



**2025-2026 Academic Year**  
**List of Courses Offered in Foreign Language**

**2025-2026 Akademik Yılı**  
**Yabancı Dilde Açılacak Dersler Listesi**

**Institute of Natural and Applied Sciences**  
**Fen Bilimleri Enstitüsü**

	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	Horticulture	BBB7045	8	Turfgrass Genetics and Breeding	Fall	The aims of this course are to give an overview of the origin, adaptations, biology, genetic and breeding of turfgrasses with wide scale economic importance. Breeding techniques and genetic structure of each species will be given with up to date on the progress that has been made.	Prof. Dr. Songül Sever Mutlu	No
2	Horticulture	BBB-7046	8	Stress Physiology of Horticultural plants	Spring	This course will teach the abiotic and biotic stress mechanisms and physiological principles as they relate to propagation, cultivation and postharvest quality of horticultural crops. Topics will include the meaning of stress, types of stresses (drought, salinity, high temperature, chilling, freezing, etc). Moreover, the effects of genetics, environmental factors and the cultural practices used plant production and cultivation on biotic and abiotic stress tolerance will be discussed.	Prof. Dr. Songül Sever Mutlu	No
3	Horticulture	BBB7043	8	Physiology of Ornamental Plants	Fall	This course will cover and teach the physiological principles as they relate to ornamental plants propagation, production and management (indoor and outside). Therefore the objectives are to discuss theoretical information first regarding all related physiological processes, biotic and abiotic stress tolerances in ornamental plants and how cultural practices like irrigation, pruning, mowing, fertilization, and plant growth regulators and bio-stimulants affect ornamental plants response to these processes.	Prof. Dr. Songül Sever Mutlu	No
4	Horticulture	BBB5046	6	Turfgrass production and Management	Spring	The aims of this course are to give an overview of the turfgrasses and turf industry as an important part of ornamental plant Industry, showing its relative size and the opportunities available to people knowledgeable in turf practices, to teach techniques of sod, seed and plug production, the importance and benefits of turf areas, how to select, establish and maintain quality and sustainable turf grass areas. The main principles regarding turfgrass production and turf management will be supported with the up to date turf studies.	Prof. Dr. Songül Sever Mutlu	No
5	Horticulture	BBB209	6 ECTS (3+0)	Horticulture		Introduction to horticultural crops, classification and taxonomy, nutrients values on human health; the growing potential and economic importance of the horticultural crops in Turkey and in all over the world; the growing potential and crop designs of the regional horticultural crops; ecological requirements of the horticultural crops; biological features of the horticultural crops; propagation methods of the horticultural crops; the orchard establishment of the horticultural crops; annual cultivation practices of the horticultural crops; the harvest and storage techniques of the horticultural crops; good agricultural practices of the horticultural crops.	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
6	Horticulture	BBB403	6 ECTS (3+0)	Vegetable Growing - I		General aspects of cool season vegetables; general aspects of compositae family and artichoke growing; amaryllidaceae family, onion growing; amaryllidaceae family, garlic and leek growing; liliaceae family, asparagus growing; chenopodiaceae family, spinach growing; brassicaceae (cruciferae) family, cabbage growing; brassicaceae (cruciferae) family, cauliflower growing; brassicaceae (cruciferae) family, broccoli growing; brassicaceae (cruciferae) family, radish, garden rocket growing; brassicaceae (cruciferae) family, brussels sprout growing; apiaceae (umbelliferae) family, carrot growing; apiaceae (umbelliferae) family, celery growing; apiaceae (umbelliferae) family, parsley, dill growing	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
7	Horticulture	BBB409		Vegetable Breeding		Description of vegetable breeding, aims and history, classification of vegetables and breeding gene resources, pollination mechanisms and techniques, introduction breeding methods, selection breeding methods, hybridization breeding methods, F1 breeding and heterosis, breeding of vegetables of different families	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No

