

COURSE LIST Faculty of Arts & Sciences Department of Biology

Please note that Erasmus students are allowed to take courses from lists of all faculties/schools according to their needs or interests.

Courses offered in Turkish are listed at the website of the faculty <http://fef.comu.edu.tr/> or you can contact Departmental Coordinator to get the necessary information

Courses offered in English

Course Title	Code	ECTS Credit	COMU Credit	Lecturer
Ecology	ULP-02-71	5	2	Asst. Prof. Dr.Esra KOÇUM
Population Dynamics & Ecosystem Ecology	ULP-02-72	6	3	Asst. Prof. Dr.Esra KOÇUM
Biological Clocks	ULP-02-73	4	2	Prof. Dr. Bülent Gündüz
Marine Ecology	ULP-02-74	4	2	Asst. Prof. Dr.Esra KOÇUM
An Introduction to Microbial Ecology	ULP-02-75	4	2	Asst. Prof. Dr.Esra KOÇUM
Contemporary Environmental Issues	ULP-02-76	4	2	Asst. Prof. Dr.Esra KOÇUM
Environmental Monitoring	ULP-02-77	3	2	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
Population Ecology	ULP-02-78	3	2	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
Coastal Ecosystems	ULP-02-79	3	2	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK

Freshwater Ecology	ULP-02-80	3	2	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
Community Ecology	ULP-02-81	3	2	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
General Ecology	ULP-02-82	3	2	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
Behavioural Ecology	ULP-02-83	3	2	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
Animal Behavior	ULP-02-84	3	2	Prof. Dr. Bülent Gündüz
Animal Physiology	ULP-02-85	6	3	Prof. Dr. Bülent Gündüz
Comparative Anatomy	ULP-02-86	6	3	Prof. Dr. Bülent Gündüz
Embryology	ULP-02-87	6	3	Prof. Dr. Bülent Gündüz
Endocrinology	ULP-02-88	3	2	Prof. Dr. Bülent Gündüz
General Zoology	ULP-02-89	10	5	Prof. Dr. Bülent Gündüz
Human Anatomy & Physiology	ULP-02-90	5	3	Prof. Dr. Bülent Gündüz
Molecular Genetics	ULP-02-91	4	2	Assoc. Prof. Dr. Kemal Melik TAŞKIN
Molecular Biology Teqniques	ULP-02-92	6	3	Assoc. Prof. Dr. Kemal Melik TAŞKIN
Recombinant DNA Teqniques	ULP-02-93	6	3	Assoc. Prof. Dr. Kemal Melik TAŞKIN
Enzymology	ULP-02-94	3	2	Asst. Prof. Dr. Tülay TURGUT GENÇ

Biochemistry	ULP-02-95	4	2	Asst. Prof. Dr. Tülay TURGUT GENÇ
Introduction to Genetic Engineering	ULP-02-96	3	2	Asst. Prof. Dr. Tülay TURGUT GENÇ
Neurobiology	ULP-02-97	3	2	Prof. Dr. Bülent Gündüz
Nutrition and Metabolism	ULP-02-98	3	2	Prof. Dr. Bülent Gündüz
Microbial Genetics	ULP-02-101	5	3	Asst. Prof. Dr. Tülay TURGUT GENÇ
Industrial Microbiology	ULP-02-103	4	3	Asst. Prof. Dr. Tülay TURGUT GENÇ
Introduction to Virology	ULP-02-104	5	3	Asst. Prof. Dr. Tülay TURGUT GENÇ
Eukaryotic Microbiology	ULP-02-105	4	2	Asst. Prof. Dr. Tülay TURGUT GENÇ
Molecular Biology	ULP-02-106	4	2	Asst. Prof. Dr. Neslihan DEMİR
Immunology	ULP-02-107	3	2	Asst. Prof. Dr. Neslihan DEMİR
Biology & Genetics of Cancer	ULP-02-108	3	2	Asst. Prof. Dr. Neslihan DEMİR
Cell Cycle and Apoptosis	ULP-02-111	4	2	Asst. Prof. Dr. Neslihan DEMİR
Molecular Evolution	X ULP-02-117	3	2	Assoc. Prof. Dr. Cüneyt AKI

Course Code	ULP-02-71
Name of the course in English	Ecology

Name of the course in Turkish	Ekoloji
Status	Compulsory Undergraduate Course
Language of the course	English
Lecturer	Asst. Prof. Dr.Esra KOÇUM
ECTS Credits	3
COMU Credits	2
Description	This is introductory ecology course for undergraduate students, aiming to introduce some of the structural and functional components of nature. Ecology as a science involves the study of interactions between organisms and their environment and how these interactions influence the distributions and abundance of organisms.

