**ESKİŞEHİR OSMANGAZİ UNİVERSİTY AGRİCULTURE FACULTY**

**HORTİCULTURE 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 | 2 |
| 251311012 | | Basic Information Technologies | | 1 | | 2 | 2 | 3 |
| 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 | 3 |
| 251312002 | | Surveying Technique | | 2 | | 0 | 2 | 4 |
| 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 | 3 |
| **Total** | | | | **18** | | **4** | **15** | **30** |
| 1. **Year – Fall Semester** | | | | | | | | |
| **Course Code** | | **Course Name** | | **T** | | **P** | **NC** | **ECTS** |
| 251313002 | | Statistics | | 2 | | 0 | 2 | 4 |
| 251313003 | | Genetics | | 2 | | 0 | 2 | 4 |
| 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 | 4 |
| 251313012 | | Occupational health and Safety I | | 2 | | 0 | 2 | 2 |
| 251313014 | | Material Science | | 2 | | 0 | 2 | 2 |
|  | | 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 |
| 1. **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 |
| 1. **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 |
| 251317031 | Agricultural Ethics and Entrepreneurship | | 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-1 | | 0 | | 2 | | 1 | 3 |
| 251317022 | Fruit Culture I | | 0 | | 2 | | 1 | 3 |
| 251317024 | Minor Fruits-1 | | 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

**ESOGÜ Horticulture Department, Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311002 | **COURSE NAME** | Botany |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| I | 2 | | 0 | 2 | | | 3 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description of plant cell  Plant tissues  Plant organs  Classification of plants  Photosyntesis and respiration | | | | | | |
| **COURSE OBJECTIVES** | | | | | Morphological and anatomical structure of plants | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | 1. Know and recognize the properties of plant cell under the microscope 2. Know and recognize the properties of plant tissues under the microscope 3. Know and distinguish the differences between plant tissues and is under the microscope 4. Know and recognize the properties of plant organs under the microscope 5. Know and distinguish the differences between plant organs and is under the microscope 6. Know classification of plants 7. Know photosyntesis and respiration | | | | | | |
| **COURSE OUTCOMES** | | | | |  | | | | | | |
| **TEXTBOOK** | | | | | Bozcuk, S. 2011. Genel Botanik, Hatipoğlu Basım ve Yayım, Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Akman, Y. ve Güney, K. 2011. Botanik-Bitki Biyolojisi, Palme Yayıncılık. 2. Yentür, S. 2003. Bitki Anatomisi, İstanbul Üniversitesi Yayınları, İstanbul. 3. Vardar, Y. ve Seçmen, Ö. 1993. Bitki Morfolojisinde Temel Bilgiler, Fakülteler Kitabevi, İzmir. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Plant Cell Structure; call wall, protoplast, nucleus, vacuol, cell division |
| 2 | Plant Tissues; meristematic tissues |
| 3 | Parenchyma and Mechanic Tissue |
| 4 | Transport System and Secretory System |
| 5 | Plant Organs; Root; general properties, morphology, root structure in relation to function and root anatomy |
| 6 | Plant Organs; Root; general properties, morphology, root structure in relation to function and root anatomy |
| 7 | Stem; general properties, morphology, branching, metamorphosis and stem anatomy |
| 8 | Leaf; general properties, morphology, parts, metamorphosis and leaf anatomy |
| 9 | Flower, flower symmetry, inflorescence, pollination and germination |
| 10 | Fruit, fruit types |
| 11 | Mid-Term - Fruit, fruit types |
| 12 | Seed; structure, ovule develepment and structure, seed types |
| 13 | Plant Systematic and Plant Classification |
| 14 | Photosyntesis and respiration |
| 15 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311003 | **COURSE NAME** | Physics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 1 | 3 | | 0 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Mechanic Effects in Physics | | | | | | | |
| **COURSE OBJECTIVES** | | | | | learning the basic principles and concepts of physics | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To use existing technology and to produce new technologies. | | | | | | | |
| **COURSE OUTCOMES** | | | | | To explain natural phenomena and analysis learn the science of physics, Understanding of scientific method and research skills. | | | | | | | |
| **TEXTBOOK** | | | | | PHYSICS For scientists& Engineers with Modern physics,  Raymound A Serway. | | | | | | | |
| **OTHER REFERENCES** | | | | | PHYSICS For scientists& Engineers with Modern physics with problem solutions.  Raymound A Serway. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculator | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Unit systems, dimensions, measurements |
| 2 | Vectors, Motion in one dimension |
| 3 | Motion in two and three dimensions |
| 4 | Dynamic |
| 5 | Circular motion |
| 6 | Mid term exam-Work and kinetic energy |
| 7 | Work and kinetic energy; Potential energy and conservation of energy |
| 8 | Impulse and linear momentum |
| 9 | Collisions |
| 10 | Rotational motion of rigid objects |
| 11 | Equilibrium |
| 12 | Law of gravity |
| 13 | Heat and thermodynamics |
| 14 | Technology applications and problem solving |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  |  |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311005 | **COURSE NAME** | Mathematics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY (**√**) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
| **√** | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Sets and Numbers, Functions, Limits and Contunuity, Derivation and Applications | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main of the course is to introduce the concepts and techniques involved in the basic topics listed in this lecture and to develope skills in applying those concepts and techniques to the solution of problems | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | to apply theoretical and practical knowledge on solving and modeling of engineering problems by using sufficient knowledge of engineering subjects related with mathematics | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this module students will be able to:   1. Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems. 2. Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods. 3. Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods. 4. Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies. 5. In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results. 6. Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence. 7. Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language. 8. Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement 9. Understanding of professional and ethical issues and taking responsibility 10. Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development. 11. Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions. | | | | | | |
| **TEXTBOOK** | | | | | Balcı, M., 2008. Genel Matematik I, Balcı Yayınları,416 s | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Koçak, M., 2010. Genel Matematik, AC Kardeşler Matbaa Yayıncılık, 485 s. 2. Cengiz, N., Tarakçı, Ö., Aktaş, M.,2006, Genel Matematik I, Pegema Yayıncılık, 472 s. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Numbers, Sets, Second degree equations and inequalities |
| 2 | Line and circle analytics |
| 3 | Functions, Special functions |
| 4 | Trigonometric functions |
| 5 | Exponential, Logarithmic functions |
| 6 | Mid-Term exam- Hyperbolic functions |
| 7 | Hyperbolic functions; Limit and Continuity |
| 8 | Derivative |
| 9 | Rules of differentiationles of derivationsualities |
| 10 | Differentiations of inverse functions and trigonometric functions |
| 11 | Differentiations of exponential, logarithmic and hyperbolic functions |
| 12 | High order derivatives, The geometrical meaning of the derivative |
| 13 | Max-Min problems |
| 14 | Drawing curve |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | 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 |  | **X** |  |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  |  |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311004 | **COURSE NAME** | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 2 | | 0 | 2 | | | 3 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
| x | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Matter and mole concepts, chemical reactions, reaction sitokiometry, gases and their charactristics, periodic table, chemical connections, liquids, solids and solutions. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Prepares basic chemistry basis. 1. Chemical reaction writing and detecting its sitokiometr. 2. Structure and characteristics of Atom. 3. Periodic features and using periodic table. 4. Chemical connections and varieties. 5. Preparing solutions and varieties. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To gain the students the basic chemistry base. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To comprehend matter and integral parts.  2.Using international naming system.  3. Separates chemical reaction types.  4. To be able to mak hemical reaction countings.  5. Brings thermodynamic comment to chemical reactions.  6. Comprehends interactions between molecules.  7. Learns to prepare and recognise solutions. | | | | | | |
| **TEXTBOOK** | | | | | 1. Temel kimya (Patkins ve L. Jones) 2. Genel kimya (Petrucci and Harwood) 3. Modern Üniversite kimyası (Martimer) | | | | | | |
| **OTHER REFERENCES** | | | | | *-* | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer; projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concepts, element, molecule, ion, cation,anion |
| 2 | Structure of atom,particle numbers (proton,electron,neutron) |
| 3 | Periodic table, periodic features |
| 4 | Electron knowledge, electronegativity, ioning energy,atom radius |
| 5 | Chemical connection, its kinds, dipol moment, particular weight |
| 6 | Mid-term exam- Writing combined formulas and naming |
| 7 | Writing combined formulas and naming |
| 8 | Acid base naming, mole concept |
| 9 | Gases, kinetic theory of gases |
| 10 | Solutions |
| 11 | Solutions |
| 12 | Solutions and varieties, detection of solutions |
| 13 | Solutions and varieties, detection of solutions |
| 14 | Resolution |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311013 | **COURSE NAME** | Introduction to Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 1 | | 0 | 0 | | | 1 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description of Horticulture, historical, place in the country's economy, general description and classification of fruits, vegetables, grapevines and ornamentals that take part in horticulture, nutritional facts and economical importances, ecological requirements of horticulture, important physiological characteristics will be explained, important reproductive methods will be mentioned. | | | | | | |
| **COURSE OBJECTIVES** | | | | | It’s an entrance course to horticulture for students and horticultural production groups will be introduced.  The course will give the opportunity of adaptation of students to horticulture. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about agriculture and horticulture from the first semester. This course could be thought as a basic lesson for further courses. | | | | | | |
| **COURSE OUTCOMES** | | | | | To know important horticultural species that grown in the World and in Turkey. To know economical importance, ecological requests, biological traits, physiology, propagation, and storage and marketing of horticultural crops. It can present approaches to the problems that may be encountered with these issues. | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | Meyve Yetiştirme İlkeleri, Arif Soylu, Uludağ Üniversitesi Ziraat Fakültesi, Ders Notları No: 20, Bursa, 1992. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Mid-term exam; Physiological principals of horticulture |
| 7 | Generative propagation and grafting; Stool propagation, cutting and layering |
| 8 | In vitro culture in horticulture |
| 9 | Cultural practices and soil cultivation in horticulture |
| 10 | Pruning and training |
| 11 | Fertilization and irrigation |
| 12 | Pest and disease maintenance |
| 13 | Maturity and harvest in horticulture |
| 14 | Storage of horticultural crops |
| 15 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 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) |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |

**Instructor(s):** Ass.Prof.Dr.Kenan SÖNMEZ **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311011 | **COURSE NAME** | CAREER PLANNING |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| I | 1 | | 0 | 0 | | | 1 | 2 | **COMPULSORY (X)** ELECTIVE () | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | It is a course designed to create career awareness in its students and to support them in their career journeys. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | It contributes to the promotion of the private, public and academic fields in which students will work after graduation and what kind of vocational education should be paid attention to in these fields. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1-Within the scope of the Career Planning Course,  students internalize career and career planning concepts;  2-Learns how to benefit from career centers;  3-They become aware of his characteristics; They recognize different sectors in which they can do internships, work voluntarily or professionally, and use the yetenekkapısı, which they can benefit as both an undergraduate student and a graduate, and thus develop themselves.  4-Learn the points that need to be considered about resume and job interviews. | | | | | | |
| **TEXTBOOK** | | | | | Kariyer Planlama ve Geliştirme, Kemal ÖZTEMEL ,Pegem Akademi Yayıncılık | | | | | | |
| **OTHER REFERENCES** | | | | | [**https://www.yetenekkapisi.org/login**](https://www.yetenekkapisi.org/login) | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector and computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311012 | **COURSE NAME** | Basic Information Technologies |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice**  **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| I | 1 | | 2 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
| X | |  | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | |
| **MID-TERM** | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | Windows operating system, office programs, internet tasks, web design | | | | | | |
| **COURSE OBJECTIVES** | | | | This course aims to give the use of information about Windows Operating System, fundamentals of office programs and using internet. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | This course includes all fundamentals regarding basic information technologies that should be given in each food engineering program. | | | | | | |
| **COURSE OUTCOMES** | | | | -Learns the fundamentals about information technologies  -Learns the basic hardware and software knowledge  -Uses spreadsheets for professional needs  -Uses presentation programs for professional needs | | | | | | |
| **TEXTBOOK** | | | | Özen, Ü., Naralan, A., Temel Bilgi Teknolojileri, 2007, Ankara | | | | | | |
| **OTHER REFERENCES** | | | | Bilgisayarın Temel Uygulamaları, Naz Yayıncılık, İstanbul. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | Computer, office package program, HTML editor | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Cell control in excel |
| 2 | Creating a table in Excel |
| 3 | Graphics creation in Excel |
| 4 | Formula Operations in Excel |
| 5 | MS Excel applications |
| 6 | Presentation preparation programs |
| 7 | Presentation preparation and making |
| 8 | Midterm |
| 9 | Creating a data-base software |
| 10 | Creating a data-base |
| 11 | Data types and data operations |
| 12 | Web page operations |
| 13 | Making a Web page |
| 14 | Publishing and updating web pages |
| 15,16 | Final Examination |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311008 | **COURSE NAME** | Turkish Language I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | |  |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | **√** |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | | 1 | 40 |
| Quiz | | | | | - | - |
| Homework | | | | | - | - |
| Project | | | | | - | - |
| Report | | | | | - | - |
| Others (………) | | | | | - | - |
| **FINAL EXAM** | | | | | Final Exam | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | Non-existence | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definition of language,Language families on earth and the place of Turkish Language among the world languages, Historical development of Turkish writing language, The ways of identifying Turkish words and phonetic cases. Bring them to write true composition skills. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To show Turkish language abundance by enlighting students about Turkish Language’s development and situation of today’s case, to bring consciousness of a national language, to provide them to know graces of Turkish Language and use these in their daily lives. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Provide using Turkish true and better in students’ daily lives, bring them skills for expressing the works done in their working life | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Student explains language families on surface and Turkish’s place among the world languages.  2.Identify the rules of Turkish.  3. Realizes the sound events.  4. Apply the rules of writing  5. Consitute Writing and Verbal composition  6. Make us of Turkish true. | | | | | | |
| **TEXTBOOK** | | | | | 1- Turkish Language and Composition I-II, Gürer Gülsevin-Erdoğan Boz.  2- Turkish Language for universities, Muharrem Ergin. | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Kaplan, M., “Culture and language”, 8. printing, ,Dergah Publication, İstanbul, 1993.  2. Fuat, M., “About Language”, Adam Publication, İstanbul, 2001.  3. Ercilasun, A. B., “Turkish Language History from begining to twentieth century”, Akçağ Publication, 1. printing, Ankara, 2004.  4. Aksan, D., “Power of Turkish”, Bilgi Publisher, 4. printing, Ankara, 1997. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, Board | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Language and ıts subbranch |
| 2 | Turkısh language’s place among the world languages |
| 3 | Turkısh language’s hıstorıcal development ı |
| 4 | Turkısh language’s hıstorıcal development ıı |
| 5 | Foreign words whıch are used ın turkısh language |
| 6 | Alphabets of turkısh used |
| 7 | Sound events ın turkısh words |
| 8 | Nouns and adjectıves |
| 9 | Pronouns, adverbs ve preposotıon |
| 10 | Verbs; words specıes accordıng to meanıng feature |
| 11 | Mid term Exam- Derivational affix and word endıng |
| 12 | [Derivational affix](http://tureng.com/search/derivational%20affix) and word endıng |
| 13 | Word groups and sentence knowledge |
| 14 | Rules of spellıng |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311009 | **COURSE NAME** | Principles of Ataturk and Recent Turkish History I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | x |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | The Description of the term “revolution”; major historical events in the Ottoman Empire to the end of World War I; a general overview of Mustafa Kemal’s life; certain associations and their activities; arrival of Mustafa Kemal to Samsun; the congresses, gathering of the last Ottoman Assembly and the proclamation of the “national oath”; opening of the Turkish Grand National Assembly; War of independence to the Victory of Sakarya; Victory of Sakarya; financial sources of the war of independence; grand counter-attack; Armistice of Mudanya; abolution of the Sultanate; Peace Conference of Lausanne. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To help the students to appreciate the hard conditions under which the war of independence, under the leadership of Mustafa Kemal, was fought and how an independent Turkish state was created. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To underline the idea that the national unity based on the principle “peace in the country peace in the world” can only be achieved through political, economic and military progress. | | | | | | |
| **COURSE OUTCOMES** | | | | | At the end of this course; Students  1.Explains Principles of Atatürk and main concepts related to Revolution history.  1.1.Explians the concepts of Reform/Revolution.  1.2.Describes the concept of National Forces.  1.3.Explains the concepts of Republic/Democracy.  1.4.Recognizes the concept of Ideology.  2.Explains the main points of the period related to Turkish War of Independence and foundation of the Turkish State.  2.1.Explains the developments at Ottoman Empire before Turkish Revolution.  2.2.Describes the World War I and its results.  2.3.Explains Turkish War of Independence.  2.4.Recognizes Turkish Revolution.  2.5.Remembers the mian principles of Turkish foreign politics.  2.6.Explains Principles of Atatürk and their importance.  3.Explains the effects of the developments at Europe and World on Turkish Republic.  3.1.Explains the effects of European and World politics on Turkey and the results of them.  3.2.Describes the effects of Capitalism/Emperialism on Turkey.  3.3.Explains the relations / problems between Turkey and its neighbours.  3.4.Explains the importance of Turkey at Europe and World. | | | | | | |
| **TEXTBOOK** | | | | | Gazi Mustafa Kemal Atatürk, Nutuk (Söylev), C. I-II, TTK., Ank., 1986.  ***İmparatorluktan Ulus Devlete Türk İnkılâp Tarihi, Cemil Öztürk (ed.), Ank., 2011.*** | | | | | | |
| **OTHER REFERENCES** | | | | | Niyazi Berkes, Türkiye’de Çağdaşlaşma, İstanbul, 1978.  Enver Ziya Karal, Atatürk ve Devrim (Konferanslar ve Makaleler), TTK., Ank., 1980.  Enver Ziya Karal, Atatürk’ten Düşünceler, MEB. Yay., Ankara, 1981.  Bernard Lewis, Modern Türkiye’nin Doğuşu, Çev.M.Kıratlı, TTK., Ank., 1970.  Ahmet Mumcu, Tarih Açısından Türk Devriminin Temelleri ve Gelişimi, Ank., 1976. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The Balkan Wars. First World War and input to war Ottoman Empire. The fronts that Ottoman Empire fighted and the results of the war. |
| 2 | Revolution, evolution, rebellion, coup and reform. The characteristics of the Turkish Revolution. the reasons of collapse of the Ottoman Empire. |
| 3 | Mondros Armistice Agreeement and occupations on the Ottoman Empire. National İndependence War. The occupation of Izmir and effects of this occupation. The preparation period of National Independence War |
| 4 | The movement of Mustafa Kemal to Samsun and to be started the organization of Anadolu Revolution. Amasya Circular, Erzurum and Sivas Congresses, to be founded of the Deputation. |
| 5 | Opening of the TBMM. Rebellions against the TBMM. Sevr Treaty. To be founded "Kuva-yı Milliye" and national army. |
| 6 | Mudanya Armistice Agreement. Abolution of sultanate. Lausanne Treaty. Abolution of caliphate and lodges |
| 7 | Constitutional developments in Turkey. Internal and external political developments in the period of Atatürk's and Inönü's. |
| 8 | The political currents that effected Turkish revolution. Democratic law state. |
| 9 | The political currents that effected Turkish revolution. Democratic law state. |
| 10 | Establishment of the Turkish law and educational system |
| 11 | MidTerm Exam - Nationalism, Etatism and Populism. |
| 12 | Nationalism, Etatism and Populism. |
| 13 | Securalism, Revoluationism |
| 14 | General ecalutation. |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**Course Information Form**