8	Horticulture	BBB102	4 ECTS (2+2)	Biotechnology		The aims of the course are to provide basic information about plant biotechnology, to give applications of its uses and to develop the laboratory skills of students on plant biotechnology. In this course, students will first be introduced to the principles and applications of plant cell and tissue culture. An overview of Agrobacterium-mediated and direct gene transfer techniques, production of herbicide-, insect-, virus-resistant and male-sterile plants and biosafety of transgenic plants will also be discussed. At the end of course students are going to be able to understand plant cell and tissue culture techniques, including: plant regeneration through organogenesis and embryogenesis, protoplast culture and somatic hybridization, haploid plant production, production of disease-free plants by meristem culture, micropropagation and be able to understand plant transformation techniques, including: particle bombardment, transformation of protoplasts, microinjection and Agrobacterium tumefaciens-mediated gene transfer	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
9	Horticulture	BBB202	6 ECTS (3+0)	Principles of Vegetable Growing		The concept of the course covers important commercial species, the systematic classification, ecological requirements, fundamental factors that are necessary for establishing the vegetable crops, pollination, fertilization fruit set, propagation techniques, cultivation practices affected fruit yield and fruit quality and harvest methods and growing potential of the vegetable crops either in greenhouse or open field conditions.	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
10	Horticulture	BBB408	6 ECTS (3+0)	Vegetable Growing - II		General aspects of warm season vegetables; compositae family and lettuce growing; leguminosae (fabaceae) family, pea growing; leguminosae (fabaceae) family,	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
11	Horticulture	BBB314	4 ECTS (2+2)	Breeding of Horticulture Crops		The course is aimed to: (i) understand the basic principles of genetics and molecular biology needed for modern plant breeding; (ii) comprehend the different selection and breeding processes and assess the advantages and drawbacks of each according to the horticulture crop species, the breeding objectives and the environmental conditions; (iii) learn how to integrate in a breeding program the conventional techniques and most up-to-date methods that contribute towards greater efficacy in the selection processes and in the development of new varieties; and (iv) design a breeding program for a given horticulture crop species.	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
12	Horticulture	ZF204	4 ECTS (2+0)	Genetics		The aim of the course is to provide students with a strong background in the principles of Mendelian genetics. Students will become familiar with Mendel's basic	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
13	Horticulture	BBB501	6 ECTS (3+0)	Genetic Improvement of Horticulture Plants		Genetic enhancement of crop value to humans began with domestication and continues with farmers' variety development and scientifically trained plant breeders'	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
14	Horticulture	BBB503	6 ECTS (3+0)	Horticultural Systems		Science and technology of horticultural plants grown for foods and ornamental, purposes. Lectures, labs, and field trips involve natural history and evolution of horticultural plants, botany and physiology, sustainable management of soil, water and plant nutrition, breeding and propagation, ecological functions, and integrated design and management of horticultural plantings and production systems	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
15	Horticulture	BBB505	6 ECTS (3+0)	Physiology and Development of Plants in Horticulture		Protected horticulture depends on modifying the physical environment of an enclosed space so as to improve the growth and quality of plants. The course comprises advanced plant physiology and developmental biology described in relation to the production of plants, cut flowers, fruits, etc under protected cultivation. The physiological content emphasizes plant responses to the environment, such as photosynthesis, temperature stress, water relations etc. The developmental content deals with plant propagation techniques, flower induction and development, plant morphological control etc.	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
16	Horticulture	BBB507	6 ECTS (3+0)	Biotechnology of Horticultural Crops		The first set of lectures outlines the techniques used in Plant Biotechnology and in the second set, specific examples of application of these techniques and the effects on science and society are provided. Guest lectures will be provided on Entrepreneurship in Plant Biotechnology. During the course a plant biotech company will be visited. Various techniques will be taught during course. Throughout the course period, students will work on an assignment focusing on one particular plant biotechnology case, which requires searching for and understanding of recent scientific literature. The results of this case study will be presented at the end of the	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
17	Horticulture	BBB509	6 ECTS (3+0)	Vegetable Seed Technology		During the course basic seed technological knowledge is provided, including vegetable seeds dormancy, seed quality, seed development, storage and quality improvement methods and ecological factors on vegetable seed production.	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
18	Horticulture	BBB511	6 ECTS (3+0)	DNA Fingerprinting Methods of Horticultural Crops		Some of the factors that limit the progress of plant breeding can be overcome or achieved more rapidly by utilising plant biotechnology including the DNA fingerprinting	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
19	Horticulture	BBB513	6 ECTS (3+0)	Recent Developments in Vegetable Growing		In a comparison to other crops vegetable industry has a highly dynamic system and many developments take place in each year within the vegetable industry. Therefore the main objective of the course is to raise students aware of these dynamic systems and get familiar with recent developments. Developments and changes take place in vegetable production areas, vegetable production systems, recently developed cultivars and their main features, recent developments take place in vegetable seed industry and vegetable seedling industry as well as seedlings.	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
20	Horticulture	BBB515	6 ECTS (3+0)	Genetic Resources and Preservation of Horticultural Crops		Description of plant genetic resources, distribution of plant genetic resources all around the world, center of origins, genetic resources erosion, finding, collecting and preservation of genetic resources of horticultural crops, storage of genetic resources and recording	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No