Course Code	ULP-02-72
Name of the course in English	Population Dynamics & Ecosystem Ecology
Name of the course in Turkish	Populasyon Dinamikleri ve Ekosistem Ekolojisi
Language of the course	English
Status	Compulsory Undergraduate Course
Lecturer	Asst. Prof. Dr.Esra KOÇUM
ECTS Credits	6
COMU Credits	3
Description	This course covers presentation of basic ideas about population and community ecology and demonstration of how theories, mathematical models laboratory experiments and in situ work are combined to explain population growth, interactions and species richness in communities.

Course Code	ULP-02-73
Name of the course in English	Biological Clocks
Name of the course in Turkish	Biyolojik Saatler
Language of the course	English
Status	Compulsory Undergraduate Course
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	4
COMU Credits	2
Description	This course explains how, whether it is cellular or organismal levels, can synchronizes with its biological clock. An internal mechanism in organisms that controls the periodicity of various functions or activities, such as metabolic changes, sleep cycles, or photosynthesis.

Course Code	ULP-02-74
Name of the course in English	Marine Ecology
Name of the course in Turkish	Deniz Ekolojisi
Language of the course	English
Status	Compulsory Undergraduate Course
Lecturer	Asst. Prof. Dr.Esra KOÇUM
ECTS Credits	4
COMU Credits	2
Description	Presentation of characteristics defining marine environment and discussion of their effects on the survival, distribution and function of marine organisms

Course Code	ULP-02-75
Name of the course in English	An Introduction to Microbial Ecology
Name of the course in Turkish	Mikrobiyal Ekolojiye Giriş
Language of the course	English
Status	Elective Undergraduate Course
Lecturer	Asst. Prof. Dr.Esra KOÇUM
ECTS Credits	4
COMU Credits	2
Description	This course explores, population, community and ecosystem ecology of microorganisms, microbial interactions with plants and animals, ecosystem processes with an emphasis on the role of microorganisms in biogeochemical cycling.

Course Code	ULP-02-76
Name of the course in English	Contemporary Environmental Issues
Name of the course in Turkish	Güncel Çevre Sorunları
Language of the course	English
Status	Elective Undergraduate Course
Lecturer	Asst. Prof. Dr.Esra KOÇUM
ECTS Credits	4
COMU Credits	2
Description	The course is organized as a seminar which means that the instructor take primary presentation for presentation of the topic, but students are expected to participate in

	<p>discussion based on readings and a discussion leader may be designated.</p> <p>This seminar addresses general questions about major contemporary environmental issues. The seminar is explicitly interdisciplinary because it incorporates natural science, economic, sociological/anthropological, political, and legal perspectives. This course explores ethical, ecological and policy dimensions of such global environmental issues as atmospheric and water pollution, global climate change, care of agricultural lands, water scarcity, overharvest of renewable resources, loss of biodiversity and world population growth.</p>
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Course Code	ULP-02-77
Name of the course in English	Environmental Monitoring
Name of the course in Turkish	Çevrenin İzlenmesi
Language of the course	English
Lecturer	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
ECTS Credits	3
COMU Credits	2
Description	<p>Behaviour of environmental contaminants in soil, groundwater, water and atmosphere</p> <p>Physical factors that affect transport of environmental constituents in water, namely streams, lakes, reservoirs, etc. Physical monitoring methods, temperature, velocity, atmospheric pressure, etc. Chemical monitoring methods such as electrical conductivity, ammonia, and other environmental constituents regulated in water environment</p> <p>Application of stream quality monitoring data/logs for evaluation of water environment health</p> <p>Lakes and reservoirs, quality monitoring of water bodies (quality aspects in limnology)</p>

