

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTİ AGRICULTURE FACULTY
HORTICULTURE DEPARTMENT BACHELORS DEGREE COURSE CATALOGUE (2022-2023)

1. Year – Fall Semester					
Course Code	Course Name	T	P	NC	ECTS
251311002	Botany	2	2	3	4
251311003	Physics	3	0	3	4
251311005	Mathematics	3	0	3	3
251311004	Chemistry	2	2	3	4
251311013	Introduction to Horticulture	1	0	1	3
251311011	Career Planning	1	0	1	4
251311012	Basic Information Technologies	2	0	2	2
251311008	Turkish Language I	2	0	0	2
251311009	Principles of Ataturk and Recent Turkish History I	2	0	2	2
251311010	Foreign Language I	3	0	0	3
Total		20	6	18	30
1. Year – Spring Semester					
Course Code	Course Name	T	P	NC	ECTS
251312015	History of Agriculture and Deontology	2	0	2	5
251312002	Surveying Technique	2	0	2	3
251312011	Computer Assisted Technical Drawing	1	2	2	4
251312012	Plant Biochemistry	1	2	2	5
251312013	Agricultural Ecology and Climate Change	2	0	2	4
251312014	Thermodynamics	3	0	3	3
251312008	Turkish language II	2	0	0	2
251312009	Principles of Ataturk and Recent Turkish History II	2	0	2	2
251312010	Foreign Language II	3	0	0	2
Total		18	4	15	30
2. Year – Fall Semester					
Course Code	Course Name	T	P	NC	ECTS
251313002	Statistics	2	0	2	3
251313003	Genetics	2	0	2	3
251313004	Agricultural Economics	2	0	2	3
251313005	Food Science and Technology	2	0	2	3
251313013	General Fruit Growing	1	2	2	5
251313024	Landscape Architecture	2	0	2	5
251313012	Occupational health and Safety I	2	0	2	2
251313014	Material Science	2	0	2	3
	Social Elective Courses (1 course to be taken)	3	0	3	3
Total		18	2	19	30
	Social Elective Course Group I (1 course to be taken)				
251313015	Stress Management	3	0	3	3
251313016	Entrepreneurship	3	0	3	3
251313017	Leadership	3	0	3	3
251313018	Turkish Folk Dance	3	0	3	3
251313019	Effective Communication	3	0	3	3
251313020	Mediation and expertise in law	3	0	3	3
251313021	Glass Arts	3	0	3	3
251313022	Works of Volunteering	3	0	3	3
2. Year – Spring Semester					
Course Code	Course Name	T	P	NC	ECTS
251314025	General Vegetable Growing	1	2	2	6
251314026	Agricultural Structures and Irrigation	2	0	2	4
251314027	Soil Science and Plant Nutrition	2	0	2	4
251314028	Research and Experimental Methods	2	2	3	4
251314029	Plant Protection	2	0	2	4
251314030	Field Crops	2	0	2	3
251314011	Occupational health and Safety II	2	0	2	2
	Social Elective Courses (1 course to be taken)	3	0	3	3
Total		16	4	18	30
	Social Elective Course Group II (1 course to be taken)				
251314031	Intellectual Property Law	3	0	3	3
251314032	IT (Informatic) Law	3	0	3	3
251314033	State and Society	3	0	3	3

251314034	Critical Thinking	3	0	3	3
251314035	Music	3	0	3	3
251314036	Photography	3	0	3	3
251314037	Marbling Art	3	0	3	3
251314038	Diction	3	0	3	3
3. Year – Fall Semester					
Course Code	Course Name	T	P	NC	ECTS
251315015	General Viticulture	1	2	2	4
251315016	Ornamental Plants Cultivation	1	2	2	4
251315017	Propagation Techniques of Horticulture	1	2	2	4
	Elective Course within the Department 1	2	2	3	4
	Elective Course within the Department 2	2	2	3	4
	Elective Course within the Department 3	2	2	3	4
	Faculty Elective Course (1 course to be taken)	3	0	3	3
251315013	Professional Practice I	0	4	0	3
Total		12	16	18	30
	Elective Course Group I within the Department				
251315018	Organic Agriculture in Horticulture	2	2	3	4
251315019	Professional English	2	2	3	4
251315020	Sustainable Agriculture in Horticulture	2	2	3	4
251315021	Biotechnology in Horticulture	2	2	3	4
251315022	Horticultural Crops Diseases and Control	2	2	3	4
251315023	Modern Fruit Growing	2	2	3	4
	Faculty Elective Course Group I (1 course to be taken)				
251315005	Determination of Plant Fertilizer Requirements and Fertilization	3	0	3	3
251315006	Agriculture and Environment	3	0	3	3
251315025	Beekeeping	3	0	3	3
251315026	Fruit and Vegetable Processing Technology	3	0	3	3
251315027	Agricultural Extension, Communication and Ethic	3	0	3	3
3. Year – Spring Semester					
Course Code	Course Name	T	P	NC	ECTS
251316019	Horticultural Crop Breeding	1	2	2	4
251316020	Engineering Design	2	0	2	4
251316021	Physiology of Horticultural Plants	2	0	2	4
	Elective Course within the Department 1	2	2	3	4
	Elective Course within the Department 2	2	2	3	4
	Elective Course within the Department 3	2	2	3	4
	Faculty Elective Course (1 course to be taken)	3	0	3	3
251316014	Professional Practice II	0	4	0	3
Total		14	12	18	30
	Elective Course Group II within the Department				
251316022	Vegetable seed production and certification	2	2	3	4
251316023	Fertilization Biology of Horticultural Crops	2	2	3	4
251316024	Propagation of Seasonal Flower	2	2	3	4
251316025	Seedling - Nursery Growing and Certification	2	2	3	4
251316026	Outdoor Ornamental Plants Propagation	2	2	3	4
251316027	Mushroom Growing Technique	2	2	3	4
251316028	Pruning and Training in Horticulture	2	2	3	4
251316029	Pests of Horticultural Crops and Control	2	2	3	4
	Faculty Elective Course Group I (1 course to be taken)				
251316006	Medicinal and Aromatic plants	3	0	3	3
251316030	Agricultural Tools and Machinery	3	0	3	3
251316031	Animal Production	3	0	3	3
251316032	Agricultural Valuation and Expertise	3	0	3	3
251316033	Weeds	3	0	3	3
251316008	Organic Animal Growing	3	0	3	3
4. Year– Fall Semester					
Course Code	Course Name	T	P	NC	ECTS
251317027	Cool Season Vegetables	2	0	2	2
251317028	Pome and Stone Fruits	2	0	2	3
251317004	Storage and Marketing of Horticultural Crops	2	0	2	2
	Elective Course within the Department 1	2	2	3	4
	Elective Course within the Department 2	2	2	3	4
	Elective Course within the Department 3	2	2	3	4

251317012	Diploma Thesis I	0	2	1	3
	Internship	0	0	0	8
Total		12	8	16	30
	Elective Course Group III within the Department				
251317029	Tropical Fruits	2	2	3	4
251317030	New Techniques on Fruit Growing	2	2	3	4
251317032	Edible Wild Vegetables	2	2	3	4
251317033	Wild Fruits	2	2	3	4
251317034	Protected Cultivation of Vegetable Crops	2	2	3	4
251317035	Cut Flower Cultivation	2	2	3	4
251317036	Greenhouse fruit growing	2	2	3	4
251317037	Vineyard Plantation Technique	2	2	3	4
	Fall Semester Diploma Thesis Course Group I				
251317014	Ornamental Plants Cultivation and Applications I	0	2	1	3
251317015	Fertilization Biology Practices in Fruits I	0	2	1	3
251317016	Cultivating Vegetables and Applications I	0	2	1	3
251317017	Fruit Growing Techniques and Applications I	0	2	1	3
251317018	Minor Vegetables-I	0	2	1	3
251317022	Fruit Culture I	0	2	1	3
251317024	Minor Fruits-I	0	2	1	3
251317025	Viticulture Practices - I	0	2	1	3
251317026	Vegetable seed practices - I	0	2	1	3
251317041	Modern Orchards Management I	0	2	1	3
4. Year – Spring Semester					
Course Code	Course Name	T	P	NC	ECTS
251318023	Subtropical fruits	2	0	2	2
251318024	Warm-season vegetables	2	0	2	4
251318025	Berries	2	0	2	4
251318026	Nut Fruits	2	0	2	5
	Elective Course within the Department 1	2	2	3	4
	Elective Course within the Department 2	2	2	3	4
	Elective Course within the Department 3	2	2	3	4
251318012	Diploma Thesis II	0	2	1	3
Total		14	8	18	30
	Elective Course Group IV within the Department				
251318027	New Advances in Horticulture Breeding	2	2	3	4
251318028	Special Viticulture	2	2	3	4
251318029	Soilless Culture	2	2	3	4
251318030	Rootstock scion relationships of fruits	2	2	3	4
251318031	Intelligent agriculture	2	2	3	4
251318032	Trends and Alternative Practices in Horticulture	2	2	3	4
251318038	Postharvest Physiology of Horticultural Crops	2	2	3	4
251318033	Citrus Trees	2	2	3	4
	Spring Semester Diploma Thesis Course Group II				
251318014	Ornamental Plants Cultivation and Applications II	0	2	1	3
251318015	Fertilization Biology Practices in Fruits II	0	2	1	3
251318016	Cultivating Vegetables and Applications II	0	2	1	3
251318017	Fruit Growing Techniques II	0	2	1	3
251318018	Minor Vegetables 2	0	2	1	3
251318034	Minor Fruits II	0	2	1	3
251318022	Fruit Culture II	0	2	1	3
251318035	Viticulture Practices - II	0	2	1	3
251318036	Vegetable Seed Practices - II	0	2	1	3
251318037	Modern Orchards Management II	0	2	1	3

T: Theory **P:** Practice **NC:** National Credit **ECTS:** European Credit Accumulation and Transfer System



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Botany	251311002

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
1	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	Morphological and anatomical structure of plants
Short Course Content	Description of plant cell Plant tissues Plant organs Classification of plants Photosynthesis and respiration

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Know and recognize the properties of plant cell under the microscope	1,2,3,4,5	1, 3,5, 6, 9, 11	A,D,I
2	Know and recognize the properties of plant tissues under the microscope	1,2,3,4,5	1, 3,5, 6, 9, 11	A,D,I
3	Know and distinguish the differences between plant tissues and is under the microscope	10,11,12	1, 3,5, 6, 9, 11	A,D,I
4	Know and recognize the properties of plant organs under the microscope	8	1, 3,5, 6, 9, 11	A,D,I
5	Know and distinguish the differences between plant organs and is under the microscope	12	1, 3,5, 6, 9, 11	A,D,I
6	Know classification of plants	1,2,3,4,5	1, 3,5, 6, 9, 11	A,D,I

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Bozcuk, S. 2011. Genel Botanik, Hatipoğlu Basım ve Yayım, Ankara
Supporting References	Akman, Y. ve Güney, K. 2011. Botanik-Bitki Biyolojisi, Palme Yayıncılık. Yentür, S. 2003. Bitki Anatomisi, İstanbul Üniversitesi Yayınları, İstanbul. Vardar, Y. ve Seçmen, Ö. 1993. Bitki Morfolojisinde Temel Bilgiler, Fakülteler Kitabevi, İzmir.
Necessary Course Material	Projection

Course Schedule		
1	Plant Cell Structure; cell wall, protoplast, nucleus, vacuole, cell division	Examination of plant cell structure and components.
2	Plant Tissues; meristematic tissues	Examination of plant cell structure and components.
3	Parenchyma and Mechanic Tissue	Examination of epidermis derived structures, Feathers.
4	Transport System and Secretory System	Examination of epidermis derived structures, Stomata.
5	Plant Organs; Root; general properties, morphology, root structure in relation to function and root anatomy	Examination of protective tissues and parenchyma.
6	Plant Organs; Root; general properties, morphology, root structure in relation to function and root anatomy	Examination of protective tissues and parenchyma.
7	Stem; general properties, morphology, branching, metamorphosis and stem anatomy	Examination of support, secretory and conduction tissues.
8	Mid-Term Exam	
9	Leaf; general properties, morphology, parts, metamorphosis and leaf anatomy	Examination of support, secretory and conduction tissues.
10	Flower, flower symmetry, inflorescence, pollination and germination	Examination of root and root types.
11	Fruit, fruit types	Examination of stem and stem types.
12	Mid-Term - Fruit, fruit types	Morphological and anatomical structure and types of leaf.
13	Seed; structure, ovule development and structure, seed types	Morphological and anatomical structure of flower.
14	Plant Systematic and Plant Classification	Morphological and anatomical structure of flower.
15	Photosynthesis and respiration	Morphological and anatomical structure of seed.
16,17	Final Exam	

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	30	30
Total workload			122
Total workload / 30			4,06
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)					
Prepared by					D
Signature(s)					



COURSE INFORMATION FORM

Course Name	Course Code
Physics	251311003

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
1	3	0	3	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
X				

Course Language	Course Level	Course Type
English	Undergraduate	Compulsory

Prerequisite(s) if any	none
Objectives of the Course	To provide students with basic information about Newtonian mechanics and conservation laws. Ability to define, formulate and analytically solve problems in physical systems; To improve general problem solving ability.
Short Course Content	Mechanical, Electricity, Magnetism, Pressure, Heat, Optics, Waves, Materials

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	The student recognizes and solves various problems of physical systems in practice.	PO2, PO3	1	A
2	Recognizes the importance of measurement and units.	PO1, PO6	1	A
3	Applies physical systems in daily life.	PO7, PO9, PO10	1	A
4	Recognizes the role of physics in engineering and health sciences.	PO9	1	A
5	Explains the basic laws and concepts of physics.	PO6	1	A
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	1. Halliday, D., Resnick, R., and Walker, J. (2008). Fundamentals of Physics (8th Edition). John Wiley & Sons, Inc. 2. Serway, R.A., Beichner, R.J., Physics For Scientists and Engineers with Modern Physics (2007), Harcourt College Publishers.
Supporting References	1. Fishbane, Gosiorowicz, Thornton, 2003, Temel Fizik, Cilt I, Arkadaş Yayınevi. 3. Young, H.D, Freedman, R.A. (2006). University Physics Volume 1 (12th Edition), Pearson/Addison Wesley. 4. Giancoli, D.C. (2004). Physics: Principles with Applications (6th Edition). Pearson Education Inc.
Necessary Course Material	

Course Schedule	
1	Measurement and Units
2	Vectors
3	Kinematics-Dynamics
4	Work-Energy and Conservation of Momentum
5	Rotational Motion - Equilibrium
6	Electric
7	Electric
8	Mid-Term Exam
9	Magnetism
10	Magnetism
11	Fluids and Pressure
12	Heat and Temperature
13	Optic
14	Waves and Sound
15	Materials
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework	5	1	5
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			123
Total workload / 30			4,1
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	2
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	2
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	2
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	2
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Mathematics	251311005

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
1	3	0	3	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
x				

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To introduce the concepts of function, limit, continuity and derivative, which are the basic knowledge of mathematics, and to develop their skills in using them when necessary
Short Course Content	Number Sets, Functions, Limits and Continuity, Derivation and Applications of differentiation

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Grasp the basic knowledge of mathematics		1,2,5,6,10	A
2 Define the functions and reverse functions		1,2,5,6,10	A
3 Explain limit and continuity.		1,2,5,6,10	A
4 Grasp the meaning of derivatives and take derivative		1,2,5,6,10	A
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Genel Matematik (Sosyal Yaşam ve Doğa Bilimleri için), Mahmut Koçak Genel Matematik I, Mustafa Balcı.
Supporting References	Genel Matematik Problemleri I, Mustafa Balcı
Necessary Course Material	

Course Schedule	
1	Differential Equations and Solutions
2	First Order Differential Equations
3	Function concept and properties
4	Essential functions and their graphs
5	Trigonometric, exponential, logarithmic and hyperbolic functions
6	Limit and continuity
7	Solving problem
8	Mid-term exam
9	Derivatives and derivation rules
10	Derivatives of Trigonometric, Exponential functions
11	Derivatives of Logarithmic and Hyperbolic functions
12	L'Hospital's rule, geometric meaning of derivative
13	Maximum-minimum problems
14	Drawing curve
15	Solving problems
16,17	Final exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	14	1	14
Final Exam	1	1	1
Studying for Final Exam	14	1	14
Total workload			86
Total workload / 30			2.87
Course ECTS Credits			3

Evaluation	
Activity Type	%
Mid-term	40
Bir öge seçin.	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Chemistry	251311004

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
1	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
X				

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To introduce the main subjects of chemistry, to give the fundamentals of chemistry to the agriculture engineering students.
Short Course Content	The properties of material and measurements, atoms and atomic theory, periodic table chemical compounds, chemical reactions stoichiometry, gases and gas mixtures, chemical thermodynamics.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Define, classify and explain the properties of materials,	1	1, 5, 10	A
2 Explain the concepts of atoms and atomic theory,	1	1, 5, 10	A
3 Explain and use the mole concepts and the Avogadro's law,	2	1, 5, 10	A
4 Explain and classify the chemical compounds,	1, 2	1, 5, 10	A
5 Define, explain and use the relationship of the gaseous state, the properties of gases and gas laws,	5	1, 5, 10	A
6 Define the basic concepts of thermodynamics, explain the law of thermodynamics and use them in solving the thermochemistry problems.	4	1, 5, 10	A
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Petrucci, H., Harwood, W. S., Herring, F. G., 2002 “Genel Kimya: İlkeler ve Modern Uygulamalar” (I. Cilt), Çeviri Editörleri: Uyar. T., Aksoy, S., Palme Yayıncılık, Ankara.
Supporting References	1. Mortimer, C. E. , 1988, Modern Üniversite Kimyası , I. ve II. Cilt, Çağlayan Kitabevi, İstanbul 2. Sienko, M. J., Plane, R. A., 1983, Temel Kimya , Savaş Yayınları, Ankara. 3. Erdik, E., Sarıkaya, Y., 1987, Temel Üniversite Kimyası , Hacettepe Taş Kitapçılık, Ankara.
Necessary Course Material	Board, projector

Dersin Haftalık Planı		
1	Properties and Measurement of the Matter	Introduction and content of the application
2	Atoms and Atomic Theory	Occupational Health and Safety Information
3	Atoms, Molecules, Ions	Laboratory Material Introduction
4	Introduction to the Periodic Table	Determination of report writing rules and groups
5	Chemical Bonds	Determining the Density of Solids
6	Chemical Compounds	Determining the Density of Liquids
7	Chemical Compounds	Verification of the Law of Constant Proportions
8	Ara Sınavlar	
9	Chemical Reactions and Equations	Precipitate Formation
10	Chemical Reactions and Equations	Qualitative Analysis
11	Chemical Balance	Titrimetric Analysis
12	Solutions	Solution Preparation
13	Acids and Bases	Relative Diffusion Rates of Gases
14	Ideal and General Gas Equation	Compensation Week
15	Gases	Compensation Week
16, 17	Yarıyıl sonu sınavları	

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	5	70
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework	0	0	0
Quiz Exam	0	0	0
Studying for Quiz Exam	0	0	0
Oral exam	0	0	0
Studying for Oral Exam	0	0	0
Report (Preparation and presentation time included)	12	1	12
Project (Preparation and presentation time included)	0	0	0
Presentation (Preparation time included)	0	0	0
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	6	6
Final Exam	1	2	2
Studying for Final Exam	1	6	6
Total workload			126
Total workload / 30			4,2
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	10
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	2
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Introduction to Horticulture	251311013

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
1	1	0	1	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	It is an introductory course in which students will be given a general introduction to Horticulture and students will be able to recognize all horticultural crop groups. This course, which will be taught in the first semester of the Horticulture program, will enable students to adapt to the department.
Short Course Content	Definition of horticultural crops, their history, their place in the national economy, general introduction and classification of fruit, vegetable, vineyard and ornamental plants in horticultural crops, their nutrient contents and economic importance, ecological requirements of horticultural crops, important physiological characteristics will be explained, important propagation methods will be mentioned.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Recognize the important horticultural crops grown in the world and in Turkey.	1,5,6	1,2,5,6	A
2	Have knowledge about the place and importance of horticultural crops in the national economy.	1,5,6	1,2,5,6	A
3	To have knowledge about ecological requirements, biological characteristics, physiology, propagation, conservation and marketing of horticultural plants.	1,5,6	1,2,5,6	A
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Genel Bahçe Bitkileri, Y.Sabit Ağaoğlu, Hasan Çelik, Menşure Çelik, Yılmaz Fidan, Yücel Gülşen, Atila Günay, Nilgün Halloran, İlhami Köksal, Ruhsar Yanmaz, Ankara Üniversitesi Ziraat Fakültesi Eğitim, Araştırma ve Geliştirme Vakfı Yayınları No:4, 1995.
Supporting References	Bahçe Bitkileri, Atilla Eriş, Vedat Şeniz, Uludağ Üniversitesi Ziraat Fakültesi Yayınları, No:28, Bursa, 1997. Meyve Yetiştirme İlkeleri, Arif Soylu, Uludağ Üniversitesi Ziraat Fakültesi, Ders Notları No: 20, Bursa, 1992.
Necessary Course Material	Computer, projector

Course Schedule	
1	Importance of horticulture and covered area in the country
2	Economical and raw material importance of horticultural crops and nutritional facts
3	Ecological factors of horticultural crops
4	Biological principals of horticulture
5	Physiological principals of horticulture
6	Generative propagation and grafting
7	Stool propagation, cutting and layering
8	Mid-Term Exam
9	In vitro culture in horticulture
10	Cultural practices and soil cultivation in horticulture
11	Pruning and training
12	Fertilization and irrigation
13	Pest and disease maintenance
14	Maturity and harvest in horticulture
15	Storage of horticultural crops
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	1	2	2
Studying for Final Exam	1	25	25
Total workload			96
Total workload / 30			3.20
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Career Planning	251311011

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
1	1	0	1	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	It is aimed to raise the awareness of university students about the dynamics and expectations of business life and to guide students to determine their careers by their intelligence, personality, knowledge, skills, abilities and competencies.
Short Course Content	It is a course designed to create career awareness in its students and to support them in their career journeys.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kariyer Planlama ve Geliştirme, Kemal ÖZTEMEL ,Pegem Akademi Yayıncılık
Supporting References	https://www.yetenekkapisi.org/login
Necessary Course Material	Projector and computer

Course Schedule	
1	Introduction
2	Basic concepts about career
3	Career Development Theories
4	Career Planning Process
5	Career Planning Models
6	Creating a Career Strategy
7	CV Preparation
8	Preparing Cover Letter, Introduction Letter and Reference Letter
9	Midterm Exam
10	Job Interview and interview techniques
11	Private Sector Presentation
12	Public Sector Presentation
13	Academics Presentation
14	Entrepreneurship
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	1	14
Classroom Studying Time (review, reinforcing, prestudy,...)	7	2	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	50	50
Total workload			110
Total workload / 30			3,6
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
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Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Basic Information Technologies	251311012

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
1	2	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	To introduce students to basic information systems and technologies and their areas of use in education.
Short Course Content	Topics such as computer hardware structure, functions of hardware units, Windows 10, Microsoft Word, Microsoft Excel, Data, cell formatting, page operations, functions, mathematical operations, preparing PowerPoint presentations, general information about the internet will be covered.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Knowing information technologies	1,2,3,4,5	1,5,6,13	A,K
2 Understanding the place of computers in information technologies	1,2,3,4,5	1,5,6,13	A,K
3 Understanding the working principles of computer hardware	1,2,3,4,5	1,5,6,13	A,K
4 Using the Windows operating system	1,2,5,6,10,12	1,5,6,13	A,K
5 Using the Microsoft Word program	1,2,5,6,10,12	1,5,6,13	A,K
6 Using the Microsoft Excel program	1,2,5,6,10,12	1,5,6,13	A,K
7 Using the Microsoft PowerPoint program	1,2,5,6,10,12	1,5,6,13	A,K
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Basic Information Technologies I https://www.academia.edu/59610726/Temel_Bilgi_Teknolojileri_1_October_2021_
Supporting References	Basic Information Technologies https://docplayer.biz.tr/1810777-Temel-bilgi-teknolojileri.html
Necessary Course Material	Informatics laboratory, Computer, projector

Course Schedule	
1	Basic computer, basic concepts of information technologies
2	Office programs, Office interface, Word program interface
3	Preparing documents with Word, saving the document in different formats
4	Creating and editing Word documents, templates
5	Creating automatic table of contents and adding references with Word
6	Word, mailings, review, view
7	Excel interface, basic mathematical and statistical calculations, date and text functions and the use of these functions
8	Mid-Term Exam
9	Sorting, filtering (filtering), conditional formatting, data validation in Excel tables
10	Excel CountBlank, CountIf, CountManyValues, SumIF functions
11	Excel page layout, If functions, Vlookup function
12	Creating Excel pivot table reports, graphics
13	PowerPoint program interface, presentation preparation steps
14	Slide layouts, animations, triggers, slide timing, printing the presentation file
15	Preparing a sample presentation file with PowerPoint
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	10	10
Final Exam	1	1	1
Studying for Final Exam	1	10	20
Total workload			68
Total workload / 30			68/30=2,2
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Quiz	60
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	2
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Turkish Language I	251311008

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
Fall	2	0		2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To show the richness of Turkish by informing students about the development and current situation of Turkish, to gain a national language awareness, to ensure that they can speak and write Turkish correctly. To compare Turkish language with major languages in the world. To compare the language policies of major languages with the language policy of Turkish language. To give speech training.
Short Course Content	Definition and properties of language; languages of the world and the place of Turkish among the world languages; historical development of Turkish language and the development of Western Turkish; Atatürk's studies and views on Turkish language; phonetics; spelling rules and punctuation; language policies.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	The student explains the language families of the world and the place of Turkish among the world languages.	5,3	1	A
2	Defines the rules of Turkish.	9	1, 5	A
3	Recognizes sound events.	8	1, 5, 11	A
4	Applies spelling rules.	7	5, 6	A
5	Compose written and oral compositions.	2,4	6	A
6	Uses Turkish correctly.	1,6	6, 11	A
7				
8				

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	<i>Türk Dili I-II</i> , ed. Ferruh Ağca, Eskişehir Osmangazi Üniversitesi Yayınları, 2022.
Supporting References	<i>Üniversiteler İçin Türk Dili</i> , Bayrak Yayınları, İstanbul, 1997.
Necessary Course Material	

Course Schedule	
1	Definition of Language
2	Language-Nationality-Culture Relationship
3	World Languages and Turkish Language
4	Age of Turkish Language
5	Historical Development of Turkish Language
6	Alphabets Used in Turkish Writing
7	Writing Revolution
8	Mid-Term Exam
9	Phonetics of Turkish Language
10	Phonetics of Turkish Language
11	Morphology of Turkish Language
12	Morphology of Turkish Language
13	Word Groups
14	Word Groups
15	Word Groups
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	4	16
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	4	4
Final Exam	1	2	2
Studying for Final Exam	1	4	4
Total workload			56
Total workload / 30			1,86
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
The History of The Principles and The Revolutions f Atatürk I	251311009

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
FALL	2	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
				X

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	None
Objectives of the Course	Students can understand the Liberation War under the leadership of Atatürk and the foundation of the young Turkish Republic. In addition to that the students will learn the processes of the liberation war and the conditions before the foundation of the Republic.
Short Course Content	The description of the revolution; the history of the Ottoman Empire up to the beginning of the Great War; Great War; The Treaty of Mudros; The Life of Mustafa Kemal Pasha; Civil Organizations for the liberation; Mustafa Kemal's arrival to Samsun; Congresses; National Oath and the Opening of Turkish Grand National Assembly; Liberation War till the Battle of Sakarya; Büyük Taarruz.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 STUDENTS, understand the main concepts of the course like reform, revolution		Expression	Class Attendance
2 learn the short history of the Ottoman Empire up to the Great War		Expression	Class Attendance
3 understand the join of the Ottoman Empire to the Great War and the fronts in which the Ottoman Empire fought		Expression	Class Attendance
4 learn the Treaty of Mudros and the invasion of the Ottoman lands		Expression	Class Attendance
5 understand the life of Mustafa Kemal Pasha (Atatürk)		Expression	Class Attendance
6 learn Mustafa Kemal's arrival to Samsun and the beginning of the Liberation War		Expression	Class Attendance
7 understand the opening of Turkish Grand National Assembly and the foundation of national army		Expression	Class Attendance
8 learn the victories of İnönü, Sakarya and Büyük Taarruz		Expression	Class Attendance

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Turan Şerafettin, <i>Türk Devrim Tarihi, C.I-II</i> , İstanbul, 1991–1995
Supporting References	Ateş, Toktamış, <i>Türk Devrim Tarihi</i> , İstanbul: Der Yayınları, 2001. Aybars, Ergün, <i>Türkiye Cumhuriyeti Tarihi</i> , İzmir: Ercan Kitabevi, 2000. Eroğlu, Hamza, <i>Türk İnkılap Tarihi</i> , Ankara: Savaş Yayınları, 1990. Kongar, Emre, <i>Devrim Tarihi ve Toplum Bilim Açısından Atatürk</i> , İstanbul: Remzi Kitabevi, 1999. Selek, Sebahattin, <i>Anadolu İhtilali</i> , İstanbul: Kastaç Yayınları, 1987. Timur, Taner, <i>Türk Devrimi ve Sonrası</i> , Ankara: İmge Kitabevi, 1997.
Necessary Course Material	

Course Schedule	
1	The teaching of the concepts of Revolution, Evolution, Uprising etc.
2	The attempts for the modernisation of the Ottoman Empire and the political thoughts
3	The Wars of Trablusgarp and the Balkans
4	The Beginning of the Great War and the join of the Ottoman Empire
5	The fronts in which the Ottoman Empire fought
6	The end of the war and the partition of the Ottoman
7	The Treaty of Mudros and the invasion of the Ottoman lands
8	Mid-Term Exam
9	The trip of Mustafa Kemal to Samsun and the beginning National Struggle
10	National Oath and the opening of Turkish Grand National Assembly
11	National Assembly and the direction of liberation war
12	National Forces and the foundation of the national army
13	First and Second Victories of İnönü; The battles of Kütahya-Eskişehir
14	The Battle of Sakarya
15	Great Attack of 30th August
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	2	2 hours
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	30 min	½ hour
Studying for Mid-Term Exam			
Final Exam	1	30 min	½ hour
Studying for Final Exam			
Total workload			3 hours
Total workload / 30			
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTURER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT
COURSE INFORMATION FORM