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| SEMESTER | FALL |

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| **COURSE CODE** | 251311010 | **COURSE NAME** | Foreign Language I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 3 | | 0 | 0 | | | 0 | 3 | Compulsory (+) Electıve ( ) | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√)]** | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Fundamental concepts and knowledge | | | | | | |
| **COURSE OBJECTIVES** | | | | | This lesson is programmed to give the basic vocabulary and grammar and make the students hear, understand, speak and write in English at elementary level. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course is aimed at :  Using the basic grammar rules  The ability to use the target language in an English setting  Understanding and making dialogues  The ability to understand what’s read  The ability to communicate with English-speaking people  The ability to write in the target language. | | | | | | |
| **COURSE OUTCOMES** | | | | | At the end of the course studends are able to :  Use the basic grammar rules  Understand and make dialogues  Read and apprehend reading materials  Communicate through writing and speaking | | | | | | |
| **TEXTBOOK** | | | | | 1. Essential English, Beginner Student’s Book, Richmond Publishing 2. Essential English, Workbook, Richmond Publishing | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Murphy, R., 2004, English Grammar in Use, Cambridge University Press, 2. Dictionary of Contemprary English, Longman. 3. Start Up Comprehensive English Practice, 2007, Nüans Publishing | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Course book, workbook, CD player, loudspeakers, dictionary. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Subject Pronouns, indefinite article, a/an, *To be*, NICE TO MEET YOU |
| 2 | Verb be ( am, is, are ) I’M FINE THANKS |
| 3 | Plurals, Wh questions, this, that, these, those WHAT IS THIS IN ENGLISH ? |
| 4 | Verb be, Wh questions, Nationalities WHERE ARE YOU FROM |
| 5 | Modals: can, can’t I’M A JOURNALIST |
| 6 | Modals: can, can’t I’M A JOURNALIST |
| 7 | Prepositions of time and place. On, in, at ALL ABOUT YOU |
| 8 | Simple present tense. Who IN PARIS ON THURSDAY |
| 9 | Possessive pronouns, Possessive ‘s HOW OLD IS HE ? |
| 10 | Present Simple tense, questions, short answers HIS MUSIC, HER SHOW, THEIR CHARITIES |
| 11 | Mid-Term Examination - Present simple, |
| 12 | Present simple, DO YOU HAVE A BIG FAMILY ? |
| 13 | Present Simple, Wh questions MEET YOUR PERFEC PARTNER |
| 14 | Present Simple, Revision WHAT DO YOU DO AT THE WEEKEND |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | X |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

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| **Instructor(s):** | **Date:** |
| **Signature(s)**: |  |

**ESOGÜ Agriculture Faculty Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312001 | **COURSE NAME** | History of Agriculture and Deontology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  | 10 |
| Homework | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Examine agricultural phases in historical development and teaching how agriculture reach current status. To learn related institution, establisments and legislations. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To gain information about the emergence and development of agriculture, professional responsibilities, rights and progressions. | | | | | | |
| **COURSE OUTCOMES** | | | | | To have profesional profile, to know profesional education establishments and planned period establishments, responsibilities and rights. | | | | | | |
| **TEXTBOOK** | | | | | -Eriş, A., 2002. Tarım Deontolojisi, U.Ü. Ziraat Fak. Ders Notları, No:88, Bursa. | | | | | | |
| **OTHER REFERENCES** | | | | | * Direk, M., 2010. Tarım Tarihi ve Deontolojisi, Eğitim Kitabevi, 160 s. * Özçelik, A., 2005. Tarım Tarihi ve Deontolojisi, A.Ü. Ziraat Fak. Eğitim, Araştırma ve Güçlendirme Vakfı Yayınları No:8, Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Data Shower | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor:** Prof.Dr. Rafet ASLANTAŞ **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312002 | **COURSE NAME** | Surveying Technique |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Fundamentals of plan surveying. Units of measurement. Basic plane trigonometry, scale concept. Measurements made with simple measuring instruments. Distance Measurement. A simple measure of the methods of measuring the land. Simple measurements of the drawing work. Error theory. Area calculations. Theodolite and angle measurement. Coordinate systems and map projections. Essential coordinates computations. Traverse surveys. Geometric and trigonometric leveling. Tacheometry. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Learning of basic field - map measures and coordinate systems. Calculating and drawing from the obtained measurements. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Solving of the measurement problems during the field applications. Understanding of Mapping and coordinate systems . | | | | | | |
| **COURSE OUTCOMES** | | | | | Understanding of basic horizontal and vertical field measurement Performing of three dimensional calculation and drawing applications. | | | | | | |
| **TEXTBOOK** | | | | | DİKER S., Ölçme Bilgisi Ders Notları | | | | | | |
| **OTHER REFERENCES** | | | | | 1. ŞERBETCİ M., SONGU C., GÜLAL E., Ölçme Bilgisi 1-2, Birsen Yay. İst. 2. KOÇ İ., Ölçme Bilgisi 1, YTÜ Yayınları, İst. 1998 3. KOÇ İ., Ölçme Bilgisi 2, YTÜ Yayınları, İst. 2003   ÖZBENLİ E., TÜDEŞ T., Ölçme Bilgisi, KTÜ, Trabzon, 1995 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Fundamentals of plan surveying. Units of measurement. |
| 2 | Basic plane trigonometry, scale concept, the scale and types of calculations. |
| 3 | Measurements made with simple measuring instruments. |
| 4 | Measure of length, a simple length measures, electronic length measurement, measurement of lengths Disabled |
| 5 | Meters with the application of a right angle. A simple measure of the methods of measuring the land. |
| 6 | Simple measurements of the drawing work |
| 7 | Error theory and investigate the types of errors. Length measure errors |
| 8 | Area calculations |
| 9 | Theodolite and angle measurement, sources of error and correcting theodolites |
| 10 | Coordinate systems and map projections |
| 11 | essential coordinates computations. Traverse surveys. |
| 12 | Geometric and trigonometric leveling, Instruments and errors. |
| 13 | Tacheometry and its instruments |
| 14 | Creation of cross-sections. |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312011 | **COURSE NAME** | Computer Assisted Technical Drawing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 1 | | 0 | 2 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | X | | | | **√** | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Fundamentals of AutoCad, projections of surfaces and geometrical shapes, AutoCad commands | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aims to give the information to make projections of surfaces and geometrical shapes using technical drawing equipment | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes all fundamentals regarding basic information technologies that should be given in each food engineering program. | | | | | | |
| **COURSE OUTCOMES** | | | | | Learns the principles of technical drawing software  Uses AutoCad commands  Learns to make projections of surfaces and geometrical shapes | | | | | | |
| **TEXTBOOK** | | | | | Muammer Nalbant, 2007. AutoCAD 2007 ile Çizim ve Tasarım. Alfa Yayınları, ISBN:975-297-809-6, İstanbul, 964s | | | | | | |
| **OTHER REFERENCES** | | | | | Mehmet Şamil DEMİRYÜREK, 2011. AutoCAD 2012 & AutoLISP, KODLAB Yayıncılık, ISBN:978-605-4205-59-2, İstanbul, 488s. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, AutoCad software | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concepts in CAD |
| 2 | Autocad Commands (Draw) |
| 3 | Autocad Commands ( Modify: Move, Copy, Scale, Rotate, Mirror) |
| 4 | Autocad Commands (Array, Stretch, Lenghten, Edit Polyline, Explode, Offset) |
| 5 | Layer |
| 6 | Plane surfaces (Basic and advanced) |
| 7 | Isometric perspective drawing |
| 8 | Midterm |
| 9 | Isometric perspective drawing-continued |
| 10 | Block Command |
| 11 | Hatch commad and Section |
| 12 | Dimension Commands |
| 13 | Constitution of template |
| 14 | Manufacturing drawings and print settings |
| 15,16 | Final Examination |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

