



2026-2027 Academic Year
List of Courses Offered in Foreign Language
2026-2027 Akademik Yılı
Yabancı Dilde Açılacak Dersler Listesi

Faculty of Agriculture
Ziraat Fakültesi

	Department <i>Bölüm</i>	Course Code <i>Ders Kodu</i>	ECTS <i>AKTS</i>	Course Title <i>Dersin Adı</i>	Semester <i>Dönem</i>	Course Content <i>Dersin İçeriği</i>	Academic Staff <i>Dersi Veren Öğretim Elemanı</i>	Online Available <i>Çevrimiçi</i>
1	Agricultural Biotechnology	BTB303	6	MOLECULAR BIOLOGY II	Fall	This course will cover the mechanisms of protein synthesis in both prokaryotic and eukaryotic organisms, as well as the different types of post-translational modifications. In addition, gene expression mechanisms and their regulation in both prokaryotes and eukaryotes will be discussed. The course will conclude with topics including epigenetics, mutations and their relationship with diseases, and gene editing technologies.	Assoc. Prof. Dr. Aysun Özçelik	NO
2	Agricultural Biotechnology	BTB202	6	MOLECULAR BIOLOGY I	Spring	Within the scope of this course, the fundamental concepts of molecular biology, including the structures and functions of DNA, RNA, and proteins, will be explained. The course will also cover gene organization and genome structure, DNA replication, transcription, post-transcriptional modifications, DNA isolation, and PCR techniques.	Assoc. Prof. Dr. Aysun Özçelik	NO
3	Agricultural Biotechnology	BTB204	6	BIOCHEMISTRY	Spring	Introduction to biochemistry, biomolecules and cell structure, properties of water and aqueous solutions, proteins, enzymes, carbohydrates, lipids, nucleic acids, vitamins, carbohydrate metabolism, lipid metabolism, nitrogen compounds metabolism.	Assoc. Prof. Dr. Aysun Özçelik	NO
4	Agricultural Biotechnology	BTB110	3	Biotechnology Laboratory Techniques I	Spring	The aim of the lecture is to teach the principles of safe working in the laboratory which includes the security measures to be taken against the physical, chemical and microbiological hazards that may occur in biotechnology laboratories and transfer of knowledge and experiences about basic techniques applied in department laboratories (plant biotechnology, animal biotechnology and enzyme and microbiological biotechnology).	Prof. Dr. M. Fatih Cengiz	NO
5	Agricultural Biotechnology	BTB 310	6	Biotechnology Laboratory Techniques II	Spring	The course content includes information on laboratory safety, basic chemicals used in the laboratory, introduction to consumables, tools and equipment, and some basic laboratory applications. Topics covered include solution preparation, concentration calculations, pH measurement, molarity (M) calculations, DNA isolation, PCR, electrophoresis techniques, and molecular marker applications.	Assoc. Prof. Dr. Hatice İkten	NO
6	Agricultural Biotechnology	BTB 403	6	Plant Biotechnology	Fall	DNA ve RNA'nın yapısı, transkripsiyon, translasyon, rekombinant DNA teknolojisi, genomik ve cDNA kütüphaneleri, gen klonlama, dizileme, PCR, doku kültürü teknikleri, gen transformasyon metodları ve transgenik bitkilerin testlenmesi	Assoc. Prof. Dr. Hatice İkten	NO
7	Agricultural Biotechnology	BTB303	4	Plant Breeding	Spring	Advance course of plant breeding. Subject include speed breeding, double haploids, polyploids, Crirpr, male sterility, incompatibility, molecular markers	Prof. Dr. Nedim Mutlu	NO
8	Agricultural Biotechnology	BTB-201	6	Plant Physiology I (undergraduate level)	Fall	This course aims to teach the basic physiological principles as they relate to plant growth and development and all related physiological processes. Topics will include the structure of herbaceous and woody plants, Transport and translocation of water, plant-water relations, mineral nutrition and solute transport, photosynthesis (light and carbon reactions) and respiration, Translocation in the phloem, assimilation of mineral nutrients, secondary metabolites and plant defense.	Prof. Dr. Songül Sever Mutlu	NO

9	Agricultural Biotechnology	BTB-202	6	Plant Physiology II (undergraduate level)	Spring	This course aims to teach physiological processes underlying plant growth and development and plant responses to the environment. This course is continuation of the BTB-201-plant physiology. Topics will include Growth and development (embryogenesis, signal transduction), phytochrome and light control of plant development, Blue-Light responses, Plant hormones, The control of flowering, responses and adaptations to abiotic stresses.	Prof. Dr. Songül Sever Mutlu	NO
10	Agricultural Biotechnology	BTB301	5	Fundamentals of Genetics	Fall	Genetic material, replication, transcription, mitosis and meiosis, chromosomal theory of inheritance, Mendelian Genetics, extensions to Mendelian Genetics, dominant/recessive interactions, genotypic interactions, autosomal and sex linked inheritance, quantitative genetics	Assoc. Prof. Dr. Münevver Aksoy	NO
11	Agricultural Biotechnology	BTB481	5	Cell Biology	Fall	Structure of the cell membrane; cellular organelles; membrane transport; intracellular trafficking; vesicular transport; cytoskeleton; phototrophic energy metabolism; chemotrophic energy metabolism	Assoc. Prof. Dr. Münevver Aksoy	NO
12	Agricultural Biotechnology	BTB402	5	Cell Biology II	Spring	Extracellular structures of plant and animal cells, cell signaling mechanisms, G-protein linked receptors, enzyme linked receptors, plant hormone signaling, light signaling, circadian clock.	Assoc. Prof. Dr. Münevver Aksoy	NO
13	Agricultural Biotechnology	BTB 101	6	Introduction To Biotechnology	Fall	The course covers the organization and structure of prokaryotic and eukaryotic cells; chemical components of living cells; proteins, nucleic acids, enzymes and the transfer of genetic information; basic principles of DNA, RNA and gene expression; the importance of microorganisms in biotechnology; applications of plant, animal, food, environmental, medical and industrial biotechnology; basic molecular biology techniques; biosafety, bioethics and the social impacts of biotechnology.	Assoc. Prof. Dr. Demir Özdemir	NO
14	Agricultural Biotechnology	BTB 112	3	Introduction To Biotechnology II	Spring	The course covers the organization of living cells; the structure of prokaryotic and eukaryotic cells; cell membrane, organelles and basic cellular structures; chemical components of living cells; structure and function of carbohydrates, lipids, proteins and nucleic acids; DNA and RNA structure; storage and transfer of genetic information; basic principles of replication, transcription and translation; and an introduction to PCR, electrophoresis, enzymes, vectors and basic molecular biology tools.	Assoc. Prof. Dr. Demir Özdemir	NO