	<p>Monitoring of sea and ocean environment subjected to environmental pollution, real time sampling, semi automatic sampling and automatic sampling, Sampling and analysis techniques Groundwaters under environmental contamination threat and their monitoring, monitoring wells Soil-water interactions and environmental monitoring of soils. Solid waste landfills and their monitoring, Industrial sites and their monitoring. Monitoring of acidic soils or soils that are under acid precipitation threat Monitoring and evaluation of data to reveal changes for biotic factors.</p> <p>Biomonitoring of environmental pollution, air pollution and mosses, evaluation of industrial pollution and its effect on the environment using environmental monitoring techniques Basic statistics of environmental monitoring</p>
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Course Code	ULP-02-78
Name of the course in English	Population Ecology
Name of the course in Turkish	Populasyon Ekolojisi
Language of the course	English
Lecturer	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
ECTS Credits	3
COMU Credits	2
Description	This course provides students with a general introduction to some of the structural and functional characteristics of population. The dynamics of population will be presented with some basic formula. Intraspecific relationships and population regulation characteristics with metapopulation concept is among subject of this

	course.
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Course Code	ULP-02-79
Name of the course in English	Coastal Ecosystems
Name of the course in Turkish	Kıyisal Ekosistemler
Language of the course	English
Lecturer	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
ECTS Credits	3
COMU Credits	2
Description	<p>Coastal Systems: Rocky Shores and Beaches Special coastal areas Physico-chemical characteristics of coastal waters Biodiversity of coastal regions Coastal upwelling Ecosystems Coastal vegetations Neritic flora and fauna Fish production in coastal water Sandy Beaches Lives in sandy beaches Sea turtle on the beach Threatens of coastal biota The Whole-Ecosystem Approach to Managing Coastal Waters Assessment</p>

Course Code	ULP-02-80
Name of the course in English	Freshwater Ecology
Name of the course in Turkish	Tatlısu Ekolojisi

Language of the course	English
Lecturer	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
ECTS Credits	3
COMU Credits	2
Description	<p>Introduction to freshwater systems general proportions of freshwaters,</p> <ul style="list-style-type: none"> - Geomorphologic aspects of freshwaters, - Physical and chemical specifications of freshwaters, - Lentic habitats, - Autotrophy, heterotrophy, herbivory, predation in lakes, -Filter feeding, food web interactions, nutrients, chemical and biological equilibrium. -The plankton and fish populations of the lakes, -Lake-bank and lake-bottom interactions, -Ecological classifications of lakes, -Seasonal changes in standing water, -Problems associated with environmental contamination -Eutrophication and acidification -Fisheries in Lakes.

Course Code	ULP-02-81
Name of the course in English	Community Ecology
Name of the course in Turkish	Kommunitte Ekolojisi
Language of the course	English

Lecturer	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
ECTS Credits	3
COMU Credits	2
Description	The main outlines of this course are Community structure Interspecific relationships Predation, symbiosis, parasitism Interspecific population regulation Community dynamics Ecological succession Diversity

Course Code	ULP-02-82
Name of the course in English	General Ecology
Name of the course in Turkish	Genel Ekoloji
Language of the course	English
Lecturer	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
ECTS Credits	3
COMU Credits	2
Description	This course provides students with a general introduction to some of the structural and functional components of nature. Ecology as a science involves the study of interactions between organisms and their environment and how these interactions influence the distributions and abundance of organisms. Ecological investigations are often empirical in nature and involve hypothesis testing through observation and/or experimentation. The main objective is gaining a perspective of concepts involved in current ecological theories.

Course Code	ULP-02-83
Name of the course in English	Behavioural Ecology
Name of the course in Turkish	Davranış Ekolojisi
Language of the course	English
Lecturer	Assoc. Prof. Dr. Şükran YALÇIN OZDILEK
ECTS Credits	3
COMU Credits	2
Description	Animal behavior in terms of its development, physiology and genetics and evolution behavioral genetics, neurobiological models of behavior, communication, economic decisions, competition and mating systems. Evolution and behaviour Behavioural diversity. Behavioural economy in feeding, fighting, egoism and altruism. Predator-prey relationships, and living in groups. Orientation and navigation. Natural selection : link to development, adaptation and (co-)evolution. the connection between behavioural ecology and the preservation of biodiversity and plasticity.