**ESOGU Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312004 | **COURSE NAME** | Plant Biochemistry |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 1 | | 2 | 0 | | | 2 | 5 | COMPULSORY (**X**) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | **X** | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | NO | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction to biochemistry, biomolecules and cell structure, water and properties of aqueous solutions, proteins, enzymes, carbohydrates, lipids, nucleic acids, vitamins, carbohydrate metabolism, lipid metabolism, metabolism of the nitrogen compounds. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The objective of this course to recognize the molecular basis of living systems and evaluation on biological processes occurring in the living systems. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To gain ability of understanding and interpreting of living chemistry to students.. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Recognizing of the macromolecules in living system. 2. Interpreting of the life in molecular level. 3. Recognizing and evaluating of the components of living system. 4. Interpreting of the dynamic interaction of molecules in living system. | | | | | | |
| **TEXTBOOK** | | | | | 1. Nelson, D.L., Cox, M.M., (2004) Lehninger Principles of Biochemistry. 3rd Edition, Worth Publishers, Wisconsin, USA. | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Keha, E.E. and Küfrevioğlu, İ. (2004). Biyokimya, 3rd Edition, Aktif Yayınevi, Erzurum, Turkey.Timbrell, J., (2000) Principles of Biochemical | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and data show device | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to biochemistry, biomolecules and cell structure. |
| 2 | Water and properties of aqueous solutions. |
| 3 | Amino acids, peptides, proteins. |
| 4 | Amino acids, peptides, proteins. |
| 5 | Enzymes |
| 6 | Midterm exam – Makro and micro molecules |
| 7 | Carbohydrates |
| 8 | Lipids |
| 9 | Nucleic acids |
| 10 | Vitamins |
| 11 | Carbohydrate metabolism |
| 12 | Carbohydrate metabolism |
| 13 | Lipid metabolism |
| 14 | Metabolsim of the nitrogen compounds |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312013 | **COURSE NAME** | Agricultural Ecology and Climate Change |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| II | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (Practise) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | |  | | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Identification of environmental factors which affect to growth and development of organism. Explain the relation of of the organism surrounding environment. Explain the effects of environmental factors on agricultural production. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Student taken this course; can learn the role of environmental factors on agricultural production.  2. can understand more easly the course related to plant and animal prodution in the advance class.  3. can aware environmental limist which restrict crop diversity  4. can have a sense to protect environment and livings in it.  5. can understand the importance of sustainable resource use  6. can understand the relations among organism | | | | | | | |
| **TEXTBOOK** | | | | | Unpublished course notes | | | | | | | |
| **OTHER 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 | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector and computer | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description of ecology and fundamental principles of ecology |
| 2 | Description of light and its related environmental factors |
| 3 | Description of the role of light on plant and animal production |
| 4 | Description of temperature and its related environmental factors |
| 5 | Description of the role of temperature on plant and animal production |
| 6 | Description of water and its related environmental factors |
| 7 | Description of the role of water on plant and animal production |
| 8 | Description of atmospheric factor and its role on agricultural production |
| 9 | Description of geographic and topographic factors and theirs role on agricultural production |
| 10 | Description of soil factors and its role on agricultural production |
| 11 | Description of fire and its role on natural and agricultural ecosystems |
| 12 | Description of ecosystems and principles of community ecology |
| 13 | Description of relation among organism and theirs role in ecosystem |
| 14 | Description of energy flow and nutrient cycle in ecosystem |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** Prof.Dr. Yakup ÖZKAN **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312014 | **COURSE NAME** | Thermodynamics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic concepts in thermodynamics, reversible-irreversible processes, properties of pure substances, Gibbs’ law, 0th and 1st laws of thermodynamics, PV processes of ideal gases, 2nd law of thermodynamics, entropy, power cycles, properties of steam, steam tables, heat engines, liquid-vapor systems | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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 | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes all fundamentals regarding engineering thermodynamics that should be given in each plant protection program. | | | | | | |
| **COURSE OUTCOMES** | | | | | -Learns the basic principles of thermodynamics  -Summarizes the properties of pure substances  -Interprets about the entropy and heat engines  -Learns the power cycles | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | Cengel, Y. and Boles, M. (2015) Thermodynamics: An Engineering Approach. 8th Edition, McGraw-Hill. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to the basic concepts of thermodynamics |
| 2 | Pressure, temperature, work, energy, power, and force |
| 3 | 1st 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 | İsochoric, isothermal, isobaric, adiabatic and polytropic processes |
| 7 | 2nd law of thermodynamics, Entropy and heat engines |
| 8 | Midterm |
| 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 | Properties of liquid-vapor systems in equilibrium |
| 14 | Approaches for the estimation of vapor pressure in liquid-vapor systems |
| 15,16 | Final Examination |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

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**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312008 | **COURSE NAME** | Turkish language II |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 2 | | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** | |
|  | | |  | | | |  | | | | | **√** | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** | |
| 1st Mid-Term | | | | | 1 | 40 | |
| 2nd Mid-Term | | | | | - | - | |
| Quiz | | | | | - | - | |
| Homework | | | | | - | - | |
| Project | | | | | - | - | |
| Report | | | | | - | - | |
| Others (………) | | | | | - | - | |
| **FINAL EXAM** | | | | | | Final Exam | | | | | 1 | 60 | |
| **PREREQUIEITE(S)** | | | | | | Non-existence | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Spelling, punctuation and composition. Spelling, spelling rules (spelling capitals ,writing numbers, spelling abridgment, writing quatitonsı). composition (the aim of composition, the method of writing composition). Experrison propertiesi. Ambigities. Honorifics; Verbal lecture kinds, written expression kinds . | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | To show Turkish language abundance by enlighting students about Turkish Language’s development and situation of today’s case, to bring consciousness of a national language, to provide them to know graces of Turkish Language and use these in their daily lives. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | Öğrencilerin, günlük yaşamlarında Türkçe’yi doğru ve iyi şekilde konuşup yazabilmelerini sağlar, meslek yaşamlarında kendilerini ve yaptıkları işleri en iyi şekilde ifade edebilme becerisi kazandırır. | | | | | | | |
| **COURSE OUTCOMES** | | | | | | 1.Distiguish Turkish Language abundance.  2.Identify Turkish Language rules.  3. Distinguish sound events.  4. Apply writing rules.  5. Constitute writing and verbal composition.  6. Use Turkish truely. | | | | | | | |
| **TEXTBOOK** | | | | | | 1- Turkish Language and Composition I-II, Gürer Gülsevin-Erdoğan Boz.  2- Turkish Language for universities, Muharrem Ergin. | | | | | | | |
| **OTHER REFERENCES** | | | | | | 1. Kaplan, M., “Culture and language”, 8. printing, ,Dergah Publication, İstanbul, 1993.  2. Fuat, M., “About Language”, Adam Publication, İstanbul, 2001.  3. Ercilasun, A. B., “Turkish Language History from begining to twentieth century”, Akçağ Publication, 1. printing, Ankara, 2004.  4. Aksan, D., “Power of Turkish”, Bilgi Publisher, 4. printing, Ankara, 1997. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | Projection, Board | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | |
| 1 | Punctuation | | | | | | | | | | | |
| 2 | Ambiguity | | | | | | | | | | | |
| 3 | Notify in written I | | | | | | | | | | | |
| 4 | Notify in written II | | | | | | | | | | | |
| 5 | Notify in written III | | | | | | | | | | | |
| 6 | Notify in written IV | | | | | | | | | | | |
| 7 | Notify in written V | | | | | | | | | | | |
| 8 | Notify in written VI | | | | | | | | | | | |
| 9 | Honorifics | | | | | | | | | | | |
| 10 | Official correspondence | | | | | | | | | | | |
| 11 | Mid term Exam- Scientific literature; Verbal lecture | | | | | | | | | | | |
| 12 | Scientific literature; Verbal lecture | | | | | | | | | | | |
| 13 | Effectıve presentatıon skılls | | | | | | | | | | | |
| 14 | Sample letters | | | | | | | | | | | |
| 15,16 | Final exam | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** : **Date:**