Course Name			Course Code
Foreign Language I			251311010
Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
Fall	3	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
X				

Course Language	Course Level	Course Type
Turkish	Associate degree / Undergraduate	Compulsory

Prerequisite(s) if any	NONE
Objectives of the Course	<p>Students at this level can understand sentences and frequently-used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment).</p> <p>Students can understand clear, slow, standard speech related to areas of most immediate personal relevance (e.g. very basic personal and family information, shopping, local geography and employment) and can catch the main point in short, clear, simple messages and announcements.</p> <p>Students are able to read and understand short, simple texts containing high frequency vocabulary and shared international expressions.</p> <p>Students can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar topics and activities.</p> <p>They can write short, simple notes and messages relating to matters in areas of immediate need, linking a series of simple phrases and sentences with simple connectors like 'and' , 'but' and 'because'.</p>
Short Course Content	The aim of the course is to teach students basic grammar rules in elementary level, give them speaking, writing, reading and listening knowledge of English. It consists of content and activities aimed at having students acquire Beginner Level English language skills according to evaluation and reference system of The Common European Framework.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
The student becomes familiar with basic grammar rules in 1 English.	1, 2, 3, 4	1, 5, 11	A
2 Analyzes English dialogues.	1, 2, 3, 4	1, 4, 5, 11	A
3 Understands and explains an English text at the level.	1, 2, 3, 4	1, 4, 5, 11	A
4 Communicates in written and spoken English.	1, 2, 3, 4	1, 4, 5, 11	A
5			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individuall Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Warwick L., Williams D. (2020). <i>Roadmap A2 Students' Book & Workbook</i> . Pearson Education Limited.
Supporting References	Murphy, R., (2004). <i>English Grammar in Use</i> , Cambridge University Press,
Necessary Course Material	Computer, Webcam, Speakers; or Smart phone

Course Schedule	
1	1A: verb be - positive and negative - countries and nationalities contractions with be introduce yourself - write an online message - using capital letters and full stops
2	1B: questions with <i>be</i> question words intonation in questions ask and answer questions - understand a simple conversation understanding question words
3	1C: <i>this, that, these</i> and those everyday objects - <i>this, these</i> talk about things for sale - understand adverts identifying specific information 1D: tell the time
4	2A: possessive adjectives and possessive 's family members possessive 's describe your family - understand a conversation about family - and, too and but 2B: <i>whose</i> and possessive pronouns - everyday objects 2 - possessive pronouns say who things belong to - understand online posts - understanding the important words
5	2C: <i>have got</i> - adjectives describing objects <i>have/has</i> describe objects English in action buy things in a shop buy things in a shop - write a review of a product using and, but and so 2D: buy things in a shop
6	3A present simple with <i>I, you, we</i> and <i>they</i> ; adverbs of frequency and time expressions - free-time activities - talk about free-time Activities - write an online profile - using commas and apostrophes
7	3B present simple with <i>he, she</i> and <i>it</i> - everyday activities - present simple with <i>he, she</i> and <i>it</i> - describe daily routines - understand a factual text - using headings to find information
8	Mid-Term Exam
9	3C present simple questions free-time activities 2 <i>do/does</i> ask about free-time activities - understand short talks - understanding key words 3D buy tickets
10	4A there is/are - places in a city - linking - talk about your city - write a description - using word order correctly 4B articles - things in a home - the - describe your home - understand social media posts - guessing new words
11	4C need + noun, need + infinitive with to - equipment - weak forms - discuss what to take on a trip - understand a short radio programme - understanding weak forms 4D ask for information
12	5A position of adjectives - appearance - tonic stress on adjectives - describe people's appearance - write a description of a person - using paragraphs
13	5B was/were - adjectives to describe experiences - weak forms of was/were - describe an experience - understand a story - linking between words
14	5C can/can't for ability - skills - can/can't - describe your skills - understand information in a brochure - understanding it, they and them 5D make and respond to requests
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy.....)	14	1	14
Homework	1	2	2
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	4	4
Final Exam	1	2	2
Studying for Final Exam	1	6	6
Total workload			72
Total workload / 30			2,4
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post-harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2
LECTUTER(S)		
Prepared by		
Signature(s)		



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
History of Agriculture and Deontology	251312001

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
2	2	0	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Examine agricultural phases in historical development and teaching how agriculture reach current status. To learn related institution, establishments and legislations.
Short Course Content	History of agriculture, knowledge on history of agriculture and progressions up to date along time periods starting from appearance of mankind. Effects of civilizations, wars and trade. Planned period establishments Legislations.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1, 3, 4, 7, 11, 12	1, 2, 5	A, K
2			
3			
4			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Surveying Technique	251312002

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
2	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	NO
Objectives of the Course	Understanding the basic principles of measurement, providing the ability to make measurements in the field and use measuring instruments.
Short Course Content	Ability to perform basic land measurements, work with basic measuring instruments; Understanding the basic principles of height measurement, planning and implementing measurements; Ability to read and interpret topographic maps

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Introduction, Definition of Measurement Units of Measurement and Scale		1	A
2	Area Calculations Area Measurement with Planimeter		1	A
3	Global Positioning Systems (GPS)		1	A
4	Coordinate Systems		1	A
5	Slope		1	A
6	Measuring Vertical Distances		1	A
7	Point, Profile and Surface Leveling		1	A
8	Map Reading and Interpretation		1	A

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Ayyıldız, M. 1985. Ölçme Bilgisi, Ankara Üniversitesi Ziraat Fakültesi Yayını N.:952
Supporting References	Yüksel, A.N, 1991. Ölçme Bilgisi, Trakya Üniversitesi, Tekirdağ Ziraat Fakültesi, Yayın no:112, Tekirdağ. Balcı, A. ve M. Avcı, 1998. Ölçme Bilgisi-1, Ege Üniversitesi, Ziraat Fakültesi yayınları, No:532, Bornova, İzmir. Yağanoğlu, V. ve ark.1991. Ölçme Bilgisi-1 (Uygulama Ders Notu). Atatürk Üniversitesi Ziraat Fakültesi Ders Yayınları, No:116, Erzurum,
Necessary Course Material	-

Course Schedule	
1	Introduction, definition of surveying
2	Units of measurement and scale
3	Area calculations
4	Area measurement with planimeter
5	Global Positioning Systems (GPS)
6	Coordinate systems
7	Slope
8	Mid-Term Exam
9	Measuring vertical distances
10	Point Leveling
11	Profile Leveling
12	Surface Leveling
13	Drawing Contours
14	Topographic Maps
15	Map reading and interpretation
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	7	2	14
Homework	0	0	0
Quiz Exam	0	0	0
Studying for Quiz Exam	0	0	0
Oral exam	0	0	0
Studying for Oral Exam	0	0	0
Report (Preparation and presentation time included)	0	0	0
Project (Preparation and presentation time included)	0	0	0
Presentation (Preparation time included)	0	0	0
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	30	30
Total workload			94
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	0
Homework	0
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	4
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the	4
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	4
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	4

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Computer Assisted Technical Drawing	251312011

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
2	1	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	Having taken the “Basic Information Technologies” course
Objectives of the Course	To gain the competence to draw two and three dimensional drawings, manufacturing/construction drawings and assembly drawings in accordance with technical drawing standards using computer-aided drawing software.
Short Course Content	Introduction to computer-aided technical drawing, two dimensional geometric drawings, extracting the third view from two main views, extracting main views from three dimensional models, basic manufacturing processes and three dimensional drawing techniques.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Understands the operating logic of drawing and design programs.	1,2,3,4,5	1,5,6,11	A,K
2	Uses AutoCAD commands.	1,2,3,4,5,11	1,5,6,11	A,K
3	Understands the projections of plane and geometric shapes.	1,2,3,4,5	1,5,6,11	A,K
4	Can make basic geometric drawings in a computer-aided drawing environment.	1,2,5,6,10,11	1,5,6,11	A,K
5	Can archive manufacturing drawings drawn in a computer environment in accordance with technical drawing rules	1,2,5,6,10,11	1,5,6,11	A,K
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Autodesk AutoCAD (2025). https://www.autodesk.com/tr/
Supporting References	
Necessary Course Material	Computer, AutoCAD software

Course Schedule	
1	Introduction and Installation
2	AutoCAD, Basic Operations, Getting Started with Drawing
3	Two-Dimensional Drawing
4	Using Coordinates
5	Editing Objects
6	Dimensioning and Dimension Settings
7	Working with Layers
8	Mid-Term Exam
9	Parametric Work (Geometric and Dimensional Limitations)
10	Working with Blocks
11	Perspective Drawings
12	Modeling of 3D Solid Objects
13	Modeling of 3D Solid Objects
14	Correction and Editing Operations in 3D Solid Objects
15	General Repetition
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	6	3	18
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	15	2	30
Final Exam	1	1	1
Studying for Final Exam	15	2	30
Total workload			122
Total workload / 30			122/30=4,07
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	60
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Plant Biochemistry	251312012

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
2	1	2	2	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	None
Objectives of the Course	The objective of this course to recognize the molecular basis of living systems and evaluation on biological processes occurring in the living systems.
Short Course Content	Introduction to biochemistry, biomolecules and cell structure, properties of water and aqueous solutions, proteins, enzymes, carbohydrates, lipids, nucleic acids, vitamins, carbohydrate metabolism, lipid metabolism, metabolism of nitrogen compounds.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Recognizing macromolecules in living systems	1, 2, 4, 7	1, 2, 5	A
2 Interpreting life at the molecular level	1, 2, 4, 7	1, 2, 5	A
3 Identifying and evaluating the components of living systems	1, 2, 4, 7	1, 2, 5	A
4 Interpreting the dynamic relationships of molecules in living systems	1, 2, 4, 7	1, 2, 5	A
5			
6			
7			
8			
9			
10			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Nelson, D.L., Cox, M.M., (2004) Lehninger Principles of Biochemistry. 3 rd Edition, Worth Publishers, Wisconsin, USA.
Supporting References	<ol style="list-style-type: none"> 1. Keba, E.E. and Küfrevioğlu, İ. (2004). Biyokimya, 3rd Edition, Aktif Yayınevi, Erzurum, Turkey. 2. Timbrell, J., (2000) Principles of Biochemical Toxicology, 3rd edition, Taylor & Francis, London.
Necessary Course Material	Computer, PowerPoint.

Course Schedule		
1	Introduction to biochemistry, biomolecules, and cell structure	Biomolecules
2	Properties of water and aqueous solutions	Cell structure
3	Amino acids, peptides, proteins	Proteins
4	Amino acids, peptides, proteins	Proteins
5	Enzymes	Enzymes
6	Enzymes	Enzymes
7	Carbohydrates	Carbohydrates
8	Mid-Term Exam	Mid-Term Exam
9	Lipids	Carbohydrates
10	Nucleic acids	Lipids
11	Vitamins	Lipids
12	Carbohydrate metabolism	Vitamins
13	Carbohydrate metabolism	Microorganisms
14	Lipid metabolism	Compensation
15	Nitrogen compounds metabolism	Compensation
16,17	Final Exam	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	4	56
Homework	0	0	0
Quiz Exam	0	0	0
Studying for Quiz Exam	0	0	0
Oral exam	0	0	0
Studying for Oral Exam	0	0	0
Report (Preparation and presentation time included)	0	0	0
Project (Preparation and presentation time included)	0	0	0
Presentation (Preparation time included)	0	0	0
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	24	24
Final Exam	1	2	2
Studying for Final Exam	1	24	24
Total workload			164
Total workload / 30			5,466
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	30
Report	20
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Agricultural Ecology and Climate Change	251312013

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
2	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	This course can contribute to understand the role of environmental factors on agricultural production. Thus, this course can be considered as a prerequested course for agronomy major.
Short Course Content	Description of ecology and classification of ecology, fundamental principles of ecology, light, temperature, water, atmosphere, geographic and topographic factors, soil, fire, ecosystems, relation among organism in ecosystem, nutrient cycle in ecosystem, energy flow

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,5,6,9,12	1, 4, 5, 8, 11	A, K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Unpublished course notes
Supporting References	Andiç, C. 2002. Tarımsal Ekoloji. Atatürk Üniv Yay. no: 106 Kılınç, M. ve H.G. Kutbay, 2004. Bitki Ekolojisi. Palme yay. Özkütük K., Hayvan Ekolojisi. Çukurova Univ. Ders Kit. no: C-79 Gliessman, S.R., 2007. Agroecology, The Ecology of Sustainable Food Systems: CRC Press
Necessary Course Material	Projector and computer

Course Schedule	
1	Introduction to history of agriculture and deontology, Stages in history of agriculture (primitive agriculture)
2	Stages in history of agriculture (Turkish Agriculture in Central Asia, Agriculture in Chinese, in Mesopotamia and in Egyptian)
3	Stages in history of agriculture (developments of agriculture in Anatolia during Selcuks and Ottoman Empire)
4	Importance of civilizations and migration routs on agriculture
5	Effects of industrial revolution on agriculture, international aids and their effects on agriculture
6	Economical crisis and their effects to agriculture
7	Agriculture Sector of Turkey in the period of Republic and institutionalisation
8	Agriculture Sector of Turkey in the period of Republic and institutionalisation
9	World trade organization and agricultural sector
10	Agriculture in global world
11	Midterm exam- Agriculture in global world
12	Agricultural education establishments and operations
13	Professional regulations
14	Problem of Professional education and the way of solution
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			112
Total workload / 30			3,73
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	5
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Thermodynamics	251312014

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	3	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	4			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	This course aims to introduce the basic concepts of thermodynamics and its laws, to explain the properties of pure substances, to introduce the pressure-volume-temperature relations of ideal gases, to give basic information about entropy and heat engines
Short Course Content	Basic concepts in thermodynamics, reversible-irreversible processes, properties of pure substances, Gibbs' law, 0 th and 1 st laws of thermodynamics, PV processes of ideal gases, 2 nd law of thermodynamics, entropy, power cycles, properties of steam, steam tables, heat engines, liquid-vapor systems

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learns the basic principles of thermodynamics		1, 5	A
2 Summarizes the properties of pure substances		1, 5	A
3 Interprets about the entropy and heat engines		1, 5	A
4 Learns the power cycles		1, 5	A
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Smith, J.M., Van Ness, H.C. and Abbott, M.M. (2005) Introduction to Chemical Engineering Thermodynamics. 7th Edition, McGraw-Hill Chemical Engineering Series, Boston.
Supporting References	Cengel, Y. and Boles, M. (2015) Thermodynamics: An Engineering Approach. 8th Edition, McGraw-Hill.
Necessary Course Material	-

Course Schedule	
1	Introduction to the basic concepts of thermodynamics
2	Pressure, temperature, work, energy, power, and force
3	1 st law of thermodynamics, internal energy, enthalpy, energy balance, reversible and irreversible processes
4	Properties of pure substances, calculations of phase change, Gibbs' law
5	Pressure-volume-temperature relations of ideal gases, introduction to processes
6	Isochoric, isothermal, isobaric, adiabatic and polytropic processes
7	2 nd law of thermodynamics, Entropy and heat engines
8	Mid-Term Exam
9	Maxwell equations and their relations
10	Power cycles, Carnot and Rankine machines
11	Properties of saturated and superheated steam, applications and problem solving
12	Steam power cycles, applications and problem
13	Steam power cycles, applications and problem-continued
14	Properties of liquid-vapor systems in equilibrium
15	Approaches for the estimation of vapor pressure in liquid-vapor systems
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam	3	4	12
Studying for Quiz Exam	3	4	12
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	6	6
Final Exam	1	1	1
Studying for Final Exam	1	12	12
Total workload			102
Total workload / 30			3,4
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	2
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTURER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Turkish Language II	251312008

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
Spring	2	0		2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To show the richness of Turkish by informing students about the development and current situation of Turkish, to gain a national language awareness, to ensure that they can speak and write Turkish correctly. To compare Turkish language with major languages in the world. To compare the language policies of major languages with the language policy of Turkish language. To give speech training.
Short Course Content	Definition and properties of language; languages of the world and the place of Turkish among the world languages; historical development of Turkish language and the development of Western Turkish; Atatürk's studies and views on Turkish language; phonetics; spelling rules and punctuation; language policies.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	The student explains the language families of the world and the place of Turkish among the world languages.	5,3	1	A
2	Defines the rules of Turkish.	9	1, 5	A
3	Recognizes sound events.	8	1, 5, 11	A
4	Applies spelling rules.	7	5, 6	A
5	Compose written and oral compositions.	2,4	6	A
6	Uses Turkish correctly.	1,6	6, 11	A
7				
8				

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	<i>Türk Dili I-II</i> , ed. Ferruh Ağca, Eskişehir Osmangazi Üniversitesi Yayınları, 2022.
Supporting References	<i>Üniversiteler İçin Türk Dili</i> , Bayrak Yayınları, İstanbul, 1997.
Necessary Course Material	

Course Schedule	
1	Elements of a Sentence
2	Elements of a Sentence
3	Sentence Types
4	Sentence Types
5	Punctuation Marks
6	Punctuation Marks
7	Punctuation Marks
8	Mid-Term Exam
9	Written Expression
10	Written Expression
11	Oral Expression
12	Oral Expression
13	Spelling Rules
14	Spelling Rules
15	Expression Disorders
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	4	16
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	4	4
Final Exam	1	2	2
Studying for Final Exam	1	4	4
Total workload			56
Total workload / 30			1,86
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	2
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
The History of The Principles and The Revolutions of Atatürk II	251312009

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
SPRING	2	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
				X

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	None
Objectives of the Course	The Students can understand; the victory at the Liberation War; The Treaty of Lausanne which paved the way for the foundation of the republic; The Principles and the Revolutions of Atatürk. Then the course will also provide the students to understand democracy and modern concepts
Short Course Content	The Armistice of Mudanya, The abolition of the dynasty, The Treaty of Lausanne, the foundation of the Republic, the abolition of Caliphate, the Constitution of 1924, the attempts for the multi-party system, the uprising of Şeyh Sait, the changing of alphabet, university reform, the revolutions of Atatürk towards all sides of life, interior and exterior politics of Atatürk, the principles of Atatürk, the developments in Turkey and world after the death of Atatürk

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Students, learn the Armistice of Mudanya and the Treaty of Lausanne		Expression	Class Attendance
2 understand the abolition of dynasty and the Caliphate; foundation of the republic		Expression	Class Attendance
3 learn the attempts for multi-party system during Atatürk's era		Expression	Class Attendance
4 see the revolutions on education and law which dedicate to create a secular and modern social structure		Expression	Class Attendance
5 learn the revolutions related with socio-economic life		Expression	Class Attendance
6 understand the foreign policy of Atatürk		Expression	Class Attendance
7 learn the principles of Atatürk		Expression	Class Attendance
8 understand the politics in Turkey after the death of Atatürk		Expression	Class Attendance

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Turan Şerafettin, <i>Türk Devrim Tarihi, C.I-II</i> , İstanbul, 1991–1995
Supporting References	Ateş, Toktamış, <i>Türk Devrim Tarihi</i> , İstanbul: Der Yayınları, 2001. Aybars, Ergün, <i>Türkiye Cumhuriyeti Tarihi</i> , İzmir: Ercan Kitabevi, 2000. Eroğlu, Hamza, <i>Türk İnkılap Tarihi</i> , Ankara: Savaş Yayınları, 1990. Kongar, Emre, <i>Devrim Tarihi ve Toplumbilim Açısından Atatürk</i> , İstanbul: Remzi Kitabevi, 1999. Selek, Sebahattin, <i>Anadolu İhtilali</i> , İstanbul: Kastaç Yayınları, 1987. Timur, Taner, <i>Türk Devrimi ve Sonrası</i> , Ankara: İmge Kitabevi, 1997.
Necessary Course Material	

Course Schedule	
1	The Armistice of Mudanya; the abolition of dynasty and the Peace Treaty of Lausanne
2	The Foundation of the Republic and the abolition of the Caliphate
3	The Attempts for multi-party system; Assassination of İzmir and the movement in Menemen
4	The Revolutions on Law System: The constitutions of New Turkish State
5	The Revolutions on Law System: The acceptance of Civil Code and the regulations for the woman rights
6	The Revolutions on Education and Cultural Life: The unity of education, the acceptance of new letters, the reforms on language, history and the other fields
7	The Revolutions for Economic Life: The abolition of aşar, reforms on agriculture and industry, etatism
8	Mid-Term Exam
9	The Changes on Social Life: the closing of tekkes and zaviyals, the law of having surname, weekend holiday
10	The Foreign Policy of Atatürk: The problems of Etabli and Mosul, relations with foreign states
11	The Foreign Policy of Atatürk: membership to the United Nations, the Balkan Agreement, Montreux Convention, The Pact of Sadabad
12	The Principles of Atatürk: Republicanism, Secularism, Revolutionism, Nationalism, Populism, Etatism
13	The Supplementary Principles of Atatürk
14	The Interior and exterior developments during the period of İsmet İnönü
15	The Period of Democratic Party
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	2	2 hours
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	30 min.	½ hour
Studying for Mid-Term Exam			
Final Exam	1	30 min.	½ hour
Studying for Final Exam			
Total workload			3 hours
Total workload / 30			
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	1

LECTURER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name			Course Code
Foreign Language II			251312010
Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
Spring	3	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
X				

Course Language	Course Level	Course Type
Turkish	Associate degree / Undergraduate	Compulsory

Prerequisite(s) if any	NONE
Objectives of the Course	<p>Students can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. They can describe in simple terms aspects of their background, immediate environment and matters in areas of immediate need.</p> <p>Students can understand standard speech related to areas of most immediate personal relevance (e.g. personal and family information, shopping, local geography and employment) and can catch the main point in simple messages and announcements.</p> <p>Students can read and find specific, predictable information in simple everyday material such as advertisements, prospectuses and timetables.</p> <p>Students can handle very short social exchanges, even though they cannot usually keep the conversation going of their own accord.</p> <p>They can write relating to matters in areas of immediate need, linking a series of phrases and sentences with connectors.</p>
Short Course Content	The aim of the course is to teach students basic grammar rules in elementary level, give them speaking, writing, reading and listening knowledge of English. It consists of content and activities aimed at having students acquire Elementary Level English language skills according to evaluation and reference system of The Common European Framework.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods †
The student becomes familiar with basic grammar rules in 1 English.	1, 2, 3, 4	1, 5, 11	A
2 Analyzes English dialogues.	1, 2, 3, 4	1, 4, 5, 11	A
3 Understands and explains an English text at the level.	1, 2, 3, 4	1, 4, 5, 11	A
4 Communicates in written and spoken English.	1, 2, 3, 4	1, 4, 5, 11	A
5			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

†**Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Warwick L., Williams D. (2020). <i>Roadmap A2 Students' Book & Workbook</i> . Pearson Education Limited.
Supporting References	Murphy, R., (2004). <i>English Grammar in Use</i> , Cambridge University Press,
Necessary Course Material	Computer, Webcam, Speakers; or Smart phone

Course Schedule	
1	6A past simple (regular verbs) - prepositions - describe an event - understand reviews - understanding adjectives 6B past simple (irregular verbs) - describe a good weekend - understand a narrative - understanding the order of events
2	6C past simple (questions) - verbs + prepositions - did you? - ask and answer questions - write a short story - using subject pronouns 6D give and accept an apology
3	7A countable and uncountable nouns; some, any, lots of and a lot of - food and drink - vowel sounds; connected speech - describe food shopping items - understand announcements - listening for special information
4	7B how much/how many? + quantifiers - food containers - sentence stress - create a dish - write a social media post - giving opinions and reasons
5	7C comparative adjectives - describing places to eat - compare places to eat - follow instructions - understanding instructions 7D order in a cafe
6	8A present continuous - geography -ing - describe a travel experience - write a guide - using adjectives 8B present simple and present continuous - weather - contractions - describe the weather - understand a news report - understanding connected speech
7	8C superlative adjectives - phrases describing travel - compare places, activities and transport - understand a short article - understanding paragraph topics 8D make a phone call
8	Mid-Term Exam
9	9A should/shouldn't - health - give advice - understand a short talk - dealing with unknown words
10	9B be going to - future plans - discuss your goals for the future - write an informal email - organising an email to a friend
11	9C would like/want - activities with go - tonic stress; weak forms - describe what you want to do - understand a blog post - understanding because and so 9D make arrangements and invitations
12	10A verb patterns - housework - sentence stress - interview people - write a personal profile - expressing likes and dislikes
13	10B have to/don't have to - clothes - word stress; have to - play a guessing game - understand an opinion article - identifying opinions
14	10C present perfect simple - technology - contractions - talk about past experiences - understand an interview - understanding time expressions 10D give a compliment
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy.....)	14	1	14
Homework	1	2	2
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	4	4
Final Exam	1	2	2
Studying for Final Exam	1	6	6
Total workload			72
Total workload / 30			2,4
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2
LECTUTER(S)		
Prepared by		
Signature(s)		



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Statistic	251313002

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	It is aimed that the subject matter studied is the correct collection, summarization, processing to introduce the subject, analysis according to the known factors, determination of relations with the other data and all the operations for interpretation and generalization of the results.
Short Course Content	Definition of statistics and general concepts, types of data, intermittent and continuous data, summary of data, descriptive statistics, central tendency measures and calculation, exchange measures and calculation, concepts of correlation and regression and calculation, classical distributions, normal distribution, Binomial distribution, Poisson distribution and their properties, sampling distributions and related hypothesis controls, one-sided and two-sided hypothesis controls, Type I error probability, hypothesis testing for the difference between two independent group averages, comparison of two dependent groups, hypothesis testing for ratios, hypothesis testing for correlation coefficient, chi-square analysis, control and calculation of independence in single and two way directional tables.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1, 3, 11, 12	1, 2, 5, 10, 11, 12, 13	A, K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	İsmail KESKİN, Ensar BAŞPINAR, Yasin ALTAY, Nazire MİKAİL (2023). Biyometri (RStudio Uygulamalı), NEU Press, Konya. Zahide KOCABAŞ, M. Muhip ÖZKAN ve Ensar BAŞPINAR (2013). Temel Biyometri, Ankara Üniversitesi, Ziraat Fakültesi, Yayın No: 1606, Ders Kitabı: 558. Orhan DÜZGÜNEŞ, Tahsin KESİCİ ve Fikret GÜRBÜZ (1993). İstatistik Metotları (2. Baskı), Ankara Üniversitesi, Ziraat Fakültesi yayınları: 1291, Ders Kitabı: 369. Tahsin KESİCİ, Zahide Kocabaş, (2007). Biyoistatistik. Ankara Üniversitesi Eczacılık Fakültesi Yayın, (94), 369. Mehmet MENDEŞ (2013). Uygulamalı Bilimler için İstatistik ve Araştırma Yöntemleri (3. Baskı), İstanbul, Kriter Yayıncılık Handan ANKARALI, Şengül CANGÜR, Mehmet Ali SUNGUR (2015). Formülsüz İstatistik, Betim Yayıncılık Jerrold H. ZAR (2010). Biostatistical Analysis Fifth Edition. Prentice-Hall, Inc., Englewood Cliffs, New Jersey Miroslav KAPS, William R. LAMBERSON, (2017). Biostatistics for Animal Science. Cabi.
Supporting References	Fikret GÜRBÜZ; Ensar BAŞPINAR, M. Muhip ÖZKAN, Mehmet MENDEŞ, Sıdık KESKİN ve Handan ÇAMDEVİREN (2000). İstatistik Metotları Dersi Uygulama Kılavuzu, Ankara Üniversitesi, Ziraat Fakültesi, Eğitim, Araştırma ve Geliştirme Vakfı Yayınları No:7
Necessary Course Material	Laptop, Calculator, Usb Memory

Course Schedule	
1	General information about the course, collection of data, summarization, frequency distribution charts, graphics
2	Introductory statistics, measures of central tendency, properties of arithmetic mean, place of median value preferred to arithmetic mean and application via statistical package programs.
3	Relationships between central tendency measures and the frequency distribution table and application via statistical package programs
4	Calculation and interpretation of change measures and application via statistical package programs
5	Calculation and interpretation of change measures from the frequency distribution table and application via statistical package programs
6	Calculation and interpretation of Pearson Correlation and Linear Regression coefficient and application via statistical package programs
7	Linear Regression Equation and Relations between Correlation and Regression Coefficient and application via statistical package programs
8	Mid-Term Exam
9	Classical populations and distributions, normal and standard normal distribution and application via statistical package programs
10	Binomial distribution, Poisson distribution, calculation and interpretation of probability and application via statistical package programs
11	Sampling distributions, averages, the difference between the averages and the sampling distribution of the ratios and application via statistical package programs
12	Hypothesis control, Two and one sided hypothesis controls and application via statistical package programs
13	Midterm, Intermediate Difference and Odds Hypothesis Controls (Coefficient t-test for control of Z or t) and application via statistical package programs
14	Calculation and interpretation of confidence bounds and confidence bounds for difference between averages and averages the difference between the averages and application via statistical package programs
15	Chi-Squared Distribution, Independence check in single and double directional tables and application via statistical package programs
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	5	20
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			120
Total workload / 30			4,00
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Genetics	251313003

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The course aims to overview of the principles of animal and plant genetics in agriculture including Mendelian and modern concepts of heredity. To provide an extensive point of view to animal and plant genetics for agriculture improvement and new investigations.
Short Course Content	The course includes concepts of genetics, Mendelian genetics, extensions of Mendelian genetics, population genetics, quantitative genetics, central dogma of molecular biology and mutations.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1, 4, 7, 13	1, 2, 11	A, D, K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kavuncu O., 2020. Genetik. Kamer Yayınları. Ankara. Klug W.S. and M.R. Cummings, 2003. Concept of Genetics 6Ed. Prentice Hall. New Jersey.
Supporting References	Klug W.S. and M.R. Cummings, 2003. Concept of Genetics 6Ed. Prentice Hall. New Jersey. Russell, P.J. 2006. iGenetics. A Mendelian approach. Pearson & Benjamin Cummings. New York. Düzgüneş, O. ve H.R. Ekingen, 1983. Genetik. A.Ü. Basımevi. Ankara Griffiths, A.J.F., S.R. Wessler, R. C. Lewontin, S.B. Carroll, 2008. Introduction to Genetics Analysis 9Ed. W.H. Freeman. New York. Griffiths, A.J.F., J. H. Miller, D.T. Suzuki, R. C. Lewontin, W. M. Gilbert, 2000. An Introduction to Genetics Analysis 7Ed. W.H. Freeman. New York. Klug W.S., M.R. Cummings, C.A. Spencer and M.A. Palladino, 2009. Concept of Genetics 9Ed. Pearson & Benjamin Cummings. New York. Brown, T.A., 1998. Genetics: A molecular approach. 3Ed. Chapman and Hall. London. Brown, T.A., 2007. Genomes 3Ed. Garland Science, Taylor & Francis Group, New York and London.
Necessary Course Material	Computer and projection

Course Schedule	
1	Introduction to Genetics and concepts
2	Mendelian Genetics, Mendel's first law
3	Mendel's second law
4	Linkage and crossing over
5	Sex linkage genes
6	Allelic gene interactions
7	Non-Allelic gene interactions
8	Mid-Term Exam
9	Quantative genetics
10	Population genetics
11	Genetic material, DNA and RNA
12	DNA replication
13	DNA transcription
14	Genetic code and protein synthesis
15	Mutations
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework	1	10	10
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	10	10
Final Exam	1	1	1
Studying for Final Exam	1	20	20
Total workload			98
Total workload / 30			2,9
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	30
Homework	20
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	4

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Agricultural Economics	251313004

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
			X	

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	No
Objectives of the Course	To provide basic knowledge about Agricultural Economics and to teach the concepts, the production activities, problems and solutions of agricultural farms, to create awareness about national, international and global developments in the field of agriculture and related fields.
Short Course Content	Concepts, basic principles, theories, laws in the field of economics and agricultural economics and examples of implementations of agricultural economics at the farm level

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Defining agriculture, diversification, classification of technical and economic characteristics.		1, 5	A, K
2	Understanding, explaining and evaluating the importance of agriculture and its contribution to the economy,		1, 5	A, Ö, K, G
3	Understanding the basic elements of agricultural structure,		1, 5, 13	A, K
4	To be able to apply the basic principles of economy to agriculture,		1, 10	A, K
5	Determining the production type and method of the agribusiness, making production and evaluating the product,		1, 2, 11	A, K
6	Determining product costs and revenues by making business analysis,		1, 2, 11	A, K
7	Understanding the market system to produce and converting it to income, monitoring market conditions,		1, 2, 11	A, K
8	Finding the means of providing the necessary finance for production, benefiting from the power of the organization,		1, 2, 11, 12	A, K
9	Making business decisions taking into account the tools of agricultural policy,		1, 2, 11	A, Ö, K
10	Analysing and monitoring the effects of international relations on agriculture and agriculture on international relations.		1, 2, 12	A, K

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Cramer, G.L. and C.W. Jensen, 1988. Agricultural Economics and Agribusiness: John Wiley-Sons, New York. Rehber, E., Ekonomi, III. Baskı, Uludag Üniversitesi, Ziraat Fakültesi, Ders Notları No: 21, Bursa 1995. Erkuş, A., M. Bülbül, T. Kırıl, F. Açıl Ve R. Demirci, 1995. Tarım Ekonomisi, Ankara Üniversitesi Ziraat Fakültesi, Eğitim, Araştırma ve Geliştirme Vakfı Yayınları No: 5, 298 s., Ankara. Presentations
Supporting References	Current articles, news, policy texts in the field of agricultural economics
Necessary Course Material	Projector and computer.

