viruses, structure and replication of viruses, classification of viruses, in vivo and in vitro systems in which viruses are produced, types of viral infections, viral pathogenesis, viral immunity, methods used in the diagnosis of viruses, clinical findings, protection and control. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Biochemistry** | **Z** | **3** | **0** | **3** | **4** |
| Introduction to biochemistry, basic structural features of the cell, chemical components of the cell, bonds, inorganic and organic structures. Water, solutions, acids and bases, pH concepts, Proteins, amino acids, peptides, classification, function, structural arrangements in proteins. Carbohydrates, their classification, structural properties, basic metabolism. Lipids, their properties, structure and function, Enzymes, classification, structural properties, factors affecting enzymatic activity, importance of enzyme inhibition in biological systems. Nucleic acids, their structural properties, DNA and RNA, Vitamins, Cofactors and Minerals, Hormone biochemistry, Metabolic Paths, anabolism, catabolism, introduction of important metabolic pathways in energy production in living things, Biochemical properties of animal products.  |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Parasitology** | **Z** | **2** | **1** | **2,5** | **4** |
| General parasitology, definition of parasite and parasitology, types of parasites, host-parasite relationships, development of parasites, symptoms, diagnosis, prognosis, treatment, protection, zoonotic parasites in parasitic diseases. Special Parasitology: Helminthology (cestode, trematode, nematode) |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Entrepreneurship** | **Z** | **2** | **0** | **2** | **3** |
| Concepts related to entrepreneurship, entrepreneurship in general. Types of entrepreneurship, entrepreneurial characteristics, entrepreneurial processes, business idea areas, creativity in entrepreneurship, innovation and innovation in entrepreneurship, industrial and intellectual property rights. feasibility, business plan, marketing plan, production plan, management plan, finance plan, entrepreneurship stories.  |

**III. Term Courses;**

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Internship** | **Z** | **0** | **0** | **0** | **10** |
| Participating in workplace activities as an intern for 30 working days in public and private sector institutions and workplaces where the student can work with the title of graduation after completing the department, giving information and internship completion documents to the relevant unit at the end of the internship. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Disease Receiving and Sending Techniques** | **Z** | **2** | **0** | **2** | **3** |
| Necropsy and techniques according to animal species, methods used in collecting and delivering morbid substances and samples (blood, urine, organs, etc.) to be sent to the laboratory, procedure for receiving and sending morbid materials according to suspected diseases. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Livestock Business Economics** | **Z** | **2** | **0** | **2** | **4** |
| Some economic concepts, consumption, goods, utility, production, factors of production, law of diminishing returns, exchange, exchange value, information about money, income, and capital, Definition of demand, factors affecting demand and demand elasticity Definition of supply, factors affecting supply and supply flexibility, Functions of price, price formation and market forms, Introduction to business economy, definition of business, principle of economy, economic, social, political, technological, natural and legal environments of the business, immediate environment of the business, financial flow, cash flow and information flow in businesses studies, feasibility study, factors affecting the choice of establishment location, capacity concept, classification of basic business functions, raw material supply and personnel supply, financing resources, production planning, income and expense concepts, economic principles in making production decisions, importance, scope, marketing activities, Turkey butchery animal and meat marketing, cooperative in livestock sector Types, Management function, planning, organization, execution, coordination and supervision activities, Analysis of capital structure and activity results in livestock enterprises, Determination of animal product costs in livestock enterprises. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Pharmacology and Toxicology** | **Z** | **3** | **0** | **3** | **4** |
| Medicine; definition, sources, properties, Sub-branches of Pharmacology Pharmacokinetics and pharmacodynamics, drug interaction, adverse effects, drug dosage and administration forms, Drugs acting on the nervous system, Endocrine system pharmacology, Drugs acting on the respiratory, digestive and cardiovascular system, Chemotherapeutics, Animal origin Drug residues in food, Introduction to toxicology and general toxicology, acute and chronic toxicity, poisoning and main effects in poisoning, diagnosis and treatment in acute poisonings, Herbal and Animal Poisoning, Industrial Substance Intoxication, Drug Intoxication, Environmental Poisoning (Ecotoxicology) Principles. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Cattle Breeding** | **Z** | **3** | **0** | **3** | **4** |
| Economic importance of cattle breeding, classification of cattle, important issues in cattle breeding, feeding, cattle breeding, practical breeding, shelter in cattle breeding. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Feed Information and Animal Nutrition** | **Z** | **2** | **0** | **2** | **4** |
| Introduction to feed information, definition of feed, classification of feeds, digestion of feeds according to the nutrients and animal species. Preparation of ration contents of feeds used in animal feeding. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Volunteering Studies** | **S** | **1** | **2** | **2** | **3** |
| Management and Organization Concepts; The Concept of Volunteering and Volunteer Management; Basic Volunteering Fields (Disaster and Emergency, Environment, Education and Culture, Sports, Health and Social Services etc.); Project Development Related to Volunteer Work and Participation in Volunteer Work in the Field; Ethics, Moral, Religious, Traditional Values and Principles in Voluntary Work; Participation in Voluntary Work in Public Institutions, Local Administrations and Non-Governmental Organizations (NGO); Risk Groups and Volunteering in Society; Immigrants and Volunteering. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Hygıene And Sanıtatıon** | **S** | **2** | **0** | **2** | **3** |
| Hygiene, sanitation, sterilization and disinfection methods and importance of materials, Methods andapplications |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Occupatıonal Health And Safety** | **S** | **2** | **0** | **2** | **3** |
| Occupational health and safety related concepts, importance, legal legislation, occupational health and safety issues. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Statıstıcs** | **S** | **2** | **0** | **2** | **3** |
| Definitions used in statistical science, data types and evaluation methods, hypothesis tests |