**Signature**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251312009 | **COURSE NAME** | Principles of Ataturk and Recent Turkish History II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√)** | | | | | **Social Science** |
| x | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Date of foundation of Turkish Republic, Turkish historical development of the revolution, considered as a comparative chronological axis, and considers the concepts of full independence and national sovereignty; the struggle is transferred to younger individuals. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to allow the students to be sensitive to the revolutionary principles of Atatürk and to induce them to protect the contemporary, secular and democratic values; to encourage the students to adopt the democratic values as the only way of a modern life and to incite them to defend these values | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To understand independence and and national sovereignty concepts at the end of personality development. In general sense, the course made additions to students on self improvement, cultural improvement, sensibility to actual life, and creativity. | | | | | | |
| **COURSE OUTCOMES** | | | | | To apply knowledge on social sciences  To have the ability of analyze, evaluate and designing the data  To have the ability of group work  To have the skill of leading an interdisciplinary team  To ability of making comparisons in lifetime, to understand professional and ethic responsibility, have the good writing and speaking ability  To understand and apply lifelong learning  To be able to follow proffesionally actual subjects  To have the skill of performing scientific researches individually or with an advisor | | | | | | |
| **TEXTBOOK** | | | | | Gazi Mustafa Kemal Atatürk, Nutuk (Söylev), C. I-II, TTK., Ankara, 1986. | | | | | | |
| **OTHER REFERENCES** | | | | | Fatma Acun (Ed.), Atatürk ve Türk İnkılap Tarihi, Ankara, 2010.  Niyazi Berkes, Türkiye’de Çağdaşlaşma, İstanbul, 1978.  Enver Ziya Karal, Atatürk ve Devrim (Konferanslar ve Makaleler), TTK., Ankara, 1980.  Enver Ziya Karal, Atatürk’ten Düşünceler, MEB. Yay., Ankara, 1981.  Bernard Lewis, Modern Türkiye’nin Doğuşu, Çev. M. Kıratlı, TTK., Ankara, 1970.  Ahmet Mumcu, Tarih Açısından Türk Devriminin Temelleri ve Gelişimi, Ankara, 1976 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection Machine, Map, Historical Photograph, Graphics. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Strategy of Turkish Revolution |
| 2 | Sevr and Lozan Alliences |
| 3 | Revolution movements in politics and law |
| 4 | Terakkiperver Cumhuriyet Party |
| 5 | Trial of starting multi party period |
| 6 | Revolution on Turkish law |
| 7 | Revolution movements in education, culture |
| 8 | Revolutions on economy |
| 9 | Revolutions on social life and health |
| 10 | Foreign Policy of Turkish Republic |
| 11 | Mid-term Exam- Geopolitics and geopolitical condition of Turkey |
| 12 | Geopolitics and geopolitical condition of Turkey; Psicological operation threat through University youth |
| 13 | Atatürk’s Revolutions and threats to revolutions |
| 14 | University reform and activities on higher education |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** . **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**Course Information Form**

|  |  |
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| SEMESTER | Spring |

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| **COURSE CODE** | 251312010 | **COURSE NAME** | Foreign Language II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 3 | | 0 | 0 | | | 0 | 3 | Compulsory (+ ) Electıve ( ) | |  |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√)]** | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Fundamental concepts and knowledge | | | | | | |
| **COURSE OBJECTIVES** | | | | | This lesson is programmed to give the basic vocabulary and grammar and make the students hear, understand, speak and write in English at elementary level. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course is aimed at :  Using the basic grammar rules  The ability to use the target language in an English setting  Understanding and making dialogues  The ability to understand what’s read  The ability to communicate with English-speaking people  The ability to write in the target language | | | | | | |
| **COURSE OUTCOMES** | | | | | At the end of the course studends are able to :  Use the basic grammar rules  Understand and make dialogues  Read and apprehend reading materials  Communicate through writing and speaking | | | | | | |
| **TEXTBOOK** | | | | | Essential English, Beginner Student’s Book, Richmond Publishing  Essential English, Workbook, Richmond Publishing | | | | | | |
| **OTHER REFERENCES** | | | | | Murphy, R., 2004, English Grammar in Use, Cambridge University Press,  Dictionary of Contemprary English, Longman.  Start Up Comprehensive English Practice, 2007, Nüans Publishing | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Course book, workbook, CD player, loudspeakers, dictionary | | | | | | |