Course Schedule	
1	General definitions: Economics, agricultural economics, agricultural production Characteristics and classification of agricultural production
2	Contribution of agriculture to the economy
3	The place and importance of agriculture sector in Turkish economy
4	Principles of agricultural economics
5	Principles of agricultural economics
6	Factors of production (nature, labour, capital, entrepreneur) and agricultural production
7	The concept of agricultural enterprises, classification of enterprises, agriculture and food systems Characteristics and classification of agricultural enterprises in Türkiye
8	Mid-term exam
9	Agricultural markets, agricultural marketing and market forces
10	Definition and laws of demand and supply, supply and demand characteristics of agricultural products, and price
11	Annual activity results of agricultural farms
12	Creating and developing financial resources of enterprises, credit conditions, making payment plans
13	The importance of organisation in agriculture, its types and implementations.
14	Definition of agricultural policy, national and international dimensions, developments and current issues concerning agriculture in the global world.
15	General information about rural development, examples and future directions
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	12
Homework	2	1	2
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	30	30
Total workload			94
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Homework	10
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)			
Prepared by			
Signature(s)			



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Food Science and Technology	251313005

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	2		3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	The aim of the Food Science and Technology course is to provide information on the definition of food technology, raw materials and their compositions in ready-made food technology, food spoilage factors and control, physical food preservation methods, chemical food preservation methods, biological food preservation techniques, grain, meat, milk, oil, sugar processing technology and quality control principles in processed foods.
Short Course Content	Definition of food technology, raw materials and their compositions in food industry, food spoilage factors and control, physical food preservation methods, chemical food preservation methods, biological food preservation techniques, grain, meat, milk, oil, sugar processing technology and quality control principles in processed foods.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learning the basic chemical structures of foodstuffs		1, 11	A
2 Learning the benefits of chemical properties of foodstuffs in terms of production, nutrition and health		1, 11	A
3 Knows the changes that occur in food from production to consumption.		1, 11	A
4 Knows food preservation conditions, rules and methods.		1, 11	A
5			
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Food Processing Technology, Second Tech Fellows, PJ
Supporting References	-
Necessary Course Material	PC, projector

Course Schedule	
1	Food Components
2	Food Microbiology
3	Preservation Techniques
4	Cereal Technology
5	Oil Technology
6	Dairy Technology
7	Canning Technology
8	Midterm Exam
9	Sugar and Sugary Products Technology
10	Meat Technology
11	Fermented Products Technology
12	Alcoholic Products Technology
13	Food Safety and Legislation
14	Food Additives
15	Food Toxicology
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	6	6
Final Exam	1	1	1
Studying for Final Exam	1	12	12
Total workload			90
Total workload / 30			3
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTURER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
General Fruit Growing	251313013

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	1	2	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Basic knowledge will be given on cultivation techniques and developments in fruit growing, of fruit species. With this course, ecology, environment and soil relationships on fruit growing will be understood.
Short Course Content	Cultural history of fruit growing, basics of modern fruit growing, production and trade data, fruit growing in Turkey, classification of fruits, organs of fruit trees and their functions, flower and fertilization biology, growing periods of trees, periodicity and fruit fall, ecological problems, important subjects in orchard establishment will be given.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,9,11,12	1, 5, 6, 7, 8, 9	A, K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Özbek,S. 1977. Genel Meyvecilik. Ankara Üniversitesi Ziraat Fakültesi yayınları No.6.
Supporting References	Ağaoğlu, S. ve ark. 1995. Genel Bahçe Bitkileri. Ankara Üniversitesi Ziraat Fakültesi Eğitim, Araştırma ve geliştirme Vakfı Yayınları No:4. Gerçekçioğlu R., Bilginer Ş, Soylu A. 2008. Genel Meyvecilik kitabı, Nobel Yayıncılık, 480 sayfa.
Necessary Course Material	Projector and computer

Course Schedule	
1	Cultural history of fruit growing, and analysis of developments through history, production and trade data
2	Basics of modern fruit growing and high density orchards
3	Basics of modern fruit growing and high density orchards
4	Fruit growing in Turkey and World
5	Classification of fruits
6	Mid-term Exam / Organs of fruit trees and their functions – vegetative / generative organs
7	Flower types in fruits, pollination and fertilization
8	Seed and fruit formation of fruit trees; Flower bud differentiation
9	Growing periods of fruit trees, dormancy
10	Periodicity and fruit falls
11	Mid-term Exam / Ecological problems of fruit growing
12	Species, variety and rootstock selection in orchard establishment; Planting in orchard establishment
13	Important subjects in orchard establishment
14	Orchard management
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	4	5	20
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	35	35
Final Exam	1	1	1
Studying for Final Exam	1	45	45
Total workload			144
Total workload / 30			4,80
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Landscape Architecture	251313024

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	2	0	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	To enable the students of the Faculty of Agriculture to understand the working areas of Landscape Architecture and its relations with agriculture and to provide them with a basic education in this direction.
Short Course Content	Landscape Concept, Landscape Architecture Profession and Historical Development, Working Subjects, History of Landscape Art, Plants and Their Functions, Grouping of Plant Material, Use of Plant Material in Landscape Architecture, Landscape Design, Landscape Planning, Landscape Plants, Cover Plants, Landscape Construction, Urban Recreation Areas, Landscape applications within the scope of adaptation to climate change will be explained.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To have general knowledge about landscape architecture and its stud area To have general knowledge about plant material and its use To understand Landscape design and projects To be aware of the importance of cooperation between Landscape Architects and Agriculture Engineers and to gain ability on teamwork	1,5,12	1,2,5	A, K
2			
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	<p>Aran,S.,(1977). Peyzaj Mimarisi:Temel prensipleri, Ankara Üniversitesi Ziraat Fakültesi Yayınları; 635 Ders Kitabı; 198, Ankara, 386s.</p> <p>Korkut, A., Şişman, E.E., Özyavuz, M., (2010). Peyzaj Mimarlığı, Verda Yayıncılık ve Danışmanlık Hizmetleri, İstanbul.</p> <p>Orçun, E. (1972) Özel Bahçe Mimarisi Dendroloji Cilt I İğne Yapraklı Ağaç ve Ağaçcıklar, Ege Üniversitesi Ziraat Fakültesi Yayınları No: 196, Bornova İzmir, 383 s.</p> <p>Orçun, E. (1975) Peyzaj Mimarisi Dendroloji, Cilt II, Yapraklı Ağaç ve Ağaçcıkların Özellikleri ve Peyzaj Mimarisinde Kullanılışları, Ege Üniversitesi Ziraat Fakültesi Yayınları No: 266, Bornova İzmir, 298 s.</p> <p>Hatipoğlu, A., Gülgün, B. (1999) Tek ve Çok Yıllık Mevsimlik Çiçekler, Kent Matbaası, Yenişehir-İzmir, 205s.</p> <p>Güney, A., Erdem Ü., Zafer, B., Hepcan, Ş. (1996) Peyzaj Konstrüksiyonu (Donatı Elemanları), Ege Üniversitesi Ziraat Fakültesi Yayınları No: 514, Bornova İzmir, 149s.</p> <p>Uzun, G. (1996) Peyzaj Mimarlığında Çim ve Spor Alanları Yapımı, Çukurova Üniversitesi Ziraat Fakültesi Yardımcı Ders Kitabı No:20, Adana, 170 s.</p>
Supporting References	Ceylan, G., (2004). Dış Mekan Süs Bitkileri ve Peyzajda Kullanımları, Flora Yayınları, İstanbul.
Necessary Course Material	Projection

Course Schedule	
1	Landscape Concept, Landscape Architecture Profession and Historical Development, Working Subjects
2	History of Landscape Art
3	Plants and their functions, Grouping of plant material
4	Use of Plant Material in Landscape Architecture and Principles of Use
5	Landscape Design
6	Landscape Planning
7	Gymnospermae Plants
8	Mid-Term Exam
9	Angiospermae Plants
10	Bedding Flowers
11	Cover Plants
12	Landscape Construction
13	Urban Recreation Areas
14	Arid Landscaping Practices
15	Landscape Practices in the Scope of Climate Change
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	7	5	35
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	45	45
Total workload			140
Total workload / 30			4,6
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Occupational Health and Safety I	251313012

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
3	2	0		2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The aim of this course is to enable the student to comprehend the rights and responsibilities of the employee and the employer within the framework of the employment contract, to understand the effects and importance of occupational accidents, to raise awareness about occupational health and safety.
Short Course Content	The Labour Law consists of occupational safety, occupational accidents, occupational diseases and risk assessment.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learn the basic concepts of individual labour law.		1	A
2 Will be able to explain the conclusion of the employment contract, its content, its termination and the consequences of its termination.		1	A
3 Will be able to explain the regulation of work in terms of time.		1	A
4 Will be able to explain the concepts related to occupational health and safety and the importance of occupational health and safety.		1	A
5 Will be able to analysis the general view of occupational health and safety in Turkiye.		1	A
6 Gain knowledge and skills about occupational accidents and occupational diseases.		1	A
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kahya, E. ve Özkar, D. (2022). <i>İş güvenliği</i> . Eskişehir: Eskişehir Osmangazi Üniversitesi Yayınları, No: 246.
Supporting References	Labour Law of Türkiye
Necessary Course Material	Computer, projection

Course Schedule	
1	Lesson scope, execution and assessment
2	The subject, importance, historical development, application area and basic concepts of labour law
3	The concept of labour contract and its features, types, establishment
4	Obligations arising from the employment contract, termination of the employment contract
5	Regulation of job in terms of time and regulation of job in terms of persons
6	Video: work on scaffolding OHS culture
7	Occupational Safety
8	Occupational Accidents Definition, types and classification Factors causing occupational accidents (+videos, unsafe movements)
9	Mid-Term Exam
10	Occupational accidents Statistics, theories of formation
11	Occupational diseases
12	Risk factors affecting the business environment Physical factors (+videos)
13	Risk factors affecting the business environment Chemical, biological
14	Work safety in workshops 1. Basic safety rules in workshops a. Basic safety rules (+videos, safety tape) b. Health and safety signs (+videos, warning signs) 2. Safety in hand tools (+videos)
15	Risk Assessment Basic concepts Risk assessment steps Risk assessment methods (2 methods, matrix and checklist)
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	2	
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam			
Final Exam	1	1	1
Studying for Final Exam			
Total workload			
Total workload / 30			
Course ECTS Credit			

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Material Science	251313014

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To understand the internal structure of materials and their usage properties in order to select appropriate and economical materials in the design of structures.
Short Course Content	Classification of materials, cast irons, steels, material norms, heat treatments, surface hardening methods of steels, diffusion, non-ferrous alloys, material properties, explanation of general properties of materials such as plastics, ceramics, composites.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Recognizing engineering materials	5,6	1,2,5,11,12,13	A,K
2 Selecting materials according to their properties	3,5,6,7	1,2,5,11,12,13	A,K
3 Evaluating materials according to working conditions	1,3,4,5	1,2,5,11,12,13	A,K
4 Taking necessary precautions for the protection of materials	1,2,4,8	1,2,5,11,12,13	A,K
5 Learning the properties of non-ferrous materials	6,7	1,2,5,11,12,13	A,K
6 Understanding information about material inspection methods	7,8,9	1,2,5,11,12,13	A,K
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	MEGEP - General Directorate of Vocational and Technical Education Lecture Notes https://megep.meb.gov.tr/?page=moduller
Supporting References	Altuntaş, E. 2021. Engineering Basic Materials Knowledge. Akfon Publications Erdoğan, Doğan. Materials Knowledge. Ankara Univ. Faculty of Agriculture. Department of Agricultural Machinery.
Necessary Course Material	

Course Schedule	
1	Introduction to materials science and types of materials
2	Internal structures of materials and crystal lattices
3	Metal materials, physical and chemical properties
4	Mechanical properties of steels and applied mechanical tests
5	Material selection
6	Material standards
7	Alloys
8	Mid-Term Exam
9	Strengthening methods in steel
10	Heat treatments
11	Hardness and hardness measurement methods
12	Methods for protecting metals
13	Non-metal materials
14	Plastic materials
15	Ceramic and Composite materials
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	3	6	18
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	30	30
Total workload			98
Total workload / 30			3,2
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	60
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Social Elective Courses I	

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
3	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
				X

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	
Short Course Content	

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1			
2			
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	
Supporting References	
Necessary Course Material	

Course Schedule	
1	
2	
3	
4	
5	
6	
7	
8	Mid-Term Exam
9	
10	
11	
12	
13	
14	
15	
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	3	42
Classroom Studying Time (review, reinforcing, prestudy,....)	2	3	6
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	25	25
Total workload			95
Total workload / 30			3,16
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
General Vegetable Production	251314025

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	1	2	6

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	Taking Introduction to Horticulture course.
Objectives of the Course	Giving basic information about vegetable cultivation and gaining knowledge and experience about the factors affecting the establishment of vegetable business.
Short Course Content	Definition and classification of vegetables, Latin names of families and species, evaluation of economic and ecological factors that are effective in the selection of vegetable business location and determination of appropriate vegetable species and varieties and appropriate cultivation systems for economic production.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Classification of vegetables according to their botanical and various characteristics, current status problems of vegetable agriculture. Seedling cultivation,	1,5,6	1,2,5,6	A
2 Flower biology, propagation methods, important environmental conditions in vegetable cultivation.	1,5,6	1,2,5,6	A
3 Will have the necessary knowledge about cultural operations such as soil preparation, sowing-planting, fertilization and irrigation.	1,5,6	1,2,5,6	A
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Genel Sebze Yetiştiriciliği Cilt I. A. GÜNAY, A. Ü. Z.F. Bahçe Bit. Böl. 1992. Ankara.
Supporting References	Sebzecilik (Genel Teknikler Özel Uygulamalar) H. Kaygısız. Hasad Yay.
Necessary Course Material	Projector, computer

Course Schedule	
1	Definition of vegetables and their differences from other products, their importance in terms of nutrition and human health
2	Botanical classification of vegetables, the most important families in terms of production and consumption and their important species
3	Classification of vegetables according to their flower biology, edible parts and processing methods, growing seasons, life span, etc.
4	Vegetable farming business forms (1. Open field vegetable farming; family vegetable farming, village enterprise, field vegetable farming, garden vegetable farming, 2. Under cover vegetable farming business characteristics)
5	Climate (light, temperature, precipitation, humidity, wind) and soil properties (depth, pH, salinity, etc.) affecting the selection of the location for vegetable production
6	Reasons for crop rotation in vegetable cultivation, its importance, issues to be considered when making crop rotation
7	Forms of propagation in vegetables. Vegetative and generative propagation methods, their advantages and disadvantages
8	Mid-Term Exam
9	Variety types in vegetable seeds. Characteristics of open pollinated, hybrid, clone and synthetic varieties. Germination of seeds, applications to stimulate germination emergence
10	Vegetable growing (sowing-planting) places. Preparation and properties of pan, board, furrow, roller. Seed sowing and seedling planting systems (sprinkling, hearth or row sowing, single row, double row, multiple rows, etc. planting)
11	Calculation of the amount of seed or seedling required per unit area in sowing or planting. Sowing, planting depth
12	Irrigation methods in vegetable cultivation; advantages and disadvantages of drip irrigation, surface irrigation, sprinkler irrigation and other methods
13	Application of fertilizer in vegetables, time of application, types of fertilizer, method and amount of fertilizer, and annual maintenance works in vegetables
14	Visiting producer fields
15	Visiting producer fields
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	5	70
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	1	2	2
Studying for Final Exam	1	25	25
Total workload			166
Total workload / 30			5.53
Course ECTS Credit			6

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have basic knowledge in the fields of Horticulture and other agricultural engineering fields, to define the necessary data for the purpose, to collect data using information technologies and to solve problems encountered	3
2	To have theoretical and practical (field and laboratory) knowledge on the cultivation and breeding of fruit, vegetable, vineyard and ornamental plants, to be able to use and transfer this information correctly	5
3	Ability to find and evaluate the source of environmental, biological, technical and economic problems that may adversely affect the achievement of the desired level of yield and quality in Horticulture agriculture	4
4	Ability to apply methods for the conservation and sustainable use of genetic resources and the environment in the field of Horticulture	2
5	Ability to identify, name and grow fruit, vegetable, vineyard and ornamental plants	5
6	Ability to establish and operate garden, greenhouse and vineyard facilities	5
7	To have knowledge and skills in the production of propagation materials (seeds, seedlings, seedlings) of species and varieties of horticultural plants	5
8	To have theoretical and practical knowledge about biotechnology in horticulture	1
9	Having knowledge about good agricultural practices, the ability to decide on cultural processes in horticulture at the right time, the ability to identify diseases and pests occurring in horticultural crops	1
10	To be able to examine the changes in horticultural crops during harvest, post-harvest and storage and to have knowledge about storage conditions	1
11	Ability to obtain data through research in the field of Horticulture, to evaluate and record these data, to write and implement projects	1
12	To be able to work effectively in individual, multidisciplinary and multidisciplinary teams and to have the ability to take responsibility in this regard	1

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Agricultural Structures and Irrigation	251314026

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	NO
Objectives of the Course	To teach the basic concepts of agricultural irrigation and to ensure that this information is used in agricultural production.
Short Course Content	Soil-plant water relations, plant water consumption, irrigation efficiency, irrigation scheduling, irrigation methods, irrigation-plant nutrition relations

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	To learn about the elements that make up the soil		1	A
2	To learn about the soil water holding capacity		1	A
3	To understand irrigation efficiency		1	A
4	To learn the measurement methods of plant water consumption		1	A
5	To learn about irrigation methods		1	A
6	To be able to plan irrigation in fields		1	A
7	To be able to calculate energy costs in irrigation		1	A
8	To learn the relationships between irrigation and plant nutrition		1	A

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Yetkin Güngör, Zeki Erözel, Osman Yıldırım, 2010, Sulama, A.Ü. Ziraat Fakültesi Yayınları, No:1580, Ankara
Supporting References	1-Çevik B., 2001. Sulama ve Drenaj Ders Kitabı. Ç.Ü. Ziraat Fakültesi Yayınları, Adana 2-Doorenbos, J., Kassam, A.H., Bentvelsen, C.L.M, Branscheid, V., Plusje, J.M.G.A., Smith, M. and Van Der Wal, H.K., 1986. Yield response to water. FAO Irrigation and Drainage paper No:33, Rome
Necessary Course Material	-

Course Schedule	
1	Hydrological cycle and its elements
2	Soil Plant Water Relations
3	Soil Plant Water Relations
4	Plant Water Consumption
5	Irrigation Efficiency
6	Plant irrigation Periods
7	Irrigation Scheduling
8	Mid-Term Exam
9	Irrigation Methods (Border Irrigation)
10	Irrigation Methods (Furrow Irrigation)
11	Irrigation Methods (Sprinkler Irrigation)
12	Irrigation Methods (Drip Irrigation)
13	Irrigation and Plant Nutrition Relationships
14	Irrigation and Fertilization
15	
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	0	0	0
Homework	0	0	0
Quiz Exam	0	0	0
Studying for Quiz Exam	0	0	0
Oral exam	0	0	0
Studying for Oral Exam	0	0	0
Report (Preparation and presentation time included)	0	0	0
Project (Preparation and presentation time included)	0	0	0
Presentation (Preparation time included)	0	0	0
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	0	0	0
Final Exam	1	1	1
Studying for Final Exam	0	0	0
Total workload			30
Total workload / 30			1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	0
Homework	0
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	4
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	4
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	4
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	4

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Soil Science and Plant Nutrition	251314027

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The aim of the course is to teach students the classification, nature and origin of parent materials, soil formation and related factors, soil classification, physical, chemical and biological properties of mineral soils and plant nutrients.
Short Course Content	Soil formation, physical, chemical and biological properties of soil, recognition of plant nutrients

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Define the formation and morphology of the soil, Learn about the properties of soil, Gain knowledge of plant nutrients and their benefits to plants.			
2				
3				
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Zengin, M., 2013. Toprak Bilgisi Ders Notları. S.Ü. Ziraat Fak. Toprak Bil. ve Bitki Besl. Böl., Konya. Prof.Dr. Mehmet Aydın ve Doç.Dr. Şeref Kılıç. Toprak Bilimi (2010). Nobel Yayın Dağıtım.
Supporting References	Bitki Besleme (2010). Prof.Dr. Burhan Kacar ve Prof.Dr. Vahap Katkat
Necessary Course Material	Bilgisayar, projektör

Course Schedule	
1	Introduction to soil science and definition of soil
2	Soil formation, factors affecting soil formation, weathering
3	Physical properties of soil (texture, structure, colour, etc.)
4	Physical properties of soil (pores, porosity, porosity, soil water, air)
5	Soil chemical properties (lime, pH, salt, alkalinity, etc.)
6	Soil chemical properties (colloidal fractions, KDK)
7	Clay minerals
8	Mid-Term Exam
9	Soil organic matter
10	Soil organisms
11	Soil Classification
12	History of plant nutrition; definition and classification of plant nutrients
13	Macroelement uptake, metabolism, interactions with other nutrients, deficiencies, excesses in plants
14	Microelements uptake, metabolism, interactions with other nutrients, deficiency, excess in plants
15	Beneficial plant nutrients, deficiencies, excesses in plants
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	28	28
Classroom Studying Time (review, reinforcing, prestudy,....)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	45	45
Total workload			117
Total workload / 30			3,9
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	-
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Research and Experiment Methods	251314028

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	Successfully completing the statistics course
Objectives of the Course	In the Research and Experiment Methods course, which is the second stage after the statistics course, different experimental designs are explained with examples and analysis of the obtained data and interpretation of the results are explained. - To get the researcher's mission to the students, - Development of analytical thinking, - It is aimed to increase the ability to comment on different branches of the agricultural
Short Course Content	Planning of the experiments, Basic principles in designing an experiment, Experimental error, Concept of Replication and Parallel, Comparison of two independent groups, F distribution and variance analysis (ANOVA) technique, Completely Randomized Design, sample problem solutions and interpretation of results. Multiple comparison methods, Little Significant Difference method, Duncan test, sample problem solutions and interpretation of results. Relation of $F = t^2$. Assumptions of ANOVA, homogeneity control of variances, sample problem solutions and interpretation of results. Randomized Block Design, Latin Square design, Relative Efficiency, Factorial Experiments, Factorial Experiments in Completely Randomized Design, The concept of interaction, Simple and main effects, Factorial Experiments in Randomized Block Design, Split-plots in randomized block design, Repeated measurements experiments, One Factor experiments with Repeated Measurements, Two Factor experiments with Repeated Measurements

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1, 3, 11, 12	1, 2, 5, 10, 11, 12, 13	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	İsmail KESKİN, Ensar BAŞPINAR Yasin ALTAY, Nazire MİKAIL, Deneysel İstatistik Yöntemler (RStudio Uygulamalı) (Basılmamış) Orhan DÜZGÜNEŞ, Tahsin KESİCİ, Orhan KAVUNCU ve Fikret GÜRBÜZ (1987). Araştırma ve Deneme Metodları (istatistik Metodları-II). Ankara Üniversitesi, Ziraat fakültesi Yayınları:1021, Ders Kitabı: 295. Mehmet MENDEŞ (2013). Uygulamalı Bilimler için İstatistik ve Araştırma Yöntemleri (3. Baskı), İstanbul, Kriter Yayıncılık Douglas C. MONTGOMERY, Design and Analysis of Experiments,Fifth Edition (2001). Arizona State University John Wiley & Sons, Inc
Supporting References	Fikret GÜRBÜZ, Ensar BAŞPINAR ve Zahide KOCABAŞ (1995). Araştırma ve Deneme Metodları Uygulama Kılavuzu (II. Baskı). Ankara Üniversitesi, Ziraat fakültesi, Yayın No: 1431, Uygulama Kılavuzu: 244.
Necessary Course Material	Laptop, Calculator, Usb Memory.