**IV. Term Courses;**

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Food Hygiene and Technology** | **Z** | **3** | **0** | **3** | **4** |
| Definition of hygiene, basic principles of food hygiene, characteristics of safe food, causes, symptoms and common poisonings of foodborne diseases and poisonings, food preservation methods, microbial ecology of food, health risks arising from animal food, water and personnel hygiene. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Birth Information and Reproductive Technologies** | **Z** | **3** | **0** | **3** | **4** |
| Male and female reproductive organs and physiology, reproduction. To introduce the methods and instruments to be used in birth and field practice, Difficult Births: General causes, maternal difficult births and fetal difficult births, normal presentations and conditions, pathological presentations and conditions, Birth assistance; Instruments and materials used in obstetrics, anamnesis, general and detailed examination, anesthesia and medication, aid attempts, care for mother and baby. Examination and care of mother and calf before and after birth. Reproductive technologies Artificial insemination, embryo transfer. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Immunology and Vaccine Applications** | **Z** | **2** | **1** | **2,5** | **4** |
| Immunology, immune system in living things, active and passive immunity, definition and classification of natural immunity vaccine, vaccination and administration routes, vaccine reactions, vaccination schedule (vaccination in cattle, vaccination in ovine animals, vaccination in poultry and pet animals). |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Poultry Breeding and Diseases** | **Z** | **3** | **0** | **3** | **4** |
| Importance of poultry breeding, Classification and characteristics of chickens, Rules to be considered in chicken breeding and herd management, coops, technical specifications and material information, Chicken breeds and general characters according to yield aspects, Poultry breeder breeding and hygiene, control of breeding eggs, Broiler chick rearing, Care and feeding, Egg chick rearing, care and feeding, Beak cutting and its importance, Broiler and ovary chicken rearing, care and feeding, Egg period in poultry, Lighting program and its importance, Forced molt. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Experimental Animal Breeding** | **Z** | **2** | **0** | **2** | **3** |
| Ethical and legal regulations related to experimental animals, characteristics of experimental animal production and breeding centers, general characteristics of experimental animals, anatomy, physiology and biochemistry of experimental animals, shelters, equipment, feeding, production, anesthesia, analgesia and euthanasia applications, handling techniques for experimental animals, oral substance disposal, waste disposal. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Beekeeping and Diseases** | **Z** | **3** | **0** | **3** | **4** |
| Honey bee morphology and biology, colony individuals and colony arrangement and seasonal controls, tools and equipment used in beekeeping, products obtained from beekeeping, apitherapy, general bee diseases and pests, laboratory diagnosis methods of bee diseases, drug use against bee diseases, parasites in bees, other pests, pesticides used in agriculture and their effects on bees. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Sheep and Goat Breeding** | **Z** | **3** | **0** | **3** | **4** |
| Sheep and goat breeds, herd size in sheep breeding, barn cleaning and disinfection, bathing, hoof, tail cutting and castration, shearing and fleece, ram and goats, detection of pregnancy in sheep, pregnancy and birth, postpartum lamb and kid rearing, milking, Numbering, record keeping, lamb production methods in sheep and goats. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Career planning** | **S** | **2** | **0** | **2** | **3** |
| Students; It helps them to make a career plan compatible with their future goals by helping them gain awareness about their interests, personal characteristics and values. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Quantitative and Qualitative Analysis** | **S** | **2** | **0** | **2** | **3** |
| Quantitative and qualitative analysis definitions, difference, data, parameters, variables, indicative Statistics quantitative and qualitative analysis methods, Descriptive and inductive analysis of qualitative and qualitative data, Reporting of quantitative and qualitative data, use of SPSS and data entry. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Epidemics and Zoonoses** | **S** | **2** | **0** | **2** | **3** |
| Explaining zoonoses transmitted from animals to humans or from humans to animals; ways to prevent these diseases, and fight, Brucella, Tuberculosis, Rinderpest, Tetanus, Rabies, Anthrax, Foot and Leptospirosis. |

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| **Course title** | **Z / S** | **Teori** | **Pratik** | **Kredi** | **Akts** |
| **Environmental Protection** | **S** | **2** | **0** | **2** | **3** |
| Human and nature relations, environmental health problems, the emergence of environmental problems, air, water, radiation, solid waste, noise pollution, population growth and its effects on the environment, environmental protection studies, environmental regulation information, waste storage, personal protection measures. |