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| **DERSİN HAFTALIK PLANI** | |
| **HAFTA** | **İŞLENEN KONULAR** |
| 1 | Can for request, Let’s +verb for suggestion LET’S WATCH A DVD TONIGHT |
| 2 | Present simple positive forms with some common verbs ORDINARY PEOPLE |
| 3 | Present simple with activities DOES HE LIKE YOU ? |
| 4 | *Present simple, When, It is on, at, about… LOOK AT THE TIME* |
| 5 | Present simple, Wh questions, Before, After, Everyday activities WHAT TIME DO YOU GET UP ? |
| 6 | Mid TermExam – Adverbs of frequency. |
| 7 | Adverbs of frequency, How many ? HE ALWAYS LEAVE HOME EARLY |
| 8 | Present simple, Months, Dates, Festivals HAVE A GOOD TRIP |
| 9 | Object Pronouns, Adjectives of opinion WHEN’S YOUR BIRTHDAY ? |
| 10 | Verb+ing, Prefer, Free time activities MUSICALS, I’M SORRY, I REALLY HATE THEM |
| 11 | Verb+ing, Prefer, Free time activities MUSICALS, I’M SORRY, I REALLY HATE THEM |
| 12 | How often ?, Frequency adverbs and phrases SWIMMING IS MY FAVOURITE ACTIVITY |
| 13 | Prepositions of time, place, movement HE GOES RUNNING ONCE A WEEK |
| 14 | Revision WE HARDLY EVER GO TO BED EARLY |
| 15,16 | Final Exam |

|  |  |  |  |  |  |
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| **NO** | **PROGRAM OUTCOMES** | | **3** | **2** | **1** |
| 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 | |  |  | **X** |
| 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 | |  |  | **X** |
| 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 | |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | |  |  | **X** |
| 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) | |  |  | X |
| 8 | To have the skill of using and applying biotechnology on horticulture | |  |  | **X** |
| 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 | |  |  | **X** |
| 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 | |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | | **X** |  |  |
| **Instructor(s):** | | |
| **Signature(s)**: | | |

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313002 | **COURSE NAME** | Statistics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
| **√** | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | \* Gaining the concept of researcher to students,  \* Development of analytical thinking,  \* It is aimed to increase the ability to comment on different branches of agriculture | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Learn how difficult, laborious, costly and time-consuming it is to work with populations, and create examples for it  2) Learn that such individuals must be chosen purely by chance.  3) It learns that the statistics estimated from the samples are parameter estimates of the population.  4) Learn how to create a hypothesis and experiment with it to control it,  5) Learn how to check the hypotheses generated by the researcher. | | | | | | |
| **TEXTBOOK** | | | | | Zahide KOCABAŞ, M. Muhip ÖZKAN ve Ensar BAŞPINAR (2013). Temel Biyometri, Ankara Üniversitesi, Ziraat Fakültesi, Yayın No: 1606, Ders Kitabi: 558.  Orhan DÜZGÜNEŞ, Tahsin KESİCİ ve Fikret GÜRBÜZ (1993). İstatistik Metotları (2. Baskı), Ankara Üniversitesi, Ziraat Fakültesi yayınları: 1291, Ders Kitabı: 369.  Mehmet MENDEŞ (2013). Uygulamalı Bilimler için İstatistik ve Araştırma Yöntemleri (3. Baskı), İstanbul, Kriter Yayıncılık  Jerrold H. Zar (2010). Biostatistical Analysis Fifth Edition. Prentice-Hall, Inc., Englewood Cliffs, New Jersey | | | | | | |
| **OTHER 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 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculator | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 3 | Relationships between central tendency measures and the frequency distribution table |
| 4 | Calculation and interpretation of change measures |
| **5** | Calculation and interpretation of change measures from the frequency distribution table |
| 6 | Calculation and interpretation of Pearson Correlation and Linear Regression coefficient |
| 7 | Linear Regression Equation and Relations between Correlation and Regression Coefficient |
| 8 | Classical populations and distributions, normal and standard normal distribution |
| 9 | Binomial distribution, Poisson distribution, calculation and interpretation of probability |
| 10 | Sampling distributions, averages, the difference between the averages and the sampling distribution of the ratios |
| 11 | Hypothesis control, Two and one sided hypothesis controls |
| 12 | Midterm, Intermediate Difference and Odds Hypothesis Controls (Coefficient t-test for control of Z or t) |
| 13 | Calculation and interpretation of confidence bounds and confidence bounds for difference between averages and averages the difference between the averages |
| 14 | Chi-Squared Distribution, Independence check in single and double directional tables |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s): Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313003 | **COURSE NAME** | Genetics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 3 | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Genetics, heredity, variations, hybridizations, Mendel Rules, linkage, crossing over, pedigree analysis, Genom concept, structure of chromosomes, replication and transcription of DNA, genetic code and protein synthesis, specifications of genetic code, mutations. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give basic information on genetics, heredity and variation.  To review previous investigations, by the way to gain ability to make genetical investigations. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Basic knowledge on breeding of old and new animal and plant cultivars that used in cultivation will be given, and it will be usefull throughout the career. | | | | | | |
| **COURSE OUTCOMES** | | | | | Comprehend gene, chromosome and heredity terms.  To gain the ability of solving problems on breeding and crossing easier by giving genetic background to students.  To gain the ability of produce new projects on breeding by transfering these knowledge to practice. | | | | | | |
| **TEXTBOOK** | | | | | Vardar, Y., Kesercioğlu, T., 1990. Genetiğe Başlarken. Bilgehan Basımevi, Bornova-İzmir. | | | | | | |
| **OTHER REFERENCES** | | | | | Kumar, N., 2006. Breeding of Horticultural Crops. Jai Bharat Printing Press, Rohtash Nagar, Shahdara Delhi.  Dabholkar, A.R., 2006. General Plant Breeding. Ashok Kumar Mittal Concept Publishing Company, New Delhi. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | None | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Genetics science, Genetic, Heredity, Variation |