Course Schedule	
1	Planning of the experiments, Basic principles in designing an experiment, Experimental error, Concept of Replication and Parallel, Comparison of two independent groups, and application via statistical package programs.
2	F distribution and variance analysis (ANOVA) technique, Completely Randomized Design, sample problem solutions, interpretation of results and application via statistical package programs.
3	Multiple comparison methods, Little Significant Difference method, Duncan test, sample problem solutions, interpretation of results and application via statistical package programs.
4	Relation of $F = t^2$. Assumptions of ANOVA, homogeneity control of variances, sample problem solutions, interpretation of results and application via statistical package programs.
5	Completely Block Design, Latin Square Design, Relative Efficiency, Missing observations, sample problem solutions, interpretation of results and application via statistical package programs.
6	Factorial Experiments, Factorial Experiments in Completely Randomized Design, sample problem solutions, interpretation of results and application via statistical package programs.
7	The concept of interaction, Simple and main effects, sample problem solutions, interpretation of results and application via statistical package programs.
8	Mid-Term Exam
9	Completely Block Factorial Experiments Design, sample problem solutions, interpretation of results and application via statistical package programs.
10	Split-plots in Completely Randomized Design, sample problem solutions, interpretation of results and application via statistical package programs.
11	Split-plots in Completely Block Design, sample problem solutions, interpretation of results and application via statistical package programs.
12	Repeated measurements experiments, sample problem solutions, interpretation of results and application via statistical package programs.
13	Repeated measurements experiments, sample problem solutions, interpretation of results and application via statistical package programs.
14	One Factor experiments with Repeated Measurements, sample problem solutions, interpretation of results and application via statistical package programs.
15	Two Factor experiments with Repeated Measurements, sample problem solutions, interpretation of results and application via statistical package programs.
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	35	35
Total workload			125
Total workload / 30			4,16
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Plant Protection	251314029

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The general information about plant diseases and pests will be given.
Short Course Content	General information about insects and their importance, insect morphology and physiology, reproduction biology, insect ecology, plant diseases, symptoms, abiotic and biotic factors of diseases, and agricultural management techniques will be given.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	They will be able to explain the concept of plant disease and symptoms	3,4,6	1,2,5	A
2	They will be able to find out the relationship between plant diseases, abiotic and biotic factors	3,4,6	1,2,5	A
3	They will be able to apply knowledge of basic agricultural pest management	3,4,6	1,2,5	A
4	Students will be able to express what plant pest insects and diseases	3,4,6	1,2,5	A
5	They will be able to apply knowledge of general entomology such as insect morphology, physiology, reproduction biology and insect ecology.	3,4,6	1,2,5	A
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Tarımsal Savaşım Yöntem ve İlaçları. 1993. Delen, N. Ege Üniversitesi Ziraat Fakültesi Ofset Basımevi, İzmir.
Supporting References	<p>Agricultural Chemicals. 1991. Thomson, W. T. Book IV-Fungicides, Thomson Publication, California.</p> <p>Agricultural Chemicals. 1991. Thomson, W. T. Book III-Miscellaneous Agricultural Chemicals, Thomson Publication, California.</p> <p>Agricultural Chemicals. 1991. Thomson, W. T. Book I-Insecticides, Thomson Publication, California.</p> <p>The Pesticide Manual. 1995. Tomlin, C. Incorporating the Agrochemicals Handbook, Crop Protection Publication, U.K.</p> <p>Tarımsal Zararlılarla Savaş Yöntem ve İlaçları. 1993. Öncüler, C. Ege Üniversitesi Basımevi, İzmir.</p> <p>Tarımda İlaçlı Mücadelenin Temel Prensipleri. 1996. Kaygısız, H. Hasad Yayıncılık LTD. ŞTİ. Rebel Ofset, İstanbul.</p> <p>Bitki Koruma El Kitabı. 2002. Anonymous. T.C. tarım ve Köyişleri Bakanlığı İzmir İl Müdürlüğü Yayınları No:352.</p>
Necessary Course Material	

Course Schedule	
1	Introduction to concept of pest control and the methods used in IPM
2	Cultural precautions using against agricultural pests
3	Domestic and foreign quarantine precautions used against to pests.
4	Domestic and foreign quarantine precautions used against to pests
5	Biotechnique methods used against to pests.
6	Biological and all control methods used against to pests.
7	Chemical control used against to pests and properties of pesticide.
8	
9	Introduction to concept of disease control and the methods used in IPM
10	Cultural precautions used against to plant disease
11	Biologic control methods used against to plant disease
12	Domestic and foreign quarantine precautions used against to plant disease.
13	Chemical control methods used against to plant pathogens.
14	Chemical control methods used against to plant pathogens.
15	Properties of fungicides used in chemical control
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			128
Total workload / 30			4,2
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Field Crops	251314030

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
			X	

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	By explaining the basic principles of field agriculture and the general situation of field agriculture in Turkey, introducing grains, edible legumes, industrial plants, forage plants and medicinal and aromatic plants among the field crops in terms of their vegetal properties and giving general information about cultivation techniques.
Short Course Content	Basic information about the introduction, cultivation, care, harvesting-threshing drying and storage of cool climate grains, hot climate grains, edible legumes, industrial crops and forage crops, and their types.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Can convey information about field crop cultivation.		1-2	A-K
2 Learning the problems of field crops in the region and taking part in their projects.			
3 They can be environmentally sensitive individuals in their field cropping practices.			
4 Can diagnose important field plant species by learning their morphological characteristics.			
5 Ability to recommend field crops suitable for producers' purposes			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Gökkuş A., Kantar F., Karadoğan T., Koç, A., 2008. Tarla Bitkileri. Atatürk Üniversitesi Ziraat Fakültesi yayınları, yayın no:188, 190, Erzurum.
Supporting References	Geçit H.H., Çiftçi C.Y., Emeklier Y., İkincikarakaya S., Adak M.S., Kolsarıcı Ö., Ekiz H., Altınok S., Sancak C., Sevimay C.S., Kendir H. 2009. Tarla Bitkileri. Ankara Üniv. Ziraat Fak. Yayın No.1569, 540, Ankara.
Necessary Course Material	-

Course Schedule	
1	Classification of field crops
2	Ecology, seed, field farming systems
3	Tillage, fallow, sowing, crop rotation
4	Fertilization, nitrogen fixation, irrigation
5	Weeds and their fight, harvest
6	Breeding of field crops
7	Grain cultivation, cool climate grains
8	Mid-Term Exam
9	Grain cultivation, warm climate grains
10	Industrial plant cultivation
11	Industrial plant cultivation
12	Cultivation of edible legumes
13	Cultivation of edible legumes
14	Forage crop cultivation
15	Forage crop cultivation
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam			
Final Exam	1	1	1
Studying for Final Exam			
Total workload			30
Total workload / 30			2/30
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	2
3	To have the ability of determining and evaluating the source of the ecological, biological,	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of	2
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the root and	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Occupational Health and Safety II	251314030

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
3	2	0		2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The aim of this course is to enable the student to comprehend the rights and responsibilities of the employee and the employer within the framework of the employment contract, to understand the effects and importance of occupational accidents, to raise awareness about occupational health and safety.
Short Course Content	The Labour Law consists of occupational safety, occupational accidents, occupational diseases and risk assessment.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Will learn Occupational Health and Safety legislation.		1	A
2 Will be able to explain the principles of fire protection in working areas.		1	A
3 Will be able to analysis the legal responsibility of the employer.		1	A
4 Will be able to adopt risk, prevention and safety culture.		1	A
5 Will be able to comprehend their responsibilities in terms of occupational safety in business life.		1	A
6 Will be able to define occupational hygiene and explain the risk factors of occupational hygiene.		1	A
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kahya, E. ve Özkaz, D. (2022). <i>İş güvenliği</i> . Eskişehir: Eskişehir Osmangazi Üniversitesi Yayınları, No: 246.
Supporting References	Labour Law of Türkiye
Necessary Course Material	Computer, projection

Course Schedule	
1	Lesson scope, execution and assessment
2	Occupational Accidents Definition, types, classification Factors causing work accidents Notification obligations of work accidents
3	Personal protective equipment (+videos)
4	Fire (+videos)
5	OHS Law
6	Examination of sample decisions of the Court of Cassation related to occupational accidents
7	Occupational hygiene
8	Emergency plan
9	Mid-Term Exam
10	Examination of statistics on occupational accidents and occupational diseases, common accidents and diseases and precautions
11	Legislation a) Noise b) Vibration c) Manual handling (load lifting)
12	Legislation a) Working with screen devices (office ergonomics) b) OHS trainings
13	OHS in food and livestock sector
14	OHS in food and livestock sector
15	OHS in Agriculture
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	2	
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam			
Final Exam	1	1	1
Studying for Final Exam			
Total workload			
Total workload / 30			
Course ECTS Credit			

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Social Elective Courses II	

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
				X

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	
Short Course Content	

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1			
2			
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	
Supporting References	
Necessary Course Material	

Course Schedule	
1	
2	
3	
4	
5	
6	
7	
8	Mid-Term Exam
9	
10	
11	
12	
13	
14	
15	
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	3	42
Classroom Studying Time (review, reinforcing, prestudy,....)	2	3	6
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	25	25
Total workload			95
Total workload / 30			3,16
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
General Viticulture	251315015

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	1	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	x			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The purpose of this course is to provide students with a better understanding of general viticulture.
Short Course Content	To describe viticulture culture and concepts, explain Turkey's and the world's viticulture potential, explain the differences between old and new viticultural practices, discuss the ecological demands of grapevines, evaluate the morphological organs of grapevines, discuss detailed breeding methods in viticulture, teach vineyard plantation techniques, winter pruning, and summer pruning, introduce goble and trellis systems, explain grape evaluation methods and grape harvest criteria, to describe growing techniques in viticulture and post-harvest storage to students.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To have general knowledge about the history of viticulture.	5	1,2	A
2 To have knowledge about viticulture in the world and in Turkey.	5	1,2	A
3 To learn the necessary climate and soil requirements for vine cultivation.	3	1,2	A
4 To learn the propagation, pruning, and rootstock usage of vines.	2	1,6	A
5 To learn the production and stages of vine saplings.	6	1,6	A
6 To learn the correct vineyard establishment and the cultural practices required in it.	1	1,6	A
7 To learn the pruning styles and training systems in viticulture.	6	1,6	A
8 To learn about common diseases in viticulture and their control methods.	9	1,2	A
9 To learn about common pests in viticulture and their control methods.	9	1,2	A
10 To understand the harvesting and preservation processes of grapes.	10	1,2	A

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Ağaoğlu, Y.S. 1999 Bilimsel ve Uygulamalı Bağcılık. Kavaklıdere Eğitim Yayınları. No: 1, 205 s Ankara Çelik, H., Ağaoğlu, Y.S., Fidan Y., Marasalı, B., Söylemezoğlu, G. 1998. Genel Bağcılık Sunfidan Mesleki Kitaplar Serisi:1, 253 s, Ankara.
Supporting References	Çelik, S. 1998. Bağcılık (Ampeloloji) Cilt-1. 426 s, Tekirdağ. Weaver, R.J., 1976. Grape Growing. John Wiley and Sons, 371 s. Coombe, B.G. and Dryi, P.R. 1992 Viticulture (Vol.1,2) Winetitles, Adelaide.
Necessary Course Material	Projector and PC.

Course Schedule	
1	The Origin of the Vine, the history of viticulture, vine systematics
2	Viticulture in the world and Turkey, evaluation of viticulture Areas in Turkey, classification of grapes
3	Ecological requirements of vine (climate and soil requirements)
4	Morphological structure and characteristics of vines
5	Grapevine physiology (phenology, bloom, pollination and berry set)
6	Grapevine physiology (berry development and maturity)
7	The Origin of the Vine, the history of viticulture, vine systematics
8	Mid-Term Exam
9	Vine propagation techniques – I (cuttings, grafting, rootstocks and sapling production)
10	Vineyard site technique and winter pruning in viticulture (shape-product pruning)
11	Winter pruning (shape-product pruning) and trellis systems in viticulture
12	Summer pruning in viticulture (canopy management, tip removal, shoot orientation, cluster manipulations, cane girdling)
13	Grape evaluation and harvest criteria
14	Cultural practices and post-harvest process in viticulture (tillage, irrigation, fertilization, disease and pest control)
15	Cultural practices and post-harvest process in viticulture (tillage, irrigation, fertilization, disease and pest control)
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	1	2	2
Studying for Final Exam	1	25	25
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	2
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Ornamental Plants Cultivation	251315016

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	1	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	It aims to get to know the Ornamental Plants sector, to have information about the cut flowers, landscape plants, indoor plants and bulbous plants, which are the branches of the sector, and to have information about the propagation methods.
Short Course Content	The historical development and socio-economic importance of ornamental plantations, definition and classification of ornamental plants, general information and propagation of cut flowers, landscape plants, indoor plants and bulbous plants.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	They will learn the place of the ornamental plants sector in the country's economy and will have general information about the branches in this sector and the cultivation of the products in these branches.	1,2,5,6,7,9,12	1,2,5,6,11,12	A, D, K
2				
3				
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Mengüç,A..1996. Süs Bitkileri Anadolu Üniversitesi, Açıköğretim Fakültesi Yayınları,Eskişehir. Tanrıverdi, F. 1993. Çiçek Üretim Tekniği, Sera ve Açık Alanlarda Saksı, Kesme ve Bahçe Çiçeği Yetiştirme İlkeleri Ders Kitabı, İnkilap Kitabevi, İstanbul.
Supporting References	Altan, S.,1989. Süs Bitkileri Üretim Tekniği. Çukurova Üniversitesi Ziraat Fakültesi Ders Kitapları Yayını, No. 9, Adana. Korkut A., 1993. Seralarda Çiçek Yetiştiriciliği, Sera Üreticisinin El Kitabı,, Yayın Yeri: Hasad Yayıncılık.
Necessary Course Material	Projection

Course Schedule	
1	Socio-economic importance and historical development of ornamental plants propagation
2	Ornamental Plants Sector in the World and Turkey
3	Classification of Ornamental Plants
4	Propagation media, Irrigation and Fertilization in Ornamental Plants
5	Propagation Methods in Ornamental Plants
6	Cut Flowers
7	Propagation of Cut Flowers
8	Mid-Term Exam
9	Indoor Plants
10	Propagation of Indoor Plants
11	Landscape Plants
12	Propagation of Landscape Plants
13	Bulbous Plants
14	Propagation of Bulbous Plants
15	Propagation of Bulbous Plants
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework	1	20	20
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	25	25
Final Exam	1	1	1
Studying for Final Exam	1	35	35
Total workload			124
Total workload / 30			4,13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	10
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Propagation Techniques of Horticulture	251315017

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	1	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To give detailed information about the methods and principles of propagation of horticultural crops.
Short Course Content	This course covers generative and vegetative propagation methods of horticultural crops, and propagation methods for fruits, vegetables, vineyards and ornamental plants.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	To learn knowledge about the methods used in the propagation of horticultural crops	1,2,4,5,6,7,12	1,2,5,6	A
2	To learn methods for propagation according to the type of fruit species	1,2,4,5,6,7,12	1,2,5,6	A
3	To learn methods for propagation of vegetables, grapes and ornamental plants	1,2,4,5,6,7,12	1,2,5,6	A
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	M. Yılmaz, Bahçe Bitkileri Yetiştirme Tekniği Hartmann, H.T., Kester, D.E., Davies, Jr.F., Geneve, R.L., 1997. Plant Propagation Principles and Practices. Sixth Edition, Prentice Hall, New Jersey Özbek, S., 1978. Genel Meyvecilik (Kışın Yapraklarını Döken Meyve Türleri). Çukurova Üniversitesi Ziraat Fakültesi Yayınları No. 128. Ders Kitabı 11
Supporting References	
Necessary Course Material	Projection

Course Schedule	
1	Propagation methods in horticulture
2	Generative propagation method
3	Vegetative propagation methods
4	Propagation with layering
5	Propagation with cuttings and practice
6	Propagation with grafting
7	Rootstocks used in Horticulture
8	Mid-Term Exam
9	Bud graftings and practice
10	Cleft and tongue graftings and practice
11	Cleft and tongue graftings
12	Propagation by specialized vegetative structures
13	Propagation by tissue culture
14	Propagation by tissue culture
15	Propagation by tissue culture
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	14	3	42
Studying for Final Exam	14	2	28
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Ara Sınav	40
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	5
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Professional Practice I	251315013

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	0	4	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The practice ability sophisticating and making technical tours to students about all lessons.
Short Course Content	Department of land and to make practical training courses in laboratory. Improve the knowledge by technical tours.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Seed sowing
2	Nursery growing
3	Tecnical tour
4	Pruning
5	Pruning
6	Tecnical tour
7	Sapling supplying and planting
8	Midterm exam / Sapling supplying and planting
9	Setting up a garden
10	Setting up a garden
11	Setting up a garden
12	Garden management
13	Garden management
14	Tecnical tour
15	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	2
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	4

LECTUTER(S)				
Prepared by	All Teaching Members			
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Organic Agriculture in Horticulture	251315018

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Teaching the general principles of organic agriculture that it's healthy production methods for environment and human, certification systems, low and instruction of organic agriculture, faced problems and analysis methods in organically production systems
Short Course Content	Organic agriculture and general principles, law and instruction of organic agriculture, certification system, production methods of organic fruit and vegetable growing and organic viticulture

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,9,10,11,12	1, 4, 5, 7, 8, 11	A, K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Zengin,M. (2007). Organik Tarım, Hasad Yayıncılık, 136s. İlbaş, A.İ. (2009). Organik Tarım İlkeler ve Ulusal Mevzuat, Efil Yayınevi, 267s. Anonim (2010). Organik Tarım Araştırma Sonuçları 2005-2010, (Ed. Ayşen Alay Vural), Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 362s.
Supporting References	Agriculture, Environment and Food Security (2002) (Edited: N. Scialabba and C. Hattam), Environment and Natural Resources Series No:4, FAO, Rome, 258 p.
Necessary Course Material	Projector and computer

Course Schedule	
1	General basis of organic agriculture
2	Developing process of organic agriculture in the World and Turkey
3	Low and instruction of organic agriculture
4	Certification system of organic agriculture
5	Increase of soil productivity in organic agriculture
6	Alternative systems in production of organic horticultural crops
7	Green manuring and effects
8	Soil process in organic agriculture; planting rotation in organic agriculture
9	Principles of organic fruit growing
10	Principles of organic vegetable growing
11	Midterm exam / Organic horticultural production areas and special locations
12	Principles of organic viticulture; Plant protection basis in organic agriculture
13	Economic analysis in organic agriculture
14	Faced problems and analysis methods in organic agriculture
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	30	30
Total workload			92
Total workload / 30			3,06
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	5
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	5
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	4
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Professional English	251315019

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	x			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	To teach words and patterns required in programs, help to express oneself and prepare to career in future.
Short Course Content	To give information about professional terminology in foreign language and to give ability to use professional terminology

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To have general knowledge about professional terminology in foreign language	1,5	1,2,5	A
2 Understands professional terminology while reading, speaking, listening and writing	1,5	1,2,5	A
3 Understands the importance of international communication	1,5	1,2,5	A
4			
5			
6			
7			
8			
9			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Akdeniz Üniversitesi Ziraat Fakültesi Bahçe Bitkileri Bölümü, İngilizce-Türkçe Bahçe Terimleri Sözlüğü, Vocabulary Of Horticulture, http://bahce.ziraat.akdeniz.edu.tr/dinamik/10/212.pdf
Supporting References	Eser, D., Tarımsal Ekoloji Terimler Sözlüğü II.Baskı Ankara Üniversitesi Ziraat Fakültesi Yayınları Ebcioglu, N., Bitki Adları Sözlüğü, İnkılap kitabevi
Necessary Course Material	Projector and PC.

Course Schedule	
1	Turkish Translations exercise in documents about Fruit Propagation
2	Turkish Translations exercise in documents about Fruit Propagation
3	Turkish Translations exercise in documents about Fruit Propagation
4	Turkish Translations exercise in documents about Fruit Propagation
5	Turkish Translations exercise in documents about Vegetable Propagation
6	Turkish Translations exercise in documents about Vegetable Propagation
7	Turkish Translations exercise in documents about Vegetable Propagation
8	Mid-Term Exam
9	Turkish Translations exercise in documents about Vegetable Propagation
10	Turkish Translations exercise in documents about Ornamental Plants Propagation
11	Turkish Translations exercise in documents about Ornamental Plants Propagation
12	Turkish Translations exercise in documents about Viticulture
13	Turkish Translations exercise in documents about Viticulture
14	Turkish Translations exercise in documents about Viticulture
15	Turkish Translations exercise in documents about Viticulture
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	1	2	2
Studying for Final Exam	1	25	25
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Sustainable Agriculture in Horticulture	251315020

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Students will be informed on sustainable agriculture in horticulture, and will be made them know sustainable agriculture methods in horticultural growing.
Short Course Content	Determination of sustainable agriculture, reason and principles of practice, organic agriculture, good agricultural practices (GAP), GLOBALGAP protocol as production standard of good agricultural practices for the certification of agricultural applications in agricultural and horticultural industry, general rules of GLOBALGAP, samples of sustainable agriculture in horticulture.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	To learn determination, reason and principles of sustainable agriculture.	1, 3, 4, 9	1	A
2	To have knowledge on organic agriculture that one of sustainable agriculture methods.	4, 9	1	A
3	To have knowledge on good agricultural practices that one of sustainable agriculture methods.	4, 9	1	A
4	To have information on GLOBALGAP protocol.	4	1	A
5	To make and been made production according to these principles, and solve the problems through production.	1, 2	1	A
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Ekolojik Tarım (Ekolojik Tarım Eğitimi Ders Notları) ETO Tarım ve Köyişleri Bakanlığı. 1999. Er, C., Başalma, D., 2008, Organik Tarımdaki Gelişmeler, Seçkin Yayıncılık, 308 sayfa.
Supporting References	Türkiye 1., 2. Ekolojik Tarım Sempozyumları Organic Farming Diamond Farm Enterprises New Yrk, USA Lampkin, N., 1990. Mollison, B., 1988, Permaculture: A Designers' Manual, ISBN-10: 0908228015, ISBN-13: 978-0908228010, Tagari Publications, Australia.
Necessary Course Material	

Course Schedule	
1	Determination and reason of sustainable agriculture
2	Beginning, stages, advantages and disadvantages of sustainable agriculture in the World and in our country
3	Principles of sustainable agriculture
4	Protection of soil, water, air and environment and positive and negative factors affected these
5	Sustainable use of agricultural resources
6	Samples of sustainable agriculture in horticulture
7	Good Agricultural Practices (GAP)
8	Mid-Term Exam
9	Good Agricultural Practices (GAP)
10	Good Agricultural Practices (GAP)
11	Good Agricultural Practices (GAP)
12	Organic agriculture and it's principles
13	Organic agriculture and it's principles
14	Permaculture
15	Biodynamic agriculture
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)	1	14	14
Mid-Term Exam	1	1	14
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Presentation	20
Presentation	
Final Exam	40
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	4
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	4

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Biotechnology in Horticulture	251315021

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Application of biotechnological methods to crops. Students are be able to know basic principles in biotechnology..
Short Course Content	Basic nutrient media and culture conditions in plant tissue culture, plant regeneration through organogenesis and embryogenesis, protoplast culture and somatic hybridization, haploid plant production and its use in plant breeding, production of virus-free plants by tissue culture, micropropagation, gene transfer techniques, production of transgenic horticultural crops

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Be able to use source of biotechnological knowledge	4, 7, 8	1	A
2 Be able to enhance agronomical characteristics using biotechnology	4, 7, 8	1	A
3 Be able to develop new cultivar	8	1	A
4 Be able to conserve genetic resources	4	1	A
5 Be able to understand gene transfer principles	8	1	A
6 Be able to understand correlations between agronomical characteristics and genes	8	1	A
7 Be able to understand use of technology in breeding	8	1	A
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Bitki Biyoteknolojisi I Doku Kültürü ve Uygulamaları 2004 Editörler: S. Özcan, E. Gürel ve M. Babaoğlu Bitki Biyoteknolojisi II Genetik Mühendisliği ve Uygulamaları 2004 Editörler: S. Özcan, E. Gürel ve M. Babaoğlu
Supporting References	Current articles
Necessary Course Material	

Course Schedule	
1	Introduction to biotechnology
2	Culture conditions and factors effecting tissue culture
3	Plant regeneration by organogenesis and embryogenesis
4	Haploidy methods
5	Haploid plant production and its use in plant breeding
6	Protoplast culture and somatic hybridization
7	Micropropagation
8	Mid-Term Exam
9	<i>In vitro</i> germplasm conservation
10	Embryo-culture and its use in plant breeding
11	Somatic embryogenesis
12	Transgenic plants-GMO
13	Gen transfer methods Gen transfer methods
14	Gen transfer methods Gen transfer methods
15	Reason to development of transgenic plants
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	28
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	2
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	5
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Horticultural Crops Diseases and Control	251315022

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To inform about the economic importance and spread of pathogenic fungus species, hosts, symptoms, biology and control methods against them in Horticulture.
Short Course Content	Introduction of fungal-borne diseases that cause problems in horticultural crops and methods of control.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Knows the fungus species that cause disease in horticultural plants.	1,2,5	1	A
2	Knows which disease symptoms occur in horticultural plants.	1,2,5	1	A
3	Knows the biology of the disease agent fungus.	1,2,5	1	A
4	Knows the economic importance and spreading conditions of the disease.	1,2,5	1	A
5	Knows which methods to use in control diseases.	1,2,5	1	A
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Agrios, G. N., 2005. Plant Pathology, Fourth Edition. Academic Press. USA. Jones, J.B., Jones, P.J., Stall, R.E. and Zitter, T.A., 1991. Compendium of Tomato Diseases. APS Press. USA. Schwartz, H.F. and Mohan, S. K., 1999. Compendium of Onion and Garlic Disease. Third Edition.. APS Press. USA. Sherf ,A. F and Macnab ,A.A., 1986. Vegetable Diseases and Their Control.. Second Edition. John Wiley & Sons. Inc., USA Zitter, T.A., Hopkins, D.L. and Thomas, C.E., 1986. Compendium of Cucurbit Diseases. APS Press. USA.
Supporting References	Kurt Ş. 2020. Bitki Fungal Hastalıkları, Akademisyen Kitabevi, Ankara.
Necessary Course Material	Projector and computer

Course Schedule	
1	Solanaceae family diseases
2	Solanaceae family diseases
3	Solanaceae family diseases
4	Onion and garlic diseases
5	Cucurbits diseases
6	Crucifers diseases
7	Crucifers diseases
8	Mid-Term Exam
9	Edible vegetables diseases
10	Legume diseases
11	Fungal diseases of annual ornamental plants
12	Fungal diseases of annual ornamental plants
13	Fungal diseases in perennial park and ornamental plants
14	Fungal diseases in perennial park and ornamental plants
15	Grapevine diseases
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	28
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	2
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Modern Fruit Growing	251315023

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Differences in practices such as irrigation, fertilization, pruning, training, support systems and rootstocks used in dwarf fruit trees due to the inputs used more intensively compared to classical cultivation are emphasized and it is aimed that the student who takes the course acquire management skills in a modern orchard.
Short Course Content	The subject of modern fruit growing covers stunted, compacted and intensive fruit growing. All inputs such as sapling, fertilizers, pesticides and supplements used in the garden are used more and more intensively than in classical and traditional fruit growing. It differs greatly from cultural treatments, especially pruning and training.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Intensive Orchard Management, Author; Dr. Bruce H. Barritt, Publication Year; 1992, ISBN;0-9630659-1-2
Supporting References	General Fruiting, Editors; R. Gerçekçioğlu et al., Chapter 12. Pruning of Fruit Trees. Pages 385-449.
Necessary Course Material	Projector and computer

Course Schedule	
1	What is modern fruit growing? What areas of fruit growing does it cover?
2	Discussion of inter-row and on-row planting spacing in dwarf orchards.
3	Characteristics of the orchard location suitable for modern fruit growing.
4	Design of support systems, poles, rods and wires in dwarf orchards
5	Determining the suitability of concrete, iron and wood materials used in support systems for the orchard system and facilitating cultural processes
6	Preparation of fruit sapling places and mulching operations in dwarf orchards
7	Vegetative power levels, classification and effects on crown development of rootstocks used in dwarf fruit growing
8	Placement of drip irrigation pipes and design of tanks and apparatus used for irrigation and fertilization purposes
9	The use of Spur and standard apple, pear, cherry and peach varieties in dwarf orchards
10	Discussion of weekly irrigation and fertilization regimens in dwarf orchards
11	Creation and pruning of super spindle and slender spindle systems applied in dwarf apple orchards
12	Creation and pruning of UFO, Kim Green Bush, Tall Spindle ax and super spindle systems applied in dwarf sweet cherry orchards
13	Creation and pruning of vertical cordon, Y palmette and super spindle systems in dwarf pear orchards
14	Spraying operations against diseases and pests such as black spot and internal worms in dwarf orchards
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			110
Total workload / 30			3,6
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Determination of Plant Fertilizer Requirements and Fertilization	251315005

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Learning of fertilization timing, application form of fertilizers to fruit and vegetable plants.
Short Course Content	Introducing horticulture crops, explaining effects of factors to fertilization, learning of fertilization timing, application form of fertilizers to horticultural plants..

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learning Application forms, timing, and amount of fertilization, and gaining ability on application of fertilization of plants.	1	1	A, K
2 Preperation of specific fertilization program for horticultural plants.	1	1	A, K
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Indivudial Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kacar B. ve Katkat A.V. 2011. Gübreler ve Gübreleme Tekniği, 4. Basım, ISBN: 978-605-5426-20-0, Nobel yayıncılık Kızılay, Ankara.
Supporting References	Anaç D. 2010. Önemli Kültür Bitkilerinin Gübrenilmesi. Bornova –İzmir. Zengin M. ve Özbahçe A. 2010. Bitkilerin iklim ve toprak istekleri. Atlas akademi Yayınları.
Necessary Course Material	Computer, projector

Course Schedule	
1	Classification of horticultural plants according to fruit characteristics and climate conditions
2	Factors effecting fertilization and fertigation method and fertilization in leaves
3	Type of organic matters for application to soils, type of chemical fertilizers, slow release fertilizers, time and methods of fertilization
4	Nutrition elements level in plants, essentials elements for plants and their uptake forms, symptoms of their deficiency and excess
5	Basic principle of fertilization program, timing of fertilization in horticultural plants
6	Fertilization and nutrition of most common fruits
7	Fertilization and nutrition of most common fruits
8	Mid-Term Exam
9	Fertilization and nutrition of most common fruits
10	Fertilization and nutrition of most common fruits
11	Effective factors in fertilization of vegetables such as economic and environmental
12	Fertilization and nutrition of most common vegetables
13	Fertilization and nutrition of most common vegetables
14	Fertilization and nutrition of most common vegetables
15	Fertilization and nutrition of most common vegetables
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	28	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	25	25
Total workload			87
Total workload / 30			2,9
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	-
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Determination of Plant Fertilizer Requirements and Fertilization	251315005

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Learning of fertilization timing, application form of fertilizers to fruit and vegetable plants.
Short Course Content	Introducing horticulture crops, explaining effects of factors to fertilization, learning of fertilization timing, application form of fertilizers to horticultural plants..