Course Code	ULP-02-84
Name of the course in English	Animal Behavior
Name of the course in Turkish	Hayvanlarda Davranış
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	3
COMU Credits	2

Description	This course surveys the theory and principles currently used in evolutionary analyses of animal behavior. Lectures will emphasize behavioral models, sexual selection, social behavior, communication, endocrinology and foraging.
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Course Code	ULP-02-85
Name of the course in English	Animal Physiology
Name of the course in Turkish	Hayvan Fizyolojisi
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	6
COMU Credits	3
Description	This course will provide an introduction to the basic physiological principles common to humans and other animals. The course will include basic physical and chemical processes in animal tissues, detailed consideration of organ systems, and an integrative approach to understand how animals meet the demands placed upon them.

Course Code	ULP-02-86
Name of the course in English	Comparative Anatomy
Name of the course in Turkish	Karşılaştırmalı Anatomi
Language of the course	English

Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	6
COMU Credits	3
Description	Comparative Vertebrate Anatomy will focus on the structural, functional and phylogenetic relationships among chordates. A detailed study of protochordates and detailed dissection of the lamprey, shark, salamander and mammals are included both in the lecture and laboratory sessions. Relevant clinical and medical issues will be analyzed.

Course Code	ULP-02-87
Name of the course in English	Embryology
Name of the course in Turkish	Embriyoloji
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	6
COMU Credits	3
Description	This course will enable students to explore and gain further understanding of embryology through the investigation of development in both humans and animal models with a direct emphasis of their application to emerging research and reproductive technologies. This course will also enable students to broadly understand abnormalities in development and current applications to medical research.

Course Code	ULP-02-88

Name of the course in English	Endocrinology
Name of the course in Turkish	Endokrinoloji
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	3
COMU Credits	2
Description	This course will cover the development of glands and their hormonal actions in animal and human models. Student will learn the action of hormones on their receptors and function in various organs and tissues.

Course Code	ULP-02-89
Name of the course in English	General Zoology
Name of the course in Turkish	Genel Zooloji
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	10
COMU Credits	5
Description	Introduction to the basic principles of biology for the science major. Topics include basic concepts of general zoology including the origin of animal life, animal reproduction and development, major phyla of animals and the major classes of vertebrates, homeostasis, and basic concepts of animal behavior and ecology.

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Course Code	ULP-02-90
Name of the course in English	Human Anatomy & Physiology
Name of the course in Turkish	İnsan Anatomi ve Fizyolojisi
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	5
COMU Credits	3
Description	<p>Aim of this course is to introduce students to human anatomy and physiology, with emphasis on the systems of the body and how they are interrelated.</p> <p>This course will include, medical terminology, basic chemistry, cell and tissue structure, and the 11 systems of the human body (integumentary, skeletal, muscular, nervous, endocrine, circulatory, lymphatic, digestive, respiratory, urinary and reproductive).</p>

Course Code	ULP-02-91
Name of the course in English	Molecular Genetics
Name of the course in Turkish	Moleküler Genetik
Language of the course	English
Lecturer	Assoc. Prof. Dr. Kemal Melik TAŞKIN
ECTS Credits	4
COMU Credits	2
Description	<p>DNA structure and analysis, DNA replication, DNA recombination, Genetic codes, Transcription, Translation, Proteins, Regulation of gene expression in prokaryotes, Regulation of Gene Expression in Eukaryots, Gene</p>

	mutations, DNA repair transposons
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Course Code	ULP-02-92
Name of the course in English	Molecular Biology Teqniques
Name of the course in Turkish	Moleküler Biyoloji Teknikleri
Language of the course	English
Lecturer	Assoc. Prof. Dr. Kemal Melik TAŞKIN
ECTS Credits	6
COMU Credits	3
Description	Introduction to Techniques used in molecular Biology, Isolation methods, Centrifuges, Chromotography , Electrophoresis, Protein İsolation, DNA isolation, RNA isolation, Transformation, PCR, Determination of enzyme activity, Southern Blotting, DNA probes