21	Horticulture	BBB517	6 ECTS (3+0)	Genome and Genome Analysis of Horticultural Crops		To provide basic information about the genome of horticultural crops is the main objective of the course. Another objective of the course is to teach the students how one can use the results of genome analysis results for horticultural crops. Although genome term has been known for a long time, genomic term is rather new term. Genomic term first time was used in 1986. Genomic term is used for genome mapping, sequencing and characterization. Within this context genomic term can be divided into 3 different parts: 1. Functional genomics, 2. Structural genomics and 3. Comparative genomics. Within this course genome, genome analysis and genome structures issues are discussed within the horticultural crops	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
22	Horticulture		10 ECTS	Traineeship		Growing, cultivation and breeding studies of vegetable crops, obtaining haploid plants and the use of molecular markers on improvement of vegetable crops	Prof. Dr. A. Naci Onus E-mail: onus@akdeniz.edu.tr Tel: 0090 242 310 24 41	No
23	Horticulture	BBB 405	6 ECTS (2+2)	Citriculture	Fall & Spring	This course gives an overview about the Citrus production World wide and the Mediterranean Basin in Particular. Topics covered are: growing potential, systematic classification, widely grown cultivars, morphological and biological features of Citrus species, propagation techniques and cultural practices. Rootstock and scion selection, and nurseries, orchard establishment crop production, crop health, economics of crop production and post harvest considerations. Students are also introduced in the World citrus market and its changes, and future expectations in Citrus production.	Asst. Prof. Dr. İlhami Tozlu E-mail: itozlu@akdeniz.edu.tr Tel: 0090 242 310 37 35	No
24	Horticulture	BBB 207	3 ECTS (2+0)	General Fruit Science	Fall & Spring	The course encompasses information which includes, the history of fruit science, classification of World fruit species. General aspects of fruit science and farming will be	Asst. Prof. Dr. İlhami Tozlu E-mail: itozlu@akdeniz.edu.tr Tel: 0090 242 310 37 35	No
25	Horticulture	asrbis		Temperate Fruits -I	Fall & Spring	Principles of fruit production, emphasizing on temperate nut crops are the main subject of this course. Crops to be studied include almond, walnut, pistachio, hazelnut, chestnut etc. Within this course integrated management of temperate nut cropping systems including site selection, orchard establishment cultural and management practices, taxonomic classifications, physiological and environmental control of plant development will be covered.	Asst. Prof. Dr. İlhami Tozlu E-mail: itozlu@akdeniz.edu.tr Tel: 0090 242 310 37 35	No
26	Horticulture	BBB 406	6 ECTS (2+2)	Subtropical Fruits	Fall & Spring	The course will emphasize on applied aspects of the physiological basis for horticultural practices used, and the practices of commercial subtropical fruit crop production (except for citrus). Crops to be studied include olive, fig, pomegranate, avocado, pecan, persimmon, carob, loquat, opuntia, date palm, etc. Subject matter will include applied crop physiology and production methods, morphological and biological features of species, propagation techniques, orchard establishment and cultural practices. In addition, insect and disease management, soil	Asst. Prof. Dr. İlhami Tozlu E-mail: itozlu@akdeniz.edu.tr Tel: 0090 242 310 37 35	No
27	Horticulture	BBB 402	6 ECTS (2+2)	Temperate Fruits -II	Fall & Spring	Principles of fruit production, emphasizing on temperate fruit crops are the main subject of this course. Pome and stone fruits are the main fruit groups will be emphasized in the course. Crops to be studied include apple, pear, quince, cherry, peach, apricot, plum etc. Within this course integrated management of temperate fruit cropping systems including site selection, orchard establishment cultural and management practices, taxonomic classifications, physiological and environmental control of plant development will be covered. Recent development in orchard systems, modern and intensive orchard establishment and management (fertilization, irrigation, pruning, training, harvesting etc.) will be the important part of this course.	Asst. Prof. Dr. İlhami Tozlu E-mail: itozlu@akdeniz.edu.tr Tel: 0090 242 310 37 35	No
28	Horticulture		6 ECTS (2+2)	Plant Propagation and Horticultural Techniques	Fall & Spring	The course introduces the student variety of basic knowledge on plant propagation and horticultural activities/techniques. Some emphasis is placed on the set-up and hands-on applications such as principles and practices of sexual and asexual plant propagation, become familiar with propagation tools, media, and propagation structures. Propagation methods covered are seeding, cuttings, layering, division, grafting, budding and micro-propagation. Horticultural techniques covered are soilless production systems, modern orchard establishment and management including intensive planting, various trellising, pruning and training. These horticulture techniques will be suitable /adaptable for use in diverse crop systems (orchard, landscape, home and veggie gardens, nursery and greenhouse).	Asst. Prof. Dr. İlhami Tozlu E-mail: itozlu@akdeniz.edu.tr Tel: 0090 242 310 37 35	No