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learning Application forms, timing, and amount of fertilization, and gaining ability on application of fertilization of plants.	1	1	A, K
2 Preperation of specific fertilization program for horticultural plants.	1	1	A, K
3			
4			
5			
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Indivudial Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kacar B. ve Katkat A.V. 2011. Gübreler ve Gübreleme Tekniği, 4. Basım, ISBN: 978-605-5426-20-0, Nobel yayıncılık Kızılay, Ankara.
Supporting References	Anaç D. 2010. Önemli Kültür Bitkilerinin Gübrenilmesi. Bornova –İzmir. Zengin M. ve Özbahçe A. 2010. Bitkilerin iklim ve toprak istekleri. Atlas akademi Yayınları.
Necessary Course Material	Computer, projector

Course Schedule	
1	Classification of horticultural plants according to fruit characteristics and climate conditions
2	Factors effecting fertilization and fertigation method and fertilization in leaves
3	Type of organic matters for application to soils, type of chemical fertilizers, slow release fertilizers, time and methods of fertilization
4	Nutrition elements level in plants, essentials elements for plants and their uptake forms, symptoms of their deficiency and excess
5	Basic principle of fertilization program, timing of fertilization in horticultural plants
6	Fertilization and nutrition of most common fruits
7	Fertilization and nutrition of most common fruits
8	Mid-Term Exam
9	Fertilization and nutrition of most common fruits
10	Fertilization and nutrition of most common fruits
11	Effective factors in fertilization of vegetables such as economical and environmental
12	Fertilization and nutrition of most common vegetables
13	Fertilization and nutrition of most common vegetables
14	Fertilization and nutrition of most common vegetables
15	Fertilization and nutrition of most common vegetables
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	28	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	25	25
Total workload			87
Total workload / 30			2,9
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	-
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Beekeeping	251315025

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	None
Objectives of the Course	General aspects on breeding and rearing of honeybee
Short Course Content	Giving teorical and practical experiences on bee breeding

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Basic and applied information about beekeeping, sufficient information about application methods in bee management.		1	A, K
2	The ability to identify problems related to beekeeping and develop solutions, the ability to choose and apply appropriate methods for this purpose.		1	A, K
3	Ability to collect data, prepare projects and conduct research on beekeeping		1	A, K
4	Ability to follow scientific and technological developments related to beekeeping, develop strategies, and transfer them to animal production		1	A, K
5	To act in accordance with professional and ethical values in the field of beekeeping, to act accordingly and to have a sense of responsibility		1	A, K

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Indivudial Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Bal Arısı Biyolojisi ve Yetiştiriciliği. Doç.Dr. Sibel Silici, Elif Yayınevi Yayınları
Supporting References	1. Sönmez,R. Altan,Ö. 1992. Teknik Arıcılık. E.Ü. Basınevi, Bornova-İzmir 2. Doğaroğlu, M.1999. Modern Arıcılık Teknikleri, Anadolu Matbaa, İstanbul. 3. Grout, R.A. 1992. The Hive and the Honeybee, Dadant & Sons, Inc.II.USA.
Necessary Course Material	–

Course Schedule			
1	Beekeeping history; beekeeping in the World and Turkey		
2	Anatomy of honeybees and bee races		
3	Specifications of honey bees in the colony		
4	Life cycles in honey bees		
5	Hormones and pheromones in honey bees		
6	Tools and equipments of beekeeping		
7	Technical beekeeping and land experience		
8	Midterm Exam		
9	Seasonal works in beekeeping I		
10	Seasonal works in beekeeping II		
11	Nectar and pollen sources		
12	Queen rearing		
13	Production of honey and other bee products		
14	Apitherapy		
15	Honey bee diseases and pests		
16	Final Exam		
Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	2	3	6
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	10	10
Final Exam	1	1	1
Studying for Final Exam	2	15	30
	Total workload		90
	Total workload / 30		3
	Course ECTS Credit		3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fruit and Vegetable Processing Technology	251315026

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	3		3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	3			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To explain the fruit and vegetable processing technologies and laboratory controls and analysis methods of the processed fruit and vegetable products.
Short Course Content	Processing technologies of fruit juices, nectars and drink, processing of tomato products, especially paste processing, concentration techniques of fruit and vegetable juices, calculation of pasteurization and sterilization conditions in heat processing, production of special canned foods, processing of jam and marmelade, principle of cold and frozen storage, freezing and thawing techniques, basic principles of dehydration, drying and dehydration methods for fruit and vegetables

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	To understand the importance of fruit and vegetables contents and structure on fruit and vegetable.		1,2,5	A
2	To learn about industrial fruit and vegetables processes.		1,2,5	A
3	To understand last product evaluation economically during process application production of high quality fruit and vegetable processing.		1,2,5	A
4	To learn the basic steps of a process.		1,2,5	A
5	To learn about safe fruit and vegetable products production.		1,2,5	A
6	To learn about technological process basics.		1,2,5	A
7	Able to solve problems at important production points for product quality		1,2,5	A
8	Able to solve problems at important production points for product quality		1,2,5	A

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	1. Cemeroğlu, B., Yemenicioğlu, A., & Özkan, M. (2001). <i>Meyve ve sebzelerin bileşimi ve soğukta depolanmaları</i> . Gıda Teknolojisi Derneği. 2. Cemeroğlu, B., & Karadeniz, F. (2001). <i>Meyve suyu teknolojisi</i> . Gıda Teknolojisi Derneği. 3. Cemeroğlu, B., Karadeniz, F., & Özkan, M. (2001). <i>Meyve ve sebze işleme teknolojisi</i> . Gıda Teknolojisi Derneği.
Supporting References	1. Cemeroğlu, B. (Ed.). (2005). <i>Gıda mühendisliğinde temel işlemler</i> . Gıda Teknolojisi Derneği. 2. Lopez, A. (1987). <i>A complete course in canning and related processes</i> . [Publisher not specified].
Necessary Course Material	PC Data Projector

Course Schedule	
1	Fruit and vegetable content and structure
2	Fruit and vegetable content and structure
3	Freezing technology
4	Canning Technology
5	Pasteurization and sterilization values and calculations during thermal process
6	Tomato products
7	Tomato paste production technology
8	Midterm exam
9	Equipments in concentrated product
10	Fruit juice production (Clear)
11	Fruit juice production (Pulp)
12	Drying Technology
13	Jam and Marmelade Production Technology
14	Valorization of fruit and vegetable wastes
15	An Overview
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	15	2	30
Classroom Studying Time (review, reinforcing, prestudy,...)	10	1	10
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	3	4	12
Final Exam	1	1	1
Studying for Final Exam	4	6	24
Total workload			78
Total workload / 30			2,6
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	4
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTURER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Agricultural Extension, Communication and Ethic	251315027

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
			X	

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	No
Objectives of the Course	To explain the importance of agricultural extension and communication, to give information about the development, theory, applications and methods of agricultural extension, to introduce the methods of transferring research results and innovations to producers, to raise awareness about producer behaviour and the process of adoption of innovations by producers
Short Course Content	Definition of agricultural extension, its effects on rural development, agricultural extension governance in public and private sectors, individual and group methods, practices and effects in extension education, producer behaviours, adoption process of innovations, development and practice of agricultural extension and consultancy in the world and in Türkiye, field studies, participatory techniques will be covered and application examples will be explained.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Understands the importance of agricultural extension and communication.		1, 5	A, K
2	To have key information for an effective extension work.		1, 2, 5	A, K
3	Have knowledge about the planning and implementation of extension methods that they will use throughout their professional life		1, 2, 5	A, K
4	Understands the importance and place of agricultural extension and communication in rural development.		1, 2, 5	A, K
5	Knows and can practice different agricultural extension and advisory approaches implemented in the world and in Türkiye.		1, 2, 11	A, K, Ö
6	Can identify the needs of rural people and prepare appropriate programmes.		1,6,7	A, K, Ö
7	Can work with groups of different structures.		1,2,12	A, K
8	Understands the relations between research, extension and producer and their importance.		1,2,12	A, K, F
9	Learns the difficulty of changing producer behaviour, the necessity of social learning and the role of agricultural extension in this field.		1,2,12	A, K
10	Understands the importance of innovation, knowledge and technology transfer and the ways to realise it. can transfer knowledge and techniques using different (individual, group and mass) methods within the framework of adult education principles.		1,2,5	A, K, G

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	1.Ceylan, C.İ., Köksal, Ö., Akın, A. GAP Bölgesinde Tarımsal Üretim Sürecinde Bilgi İhtiyaçlarının Karşılmasında Tarım Danışmanlarının Yeri. 2.Ceylan,C. Tarımsal Yayım İletişimi Ders Notu (2006/2007 Güz). 3. Presentations
Supporting References	1.Ceylan, C., 2005. Yayımcı Rehberi, TKB Yayım Dairesi Başkanlığı, Tarımsal Yayım Serisi, 2005/1. 2 .Değirmenci, Y., Manyaz, İ., Güzelaydın, I., Erkuş, E., Koçak, F., Arı, B., 2008. Tarımsal Yayım ve Danışmanlık, Ankara. 3. Current articles in this field, scientific studies on implementation examples
Necessary Course Material	Projection device, coloured papers for group work and board markers, scissors and computer

Course Schedule	
1	Definition, concept and effects of agricultural extension on rural development
2	Organisation chart of relevant public institutions, related institutions, extension services and regulations
3	Agricultural extension and counselling process, development and practices
4	Characteristics of extension education, school education and comparisons
5	General information about the methods used in agricultural extension
6	Individual methods in agricultural extension
7	Individual methods, an overview of group methods
8	Mid-Term Exam
9	Innovation and innovativeness concept, innovation adoption process
10	Producer behaviour and the process of adopting innovations
11	Agricultural extension in rural development, participatory techniques and examples from practices
12	Communication techniques and agricultural extension
13	Visiting sample projects in the field and evaluating them in terms of agricultural extension-participation
14	Information about the Ministry of Agriculture and Forestry Agricultural Extension and Consultancy Exam, question samples and preparation process
15	Agricultural extension and communication techniques and discussion of the appropriate agricultural extension and counselling model for Türkiye by taking into account all the learnt information (debate)
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,....)	14	1	12
Homework	2	1	2
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	3	3	9
Final Exam	1	1	1
Studying for Final Exam	5	3	15
Total workload			82
Total workload / 30			2,7
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Homework	10
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	2
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)			
Prepared by			
Signature(s)			



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Horticultural Crop Breeding	251316019

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	1	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Teaching the aims of breeding new varieties in plants and how to improve plant characteristics using basic plant breeding methods.
Short Course Content	Brief history of plant breeding, Reproductive models in plants, Sources of genetic variation, Heterosis, Artificial hybridization techniques, Mutation Breeding, Selection in self-pollinated and open-pollinated plants, Pedigree method, Obtaining homozygous lines from doubled haploids, Hybridization and F1 hybrid variety development, Marker assisted selection, Use of biotechnology in breeding

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Understanding and practicing horticultural plant breeding methods	3, 4	1, 6	A
2	Understanding and practicing molecular breeding methods	4, 8	1	A
3	Being able to improve plant characteristics using breeding methods	1, 4	1	A
4	Understanding biotechnological applications of breeding methods	8	1, 6	A
5				
6				
7				
8				

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Abak, K., Balkaya, A., Ellialtıoğlu. Ş., Düzyaman E. (Editörler) 2021. Sebze Islahı Cilt 1: Brassicaceae, Bitki Islahçıları Alt Birliğı (BİSAB) yayınları, Gece Kitaplığı. Abak, K., Balkaya, A., Ellialtıoğlu. Ş., Düzyaman E. (Editörler) 2021. Sebze Islahı Cilt 2: Cucurbitaceae, Bitki Islahçıları Alt Birliğı (BİSAB) yayınları, Gece Kitaplığı. Abak, K., Balkaya, A., Ellialtıoğlu. Ş., Düzyaman E. (Editörler) 2022. Sebze Islahı Cilt 3: Solanaceae, Bitki Islahçıları Alt Birliğı (BİSAB) yayınları, Gece Kitaplığı Abak, K., Balkaya, A., Ellialtıoğlu. Ş., Düzyaman E. (Editörler) 2022. Sebze Islahı Cilt 4: Allioideae Bitki Islahçıları Alt Birliğı (BİSAB) yayınları, Gece Kitaplığı Tugay, M.E. Genel Bitki Islahı, Gaziosmanpaşa Üniv. Ders Yayınları ,1996
Supporting References	
Necessary Course Material	

Course Schedule	
1	Brief history of plant breeding, definition, sources of variation in plants hybrid breeding
2	Selection breeding
3	Selection in self-pollinated plants
4	Selection in open pollinated plants
5	Hybridization
6	Hybridization
7	Heterosis
8	Mid-Term Exam
9	Haploidy methods
10	Mutation Breeding
11	Mutation Breeding
12	Polyploidy breeding
13	Biotechnological breeding methods
14	Breeding resistance to abiotic stresses
15	Breeding resistance to biotic stresses
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	28
Studying for Mid-Term Exam			
Final Exam	1	3	42
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Engineering Design	251316020

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	The aim of the Engineering Design course is to design and report a product, process and/or system for a desired purpose, based on the knowledge that students have received from different courses. Within the scope of this course, in order for students to use the knowledge and skills they have acquired in various courses, to interpret and evaluate data, to define problems and to analyze; It is desired to have innovative designs based on research and scientific evidence, and in accordance with the demands of the profession. First of all, the undergraduate students of our department are to teach the concept of engineering design and its elements, in this context, to introduce and apply the design process, design activities and design development processes in general, and also to be able to develop a design, group work, oral and poster presentations about the profession of each Horticulture department candidate. It is also aimed to gain the ability, knowledge and skills of presentation and self-expression by preparing presentations.
Short Course Content	Fundamentals of the design of Product, Production and Service Processes, concept development and innovation, determination of design input parameters, review of the basic information (Modelling, Operations Research, Statistical Analysis, Information Systems, Literature research) to be used in the realization of the design, design and cost (economic) analysis. performance analysis, preparation of the design report, preparation and effective presentation of the design presentation (Powerpoint), and defense of the produced design.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Students solve real life problems related to Horticulture by using acquired basic science and basic engineering knowledge		1	A
2 The student can design to meet the desired requirements. The student can identify, formulate and solve engineering problems.		1	A
3 Students can integrate their individual creativity with teamwork. The student gains awareness of professional and ethical responsibility.		1	A
4 The student can write a report and present it in writing and orally. The student can plan and schedule a design, and show continuity in discussions with the consultant.		1	A
5 Student can make cost analysis, compare alternatives and compare their strengths and weaknesses, and use modern engineering methods.		1	A

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Distance Education, Horticulture department textbooks, lecture notes and online resources
Supporting References	
Necessary Course Material	Computer and projector

Course Schedule	
1	Basic concepts of engineering and design (Engineering Ethics and responsibilities)
2	Basic concepts of engineering and design (Engineering Ethics and responsibilities)
3	Stages of design (Identification, analysis, evaluation and synthesis of the problem)
4	Stages of design (Identification, analysis, evaluation and synthesis of the problem)
5	Determination and definition of tools, techniques, methods, services etc. used in Horticulture Department
6	Understanding and using modern engineering methods, studies
7	Design and optimization of process steps for tools, techniques, methods, services, etc. used in the Horticulture Department
8	Mid-Term Exam
9	Report preparation principles
10	A report preparation study of the case design study
11	Preparation and evaluation of the report of the design work
12	Preparation and evaluation of the report of the design work
13	Preparation and evaluation of the report of the design work
14	Preparation and evaluation of the report of the design work
15	Preparation and evaluation of the report of the design work
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	28
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Physiology of Horticultural Plants	251316021

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The course aims to explain physiological processes and the factors affecting these processes in horticultural crops and to show the ways for yield and quality control in horticultural crops by interfering the physiological processes
Short Course Content	Concepts in plant growth and development of horticultural crops, factors affecting growth and development, growth and some important physiological processes in development, plant resistance to various environmental conditions, effects of ecological factors and exterior applications on physiology and their usage in horticultural crops.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Understands the importance of physiological events in horticultural crop cultivation, analyzes the physiological problems; develops solutions			
2 Knows the fundamentals of growth and development of horticultural crops; and transfer to practice.			
3 Knows the effective internal and external factors of growth and development			
4 learns the application of control and management techniques and transfer these techniques to practice.			
5 Controls and manages the abiotic stress conditions in horticultural crops.			
6 Learn about the dormancy mechanism.			
7 Learns about flower and fruit setting.			
8 Learn about infertility and incompatibilities in fertilisation.			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Bitki Fizyolojisi (Burhan Kacar, A. Vahap Katkat, Şule Öztürk), 4. Baskı, Nobel Yayınları - Bitki Fizyolojisi (Taiz&Zeiger, Çeviri Editörü: İsmail Türkan, Palme Yayıncılık). Plant Physiology (Salisbury&Ross, Wadsworth Publishing) - Bahçe Bitkileri Fizyolojisi (Atilla Eriş, Uludağ Üniversitesi Ziraat Fakültesi Yayınları).
Supporting References	-
Necessary Course Material	Computer and projection.

Course Schedule	
1	Structure and functions of plant cells and organelles- Cell division, structural elements, enzymes and processes
2	Water and cell relation, taking and transporting water, dehydration
3	Plant nutrient intake, transport and deficiencies
4	Factors affecting photosynthesis and photosynthesis
5	Factors affecting the respiratory and respiratory
6	The effects of ecological factors on growth, development and maturation
7	Midterm exam -The effects of internal factors on growth and development-Plant hormones
8	Mid-Term Exam
9	Germination, spouting and rooting
10	Apical dominancy, flowering, photoperiodicity,
11	Dormancy and its mechanism
12	Flower and fruit drop, Maturity,Aging
13	Sterility and incompatibility, parthenocarpy and apomixes in horticultural crops
14	Tropisms, Vernalisation, thermoperiodism and regeneration
15	Abiotic Stresses
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)	1	40	40
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	8	8
Final Exam	1	2	2
Studying for Final Exam	1	8	8
Total workload			116
Total workload / 30			3,87
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	35
Quiz	
Homework	15
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Professional Practice II	251316014

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	0	4	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The practice ability sophisticating and making technical tours to students about all lessons.
Short Course Content	Department of land and to make practical training courses in laboratory. Improve the knowledge by technical tours.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Seed sowing
2	Nursery growing
3	Tecnical tour
4	Pruning
5	Pruning
6	Tecnical tour
7	Sapling supplying and planting
8	Midterm exam / Sapling supplying and planting
9	Setting up a garden
10	Setting up a garden
11	Setting up a garden
12	Garden management
13	Garden management
14	Tecnical tour
15	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	2
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	4

LECTUTER(S)				
Prepared by	All Teaching Members			
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Vegetable seed production and certification	251316022

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To teach the production processes of vegetable seeds, cultivation techniques, the fundamental principles of the registration and certification system, the Seed Law and its associated regulations, and to address the challenges encountered in the registration and certification system along with their solutions.
Short Course Content	The situation in our country, concepts of seed and seedling, flower structure, seed formation, seed classes, seed morphology and physiology in vegetable species, seed growth and development, seed ecology and production, protection and isolation, seed drying, seed storage, seed control and certification stages, vegetable seed registration, hybrid seed production, and seed gene banks

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Students will learn and explain the topics covered in the course content	1,2,3,4,5,6,7,9,10,11,12	1, 4, 5, 7, 8, 11, 13	A, K
2				
3				
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Şehirali, S. 1997. Tohumluk ve Teknolojisi, Fakülteler Matbaası, İstanbul. BİSAP 2019, Tohum, Tohumculuk ve Teknolojileri, Bitki Islahçıları Alt Birliği 4-cilt Er, C., Başalma, D. 2020. Tohumculuk ve Tohumluk, Temel ilkeler ve teknoloji, Nobel Akademik Yayıncılık.
Supporting References	Copeland, LO., McDonald, MB. 1995. Seed Science and Technology, Kluwer Academic Publishers, Boston/Dordrecht/London, 478 pages Copeland, LO., McDonald, MB. 1995. Seed Production Principles and Practises, Springer Science Business Media, 719 pages George, Raymond A.T. 1996. Vegetable seed production, 3rd edition, CAB International, Oxfordshire, United Kingdom, 320 pages
Necessary Course Material	Projection and computer

Course Schedule	
1	The situation and development of vegetable seeds in our country
2	Flower structure, seed formation, seed and seed concept, seeds used in vegetable species
3	Morphology and physiology of vegetable seeds
4	Seed germination physiology and dormancy classes
5	Principles of registration of vegetable species
6	Principles of registration of vegetable species
7	Methods of obtaining seeds from vegetables and preparation for the market
8	Mid-term exams
9	Effects of biotic and abiotic factors on vegetable seed production
10	Required isolation distances in seed production, necessary conditions in seed producing organization
11	Drying and storage of seeds, Seed gene banks
12	Seed control and certification steps, field control, packaging of seeds, labeling sampling procedures and marking of seed lots
13	Laboratory analysis of seed lots (sampling, purity)
14	Laboratory analysis of seed lots (germination)
15	Final Exam
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	4	4	16
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	30	30
Total workload			120
Total workload / 30			4
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	5
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	4
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fertilization Biology of Horticultural Crops	251316023

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	It was aimed to give information on pollination and fertilization of horticultural plant species to students.
Short Course Content	Pollination, floral structures, pollen structure, quality and quantity, characteristics of stigma and stilus, horticultural groups through fertilization biology, pollinator insects, cleistogamie, artificial pollination, fertilization, germination of pollen, vigor of egg cell, infertilities, apomixis, parthenocarp, incompatibility, fertilizer cultivars, controlled hybridization and emasculation will be discussed.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Understanding pollination and fertilization of horticultural plant species.	1, 2, 3, 5	1, 4, 5	A
2	To gain the ability of practicing breeding techniques.	2, 3, 5	1, 3, 7	A, D
3	To choose proper varieties and fertilizers on orchard establishment.	3, 11	1, 3, 4, 8	A
4	To gain the ability of detecting problems in pollination, fertilization, fruit set and to develop solutions.	6, 7, 9, 11, 12	1, 2	A
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Özçağiran, R., 2000. Bahçe Bitkilerinde Döllenme Biyolojisi (Ders notları). Ege Üniversitesi Ziraat Fakültesi, Bahçe Bitkileri Bölümü.
Supporting References	Janick, J., Moore, J. N., 1975. Advances in Fruit Breeding. Purdue University Press, West Lafayette, Indiana. Moore, J.N., Janick, J., 1983. Methods in Fruit Breeding. Purdue University Press, West Lafayette, Indiana. Hörandl, E., 2010. The evolution of self-fertility in apomictic plants. Sexual Plant Reproduction 23:1, 73-86. Owens, S.J., Miller, R., 2009. Cross- and self-fertilization of plants â Darwin's experiments and what we know now. Botanical Journal of the Linnean Society 161:4, 357-395. Friedman, J., Barrett, S.C.H., 2009 The consequences of monoecy and protogyny for mating in wind-pollinated Carex. New Phytologist 181:2, 489-497.
Necessary Course Material	Projection

Course Schedule	
1	Pollination and flower structures, inflorescences – racemes – cymes
2	Flower structures of fruits and vegetables
3	Pollen and embryo sac formation
4	Self sterility and dioecy
5	Pollination of some fruit species, controlled hybridization and emasculation
6	Controlled hybridization and emasculation
7	Pollen carriers (Wind, insects, water, birds); Factors affecting pollination
8	Mid-Term Exam
9	Fertilization
10	Germination of pollen and factors affecting pollen development
11	Incompatibility; Fertilization of some fruit species and fertilizer varieties
12	Incompatibility
13	Fertilization of vegetables
14	Abnormalities in generative reproduction of plants, apomixis, parthenocarpy, parthenospermy, stenopericarp, polyploidy
15	Seed and fruit development, dormancy-metamorphosis, fruit fall
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	10	1	10
Final Exam	1	1	1
Studying for Final Exam	12	2	24
Total workload			120
Total workload / 30			4
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Propagation of Seasonal Flower	251316024

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	To have passed the Ornamental Plants Cultivation course
Objectives of the Course	Annual, biannual and perennial seasonal flowers will be explained and propagation methods of these flowers will be taught.
Short Course Content	To teach the basic principle of seasonal flowers cultivation, the place and the importance of them among ornamental plants, the knowledge belonging to the group, family, botanical name, morphological features, ecological demands, production techniques and care recommendations of the seasonal flowers grown annual, bi-annual and perennial.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To have recognize seasonal flowers To have general knowledge about seasonal flowers that is grown annual, bi-annual and perennial To have learn ecological demands and propagation methods of them	1,2,3,4,5,6,7,9,11,12	1,2,5,6,11,12	A, D, K
2			
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Hatipoğlu, A., Gülgün, B. (.....). Tek ve Çok Yıllık Mevsimlik Çiçekler, Kent Matbaası, İzmir, 208s. Orçun, E. (1968). Süs Bitkileri Cilt II, İlkbahar ve Yaz Çiçekleri, Ege Üniversitesi Matbaası, İzmir, 173s. Oğuz, G., Yayıntaş, a. (1987). Park ve Bahçelerimizin Süs Bitkileri, Ege Üniversitesi Fen Fakültesi Baskı İşleri, İzmir, 207.
Supporting References	
Necessary Course Material	Projection

Course Schedule	
1	The importance of seasonal flowers and their dendrological features
2	The production of seasonal flowers, the features and preparation and maintenance of seasonal flowers
3	Some seasonal flowers. The production use growing demands and care of Achille, Ageratum, Althea, Alyssum, Amaranthus, Antirrhinum, üretimi, kullanımı, yetiştirme istekleri ve bakımı
4	The production use growing demands and care of Aster, Astilbe, Bellis, Brassica, Calendula, Campanula
5	The production use growing demands and care of Capsicum annum, Catharanthus, Celosia Centaurea, Erysimum cheiri, Cerastium
6	The production use growing demands and care of Chrysanthemum, Coleus, Cosmos, Coreopsis Delphinium, Dianthus
7	The production use growing demands and care of Eschsolzia, Exacum, Gazania, Gomphera, Godetia, Impatiens
8	Mid-Term Exam
9	The production use growing demands and care of Nigella, Petunia, Phlox
10	The production use growing demands and care of Portulaca, Salvia, Tagates,
11	The production use growing demands and care of Verbena, Zinnia, Rudbeckia
12	The production use growing demands and care of Cineraria, Viola, Primula
13	The production use growing demands and care of Pelargonium, Papaver, Armeria, Amberboa imperialis, Cleome, Datura
14	The production use growing demands and care of Erigeron, Gentiana, Gypsophila, Aquilegia, Saxifraga, Silene,
15	Visiting seasonal flower production area
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,....)			
Homework	14	1	14
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	25	25
Final Exam	1	1	1
Studying for Final Exam	1	35	35
Total workload			130
Total workload / 30			4,33
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	10
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Seedling - Nursery Growing and Certification	251316025

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	To get information about production of vegetable seedling and nursery production.
Short Course Content	Vegetable and seasonal ornamental seedling propagation techniques and growing mediums, seedling propagation units, propagation techniques of fruit trees, specifications of saplings, establishment of nursery and required applications, nursery parcelling, specifications of rootstock and scion base materials, standardization and longitude, transport and storage.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To learn the principles of seedling production	1, 2, 3, 5, 7	1, 4, 5	A
2 To use general propagation methods where needed.	1, 2, 3, 5, 6, 7	1, 3, 7	A, D
3 To learn nursery production methods and share these information to the producers	5, 7, 11	1, 3, 8	A, D
4 To make sectoral analysis.	11, 12	1, 2	A
5			
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Soylu, A. (2000). Meyve Yetiştirme Tekniği, Uludağ Üniversitesi Ziraat Fakültesi Yayınları, No: Bursa Soylu, A. (2006). Meyve Ağaçlarında Budama ve Aşılama, Hasad Yayıncılık, 144s. M. Babaoğlu, E. Gürel, S. Özcan eds.(2002). Bitki Biyoteknolojisi I, Doku Kültürü ve Uygulamaları, Selçuk Üniversitesi Basımevi Hartman, H.T. (1974). Bahçe Bitkileri Yetiştirme Tekniği (Çev. Muhsin Yılmaz), Çukurova Üniversitesi Ziraat Fakültesi Yayınları, 601s.
Supporting References	Yılmaz, S., Çelik, H., Zengin, S., Fırat, A.F., . (2009). Tohum, fide ve çeşit seçimi. Örtüaltı Biber Yetistirciliği. 4. Bölüm.49-58s. Batı Akdeniz Tarımsal Aras. Enst., Antalya.
Necessary Course Material	Projection

Course Schedule	
1	Seedling production of traditional methods
2	Seedling production on seedbed
3	Seedling production on plastic tunnels
4	Potted seedling production
5	Seedling production of modern techniques
6	Potted seedling production
7	Grafted vegetable seedling production; Planning and establishing tree nursery
8	Mid-Term Exam
9	Nursery production methods
10	Grafting and maintenance works after grafting
11	Propagation with cuttings
12	Sectoral analysis
13	Layering and other propagation methods; The quality properties of fruit scions
14	Rootstocks and their properties that used in nursery
15	Certification processes
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,....)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	10	1	10
Final Exam	1	1	1
Studying for Final Exam	12	2	24
Total workload			120
Total workload / 30			4
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	3
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	1

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Outdoor Ornamental Plants Propagation	251316026

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	To have passed the Ornamental Plants Cultivation course
Objectives of the Course	The main goals of the course are to learn outdoor woody plants and propagation methods of these plants
Short Course Content	Propagation of woody plants such as tree and shrub for landscape application

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To set up greenhouse for ornamental plants and to achieve maintenance of woody plants, to solve problems, To have recognize woody ornamental plants, To have general knowledge about woody ornamental plants, To have knowledge about propagation of woody ornamental plants	1,2,5,6,7,9,11,12	1,2,5,6,11,12	A, D, K
2			
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Orçun, E. (1972) Dendroloji Cilt I İğne Yapraklı Ağaç ve Ağaçcıklar , Ege Üniversitesi Matbaası, Bornova-İzmir, 383s. Orçun, E. (1975) Dendroloji Cilt II Yapraklı Ağaç ve Ağaçcıkların Özellikleri ve Peyzaj Mimarisinde Kullanılışları, Ege Üniversitesi Matbaası, Bornova-İzmir, 298 s. Yaltırık, F. (1988)ç Dendroloji Ders Kitabı II Angiospermae Bölüm I, İstanbul Üniversitesi Orman Fakültesi Yayınları, İstanbul, 255s. Zencirkıran, M. (2013). Peyzaj Bitkileri 1 (Açık Tohumlu Bitkiler-Gymnospermae), Nobel Akademik Yayıncılık, ISBN: 9786051335070, 475s.
Supporting References	Mamikoğlu, N.G. (2007). Türkiye'nin Ağaçları ve Çalıları, NTV Yayınları, İstanbul, 727s
Necessary Course Material	Projection

Course Schedule	
1	The situation of outdoor ornamental plants in world and Turkey and the place of these plants in the country economy
2	Propagation of outdoor ornamental plants
3	General information about Gymnospermae plants
4	Gymnospermae outdoor plants (Trees)
5	Gymnospermae outdoor plants (Trees)
6	Gymnospermae outdoor plants (Trees)
7	Gymnospermae outdoor plants (Shrubs)
8	Mid-Term Exam
9	General information about Angiospermae plants
10	Angiospermae outdoor plants (Trees)
11	Angiospermae outdoor plants (Trees)
12	Angiospermae outdoor plants (Trees)
13	Angiospermae outdoor plants (Trees)
14	Angiospermae outdoor plants (Shrubs)
15	Angiospermae outdoor plants (Shrubs)
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework	14	1	14
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	25	25
Final Exam	1	1	1
Studying for Final Exam	1	35	35
Total workload			130
Total workload / 30			4.33
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	10
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Mushroom Production Technique	251316027

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To teach undergraduate students the basic principles of <i>Agaricus bisporus</i> and <i>Pleurotus ostreatus</i> mushroom production techniques, which are edible mushrooms.
Short Course Content	Mushroom production in Turkey and in the World, nutritional value of mushroom, production techniques, compost requirements, environmental conditions necessary for production will be given.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Production of mushroom mycelium,	5, 7	1	A
2 Compost (substrate) preparation	5, 7	1, 6	A
3 Sterilization of substrate	5, 7	1, 6	A
4 Ecological needs at different stages of development	5, 7	1, 6	A
5 Cultivation of common mushrooms	5, 7, 8	1, 6	A
6 Harvest and Packaging	1, 10	1, 6	A
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kültür Mantarı Yetiştiriciliği, Erkel, İ. TAV yayınları, Yalova, 1993. Mantar Yetiştirme. Günay, A., Abak, K., Koçyiğit, A.E. Saypa Kitap ve Yayınevi, Ankara, 1992. Kültür Mantarı üretim Teknikleri, Aksu, Ş. Hasad Yayıncılık, 2006
Supporting References	
Necessary Course Material	