Course Code	ULP-02-93
Name of the course in English	Recombinant DNA Teqniques
Name of the course in Turkish	Rekombinant DNA Teknikleri
Language of the course	English
Lecturer	Assoc. Prof. Dr. Kemal Melik TAŞKIN
ECTS Credits	6
COMU Credits	3
Description	Introduction to Recombinat DNA techn., Nücleic acids, Enzymes use in molecular biology, DNA restriction enzyme analyses, and ligation, Vectors, Transformation,

	Making Libraries, Screening, PCR DNA probs, Restriction maps, DNA sequencing, DNA fingerprints
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Course Code	ULP-02-94
Name of the course in English	Enzymology
Name of the course in Turkish	Enzimoloji
Language of the course	English
Lecturer	Asst. Prof. Dr. Tülay TURGUT GENÇ
ECTS Credits	3
COMU Credits	2
Description	The purpose of this course is to acquaint the student with many of background information about enzymes. By the end of this course, the student should be able to describe the chemical structure and functions of enzymes, regulation of enzyme activity, activators and inhibitors of enzymes, kinetic parameters of one-substrate and multisubstrate enzymes.

Course Code	ULP-02-95
Name of the course in English	Biochemistry
Name of the course in Turkish	Biyokimya
Language of the course	English
Lecturer	Asst. Prof. Dr. Tülay TURGUT GENÇ
ECTS Credits	4

COMU Credits	3
Description	Topics to be covered in this course include physical and chemical properties of water, proteins and their metabolism, enzymes, carbohydrates and their metabolism, lipids and their metabolisms, cell membrane and transport, nucleic acids and metabolism.

Course Code	ULP-02-96
Name of the course in English	Introduction to Genetic Engineering
Name of the course in Turkish	Genetik Muhendisligine Giris
Language of the course	English
Lecturer	Asst. Prof. Dr. Tülay TURGUT GENÇ
ECTS Credits	3
COMU Credits	2
Description	The purpose of this course is to acquaint the student with many of background information about genetic engineering. By the end of this course, the student should be able to understand the importance of genetic engineering in medicine, industry, agriculture and forensic sciences.

Course Code	ULP-02-97
Name of the course in English	Neurobiology
Name of the course in Turkish	Sinir Biyolojisi
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz

ECTS Credits	3
COMU Credits	2
Description	Neuroscience is the scientific study of nervous system. Traditionally, neuroscience has been seen as a branch of biology. However, it is currently an interdisciplinary science that collaborates with other fields such as chemistry, computer science, engineering, linguistics, mathematics, medicine and allied disciplines, philosophy, physics and psychology. The term neurobiology is usually used interchangeably with the term neuroscience, although the former refers specifically to the biology of the nervous system, whereas the latter refers to the entire science of the nervous system.

Course Code	ULP-02-98
Name of the course in English	Nutrition and Metabolism
Name of the course in Turkish	Beslenme ve Metabolizma
Language of the course	English
Lecturer	Prof. Dr. Bülent Gündüz
ECTS Credits	3
COMU Credits	2
Description	Introduction to human nutrition, basic nutrients, nutritional status, vitamins, minerals and trace metals, metabolism of nutrients, digestion, specific nutritional requirements and dietary deficiency.

Course Code	ULP-02-101
Name of the course in English	Microbial Genetics

Name of the course in Turkish	Mikrobiyal Genetik
Language of the course	English
Lecturer	Asst. Prof. Dr. Tülay TURGUT GENÇ
ECTS Credits	4
COMU Credits	3
Description	This course covers the genetic structure of microorganisms, control mechanisms of genes and gene systems, genetic events that cause to change in genetic structure like transformations, conjugation, transduction and recombination.

Course Code	ULP-02-103
Name of the course in English	Industrial Microbiology
Name of the course in Turkish	Endüstriyel Mikrobiyoloji
Language of the course	English
Lecturer	Asst. Prof. Dr. Tülay TURGUT GENÇ
ECTS Credits	4
COMU Credits	3
Description	This course covers the classification, nomenclature and identification of microbial groups (bacteria, algae, protozoa, cyanobacteria, fungi, viruses) growth and control of microbial growth, preservation and maintenance fermentation, scaled - up fermentation and downstream processing.