Course Schedule	
1	General information about cultivated mushrooms, Taxonomy and nutritional value of common mushroom, production in Turkey and in the World
2	Mushroom growing places, modern farm design for commercial mushroom production
3	Mushroom cultivation systems; Mushroom cultivation in bed or shelf bed system and plastic bag systems
4	Mushroom production technique; Materials used in compost making, compost formulas, compost preparation
5	Pasteurization and disinfection of compost,
6	Casing material, its function, in <i>Agaricus bisporus</i> cultivation
7	Irrigation, ventilation and temperature after casing
8	Mid-Term Exam
9	Pleurotus species
10	Substrate materials and formulations
11	Substrate preparation to cultivation Pleurotus
12	Irrigation, ventilation and temperature during the cap formation and harvest period
13	Harvesting and packaging mushrooms
14	Diseases and pests in mushroom cultivation
15	Mushroom evaluation methods; Fresh storage, drying, canning, deep freezing
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	28
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Pruning and Training in Horticulture	251316028

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To gain experiences and get information about pruning fruit trees and training systems.
Short Course Content	In this course Fruit trees pruning and training techniques used are discussed as theoretical and practical

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Get to know pruning, aims and can comprehend the effects.	1, 2, 5	1	A, K
2 To be able to learn pruning times.	1, 2, 5	1	A, K
3 To put into practice the training forms that applied to fruit trees.	1, 2, 5	1	A, K
4 To be able to learn technical operations that applied in pruning.	1, 2, 5	1	A, K
5 To know pruning and training forms that applied to different fruit species.	1, 2, 5	1	A, K
6 To learn pruning methods that applied in different age periods of trees.	1, 2, 5	1	A, K
7 To get information about pruning tools and machinery.	1, 2, 5	1	A, K
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Budama Tekniği (Arif Soylu , Rahmi Türk). Meyve Ağaçlarında Budama (Muhsin Yılmaz). Meyve Ağaçlarında Budama ve Aşılama (Arif Soylu). Yılmaz, M., 1995. " Budama ". Çukurova Üniversitesi Ziraat Fakültesi Yayını, Adana
Supporting References	Training and Pruning Apple and Pear Trees (C.G Forshey, D.C Elfving,R. L. Stebbins). Pruning Fruit and Nut Trees (Leaflet 21171, University of California). Pruning & Training. A Fully Illustrated Plant by Plant Manual (C. Brickell, D. Joyce)
Necessary Course Material	Projector and computer

Course Schedule	
1	Definition and objectives of pruning
2	Various organs of fruit trees and their functions
3	Various organs of fruit trees and their functions
4	Physiological principles of pruning
5	Pruning times
6	Cautions during pruning
7	Cautions during pruning
8	Mid-Term Exam
9	Training systems in fruit trees
10	Training systems in fruit trees
11	Training systems in fruit trees
12	Mid-term exam - Training systems in fruit trees
13	Training systems in fruit trees
14	Pruning of yielded trees
15	Rejuvenation pruning
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	28
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Pests of Horticultural Crops and Control	251316029

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Objective of this course, description, biology, damage and their control of important pests in fruit, vegetable, vineyard and ornament plants in Turkey are teach.
Short Course Content	Description, biology, damage and their control of important pests in vegetable, fruit, vineyard and ornament plants.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Knowledge about description, biology, damage and their control of important pests in vegetable, fruit, vineyard and ornament plants are learning understand, improve.	1, 2, 5	1	A, K
2	Knowledge about description, biology, damage and their control of important pests in vegetable, fruit, vineyard and ornament plants in to procedures can be transfer.	1, 2, 5	1	A, K
3				
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Indivudial Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Özbek, H., Ş. Güçlü, R. Hayat and E. Yildirim, 1998. Pests of Fruit, Vineyard and Some Ornament Plants. Second Edition. Atatürk University, Agriculture Faculty Press, No: 72, Erzurum, 357 p. (Turkish). Tarım ve Orman Bakanlığı Bahçe bitkileri ve sebze zararlıları ilgili teknik talimatlar, 2017
Supporting References	Anonymous, 2008. Ziraî Mücadele Teknik Talimatları, Cilt 1. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 283 s. Anonymous, 2008. Ziraî Mücadele Teknik Talimatları, Cilt 2. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 260 s. Anonymous, 2008. Ziraî Mücadele Teknik Talimatları, Cilt 4. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 388 s. Anonymous, 2008. Ziraî Mücadele Teknik Talimatları, Cilt 5. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 301 s. Anonymous, 2008. Ziraî Mücadele Teknik Talimatları, Cilt 6. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 286 s. Anonymous, 2009. Fauna Europaea Version 2.1, http://www.faunaeur.org Hill, D. S., 1994. Agricultural Entomology. Timber Press, Portland, Oregon, 634pp
Necessary Course Material	Projector and computer

Course Schedule	
1	Chordata, Mollusca, Nematoda
2	Arthropoda, Arachnida,
3	Arthropoda, Insecta, Hemiptera
4	Thysanoptera,
5	Hemiptera
6	Hemiptera
7	Coleoptera
8	Mid-Term Exam
9	Coleoptera
10	Coleoptera
11	Diptera
12	Hymenoptera
13	Lepidoptera
14	Lepidoptera,
15	Lepidoptera,
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,....)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	28
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			112
Total workload / 30			3,7
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Medicinal and Aromatic Plants	251316006

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	The general objectives are to understand the importance of Medicinal and Aromatic Plants that are of economic importance at the world and in Türkiye, to reveal their place in the trade, to introduce the plants, to teach general cultivation techniques.
Short Course Content	It contains information about the history, importance, ecological requirements, general cultivation, drying and preservation principles, usage areas, effective substances and diversity of Medicinal and Aromatic Plants.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	To understand the importance of Medicinal and Aromatic Plants at the world and Türkiye.	1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2, 6,11, 15	A, D, E, F, G, K
2	To gain ability to learn sustainable agriculture of MAPs.	1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2, 6,11, 15	A, D, E, F, G, K
3	To obtain information about the general characteristics and usage areas of MAPs.	1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2, 6,11, 15	A, D, E, F, G, K
4	To gain information about drying and preserving of MAPs.	1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2, 6,11, 15	A, D, E, F, G, K
5	To obtain information about the essential oil production of MAPs and their value-added products.	1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2, 6,11, 15	A, D, E, F, G, K
6	To introduce new MAPs into the regional production pattern	1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2, 6,11, 15	A, D, E, F, G, K
7	Gaining experiences in the cultivation of important endemic species of MAPs	1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2, 6,11, 15	A, D, E, F, G, K

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Baydar, H. 2005. Tıbbi Aromatik ve Keyf Bitkileri, SDÜ Zir. Fak. Yayınları, 51, Isparta
Supporting References	Ceylan, A. 1995. Tıbbi Bitkiler, Ege Üni. Zir. Fak. Yayınları, 312, İzmir Ceylan,A. Tıbbi Bitkiler II (Uçucu Yağ İçerenler). E.Ü. Ziraat Fakültesi yayınları no.481, 188s, Bornova-İzmir
Necessary Course Material	-

Course Schedule	
1	Introduction, History of MAPs., their importance, production at the World and in Türkiye, basic concepts and classifications
2	Plant metabolites (primary metabolites, secondary metabolites: alkaloids, glycosides, essential oils, etc.)
3	Importance and uses of secondary metabolites (Traditional Drug Preparation and Usage Methods
4	Variability in MAPs (Morphogenetic, ontogenetic, diurnal variability and ecological factors)
5	Student Presentations and Cultivation Practices
6	Student Presentations and Cultivation Practices
7	Student Presentations and Cultivation Practices
8	Mid-Term Exam
9	Oregano (<i>Origanum vulgare</i> L.)
10	Laurel (<i>Laurus nobilis</i> L.)
11	Oil Rose (<i>Rosa damascena</i> Mill.)
12	Lavender (<i>Lavandula angustifolia</i> Mill.)
13	Black cumin (<i>Nigella sativa</i> L.)
14	Saffron (<i>Crocus sativus</i> L.)
15	Cumin (<i>Cuminum cyminum</i> L.)
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework	1	5	5
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	20	20
Final Exam	1	1	1
Studying for Final Exam	1	30	30
Total workload			104
Total workload / 30			3,3
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	25
Quiz	25
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	5
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	5
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	5
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	5
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Agricultural Tools and Machinery	251316030

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
X				

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To have information about the development of mechanization in agriculture; energy and agriculture; engines; tractors; soil processing tools and machines; sowing, planting, fertilizing and maintenance machines, irrigation machines, agricultural war machines, harvesting-threshing machines, mechanization in animal husbandry, agricultural machinery management.
Short Course Content	Basic concepts related to agricultural machinery, introduction, classification of agricultural power and work machines, basic information about their construction features and working principles, current status and future of agricultural machinery, importance of energy in agriculture and classification of agricultural machinery.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Defines general concepts related to agricultural machinery.	1,2,3,4,5	1,5,6,11	A,K
2 Defines types, parts and working principles of machinery such as thermal engines, tractors, soil processing, sowing, planting and fertilizing, spraying, irrigation, harvesting-threshing.	1,2,3,4,5	1,5,6,11	A,K
3 Selects appropriate machinery for agricultural enterprises.	1,2,3,4,5	1,5,6,11	A,K
4 Plans existing machinery in agricultural enterprises and operates it at the most appropriate times.	1,2,4,5,6,10,12	1,5,6,11	A,K
5 Has information about the adjustments and uses of tractors and agricultural machinery.	1,2,4,5,6,10,12	1,5,6,11	A,K
6 Stores agricultural machinery in appropriate conditions when not in use.	1,2,5,6,10,11,12	1,5,6,11	A,K
7 Solves problems related to agricultural tools and machinery.	1,2,5,6,10,11,12	1,5,6,11	A,K
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Acar, A. I., Ozturk, R., Guner, M. (2011). Agricultural Tools and Machinery. Anadolu University Publication No: 2354, Open Education Faculty Publication No: 1351.
Supporting References	Erdogan, D., (2005). Agricultural Machinery. Ankara University, Faculty of Agriculture, Publication No: 1548, Textbook: 501, Ankara University Press, 142 p., Ankara Sara, A., Avcioglu, A.O., (2002). Engines and Tractors. Ankara University, Faculty of Agriculture Publications: 1529, Textbook: 482, 294 p., Ankara.
Necessary Course Material	

Course Schedule	
1	Agriculture overview, agricultural mechanization
2	Energy and agriculture
3	Engines
4	Tractors
5	Soil tillage tools and machinery
6	Soil tillage tools and machinery
7	Sowing machines
8	Mid-Term Exam
9	Planting machines
10	Fertilizing machines
11	Spraying machines
12	Hoeing machines
13	Irrigation machines
14	Harvesting machines
15	Selection and operating principles of agricultural machines
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	6	3	18
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	5	2	10
Final Exam	1	1	1
Studying for Final Exam	6	3	18
Total workload			90
Total workload / 30			90/30=3
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	60
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	2
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	2
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	2
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	2
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	2
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Animal Production	2513160031

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	None
Objectives of the Course	The aim of the course is to teach the basic concepts of animal production mentioned in the brief content of the course, as well as to know the species and breeds of farm animals, and to teach the basic information necessary to carry out profitable, sustainable animal husbandry by knowing the tasks such as breeding, feeding, care and herd management in these animals.
Short Course Content	Definition and scope of agricultural activities; definition and scope of animal production activities; The current situation of Türkiye's animal husbandry; Extensive and intensive agriculture concepts; Terms of constitution, conditioning and acclimatization; The importance of animal breeding and the definition and scope of some terms; Some economically important efficiencies; Commonly produced farm animal species and breeds; Definitions related to cattle, buffalo, sheep, goat, poultry and bee breeding; Feeds and animal nutrition.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Knows general terms related to animal science		1,2,5	A, B, C
2 Understands the importance of animal husbandry in agriculture		1,2,5	A, B, C
3 Learns the concepts of species and breeds in farm animals and knows the important species and races in Turkey and the world.		1,2,5	A, B, C
4 Knows the names of farm animal species based on gender and age.		1,2,5	A, B, C
5 Knows the livestock products		1,2,5	A, B, C
6 Knows the concept of performance in farm animals		1,2,5	A, B, C
7 Understands breeding in animal husbandry at entry level		1,2,5	A, B, C
8 Knows breeding in animal husbandry at entry level		1,2,5	A, B, C
9 Knows feeds and nutrition in animal husbandry at entry level		1,2,5	A, B, C

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Genel Hayvan Yetiştirme 2014 (Prof. Dr. Saim Boztepe, Dr. Yusuf Çuhadar, Arş. Gör. İbrahim Aytekin, Arş. Gör. Selçuk Kaplan, Yrd. Doç. Dr. Ali Karabacak, Prof. Dr. İskender Yıldırım)
Supporting References	Presentation notes
Necessary Course Material	None

Course Schedule	
1	Definition and scope of Animal Production activities, employment opportunities
2	The place and importance of animal production in agriculture, important terms related to animal production
3	Current situation of animal husbandry in Türkiye and the world (statistics), problems of animal husbandry and solution suggestions
4	Classification and evaluation of animal products
5	Extensive and intensive agriculture concepts, advantages and disadvantages, Constitution, conditioning and acclimatization concepts
6	Herd management and its importance
7	Reproduction in farm animals
8	Mid-Term Exam
9	Cattle and buffalo breeding in Turkey and the World
10	Cattle and buffalo breeding in Turkey and the World
11	Sheep and goat breeding in Turkey and the World
12	Broiler chicken farming
13	Egg poultry farming
14	Feeds and animal nutrition
15	Feeds and animal nutrition
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	1	7	7
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	10	10
Final Exam	1	2	2
Studying for Final Exam	1	20	20
Total workload			82
Total workload / 30			2.73
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Agricultural Valuation and Expertise	

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	Agricultural Economics
Objectives of the Course	Creating employment opportunities by enabling students to make calculations and gain knowledge on issues such as expropriation, privatization, compensation cases, consolidation, learning and applying valuation criteria and methods, and gaining experience in writing reports on expert witness principles and practices.
Short Course Content	General Concepts Related to Agricultural Valuation, Valuation Criteria and Methods, Valuation of a Land According to the Synthetic Method, Valuation of a Farm According to the Analytical Method (owner), Valuation of a Farm According to the Analytical Method (tenant/partner), Financial Accounts Related to Valuation, Valuation of Orchards, Fruitless Trees, Plots and Buildings, Expert Witnessing, Legal Legislation on Which It Is Based and Expert Selection, Expropriation, Damage Assessment and Writing of Expert Report

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learning agricultural valuation methods		1,2,5,8	A, D
2 Understanding the principles and methods of valuation that can be used for different purposes (expropriation, taxation, etc.)		1,2,5,8	A, D
3 Being able to distinguish, apply and interpret the methods that can be used depending on the characteristics of agricultural real estate (land, orchard, building, etc.)		1,2,5,8	A, D
4 Learning the legal regulations regarding agricultural valuation and expertise		1,2,5,8	A, D
5 Ability to perform valuation and expert witnessing for situations requiring different agricultural valuations.)		1,2,5,8	A, D
6 Developing the ability to synthesize agricultural valuation issues, understand expert witness powers and write reports.		1,2,5,8	A, D
7 Ability to determine the cost elements of agricultural products and distribute and calculate them based on production branches.		1,2,5,8	A, D

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Rehber E, 2008. Agricultural Valuation and Expertise. Ekin Bookstore, Bursa, 162p.
Supporting References	<ul style="list-style-type: none"> Lecture notes compiled from various scientific sources Mülayim, Z.G., 2008, Agricultural Valuation and Expertise, Yetkin Publications, Ankara. Anonymous, 2000. The Appraisal of Rural Property. 2nd edition. American Society of Farm Managers and Rural Appraisers and the Appraisal Institute.
Necessary Course Material	Computer, Projector

Course Schedule	
1	Informing students about the introduction, scope, rationale and implementation of the course.
2	Subject and history of agricultural valuation
3	General information on the methods used in valuation
4	Evaluation of agricultural enterprises and lands according to the market method
5	Making sample valuations with the market method
6	Valuation with cost method
7	Cost calculation for annual plant products (wheat, corn, vetch), cost calculation for perennial plant products (olive, vineyard, apple, clover) with case studies.
8	Mid-Term Exam
9	Cost calculation in forage crop production, greenhouse production and animal production with case studies
10	Use of the income method in agricultural land valuation
11	Calculation of time value of money and capitalization interest and their use in valuation
12	Advanced methods in agricultural valuation (multiple regression analysis, hedonic pricing, artificial neural networks, fuzzy logic, GIS analysis methods, demand-side models)
13	Valuation of agricultural land and enterprises in expropriation, determination of damage and loss value, agricultural insurance, agricultural taxation and methods of using valuation in crediting
14	Expert witness principles, application examples, legal regulations
15	Expert report writing technique, sample report writing
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	72
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	2	2
Final Exam	1	1	1
Studying for Final Exam	1	2	2
Total workload			90
Total workload / 30			90/30
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Homework	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	2
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	2
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	2
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)			
Prepared by			
Signature(s)			



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Weeds	251316033

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	To inform about the economic importance and spread of weeds that cause damage to horticultural crops, their damage, ecology, biology and the control methods applied against them
Short Course Content	Introduction of weeds that cause problems in horticultural crops and control methods

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Knows the types of weeds that cause damage to horticulture plants.	3,6,7	1,2,5	A
2	Knows the ecology of weeds that cause damage to horticulture plants.	3,6,7	1,2,5	A
3	Knows the biology of weeds that cause damage to horticulture plants.	3,6,7	1,2,5	A
4	Knows the economic importance of weeds and the conditions of their spread.	3,6,7	1,2,5	A
5	Knows which methods to use in controlling weeds.	3,6,7	1,2,5	A

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Ahmet Güncan, Weeds and control principles, 2019, Selçuk University, Agriculture Faculty, 269s
Supporting References	
Necessary Course Material	Projector and computer

Course Schedule	
1	Importance and Harms of Weeds
2	Biology of Weeds
3	Biology of Weeds
4	Allelopathy
5	Ecology of Weeds
6	Parasitic Weeds
7	Weeds and Control Methods
8	Midterm Exam
9	Classification of Herbicides 1
10	Classification of Herbicides 2
11	Weeds and Control Methods in Vegetable Areas 1
12	Weeds and Control Methods in Vegetable Areas 2
13	Weeds and Control Methods in Orchards 1
14	Weeds and Control Methods in Orchards 2
15	End of Year Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	7	7
Final Exam	1	2	2
Studying for Final Exam	1	14	14
Total workload			95
Total workload / 30			3.16
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Organic Animal Growing	251316008

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	3	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	None
Objectives of the Course	It is aimed to teach the methods and rules of organic farming, which is an alternative production system that produces quality food, takes animal welfare into consideration and protects the environment, within the framework of the relevant legislation, by revealing the similarities and differences between organic and conventional livestock farming and the advantages and disadvantages of organic livestock farming.
Short Course Content	Organic livestock farming, differences between conventional and organic livestock farming, why organic livestock farming, how organic livestock farming is done, organic animal breeding and production principles, legal regulations, problems of organic livestock farming and solutions.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Knowing the differences between organic and traditional animal husbandry		1,2,5	A, B, D
2	Knowing how to carry out organic production in accordance with the relevant legislation		1,2,5	A, B, D
3	Knowing the difference between organic animal products		1,2,5	A, B, D
4	Knowing the positive effects of organic practices on animal welfare		1,2,5	A, B, D
5	Knowing the positive effects of organic practices on the environment		1,2,5	A, B, D
6	To create awareness of production that is harmless to the environment and humans for a healthy generation and a clean world, and to raise the idea of leaving a more livable world to future generations.		1,2,5	A, B, D

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Presentation notes
Supporting References	Organik Tarımın Esasları ve Uygulanmasına İlişkin Yönetmelik (2010) Yayımlandığı Resmi Gazetenin Tarihi: 18 Ağustos, Sayı: 27676. www.tarim.gov.tr Organik Hayvancılık Kongresi Bildiriler Kitabı Scientific articlesakaleler
Necessary Course Material	None

Course Schedule	
1	Definition of organic animal production, its situation and future in Turkey and in the world
2	Why organic farming (problems in conventional agriculture)
3	Organic animal production in the world and in our country
4	Establishment and principles of organic animal production enterprises (animal selection and transition processes)
5	Principles of organic animal husbandry (breeding, housing, care, transportation and slaughter)
6	Principles of organic animal nutrition
7	Maintenance and management in organic milk production
8	Mid-Term Exam
9	Organic red meat production and animal slaughter
10	Organic egg and chicken production
11	Organic beekeeping
12	Organic aquaculture production
13	Economics of organic production
14	Differences of organic products from conventional products
15	Regulation in our country regarding the implementation of organic animal production
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework	1	14	14
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	10	10
Final Exam	1	2	2
Studying for Final Exam	1	15	15
Total workload			84
Total workload / 30			2.8
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	25
Homework	25
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	1
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	1
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	1
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	1
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	1
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	1
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Cool Season Vegetables	251317027

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	To have passed the “251314025 -General Vegetable” course
Objectives of the Course	It is aimed to give detailed information and to teach cultivation of the economic importance, morphological characteristics, ecological requirements, cultivation method, soil preparation, sowing, planting, care treatments of winter-grown vegetables (onion, garlic, leek, cabbage, cauliflower, broccoli, lettuce-salad, radish, spinach, carrot etc.).
Short Course Content	The cultivation of economically important vegetable species (onion, garlic, leek, cabbage, cauliflower, broccoli, lettuce-salad, radish, spinach, carrot etc.) in our country, which requires a cool climate, is explained. Production areas and quantities of each species in the world and in our country, the botanical characteristics of the plant, its ecological requirements, cultivation techniques, and cultural treatments are explained.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Climate and soil requirements of winter vegetables	1, 2, 3	1	A
2 Reproduction forms of winter vegetables,	3, 7	1	A
3 Growing techniques of cool season vegetables	1, 2, 3, 5, 9	1	A
4 Morphological characteristics of cool season vegetables	1, 2, 4	1	A
5 Cultural treatments such as soil preparation, sowing, planting, fertilization and irrigation.	2, 3, 4	1	A
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kültür Sebzeleri (Sebze Yetiştirme) Vural, H., Eşiyok, D., Duman, İ. Ege Üniv. Ziraat Fak. Bahçe Bitkileri Bölümü, İzmir,. 2005 Özel Sebzecilik. Şalk, A., Arın, L., Deveci M., Polat S. 2008. Onur Grafik Matbaa ve Reklam Hizmetleri İst.
Supporting References	
Necessary Course Material	

Course Schedule	
1	Onion Cultivation
2	Onion Cultivation
3	Garlic Cultivation
4	Leek Cultivation
5	Lettuce-Salad Cultivation
6	Lettuce-salad cultivation
7	Cabbage Cultivation
8	Mid-Term Exam
9	Cabbage Cultivation
10	Cauliflower- Broccoli Cultivation
11	Cauliflower- Broccoli Cultivation
12	Radish Cultivation
13	Carrot Cultivation
14	Spinach Cultivation
15	Pea cultivation
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	14
Studying for Mid-Term Exam			
Final Exam	1	2	28
Studying for Final Exam			
Total workload			70
Total workload / 30			2,3
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	4
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Pome and Stone Fruits	251317028

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The purpose of this course is to give the students knowledge on growing of pome and stone fruit species.
Short Course Content	Classification, history, distribution, economical importance, morphological and pomological characteristics, fertilization biology, ecological requirements, propagation, plantation, maintenance and production, trade, and politics of pome and stone fruits species will be discussed.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To learn the growing and breeding techniques, varieties, harvesting and marketing of apple, pear, quince, persimmon, peach, nectarin, apricot, plum, cherry- sourcherry.	1, 2, 3, 5, 6	1, 4, 5	A
2 To recognize the morphologic and pomologic characteristics of these species.	1, 3, 5	1, 3, 7	A, D
3 To know the ecologic characteristics of the species and advise the appropriate species and cultivars to the growers and different areas.	3, 5, 11	1, 3, 8	A, D
4 To recognize the possible problems in growing period of these species and develop solution advisories.	11, 12	1, 2	A
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Özçağırın, R., Ünal, A., Özeker, E., İsfendiyaroğlu, M., 2005, Ilıman İklim Meyve Türleri, Sert Çekirdekli Meyveler, Cilt I, Ege Üniversitesi Ziraat Fakültesi Yayınları No: 553, Ege Üniversitesi Basımevi, Bornova-İzmir, 229 sayfa. Özçağırın, R., Ünal, A., Özeker, E., İsfendiyaroğlu, M., 2005, Ilıman İklim Meyve Türleri, Sert Kabuklu Meyveler, Cilt III, Ege Üniversitesi Ziraat Fakültesi Yayınları No: 566, Ege Üniversitesi Basımevi, Bornova-İzmir, 308 sayfa. Özbek, S., 1978, Özel Meyvecilik - Kışın Yapraklarını Döken Meyve Türleri.
Supporting References	Elma Kültürü, 2011, Eğirdir Bahçe Kültürleri Araştırma Enstitüsü Yayınları. Modern fruit Science (N.F. Childers) 1983. Hort. Publ., 3906; NW 31 Place Gainesville, Florida 32606, 582 p
Necessary Course Material	Projection

Course Schedule	
1	Classification of fruits
2	Apple growing
3	Apple growing
4	Pear growing
5	Pear growing
6	Quince growing
7	Persimmon growing
8	Mid-Term Exam
9	Peach growing
10	Apricot growing
11	Apricot growing
12	Plum growing
13	Plum growing
14	Cherry-sourcherry growing
15	Cherry-sourcherry growing
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	10	1	10
Final Exam	1	1	1
Studying for Final Exam	12	2	24
Total workload			92
Total workload / 30			3,06
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	2
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Storage and Marketing of Horticultural Crops	251317004

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The aim of the course is to convey theoretical and practical information about the development physiology, biochemical structure and change, harvesting and cold storage of horticultural products.
Short Course Content	Basic physiological information, different storage methods and effects of storage components on post-harvest quality in order to store horticultural products with minimum quality loss in the post-harvest period.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,7,9,10,11,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Karaçalı, İ, 2011, Bahçe Ürünlerinin Muhafaza ve Pazarlanması, 7. Baskı, Ege Üniversitesi Ziraat Fakültesi Yayınları, Bornova-İzmir. Karaçalı, İ, Meyve Sebze Değerlendirme, Teksir, Ege Üniversitesi Ziraat Fakültesi Yayınları, Bornova-İzmir.
Supporting References	Commercial Cooling of Fruits, Vegetables, and Flowers, James F. Thompson et al., University of California, Oakland, 2002. Postharvest Diseases&Disorders of Fruits&Vegetables, Anna L. Snowdon, Wolfe Scientific, 1990. Postharvest Technology of Horticultural Crops, Adel A. Kader, University of California, 1992. Controlled Atmosphere Storage of Fruits and Vegetables, A.K. Thompson, CABI Publishing, New York, 1998.
Necessary Course Material	Projector and computer

Course Schedule	
1	Definition, history and importance of postharvest storage
2	Biochemical structure and change of horticultural products
3	Factors affecting development in the pre-harvest period
4	Basic principles for the preservation of garden products
5	Effective environmental factors in the post-harvest period
6	Factors affecting postharvest quality
7	Midterm Exam
8	Storage damage and Physiological disorders
9	Harvest, sorting and packaging principles
10	Modern Conservation Methods
11	Postharvest Storage of Fruit Species
12	Postharvest Storage of Vegetable Species
13	Postharvest Storage of Production Materials and Genetic Resources
14	Postharvest Storage of Ornamental Plants
15,16	Final

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,....)	4	1	4
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	20	20
Total workload			69
Total workload / 30			2,3
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	5
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Tropical Fruits	251317029

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	The purpose of this course is to give the students knowledge on growing of ananas, mango, cherimoya, lichi, guava, pithaya, papaya, passion fruit and star fruit species.
Short Course Content	Classification, history, distribution, economical importance, morphological and pomological characteristics, fertilization biology, ecological requirements, propagation, plantation and maintenance of ananas, mango, cherimoya, lichi, guava, pithaya, papaya, passion fruit and star fruit species will be discussed.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Have knowledge about tropical fruit production.			
2	Learns pineapple cultivation.			
3	Learns mango cultivation.			
4	Learns the cultivation of pitaya.			
5	Learns how to cultivate cherimoya.			
6	Learns lychee cultivation.			
7	Learns guava cultivation.			
8	Learns the cultivation of papaya.			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	-
Supporting References	Paul, R.E., 2010. Tropical Fruits V.I. Cabi publication, 408 Pages, ISBN:9781845936723
Necessary Course Material	Computer and projection.

Course Schedule	
1	Introduction of tropical fruits
2	Economy of tropical fruits
3	Tropical climate types and characteristics
4	Ananas growing
5	Ananas growing
6	Mango growing
7	Mango growing
8	Mid-Term Exam
9	Pithaya growing
10	Cherimoya growing
11	Litchi growing
12	Guava growing
13	Papaya growing
14	Passion fruit growing
15	Starfruit growing
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework	1	40	40
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	8	8
Final Exam	1	2	2
Studying for Final Exam	1	8	8
Total workload			116
Total workload / 30			3,87
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	10
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
New Techniques on Fruit Growing	251317030

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To gain knowledge on subjects on new orchard plantations, training and pruning systems, cultural techniques and harvest methods.
Short Course Content	In this course, new techniques and developments on fruit growing will be discussed theoretically and practically.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,5,7,9,10,11,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Yılmaz, M. 1994. Bahçe Bitkileri Yetiştirme Tekniği. Çukurova Üniversitesi Basımevi, Adana.
Supporting References	Hartmann, H.T., Kester, D.E., Davies, Jr.F., Geneve, R.L., 1997. Plant Propagation Principles and Practices. Sixth Edition, Prentice Hall, New Jersey Özbek, S., 1978. Genel Meyvecilik (Kışın Yapraklarını Döken Meyve Türleri). Çukurova Üniversitesi Ziraat Fakültesi Yayınları No. 128. Ders Kitabı 11
Necessary Course Material	Projector and computer

Course Schedule	
1	New fruit cultivars and rootstocks
2	Orchard design
3	High density orchard plantations
4	High density orchard plantations
5	Current training and pruning systems
6	Current training and pruning systems
7	Mid-term exam
8	Current training and pruning systems
9	Soil cultivation methods
10	Soil cultivation methods
11	New cultural techniques in orchards
12	New cultural techniques in orchards
13	Harvest systems
14	Harvest systems
15, 16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			110
Total workload / 30			3,6
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	5
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Edible Wild Vegetables	251317032

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Learning of the plants that are not cultured but consumed, albeit a little, which field and period they develop, their properties in terms of health and nutrition, and their functional features, if any.
Short Course Content	Recognition of uncultivated plants collected from nature and consumed as vegetables.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,5,7,9,10,11,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Herkes için yenebilir yabani bitkiler ve yararlı otlar. Jim Meuninck, Derya Engin, 2004, 1. bs.
Supporting References	
Necessary Course Material	Projector and computer

Course Schedule	
1	General description and classification of plants.
2	Determining the developmental stages of wild plants
3	Determination of consumed parts of plants collected from nature
4	Positive aspects of wild plants in terms of health
5	Negative aspects of wild plants in terms of health
6	Reproduction methods of wild plants
7	Reproduction methods of wild plants
8	Midterm Exam
9	Researching the possibilities of growing wild plants
10	Investigation of the possibilities of growing wild plants.
11	Detection of wild plants in nature
12	Detection of wild plants in nature
13	Methods of conservation of wild plants
14	Discussion of the course and topics
15, 16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			110
Total workload / 30			3,6
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	5
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Wild Fruits	251317033

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	Wild fruit species, which have an important place in today's human nutrition, are the main subject of the course. The natural growing areas, plant characteristics and nutritional values of these fruit species will be covered during the course period.
Short Course Content	The place, distribution, economic importance, morphological and pomological characteristics of cranberry, hawthorn, rosehip, berberis vulgaris, medlar, mountain strawberry, blackberry, wild strawberry, wild apple, pear and plum species in plant system, distribution, morphological and pomological characteristics, fertilization biology, ecological demands, reproduction, garden establishment and Annual maintenance will be explained.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learns the collection, processing methods, breeding, varieties, harvesting and preparation of wild apple, pear and plum species in wild form.	1,2,3,4,5,6,7,9,10,11,12	1,2,5,6	A
2 Recognize the morphological and pomological features of these fruit species.	1,2,3,4,5,6,7,9,10,11,12	1,2,5,6	A
3 Knows the ecological characteristics of fruit species within the scope of the course and can suggest suitable species and varieties for different regions.	1,2,3,4,5,6,7,9,10,11,12	1,2,5,6	A
4 Develops solutions by knowing the problems that may arise during the cultivation of these species.	1,2,3,4,5,6,7,9,10,11,12	1,2,5,6	A
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Internet printouts Lecture Notes
Supporting References	Internet printouts Lecture Notes
Necessary Course Material	Projector

Course Schedule	
1	Description of wild fruits
2	Importance of wild fruits in terms of health and their place in economy
3	Importance of wild fruits in terms of health and their place in economy
4	Example of wild fruit species: Cranberry
5	Example of wild fruit species: Hawthorn
6	Example of wild fruit species: Rosehip
7	Example of wild fruit species: Berberis vulgaris (Female saltpeter)
8	Mid-Term Exam
9	Example of wild fruit species: Medlar
10	Example of wild fruit species: Rowan
11	Example of wild fruit species: Blackberry
12	Example of wild fruit species: Mountain Strawberry
13	Example of wild fruit types: wild apple
14	Example of wild fruit species: wild pear
15	Example of wild fruit species: wild plum
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	14	3	42
Studying for Final Exam	14	2	28
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Ara Sınav	40
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	5
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	4
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Protected Cultivation of Vegetable Crops	251317034

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To give basic knowledge and abilities on Description of protected cultivation, information about protected cultivation in Turkey and the world. Systems referred to as greenhouse cultivation, cover types and their characteristics. Equipments used in greenhouse and alternative
Short Course Content	Information on reasons for using protected cultivation, terms of greenhouse and tunnel, properties of greenhouse covering materials used in the agriculture, and acclimatization of greenhouse, practice of protected cultivation of vegetable crops will be discussed.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,5,7,9,10,11,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Örtüaltı Sebzeciliği, Sevgican, A., Ege Univ. Ziraat Fak. Yayın No. 528, Bornova-Izmir, 2002.
Supporting References	
Necessary Course Material	Projector and computer

Course Schedule	
1	Introduction of protected cultivation, history, economy, greenhouse cultivation in Turkey and in the world
2	Protected cultivation structures classification and characteristics
3	Greenhouse construction elements and their properties, covering materials and their properties, environmental control of greenhouse
4	Irrigation systems and cultivation techniques in greenhouses,
5	Soil preparation and struggle with weed in greenhouse
6	Cultural practices in protected cultivation
7	Soilless culture possibilities in greenhouse cultivation
8	Midterm exam
9	Planting systems, and timing in protected cultivation
10	Characteristics of substrates used in protected cultivation
11	Midterm exam, Characteristics of substrates used in protected cultivation
12	Characteristics of cultivars which are suitable for greenhouse cultivation; Plant growth regulators used in the greenhouse
13	Preparation greenhouses or tunnels for the next year
14	Course evaluation
15, 16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			110
Total workload / 30			3,6
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	5
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Cut Flower Cultivation	251317035

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	To have passed the Ornamental Plants Cultivation course
Objectives of the Course	Introducing important cut flower species and teaching production methods
Short Course Content	Introduction of the cut flower industry and important cut flower species and cultivation

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Recognizing and cultivating cut flower types; To apply propagation and production techniques suitable for the plant. Selecting the type and variety suitable for the sector demands and production periods; Solving problems encountered in production	1,2,5,6,7,9,11,12	1,2,5,6,11,12	A, D, K
2				
3				
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Orçun, E. (1972) Dendroloji Cilt I İğne Yapraklı Ağaç ve Ağaçcıklar , Ege Üniversitesi Matbaası, Bornova-İzmir, 383s. Orçun, E. (1975) Dendroloji Cilt II Yapraklı Ağaç ve Ağaçcıkların Özellikleri ve Peyzaj Mimarisinde Kullanılışları, Ege Üniversitesi Matbaası, Bornova-İzmir, 298 s. Yaltırık, F. (1988)ç Dendroloji Ders Kitabı II Angiospermae Bölüm I, İstanbul Üniversitesi Orman Fakültesi Yayınları, İstanbul, 255s. Zencirkıran, M. (2013). Peyzaj Bitkileri 1 (Açık Tohumlu Bitkiler-Gymnospermae), Nobel Akademik Yayıncılık, ISBN: 9786051335070, 475s.
Supporting References	Özzambak, E., Zeybekoğlu, E. (2004). Serada Topraksız Gerbera Yetiştiriciliği, İzmir Ticaret Odası Yayın No: 140 Altan, s. (1992). Süs Bitkileri Üretim Tekniği, Çukurova Üni. Ziraat Fak. Ders Kitabı No:104, Adana.
Necessary Course Material	Projection

Course Schedule	
1	Status and expectations of the cut flower industry, classification of cut flower types
2	Reproduction methods of cut flower species
3	Rose Propagation
4	Carnation Propagation
5	Chrysanthemum Propagation
6	Gerbera Propagation
7	Anthurium Propagation
8	Mid-Term Exam
9	Antirrhinum Propagation
10	Alstroemeria Propagation
11	Gladiol Propagation
12	Orchids Propagation
13	Daffodil Propagation
14	Tulip Propagation
15	Lilium Propagation
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework	14	1	14
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	25	25
Final Exam	1	1	1
Studying for Final Exam	1	35	35
Total workload			130
Total workload / 30			4,33
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	10
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Greenhouse fruit growing	251317036

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	The aim of this course is to teach the fruit production of our country and the world, the importance of greenhouse fruit growing and how temperate climate fruits can be grown under cover.
Short Course Content	This course includes the general principles of fruit growing, the importance of greenhouse fruit growing, fruit production and foreign trade in our country, and general principles of fruit growing under cover.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Emphasizes the importance of fruit growing	1,5,7	1,2	A
2 Explains the situation of fruit growing in our country.	1,5,7	1,2	A
3 Defines greenhouse fruit growing	1,5,7	1,2	A
4 Explain the reasons and advantages of greenhouse fruit growing	1,5,7	1,2	A
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Course notes
Supporting References	
Necessary Course Material	Projection

Course Schedule	
1	Definition and general principles of fruit growing
2	Fruit production of our country and its place in the world
3	Our country's fruit trade and its place in the world
4	Why greenhouse fruit growing and its advantages
5	General principles of greenhouse fruit growing
6	General principles of greenhouse fruit growing
7	Current pruning and training systems
8	Mid-Term Exam
9	Fruit growing systems
10	Dressing systems used under cover
11	Pruning
12	Other cultural processes used in greenhouse fruit growing
13	An applied example in greenhouse fruit cultivation: Strawberry cultivation under cover
14	An applied example in greenhouse fruit cultivation: Blackberry cultivation under cover
15	An applied example in greenhouse fruit cultivation: Blueberry cultivation under cover
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	14	3	42
Studying for Final Exam	14	2	28
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Ara Sınav	40
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Vineyard Plantation Technique	251317037

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	x			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	To have a passing grade in the General Viticulture course.
Objectives of the Course	To determine assessing the suitability of areas for vineyard planting, to know subjects such as land preparation, to teach the vineyard establishment plan and the annual maintenance of an established vineyard.
Short Course Content	Ecological and economic factors in selecting the vineyard sites, land selection, soil types and factors, selection of vine rootstock and grape variety, plant planning, supply of planting materials, maintenance activities after plantation training and pruning, determination of the choice of trellis and systems.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	To learn about the ecological and economic factors to consider in vineyard establishment	6	1,2	A
2	Planting planning	6	1,2	A
3	Pre-establishment planning	6	1,2	A
4	Gaining experience in soil types, factors, and analyses	6	1,6	A
5	Deciding on the correct rootstock and variety selection	6	1,6	A
6	Creating an action plan for preparing the vineyard site	6	1,6	A
7	Learning post-planting care practices	6	1,6	A
8	Learning to correctly choose pruning and training systems	6	1,6	A

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Çelik, H., Ağaoğlu, Y.S., Fidan, Y., Marasalı, B., Söylemezoğlu G., 1998. Genel Bağcılık, Sunfidan Mesleki Kitaplar Serisi:1, Ankara
Supporting References	Winkler, A.J.ve ark.1974. General Viticulture. Univ.Calif.Press, 710 s, Berkeley Keller, M., 2015. The Science of Grapevines. Second Edt., USA.
Necessary Course Material	Projector and PC.

Course Schedule	
1	Ecological Factors to Consider in the Selection of Vineyard Sites
2	Considerations in Land Selection
3	Soil Factors and Grapevine Rootstock Selection
4	Soil Factors and Grapevine Rootstock Selection
5	Considerations in Selection of Grape Variety
6	Vine Plantation (Determination of Site Plantation and Requirements)
7	Supply of Planting Materials (Sapling Use)
8	Mid-Term Exam
9	Supply of Planting Materials (Sapling Use)
10	Preparation of the Vineyard Site for Planting
11	Vine Planting
12	Maintenance Activities After Plantation
13	Training and Pruning
14	Determination of the Choice of Trellis Systems
15	Economical Factors to Consider in the Selection of Vineyard Sites
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	1	2	2
Studying for Final Exam	1	25	25
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	2
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	4
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	2
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Diploma Thesis I	251317012

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
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ESOGU ANIMAL SCIENCE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Ornamental Plants Cultivation and Applications I	251317014

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fertilization Biology Practices in Fruits I	251317015

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The aims of the course are to study the topic on fruits of horticultural crops research during the training period, to prepare the results as a project and to present the subject to community.
Short Course Content	Literature screening, project preparation and presentation the topic on fertilization biology of fruits.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To learn searching literature,	1, 11,12	6, 10, 11	D
2 To learn summary the literature,	11,12	6, 10, 11	D
3 To learn evaluating the results of literature,	2, 11,12	6, 10, 11, 14	D
4 Reporting the results of the researches,	3, 11, 12	6, 10, 11, 15	E
5 Presenting the project	11,12	15	E
6 Ability to use the information obtained from the course in lifetime	4, 11,12	4, 10, 13	J
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Different literatures on the subject
Supporting References	
Necessary Course Material	

Course Schedule	
1	Determination of the project topic
2	Searching the literature about the topic
3	Searching the literature about the topic
4	Summary of the literature
5	Summary of the literature
6	Summary of the literature
7	Evaluating the literature
8	Mid-Term Exam
9	Writing the results
10	Writing the results
11	Preparing the results as a report
12	Preparing the results as a report
13	Evaluating the report
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Homework	1	1	1
Studying for Homework	10	1	10
Final Exam			
Studying for Project Preparation	12	2	24
Total workload			91
Total workload / 30			3,03
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	
Quiz	
Homework	40
Bir öge seçin.	
Bir öge seçin.	
Final Exam - Project	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	2
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	2
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
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Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Cultivating Vegetables and Applications I	251317016

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	It is aimed that students search a research topic related to vegetable growing and special applications in detail, write and present a project related to the subject, conduct it and write a project report.
Short Course Content	Literature search, project preparation, presentation and implementation on the cultivation of vegetables

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learning to literature search	1, 2, 8	1	F
2 Learning to sense, summarize and evaluate the literature	1, 2, 8	1	F, G
3 Project preparation and practice	11, 12	1, 3, 6	J, I
4 Submit a project report	11, 12	1	G
5 The ability to use the results obtained	11, 12	1	G
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	
Supporting References	
Necessary Course Material	

Course Schedule	
1	Determining the research topic
2	Literature search and evaluation
3	Literature search and evaluation
4	Literature summary and evaluation
5	Writing a project
6	Writing a project
7	Writing a project
8	Practice of the project
9	Practice of the project
10	Practice of the project
11	Evaluation of data
12	Writing a results report
13	Writing a results report
14	Writing a results report
15,16	Presentation of the project report

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)	14	3	42
Presentation (Preparation time included)	1	1	1
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam			
Studying for Final Exam			
Total workload			85
Total workload / 30			2,8
Course ECTS Credit			3

Evaluation	
Activity Type	%
Presentation	
Quiz	
Homework	
Bir öge seçin.	
Presentation	100
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fruit Growing Techniques and Applications I	251317017

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The aims of the course are to study the topic on fruits of horticultural crops research during the training period, to prepare the results as a project and to present the subject to community.
Short Course Content	Literature screening, project preparation and presentation the topic on fruit growing.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learns to plan an investigation.			
2 Develops hypotheses about the problem.			
3 Learns to conduct a literature review.			
4 Learns to summarize the source.			
5 Learns to interpret results.			
6 Learns to report the results obtained.			
7 Learns to present his report.			
8 Gains the ability to use the information obtained throughout life.			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	-
Supporting References	-
Necessary Course Material	-

Course Schedule	
1	Determination of the project topic
2	Searching the literature about the topic
3	Searching the literature about the topic
4	Summary of the literature
5	Summary of the literature
6	Evaluating the literature
7	Evaluating the literature
8	Mid-Term Exam
9	Writing the results
10	Writing the results
11	Preparing the results as a report
12	Preparing the results as a report
13	Evaluating the report
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)	14	4	56
Presentation (Preparation time included)			
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam	1	2	2
Studying for Final Exam			
Total workload			86
Total workload / 30			8,87
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	-
Quiz	-
Homework	-
Bir öge seçin.	
Bir öge seçin.	
Final Exam	100
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Minor Vegetables I	251317018

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
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Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fruit Culture I	251317022

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Minor Fruits-I	251317024

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The research will be conducted on any topic related to minor fruits, and a research project will be designed to evaluate and successfully transfer the results.
Short Course Content	Conducting research, preparing, and presenting projects on the subjects within the relevant department, as suggested by the faculty member chosen within the scope of the relevant course.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Students will be given the ability to conduct research and practice on any subject related to minor fruits. The ability to create a project on any professional subject and successfully convey the results will be gained.	2,3,5,11	1,2,5,6,7,12,14,15	D,E,F,G
2 The ability to create a project on any professional subject and successfully convey the results will be gained.	2,3,5,11	1,2,5,6,7,12,14,15	D,E,F,G
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Researched, relevant documents and resources on the subject.
Supporting References	Researched, relevant documents and resources on the subject.
Necessary Course Material	Computer, projector

Course Schedule	
1	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
2	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
3	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
4	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
5	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
6	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
7	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
8	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
9	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
10	Presentation of the project
11	Presentation of the project
12	Presentation of the project
13	Presentation of the project
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	1	14
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)	1	25	25
Project (Preparation and presentation time included)			
Presentation (Preparation time included)	1	25	25
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam			
Studying for Final Exam			
Total workload			92
Total workload / 30			3,06
Course ECTS Credit			3

Evaluation	
Activity Type	%
Others (Diploma Thesis)	50
Presentation of Thesis	50
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Viticulture Practices- I	251317025

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	To have a passing grade in the General Viticulture course.
Objectives of the Course	The research will be conducted on any topic related to viticulture, and a research project will be designed to evaluate and successfully transfer the results.
Short Course Content	Conducting research, preparing, and presenting projects on the subjects within the relevant department, as suggested by the faculty member chosen within the scope of the relevant course.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Students will be given the ability to conduct research and practice on any subject related to viticulture.	2,3,5	3,5,7,11,12.13,14,15	E,G
2 The ability to create a project on any professional subject and successfully convey the results will be gained.	2,3,5	3,5,7,11,12.13,14,15	E,G
3			
4			
5			
6			
7			
8			
9			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Researched, relevant documents and resources on the subject.
Supporting References	Researched, relevant documents and resources on the subject.
Necessary Course Material	Projector and PC.

Course Schedule	
1	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
2	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
3	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
4	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
5	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
6	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
7	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
8	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
9	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
10	Presentation of the project
11	Presentation of the project
12	Presentation of the project
13	Presentation of the project
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam (Presentation)

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	1	14
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)	14	1	14
Project (Preparation and presentation time included)	14	1	14
Presentation (Preparation time included)			
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam	1	2	2
Studying for Final Exam	14	1	14
Total workload			100
Total workload / 30			3.33
Course ECTS Credit			3

Evaluation	
Activity Type	%
Report	50
Final Exam (Presentation)	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Vegetable seed practices - I	251317026

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	Conducting research, preparing, and presenting projects on the subjects within the relevant department, as suggested by the faculty member chosen within the scope of the relevant course.
Short Course Content	The research will be conducted on any topic related to Vegetable seed practices, and a research project will be designed to evaluate and successfully transfer the results.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
Students will be given the ability to conduct research and practice on any subject related to 1 Vegetable seed practices. The ability to create a project on any professional subject and successfully convey the results will be gained.	1,2,3,4,5,6,7,9,10,11,12,14,15	1, 4, 5, 7, 8, 11, 13	D,E,F,G,I,J,K
2			
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Researched, relevant documents and resources on the subject.
Supporting References	Researched, relevant documents and resources on the subject.
Necessary Course Material	Projection and computer

Course Schedule	
1	Determination of thesis topics within the scope of the related course
2	Determination of thesis topics within the scope of the related course
3	Determination of thesis topics within the scope of the related course
4	Determination of thesis topics within the scope of the related course
5	Conducting a literature review on the thesis topics determined within the scope of the related course
6	Conducting a literature review on the thesis topics determined within the scope of the related course
7	Conducting a literature review on the thesis topics determined within the scope of the related course
8	Conducting a literature review on the thesis topics determined within the scope of the related course
9	Conducting a literature review on the thesis topics determined within the scope of the related course
10	Conducting a literature review on the thesis topics determined within the scope of the related course
11	Checking the preparations
12	Checking the preparations
13	Checking the preparations
14	Checking the preparations
15	Checking the preparations
16,17	Submission of Undergraduate Thesis

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Presentation of Thesis	50
Bir öge seçin.	
Bir öge seçin.	
Diploma Thesis	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Modern Orchards Management I	251317041

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	In this course, the student who takes the course on the management of a modern garden from A to Z, taking into account irrigation, fertilization, pruning, training, support systems, rootstocks and varieties used in dwarf orchards, gains skills or theoretically prepares a thesis on this subject.
Short Course Content	In this course, the student prepares for the graduation thesis on a predetermined subject by using the knowledge and skills he has acquired so far. The topics to be chosen here should be more about modern orchard management. These topics are; In the dwarf apple, amulet, cherry, or peach orchards, there should be topics that include the cultural practices of modern gardens such as irrigation, fertilization, disease and pest control, and tree treatment and pruning systems

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Intensive Orchard Management, Author; Dr. Bruce H. Barritt, Publication Year; 1992, ISBN;0-9630659-1-2
Supporting References	General Fruiting, Editors; R. Gerçekçioğlu et al., Chapter 12. Pruning of Fruit Trees. Pages 385-449.
Necessary Course Material	Projector and computer

Course Schedule	
1	What does Modern Orchard Management mean?
2	Which criteria are used to determine planting spacing between rows and above rows in modern orchards?
3	Are support systems a choice in modern orchards? Or is it a necessity?
4	Does the combination of poles, stems and wires from support systems in dwarf orchard vary according to the rootstock and cultivars used?
5	Determining the suitability of concrete, iron and wood materials used in support systems for the orchard system and facilitating cultural processes
6	Multiple row planting systems and their application in modern apple, pear, cherry and peach orchards.
7	Vegetative power levels, classification, compatibility with varieties and effects on crown development of rootstocks used in modern apple, pear, cherry and peach orchards.
8	Placement of drip irrigation pipes and design of fertilizer tanks and apparatus used for irrigation and fertilization in modern orchards
9	Determination of the developmental status of Spur and standard apple, pear, cherry and peach varieties in modern orchards according to the rootstocks used.
10	The use of weekly different irrigation and fertilization regimens according to phenological periods in modern orchards.
11	Creation and pruning of super spindle and slender spindle systems applied in modern orchards
12	Creation and pruning of Steep Leader, Vogel Central Leader, Spanish Bush, UFO, Kim Green Bush, Tall Spindle ax and Super Spindle systems applied in modern cherry orchards
13	Formation and pruning of vertical cordon, Y palmette, single-armed horizontal cordon, V system and super spindle systems in dwarf pear orchards
14	The use of natural methods in the fight against diseases and pests in modern orchards
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Subtropical Fruits	251318023

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	0	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The purpose of this course is to give the students knowledge on growing of olive, pomegranate, fig, loquat etc. species.
Short Course Content	Classification, history, distribution, economical importance, morphological and pomological characteristics, fertilization biology, ecological requirements, propagation, plantation and maintenance of olive, pomegranate, fig, loquat etc. will be discussed.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Have knowledge about olive cultivation.			
2 Have knowledge about pomegranate cultivation.			
3 Have knowledge about fig cultivation.			
4 Have information about pecan cultivation.			
5 Have knowledge about avocado cultivation.			
6 Have knowledge about banana cultivation.			
7 Have knowledge about carob cultivation.			
8 Have knowledge about the cultivation of prickly figs.			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Subtropik İklim Meyveleri, K. Mendilcioğlu, Ege Üniversitesi, Ziraat Fak. Ders Notları, İzmir, 2000.
Supporting References	Yılmaz, C., 2007. Nar. Hasad yayıncılık, 276 s.
Necessary Course Material	Computer and projection.

Course Schedule	
1	Olive growing
2	Olive growing
3	Olive growing
4	Pomegranate growing
5	Pomegranate growing
6	Pomegranate growing
7	Fig growing
8	Mid-Term Exam
9	Fig growing
10	Pecan growing
11	Avocado growing
12	Banana growing
13	Carob growing
14	Prickly pear growing
15	Loquat growing
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	12	6
Final Exam	1	2	2
Studying for Final Exam	1	12	6
Total workload			72
Total workload / 30			2,4
Course ECTS Credit			2

Evaluation	
Activity Type	%
Mid-term	
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Warm Season Vegetables	251318024

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	To have passed the “251314025 -General Vegetable” course
Objectives of the Course	It is aimed to give detailed information and to teach cultivation of the economic importance, morphological characteristics, ecological requirements, cultivation method, soil preparation, sowing, planting, care treatments of summer-grown vegetables (tomato, pepper, eggplant, watermelon, melon, cucumber, zucchini, beans, okra).
Short Course Content	The cultivation of economically important vegetable species in our country, which requires a warm climate, is explained. Production areas and quantities of each species in the world and in our country, the botanical characteristics of the plant, its ecological requirements, cultivation techniques, and cultural treatments are explained.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Climate and soil requirements of warm season vegetables	1, 2, 3	1	A
2 Reproduction forms of warm season vegetables	3, 7	1	A
3 Growing techniques of warm season vegetables	1, 2, 3, 5, 9	1	A
4 Morphological characteristics of winter vegetables	1, 2, 4	1	A
5 Cultural treatments such as soil preparation, sowing, planting, fertilization and irrigation.	2, 3, 4	1	A
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Kültür Sebzeleri (Sebze Yetiştirme) Vural, H., Eşiyok, D., Duman, İ. Ege Üniv. Ziraat Fak. Bahçe Bitkileri Bölümü, İzmir., 2005 Özel Sebzecilik. Şalk, A., Arın, L., Deveci M., Polat S. 2008. Onur Grafik Matbaa ve Reklam Hizmetleri İst.
Supporting References	
Necessary Course Material	

Course Schedule	
1	Tomato Cultivation
2	Tomato Cultivation
3	Tomato Cultivation
4	Pepper Cultivation
5	Pepper Cultivation
6	Eggplant Cultivation
7	Eggplant Cultivation
8	Mid-Term Exam
9	Watermelon Cultivation
10	Watermelon Cultivation
11	Cucumber Cultivation
12	Melon Cultivation
13	Pumpkin, Zucchini Cultivation
14	Beans Cultivation
15	Okra Cultivation
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	14	2	28
Final Exam	1	1	1
Studying for Final Exam	14	2	28
Toplam iş yükü			114
Toplam iş yükü / 30			3,8
Dersin AKTS Kredisi			4

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	4
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Berries	251317036

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The purpose of this course is to give the students knowledge on growing of strawberry, blackberry, raspberry, gooseberry, ribes, blueberry, and mulberry species.
Short Course Content	Classification, history, distribution, economical importance, morphological and pomological characteristics, fertilization biology, ecological requirements, propagation, plantation and maintenance of strawberry, blackberry, raspberry, gooseberry, ribes, blueberry, and mulberry, kiwi and fig species will be discussed.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	To learn the growing, processing and breeding techniques, varieties, harvesting and marketing strawberry, blackberry, raspberry, gooseberry, ribes, blueberry, and mulberry.	1,5,7,12	1	A
2	To recognize the morphologic and pomologic characteristics of these species.	1,5,7,12	1	A
3	To know the ecologic characteristics of the species and advise the appropriate species and cultivars to the growers and different areas	1,5,7,12	1	A
4	To recognize the possible problems in growing period of these species and develop solution advisories.	1,5,7,12	1	A
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	1. Childers, N.F., Morris, J.R., Sibbet, G.S., 1995. Modern Fruit Science (Orchard and Small Fruit Culture). Horticultural Publications. Gainesville, Florida. 2. Ağaoğlu, Y.S., 1986. Üzümsü Meyveler. A.Ü. Zir. Fak. Yay. 984. Ankara
Supporting References	1. Kaşka, N., Türemiş, N., Özdemir, E., 1995. Çilek Çeşit Kataloğu. Tarım ve Köyişleri Bakanlığı Yay., Ankara. 2. Westwood, M.N., 1978. Temperate-Zone Pomology. W.H.Freeman and Company, San Francisco.
Necessary Course Material	Projection

Course Schedule	
1	Introduction to small fruits
2	Strawberry growing
3	Strawberry growing
4	Strawberry growing
5	Blackberry growing
6	Blackberry growing
7	Blackberry growing
8	Mid-Term Exam
9	Raspberry growing
10	Raspberry growing
11	Gooseberry growing
12	Gooseberry growing
13	Ribes growing
14	Blueberry growing
15	Mulberry growing
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,....)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	14	3	42
Studying for Final Exam	14	2	28
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Ara Sınav	40
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Nut Fruits	251318026

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	0	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To provide professional knowledge about the cultural history, systematics, ecological demands, breeding, cultivation, annual maintenance processes, production, trade and role in human nutrition of nut fruit species.
Short Course Content	Cultural history, systematics, ecological demands, reproduction, cultivation, annual maintenance, production, trade and role in human nutrition of nut fruit species.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,9	1, 4, 5, 7, 8, 11	A, K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Genetics, Genomics and Breeding of Stone Fruits. Chittaranjan Kole, Albert G. Abbott.
Supporting References	Production Technology of Stone Fruits. Mohammad Maqbool Mir, Umar Iqbal, Shabir Ahmad Mir.
Necessary Course Material	Projector and computer

Course Schedule	
1	Formation-Development Physiology and Common Characteristics of Nut Fruit Species
2	Hazelnut Cultivation
3	Hazelnut Cultivation
4	Almond Cultivation
5	Almond Cultivation
6	Walnut Cultivation
7	Midterm Exam
8	Walnut Cultivation
9	Pistachio Cultivation
10	Pistachio Cultivation
11	Chestnut Cultivation
12	Pecan Cultivation
13	Carob Cultivation
14	Peanut Pine Cultivation
15,16	Final

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	6	24
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	40	40
Final Exam	1	1	1
Studying for Final Exam	1	45	45
Total workload			139
Total workload / 30			4,63
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
New Advances in Horticulture Breeding	251318027

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	With this course, students will be taught about new developments in horticultural breeding.
Short Course Content	Definition and scope of horticultural breeding and new developments in the related field.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,9,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Baydar, H. 2020. Bitki Genetiği ve Islahı. Nobel Akademik Yayıncılık, Ankara.
Supporting References	Emiroğlu, Ü ve Bürün, H. Bitki Islahı Temel Kavramlar ve Mekanizmalar. Nobel Akademik Yayıncılık, Ankara.
Necessary Course Material	Projector and computer

Course Schedule	
1	Horticultural Breeding Methods; General and Modern Techniques
2	Morphological Characterization in Horticultural Breeding; UPOV and IPGRI criteria
3	Morphological Characterization in Horticultural Breeding; UPOV and IPGRI criteria
4	Molecular Characterization in Horticultural Breeding
5	Molecular Characterization in Horticultural Breeding
6	Molecular Characterization in Horticultural Breeding
7	Midterm Exam
8	Rootstock Breeding Strategies in Fruit Species
9	Breeding Strategies for Variety Improvement in Fruit Species
10	Breeding Strategies for Variety Improvement in Fruit Species
11	Rootstock Breeding Strategies in Vegetable Species
12	Breeding Strategies for Variety Improvement in Vegetable Types
13	Breeding Strategies in Ornamental Plants
14	Breeding Strategies in Viticulture
15,16	Final

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			126
Total workload / 30			4,2
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Special Viticulture	251318028

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	x			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	To have a passing grade in the General Viticulture course.
Objectives of the Course	Growth and development stages of the vine and its annual life cycle, bud, shoot, and root structures in the vine, vine physiology (photosynthesis, respiration, water loss), abiotic stress factors, pollination, bloom, berry set, veraison stages in the vine, berry structure and developmental stages, harvest criteria in viticulture, growth and development regulators and their use in viticulture, harvest criteria in viticulture, table, wine, and raisin production and its importance, general ampelography descriptive methods, vine rootstocks, and their uses.
Short Course Content	Students knows the annual life cycle of the vine, define grapevine organs morphologically, learns vine physiology and stress factors affecting physiology, learns the stages of pollination, fertilization biology and the importance and development process of flowering - berry set period in vine, learns vine breeding methods in viticulture, knows the berry structure and developmental stages, learns the harvest criteria to be taken into account according to grape evaluation methods in viticulture and its changes with the concept of phenolic maturity, knows the use of growth and development regulators in viticulture, knows fresh (table), wine grapes and raisin production and Turkey's potential in world production, knows general ampelography concept, method and vine rootstocks and usage areas.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To teach the growth and development stages of the vine,	1,2,5,6	1,2,5	A
2 To gain knowledge about bud, shoot, and root systems in the vine,	1,2,5,6	1,2,5	A
3 To provide a detailed understanding of grapevine physiology and biology,	1,2,5,6	1,2,5	A
4 To teach vine breeding methods,	1,2,5,6	1,2,5	A
5 To convey the grain structure and development stages,	1,2,5,6	1,2,5	A
6 To determine the harvest criteria according to the evaluation methods in viticulture	1,2,5,6	1,2,5	A
7 To explain the use of development and growth regulators in viticulture,	1,2,5,6	1,2,5	A
8 To teach the production and importance of table grapes, wine grapes and raisins	1,2,5,6	1,2,5	A
9 General ampelography definitions, vine rootstock and use in viticulture to gain knowledge on the issues.	1,2,5,6	1,2,5	A

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Çelik, S. (1998). Bağcılık (Ampeloloji I). Anadolu Matbaacılık A.Ş. İstanbul, 425s. Ağaoğlu, Y. S. (2002). Bilimsel ve Uygulamalı Bağcılık Asma Fizyolojisi I, , Kavaklıdere Eğitim Yayınları, Ankara, 446 s. Ağaoğlu, Y.S. (2000). Bilimsel ve Uygulamalı Bağcılık Asma Biyolojisi, Kavaklıdere Eğitim Yayınları, İstanbul, 205 s. Uzun, İ. (2004). Bağcılık El Kitabı, Hasad Yayıncılık, 160 s.
Supporting References	Viticulture - Ebook (2011) (Stephen Skelton MW) PDF for Adobe Digital Editions (File Size 17.97 MB) 2nd Edition Türkiye Asma Genetik Kaynakları Kataloğu, Gıda tarım ve Ormancılık Bakanlığı, Tarımsal araştırmalar ve Politikalar Müdürlüğü, Tekirdağ Bağcılık Araştırma İstasyonu, 400 s.
Necessary Course Material	Projector and PC.