Course Code	ULP-02-104

Name of the course in English	Virology
Name of the course in Turkish	Viroloji
Language of the course	English
Lecturer	Asst. Prof. Dr. Tülay TURGUT GENÇ
ECTS Credits	4
COMU Credits	2
Description	This course includes studying both the biology and the epidemiology of viruses, DNA and RNA viruses, small number of human viruses that will serve as the basis for investigation into human virology issues.

Course Code	ULP-02-105
Name of the course in English	Eukaryotic Microbiology
Name of the course in Turkish	Okaryotic Mikrobiyolojisi
Language of the course	English
Lecturer	Asst. Prof. Dr. Tülay TURGUT GENÇ
ECTS Credits	4
COMU Credits	2
Description	This course covers the introduction to the structure, function, evolution and biodiversity of unicellular eukaryotic organisms, including protozoa, microbial fungi and unicellular algae.

Course Code	ULP-02-106
Name of the course in English	Molecular Biology

Name of the course in Turkish	Moleküler Biyoloji
Language of the course	English
Lecturer	Asst. Prof. Dr. Neslihan DEMİR
ECTS Credits	4
COMU Credits	2
Description	Introduction to molecular biology, cells and biomolecules, the structure of nucleic acids, DNA, RNA, DNA recombinations, DNA isolations, the structure of protein molecules, protein biosynthesis

Course Code	ULP-02-107
Name of the course in English	Immunology
Name of the course in Turkish	İmmunoloji
Language of the course	English
Lecturer	Asst. Prof. Dr. Neslihan DEMİR
ECTS Credits	3
COMU Credits	2
Description	History of immunology and basic concepts, the structure of the immun system. Antigen classification and basic examples. Natural immunity and specific immunity. B/T lymphocytes. The organs of the immun system. Immunoglobulin types and importance. Major Histocompatibility Complex (MHC) and the human leukocyte antigen system (HLA). The importance of the surface of immune cells. Blood groups and red cell antigens, complement system, cytokines. Tumor immunology, AIDS immunology. Genetic control of immunity, autoimmunity, immune diseases and treatments. Allergy, vaccines and its effects on the

	immune system.
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Course Code	ULP-02-108
Name of the course in English	Biology & Genetics of Cancer
Name of the course in Turkish	Kanser Biyolojisi ve Genetiđi
Language of the course	English
Lecturer	Asst. Prof. Dr. Neslihan DEMİR
ECTS Credits	4
COMU Credits	2
Description	Characteristic features of cancer cells, signal transduction of cancer, the origin of genetic damage and connection to the cancer, genetic changes that occur in cancer, the importance of gene therapy in cancer, cancer causing factors and cell cycle mechanism

Course Code	ULP-02-111
Name of the course in English	Cell Cycle and Apoptosis
Name of the course in Turkish	Hucre Dongusu ve Apoptozis
Language of the course	English
Lecturer	Asst. Prof. Dr. Neslihan DEMİR
ECTS Credits	4
COMU Credits	2
Description	Importance of cell cycle, Basic knowledges and importance of of apoptosis, Signalling pathway inside the cell, Molecular basis about cell cycle, Molecular basis

	about cell cycle, Relation between apoptosis and cancer, Relationship of Autoimmune disease and apoptosis , Mechanism of apoptosis in different living organisms, Relation between apoptosis and diseases
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Course Code	ULP-02-117
Name of the course in English	Molecular Evolution
Name of the course in Turkish	Mleküler Evrim
Language of the course	English
Lecturer	Assoc. Prof. Dr. Cüneyt AKI
ECTS Credits	3
COMU Credits	2
Description	<p>Topics to be covered in this course includes, origin of universe, evolution of cells and organelles. Explanations on the molecular basis of evolutionary mechanisms. Miller-Urey experiment. Dynamic structure of DNA, RNA and proteins. Explaining how variation, recombination, mutation occurred in the genetic substances. Effects of transposable genetic elements on evolution process. Gene substitution and rate of gene substitution, genetic polymorphism, molecular phylogenetics. Genome organisation and evolution, evolution by gene duplication, DNA polymorphism in populations, roles of mutation and selection in molecular evolution.</p>