Course Schedule	
1	Growth and Development in Vine, Annual Life Cycle of Vine, Phenological Stages
2	Bud , Shoot and Root System in Vine
3	Vine Physiology (Photosynthesis, Respiration, Transpiration)
4	Vine Physiology (Abiotic Stress Factors and Importance of Their Effects)
5	Pollination, Bloom and Berry Set in Vines
6	Vine Breeding (Classic Crossbreeding, Seedless Breeding, Embryo Rescue Technique)
7	Vine Breeding (Polyploidy and Clone Selection Studies)
8	Mid-Term Exam
9	Berry Structures and Developmental Stages
10	Harvest Criteria in Viticulture (Table, Wine, Drying) and Phenolic Maturity Concepts
11	Using Plant Growth Regulators (PGR) in Viticulture
12	Production of Table Grapes, Wine Grapes, and Raisins And Their Importance
13	Definitions And International Criteria For Ampelography
14	Vine Rootstocks and Uses
15	Vine Rootstocks and Uses
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	25	25
Final Exam	1	2	2
Studying for Final Exam	1	25	25
Total workload			124
Total workload / 30			4.13
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Soilless Culture	251318029

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	This course aims to enable students to learn the reasons for soilless plant cultivation, soilless agriculture techniques, plant nutrition in soilless plant cultivation, to plan and apply plant cultivation and to follow the developments in this field.
Short Course Content	Reasons for soilless farming, soilless culture methods, plant nutrition in soilless culture, advantages and disadvantages in soilless culture.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To learn reasons for soilless farming	1, 2, 7	1	A
2 To learn the soilless culture systems	1, 3	1	A
3 Cultivate the plants in the soilless culture	1, 2, 3	1	A
4 To be able to plan and manage soilless cultivation at commercial level	6	1	A
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Gül, A. 2008. Topraksız Tarım. Hasad yayıncılık, 144 s.
Supporting References	Savvas, D. and Passam H. 2002. Hydroponic Production of Vegetables and Ornamamentals. Embryo Publishing, Greece, 463p. Douglas, J. S. 1985. Advanced Guide to Hydroponics.BAS Printers Lmt, GB.368 p.
Necessary Course Material	

Course Schedule	
1	History of soilless agriculture, soilless agriculture in the world and in Turkey, advantages and disadvantages of soilless agriculture
2	Soilless culture techniques, hydroponic culture, aeroponics
3	Substrate culture and properties of substrates
4	Plant nutrition in soilless culture
5	Substrates and their properties
6	examples to soilless production
7	Plant nutrition in hydroponic cultivation
8	Mid-Term Exam
9	Nutrient solution preparation
10	Nutrient solution preparation
11	Sample Nutrient Solution Recipes
12	Examples to soilless production
13	Advantages and disadvantages of soilless culture
14	Environmental impact of soilless culture
15	Latest developments in soilless agriculture
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	1	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)	1	1	14
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	14	1	14
Final Exam	1	1	1
Studying for Final Exam	14	1	14
Total workload			114
Total workload / 30			3,8
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	20
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	40
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	4
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Rootstock Scion Relationships of Fruits	251318030

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	To gain knowledge on subjects about rootstocks of fruits, their usage, grafting, incompatibilities of rootstock and scion.
Short Course Content	In this course, physiological relationships of rootstock and scion of fruits will be discussed theoretically and practically.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,7,9,10,11,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Özçağiran, R. 1974. Meyve Ağaçlarında Anaç İle Kalem Arasındaki Fizyolojik ilişkiler. Ege Üniversitesi Basımevi, İzmir.
Supporting References	Yılmaz, M. 1994. Bahçe Bitkileri Yetiştirme Tekniği. Çukurova Üniversitesi Basımevi, Adana.
Necessary Course Material	Projector and computer

Course Schedule	
1	Entrance to rootstock-scion relationships
2	Grafting; aims, benefits and usage
3	Corresponding effects of rootstock and scion
4	Effects of rootstock to scion
5	Effects of scion to rootstock
6	Effects of inter-stock to rootstock and scion
7	Mid-term exam
8	Rootstock-scion incompatibility
9	Grafting capabilities of fruit species and cultivars to each other
10	Symptoms and types of incompatibility
11	Symptoms and types of incompatibility
12	Changes at incompatible grafting combinations
13	Reasons of incompatibilities
14	To prevent incompatibility
15, 16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			126
Total workload / 30			4,2
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Intelligent Agriculture	251318031

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Today, the agricultural sector; The future of the agricultural sector is shaped by technological applications. It is possible to examine the technological transformation process of agriculture, especially by presenting the current practices more clearly. The use of today's communication technologies in smart agriculture systems and the use of developing technologies by integrating them with agricultural production are examined. It is aimed to inform students about smart agriculture and to create an infrastructure with basic application examples.
Short Course Content	Introduction of wireless communication technologies systems used in Smart Agriculture; Learning digital transformation and smart farming practices in agriculture; Introducing the necessary sensors, hardware and technologies for Smart Agriculture applications; Reducing the costs of chemicals such as fertilizers and pesticides by applying Smart Agriculture techniques, protecting the environment by reducing these uses, providing a high quantity and quality product, providing a more effective information flow for business and aquaculture decisions, and establishing a record order in agriculture; Smart agriculture practices in our country and in the world.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,5,7,9,10,11,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Internet printouts Lecture Notes
Supporting References	Internet printouts Lecture Notes
Necessary Course Material	Projector and computer

Course Schedule	
1	Course introduction, Smart Agriculture overview, Principles of Smart Agriculture
2	Developmental Stages of Agriculture (Agriculture 1.0, Agriculture 2.0, Agriculture 3.0, Agriculture 4.0)
3	Benefits of Smart Agriculture
4	Introduction of communication technologies used in smart farming systems
5	Explaining the infrastructures of communication technologies used in smart agriculture systems
6	Introduction of sensors and modules used in digital transformation systems in agriculture
7	Smart Agriculture Applications
8	Midterm Exam
9	Use of Drone and UAV in smart agriculture
10	Intelligent Irrigation and Fertilization Systems
11	Smart Greenhouses and Farm Management Systems
12	Using Geographic Information Systems in Smart Agriculture applications
13	Internet of Things Concept and Application Examples
14	Smart Agriculture Practices in Turkey and in the World
15, 16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			110
Total workload / 30			3,6
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	4
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	5
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Trends and Alternative Practices in Horticulture	251318032

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Advances in Fruit Breeding, Purdue University Press. Tarım ve Gıdada Yatırım Trendleri 2050, Rachid Serraj & Prabhu Pingali Scala Yayıncılık, 2021.
Short Course Content	Topraksız Tarım ve Bitki Besleme Teknikleri, Nobel Akademik Yayıncılık.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,9,10,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Advances in Fruit Breeding, Purdue University Press. Tarım ve Gıdada Yatırım Trendleri 2050, Rachid Serraj & Prabhu Pingali Scala Yayıncılık, 2021.
Supporting References	Topraksız Tarım ve Bitki Besleme Teknikleri, Nobel Akademik Yayıncılık.
Necessary Course Material	Projector and computer

Course Schedule	
1	Current Situation, Problems and Solutions in Horticulture
2	Fundamentals of Modern Cultivation; Dwarf Cultivation
3	Fundamentals of Modern Cultivation; Dwarf Breeding II
4	Fundamentals of Modern Cultivation; Greenhouse Cultivation
5	Fundamentals of Modern Cultivation; Soilless Agriculture
6	Fundamentals of Modern Cultivation; Soilless Agriculture II
7	Midterm Exam
8	Fundamentals of Modern Breeding; Smart Agriculture
9	Fundamentals of Modern Breeding; Smart Agriculture II
10	Goals of Modern Breeding; Cultivation in line with market preferences
11	Goals of Modern Breeding; Cultivation for Sensitive Consumer Groups
12	Goals of Modern Breeding; Certified and Patented Cultivation of Local Products
13	Goals of Modern Breeding; Modern Preservation Methods
14	Goals of Modern Breeding; Industrial Production
15,16	Final

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			126
Total workload / 30			4,2
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	5
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by	P			
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Postharvest Physiology of Horticultural Crops	251317006

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	0	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Examination of physiological changes occurring after harvest in fruits, vegetables and ornamental plants
Short Course Content	The importance of post-harvest physiology and affecting factors. Growing and development physiology of fruits - vegetables, physical and chemical changes in fruits, development and changes in harvest criteria, effects of postharvest processes on product quality, effects of different storage methods on product resistance and marketing. Physiological and parasitic deterioration in horticultural plants.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,9,10,11,12	1, 4, 5, 8, 11	A, K
2			
3			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Karaçalı, İ., 2011. Bahçe Ürünlerinin Muhafazası ve Pazara Hazırlanması. E.Ü. Ziraat Fak. Yayın No: 494, 410 s. Cemeroğlu, B., Acar, J., 1986. Meyve ve Sebzelerde İşleme Teknolojisi. Gıda Derneği Yayın No: 6, Ankara Üniv. Ziraat Fak., Gıda Bölümü.
Supporting References	Postharvest Diseases and Disorders of Fruits and Vegetables, A.L.Snowdown,1990. Commercial Cooling of Fruits, Vegetables and Flowers, J. F. Thompson et al. University of California, Oakland, 2002. DeELL, R.J., Pranga, K.R., Peppelenbos, W.H., 2003. Postharvest Physiology of Fresh Fruits and Vegetables. Handbook of Postharvest Technology, Marcel Dekker, Inc., New York, Basel, 455,484.
Necessary Course Material	Projector and computer

Course Schedule	
1	Physiological events and importance in horticultural plants, Chemical structures of fruits and vegetables and post harvest parameters
2	Post harvest parameters of ornamental plants
3	Post harvest changes in fruits (pome and stone fruits)
4	Post harvest changes in fruits (nuts)
5	Post harvest changes in fruits (grapes and small fruits; citrus and other subtropical fruits)
6	I. Mid-term exam, Post harvest changes in fruits
7	Post harvest changes in vegetables
8	Post harvest changes in ornamental plants
9	Changes observed in seeds and saplings
10	Storage of fruits (pome and stone fruits)
11	II. Mid-term exam, Storage of fruits (pome and stone fruits)
12	Storage of fruits (grapes, small fruits, and nuts; citrus and other subtropical fruits)
13	Storage of vegetables
14	Storage of ornamental plants, analysis of warehouse losses.
15,16	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	4	3	12
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	30	30
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			126
Total workload / 30			4,2
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	5
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Citrus Trees	251318033

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	2	2	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	-
Objectives of the Course	Students will be informed about growing and maintenance of citrus fruits that intensively grown in our country.
Short Course Content	Classification, history, distribution, economical importance, morphological and pomological characteristics, fertilization biology, ecological requirements, propagation, plantation and maintenance of sweet orange, mandarin, grapefruit, lemon, sour orange and kumquat species will be discussed.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Have information about the production of citrus fruits.			
2 Learns how to grow oranges			
3 Learns mandarin cultivation			
4 Learns how to grow lemons			
5 Learns how to breed Altintop			
6 Learns how to grow lime			
7 Learns the propagation of citrus fruits.			
8 Learns how to care for the orchard of citrus fruits			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	-
Supporting References	Davies, F.S., Albrigo, L.G. 1994. Citrus. Typeset by Solidus (Bristol) Limitedts, Great Britain. Tanrıverdi, F., 1987. Subtropik Meyve Türleri. Atatürk Üniversitesi Ziraat Fakültesi Ders Notları, Erzurum. Tuzcu, Ö., 2000. Turuncgiller (Ders Notları) Ç. Ü. Adana. Mendilcioglu, K., 1991. Turuncgiller. E.Ü. Zir. Fak. Ofset Basımevi, Bornova, İzmir.
Necessary Course Material	Computer and projection.

Course Schedule	
1	The origin and distribution of citrus
2	The production, export and import of citrus fruits in Turkey and World
3	Citrus classification, important species and cultivars
4	Main citrus cultivars
5	The morphological properties of citrus fruits
6	The morphological properties of citrus fruits
7	The biological properties of citrus fruits
8	Mid-Term Exam
9	Citrus fruits and climate
10	Citrus fruits and soil
11	Propagation of citrus
12	Propagation of citrus
13	Citrus nursery
14	Orchard establishment, tillage, and irrigation of citrus fruits
15	Fertigasyon, pruning, harvest in citrus orchard
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework	1	40	40
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	8	8
Final Exam	1	2	2
Studying for Final Exam	1	8	8
Total workload			116
Total workload / 30			3,87
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	410
Quiz	
Homework	10
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Diploma Thesis II	251318012

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU ANIMAL SCIENCE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Ornamental Plants Cultivation and Applications II	251318014

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
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Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fertilization Biology Practices in Fruits II	251318015

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The aims of the course are to study the topic on fruits of horticultural crops research during the training period, to prepare the results as a project and to present the subject to community.
Short Course Content	Literature screening, project preparation and presentation the topic on fertilization biology of fruits.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To learn searching literature,	1, 11,12	6, 10, 11	D
2 To learn summary the literature,	11,12	6, 10, 11	D
3 To learn evaluating the results of literature,	2, 11,12	6, 10, 11, 14	D
4 Reporting the results of the researches,	3, 11, 12	6, 10, 11, 15	E
5 Presenting the project	11,12	15	E
6 Ability to use the information obtained from the course in lifetime	4, 11,12	4, 10, 13	J
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Different literatures on the subject
Supporting References	
Necessary Course Material	

Course Schedule	
1	Determination of the project topic
2	Searching the literature about the topic
3	Searching the literature about the topic
4	Summary of the literature
5	Summary of the literature
6	Summary of the literature
7	Evaluating the literature
8	Mid-Term Exam
9	Writing the results
10	Writing the results
11	Preparing the results as a report
12	Preparing the results as a report
13	Evaluating the report
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Homework	1	1	1
Studying for Homework	10	1	10
Final Exam			
Studying for Project Preparation	12	2	24
Total workload			91
Total workload / 30			3,03
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	
Quiz	
Homework	40
Bir öge seçin.	
Bir öge seçin.	
Final Exam - Project	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer	3
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient	3
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	2
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	3
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	2
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling,	2
8	To have the skill of using and applying biotechnology on horticulture	2
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of	1
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	3
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	2

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Cultivating Vegetables and Applications II	251318016

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	It is aimed that students search a research topic related to vegetable growing and special applications in detail, write and present a project related to the subject, conduct it and write a project report.
Short Course Content	Literature search, project preparation, presentation and implementation on the cultivation of vegetables

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learning to literature search	1, 2, 8	1	F
2 Learning to sense, summarize and evaluate the literature	1, 2, 8	1	F, G
3 Project preparation and practice	11, 12	1, 3, 6	J, I
4 Submit a project report	11, 12	1	G
5 The ability to use the results obtained	11, 12	1	G
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	
Supporting References	
Necessary Course Material	

Course Schedule	
1	Determining the research topic
2	Literature search and evaluation
3	Literature search and evaluation
4	Literature summary and evaluation
5	Writing a project
6	Writing a project
7	Writing a project
8	Practice of the project
9	Practice of the project
10	Practice of the project
11	Evaluation of data
12	Writing a results report
13	Writing a results report
14	Writing a results report
15,16	Presentation of the project report

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)	14	3	42
Presentation (Preparation time included)	1	1	1
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam			
Studying for Final Exam			
Total workload			85
Total workload / 30			2,8
Course ECTS Credit			3

Evaluation	
Activity Type	%
Presentation	
Quiz	
Homework	
Bir öge seçin.	
Presentation	100
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	4
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	4
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	5
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
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ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fruit Growing Techniques and Applications II	251318015

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The aims of the course are to study the topic on fruits of horticultural crops research during the training period, to prepare the results as a project and to present the subject to community.
Short Course Content	Literature screening, project preparation and presentation the topic on fruit growing.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Learns to plan an investigation.			
2 Develops hypotheses about the problem.			
3 Learns to conduct a literature review.			
4 Learns to summarize the source.			
5 Learns to interpret results.			
6 Learns to report the results obtained.			
7 Learns to present his report.			
8 Gains the ability to use the information obtained throughout life.			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	-
Supporting References	-
Necessary Course Material	-

Course Schedule	
1	Determination of the project topic
2	Searching the literature about the topic
3	Searching the literature about the topic
4	Summary of the literature
5	Summary of the literature
6	Evaluating the literature
7	Evaluating the literature
8	Mid-Term Exam
9	Writing the results
10	Writing the results
11	Preparing the results as a report
12	Preparing the results as a report
13	Evaluating the report
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)	14	4	56
Presentation (Preparation time included)			
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam	1	2	2
Studying for Final Exam			
Total workload			86
Total workload / 30			8,87
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	-
Quiz	-
Homework	-
Bir öge seçin.	
Bir öge seçin.	
Final Exam	100
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	
8	To have the skill of using and applying biotechnology on horticulture	
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	

LECTUTER(S)				
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Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Minor Vegetables II	251318018

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
7	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Minor Fruits-II	251318034

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The research will be conducted on any topic related to minor fruits, and a research project will be designed to evaluate and successfully transfer the results.
Short Course Content	Conducting research, preparing, and presenting projects on the subjects within the relevant department, as suggested by the faculty member chosen within the scope of the relevant course.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Students will be given the ability to conduct research and practice on any subject related to minor fruits. The ability to create a project on any professional subject and successfully convey the results will be gained.	2,3,5,11	1,2,5,6,7,12,14,15	D,E,F,G
2 The ability to create a project on any professional subject and successfully convey the results will be gained.	2,3,5,11	1,2,5,6,7,12,14,15	D,E,F,G
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Researched, relevant documents and resources on the subject.
Supporting References	Researched, relevant documents and resources on the subject.
Necessary Course Material	Computer, projector

Course Schedule	
1	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
2	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
3	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
4	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
5	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
6	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
7	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
8	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
9	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
10	Presentation of the project
11	Presentation of the project
12	Presentation of the project
13	Presentation of the project
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	1	14
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)	1	25	25
Project (Preparation and presentation time included)			
Presentation (Preparation time included)	1	25	25
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam			
Studying for Final Exam			
Total workload			92
Total workload / 30			3,06
Course ECTS Credit			3

Evaluation	
Activity Type	%
Others (Diploma Thesis)	50
Presentation of Thesis	50
Final Exam	
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	3
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	1
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	1
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	5
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Fruit Culture II	251318022

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	Students will be able to do research and practice on any subject related to Horticulture, to evaluate the results by creating a project and to transfer them successfully.
Short Course Content	Within the scope of the related course, researching, project preparation and presentation of the results in the form of a thesis of the advisor faculty member and the faculty member

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			
3			
4			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Related documents and internet resources
Supporting References	Related documents and internet resources
Necessary Course Material	Projector and computer

Course Schedule	
1	Determination of thesis topics within the scope of the relevant course
2	Determination of thesis topics within the scope of the relevant course
3	Determination of thesis topics within the scope of the relevant course
4	Determination of thesis topics within the scope of the relevant course
5	Conducting literature research on thesis topics determined within the scope of the relevant course
6	Conducting literature research on thesis topics determined within the scope of the relevant course
7	Conducting literature research on thesis topics determined within the scope of the relevant course
8	Conducting literature research on thesis topics determined within the scope of the relevant course
9	Conducting literature research on thesis topics determined within the scope of the relevant course
10	Conducting literature research on thesis topics determined within the scope of the relevant course
11	Control of preparations
12	Control of preparations
13	Control of preparations
14	Control of preparations
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Viticulture Practices- II	251318035

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	To have a passing grade in the General Viticulture course.
Objectives of the Course	The research will be conducted on any topic related to viticulture, and a research project will be designed to evaluate and successfully transfer the results.
Short Course Content	Conducting research, preparing, and presenting projects on the subjects within the relevant department, as suggested by the faculty member chosen within the scope of the relevant course.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Students will be given the ability to conduct research and practice on any subject related to viticulture.	2,3,5	3,5,7,11,12.13,14,15	E,G
2 The ability to create a project on any professional subject and successfully convey the results will be gained.	2,3,5	3,5,7,11,12.13,14,15	E,G
3			
4			
5			
6			
7			
8			
9			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Researched, relevant documents and resources on the subject.
Supporting References	Researched, relevant documents and resources on the subject.
Necessary Course Material	Projector and PC.

Course Schedule	
1	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
2	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
3	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
4	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
5	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
6	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
7	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
8	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
9	Preparing a project on the subjects within the department of the faculty member selected within the scope of the relevant course.
10	Presentation of the project
11	Presentation of the project
12	Presentation of the project
13	Presentation of the project
14	Presentation of the project
15	Presentation of the project
16,17	Final Exam (Presentation)

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	1	14
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)	14	1	14
Project (Preparation and presentation time included)	14	1	14
Presentation (Preparation time included)			
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam	1	2	2
Studying for Final Exam	14	1	14
Total workload			100
Total workload / 30			3.33
Course ECTS Credit			3

Evaluation	
Activity Type	%
Report	50
Final Exam (Presentation)	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and	4
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of	4
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	4
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	1
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	3
8	To have the skill of using and applying biotechnology on horticulture	1
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and	3
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	2
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	2
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	3

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Vegetable seed practices - II	251318036

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	Conducting research, preparing, and presenting projects on the subjects within the relevant department, as suggested by the faculty member chosen within the scope of the relevant course.
Short Course Content	The research will be conducted on any topic related to Vegetable seed practices, and a research project will be designed to evaluate and successfully transfer the results.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
Students will be given the ability to conduct research and practice on any subject related to 1 Vegetable seed practices. The ability to create a project on any professional subject and successfully convey the results will be gained.	1,2,3,4,5,6,7,9,10,11,12,14,15	1, 4, 5, 7, 8, 11, 13	D,E,F,G,I,J,K
2			
3			
4			
5			
6			
7			
8			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Researched, relevant documents and resources on the subject.
Supporting References	Researched, relevant documents and resources on the subject.
Necessary Course Material	Projection and computer

Course Schedule	
1	Determination of thesis topics within the scope of the related course
2	Determination of thesis topics within the scope of the related course
3	Determination of thesis topics within the scope of the related course
4	Determination of thesis topics within the scope of the related course
5	Conducting a literature review on the thesis topics determined within the scope of the related course
6	Conducting a literature review on the thesis topics determined within the scope of the related course
7	Conducting a literature review on the thesis topics determined within the scope of the related course
8	Conducting a literature review on the thesis topics determined within the scope of the related course
9	Conducting a literature review on the thesis topics determined within the scope of the related course
10	Conducting a literature review on the thesis topics determined within the scope of the related course
11	Checking the preparations
12	Checking the preparations
13	Checking the preparations
14	Checking the preparations
15	Checking the preparations
16,17	Submission of Undergraduate Thesis

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Presentation of Thesis	50
Bir öge seçin.	
Bir öge seçin.	
Diploma Thesis	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				



ESOGU HORTICULTURE DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Modern Orchards Management II	251318037

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
8	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	In this course, the student who takes the course on the management of a modern garden from A to Z, taking into account irrigation, fertilization, pruning, training, support systems, rootstocks and varieties used in dwarf orchards, gains skills or theoretically prepares a thesis on this subject.
Short Course Content	In this course, the student prepares for the graduation thesis on a predetermined subject by using the knowledge and skills he has acquired so far. The topics to be chosen here should be more about modern orchard management. These topics are; In the dwarf apple, amulet, cherry, or peach orchards, there should be topics that include the cultural practices of modern gardens such as irrigation, fertilization, disease and pest control, and tree treatment and pruning systems

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 The student learns and explains the course content.	1,2,3,4,5,6,7,8,10,11,12	1,3,6,7,8,9,10,11,12,13,14,15	E,F,G,I,J,K
2			

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Intensive Orchard Management, Author; Dr. Bruce H. Barritt, Publication Year; 1992, ISBN;0-9630659-1-2
Supporting References	General Fruiting, Editors; R. Gerçekçioğlu et al., Chapter 12. Pruning of Fruit Trees. Pages 385-449.
Necessary Course Material	Projector and computer

Course Schedule	
1	What does Modern Orchard Management mean?
2	Which criteria are used to determine planting spacing between rows and above rows in modern orchards?
3	Are support systems a choice in modern orchards? Or is it a necessity?
4	Does the combination of poles, stems and wires from support systems in dwarf orchard vary according to the rootstock and cultivars used?
5	Determining the suitability of concrete, iron and wood materials used in support systems for the orchard system and facilitating cultural processes
6	Multiple row planting systems and their application in modern apple, pear, cherry and peach orchards.
7	Vegetative power levels, classification, compatibility with varieties and effects on crown development of rootstocks used in modern apple, pear, cherry and peach orchards.
8	Placement of drip irrigation pipes and design of fertilizer tanks and apparatus used for irrigation and fertilization in modern orchards
9	Determination of the developmental status of Spur and standard apple, pear, cherry and peach varieties in modern orchards according to the rootstocks used.
10	The use of weekly different irrigation and fertilization regimens according to phenological periods in modern orchards.
11	Creation and pruning of super spindle and slender spindle systems applied in modern orchards
12	Creation and pruning of Steep Leader, Vogel Central Leader, Spanish Bush, UFO, Kim Green Bush, Tall Spindle ax and Super Spindle systems applied in modern cherry orchards
13	Formation and pruning of vertical cordon, Y palmette, single-armed horizontal cordon, V system and super spindle systems in dwarf pear orchards
14	The use of natural methods in the fight against diseases and pests in modern orchards
15,16	Thesis Submission

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)	4	2	8
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	40	40
Total workload			93
Total workload / 30			3,1
Course ECTS Credit			3

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	To have the basic information on horticulture and other agriculture engineering areas, describing the required data to solve the problems, to have the ability of gathering data and solving the problems by using information technology	5
2	To have theoretical and practical (land and laboratory) information on growing and breeding of fruits, vegetables, grapevine and ornamental plants, and to use and transfer these information accurately	5
3	To have the ability of determining and evaluating the source of the ecological, biological, technical and economical problems that negatively effects the sufficient yield and quality of horticultural crops	5
4	To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment	3
5	To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants	5
6	To have the skill of establishing and operating orchards, greenhouses and vineyards	3
7	To have the information and ability on breeding horticultural crops, developing a new cultivar, and propagation of these new varieties by different methods (seed, seedling, and sapling)	5
8	To have the skill of using and applying biotechnology on horticulture	3
9	To have the information on good agricultural practices, and by the way, to decide the right time of cultural practices of the horticultural crops, and to have the ability of describing the pest and diseases of horticultural plants	
10	To have the skill on observing the changes through harvest, post harvest, and storage of horticultural crops, and to have the information on storage conditions	3
11	To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills	4
12	To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility	5

LECTUTER(S)				
Prepared by				
Signature(s)				