| 2 | Hybridisations |
| 3 | 1. Rule of Mendel |
| 4 | 1. Rule of Mendel |
| 5 | Linkage, crossing-over |
| 6 | Heredity depending on gender |
| 7 | Heredity depending on gender |
| 8 | Pedigree analysis, gene interactions |
| 9 | Genom concept, molecular structure of DNA |
| 10 | Structure of chromosomes |
| 11 | Replication of DNA; transcription of DNA |
| 12 | Replication of DNA; transcription of DNA |
| 13 | Genetic code and protein synthesis |
| 14 | Specifications of genetic code, mutations |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** Asst. Prof. Dr. Yasemin GEDİK **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313004 | **COURSE NAME** | Agricultural Economics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 3 | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | TURKİSH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic principles, theories and concepts of economics and agricultural economics and their implementation on practical life. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Objective of the course to give students the basic information and basic principles of agricultural economics that they can monitor and evaluate economic developments in the world and Turkey. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Monitoring economic events, ability to apply theories and laws of agricultural economics in practical life, ability to monitor and understand agricultural policies and shaping production according to these policy developments. | | | | | | |
| **COURSE OUTCOMES** | | | | | Learning the basic principles of agricultural economics and providing to apply them into practical life. | | | | | | |
| **TEXTBOOK** | | | | | Course notes that are prepared from various scientific sources. | | | | | | |
| **OTHER REFERENCES** | | | | | REHBER, E., Economics, III.Edition, Uludag University, Agricultural Faculty, Lecture Notes Nr: 21, Bursa 1995.  ERKUS, A., M. BULBUL, T. KIRAL, F. ACIL ve R. DEMIRCI, 1995. Agricultural Economics, Ankara University, Agricultural Faculty, Education, Research and Development Foundation Publications Nr: 5, 298 s., Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and historical development of economics, economical systems |
| 2 | The Scope of the Agricultural Economy |
| 3 | The importance of agriculture in Turkish economy, features of agricultural activities |
| 4 | Agricultural Production Economics |
| 5 | The Law of Diminished Returns |
| 6 | Substitution of Factors (Factor-Factor) and Substitution of Initiatives (Product-Product) |
| 7 | Annual Operating Results of Agricultural Enterprises |
| 8 | Agricultural finance |
| 9 | Marketing Of Agricultural Products |
| 10 | Agricultural Policy, International Relations |
| 11 | Agricultural policy and agricultural incentives, Good Agricultural Practices, Globalgap and other international quality systems |
| 12 | Natural Resources Economy |
| 13 | Organising in Agriculture, Cooperatives |
| 14 | Rural development economy |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313005 | **COURSE NAME** | Food Science and Technology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| III | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | |  | | | | X | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction to food science and technology, chemical composition of foods, microbiology, food quality control, food protection techniques, tea processing, cereal processing, meat processing, fruit and vegetable processing, milk processing, oil processing | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give information basic concepts and techniques of foods, to increase information in processing of agricultural products | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To provide strengthening of subjects in food science and technology | | | | | | | |
| **COURSE OUTCOMES** | | | | | To aim increasing of information and to improve knowledge and skills of students in related subject | | | | | | | |
| **TEXTBOOK** | | | | | Bulduk, S. 2010. Gıda Teknolojisi. Detay Yayıncılık, Ankara | | | | | | | |
| **OTHER REFERENCES** | | | | | Bilişli, A. Gıda Kimyası.  Bilişli, A. Gıda Teknolojisi  Dokuzlu, C. Gıda Analizleri | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | History and introduction of food science |
| 2 | Food production |
| 3 | Storage of foods |
| 4 | Storage techniques of foods |
| 5 | Dry storage of foods |
| 6 | Midterm exam/ Canned foods and Milk processing techniques |
| 7 | Cereal processing techniques |
| 8 | Cereal processing techniques |
| 9 | Meat processing techniques |
| 10 | Freezing storage |
| 11 | Storage by salt and species |
| 12 | Fruit and vegetable processing techniques |
| 13 | Fruit and vegetable processing techniques |
| 14 | Radiation techniques and Functional foods |
| 15 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313013 | **COURSE NAME** | General Fruit Growing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 3 | 1 | | 2 | 0 | | | 2 | 5 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | | 1 | 20 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about fruit growing. This course will be a basis for further intermediate courses on this subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | To know cultural history of fruit growing, basics of modern fruit growing, production and trade data of the world.  To know fruit species, their pomology, flowering type and structure.  To know pollination, fertilization, flower fall and periodicity of fruit species.  To know establishment of orchard and factors effecting establishment.  To learn basic knowledge on orchard establishment. To solve the problems about fruit growing.  To instruct different cultural techniques to farmers, on this structure. | | | | | | |
| **TEXTBOOK** | | | | | Özbek,S. 1977. Genel Meyvecilik. Ankara University Faculty of Agriculture publishments No.6. | | | | | | |
| **OTHER REFERENCES** | | | | | Ağaoğlu, S. ve ark. 1995. Genel Bahçe Bitkileri. Ankara University Faculty of Agriculture, Eğitim, Araştırma ve geliştirme Vakfı Yayınları No:4.  Gerçekçioğlu R., Bilginer Ş, Soylu A. 2008. Genel Meyvecilik kitabı, Nobel Publishing, 480 sayfa. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 diferantiation |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |

**Instructor(s):** Prof.Dr. Rafet ASLANTAŞ **Date:**

Prof.Dr. Yasemin EVRENOSOĞLU **Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313024 | **COURSE NAME** | Landscape Architecture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 3 | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | | 1 | 20 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Landscape concept, Historical development and Study Areas of Landscape Architecture, Landscape Art History, Leaving Material “Plants” and Functions, Grouping of Plant Material, Use of Plant Material in Landscape Architecture, Planting Principles, Gymnospermae Plants and Dendrological Properties, Angiospermae Plants and Dendrological Properties, Grassland, Landscape Planning and Landscape Planning Stages; Landscape Design and Landscape Design Stages; Landscape Construction, Urban Green Areas | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main goals of the course are to understand what Landscape Architecture is and study areas and also to establish relations with agriculture | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about landscape architecture and its study area | | | | | | |
| **COURSE OUTCOMES** | | | | | 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 | | | | | | |
| **TEXTBOOK** | | | | | Aran,S.,(1977). Peyzaj Mimarisi:Temel prensipleri, [Ankara Üniversitesi Ziraat Fakültesi Yayınları; 635 Ders Kitabı; 198](http://library.ege.edu.tr/search*tur/tAnkara+%7b232%7dUniversersitesi+Ziraat+Fak%7b232%7dultesi/tankara+u~aniversersitesi+ziraat+faku~altesi+yay++635+ders+kitabi++198/-2,-1,0,B/browse), Ankara, 386s.  Korkut, A., Şişman, E.E., Özyavuz, M., (2010). Peyzaj Mimarlığı, Verda Yayıncılık ve Danışmanlık Hizmetleri, İstanbul.  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.  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.  Hatipoğlu, A., Gülgün, B. (1999) Tek ve Çok Yıllık Mevsimlik Çiçekler, Kent Matbaası, Yenişehir-İzmir, 205s.  Güney, A., Erdem Ü., Zafer, B., Hepcan, Ş. (1996) Peyzaj Konstrüksiyonu (Donatı Elemanları), Ege Üniversitesi Ziraat Fakültesi Yayınları No: 514, Bornova İzmir, 149s.  Uzun, G. (1996) Peyzaj Mimarlığında Çim ve Spor Alanları Yapımı, Çukurova Üniversitesi Ziraat Fakültesi Yardımcı Ders Kitabı No:20, Adana, 170 s. | | | | | | |
| **OTHER REFERENCES** | | | | | Ceylan, G., (2004). Dış Mekan Süs Bitkileri ve Peyzajda Kullanımları, Flora Yayınları, İstanbul. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Landscape concept, Historical development and Study Areas of Landscape Architecture |
| 2 | Landscape Art History |
| 3 | Leaving Material “Plants” and Functions, Grouping of Plant Material |
| 4, 5 | Use of Plant Material in Landscape Architecture, Planting Principles, |
| 6 | Landscape Design and Landscape Design Stages |
| 7 | Landscape Planning and Landscape Planning Stages |
| 8 | Gymnospermae Plants and Dendrological Properties |
| 9 | Gymnospermae Plants and Dendrological Properties |
| 10 | Midterm Exam - Angiospermae Plants and Dendrological Properties; |
| 11 | Angiospermae Plants and Dendrological Properties |
| 12 | Grassland, |
| 13 | Landscape Construction |
| 14 | Urban Green Areas |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** Assoc. Prof. Dr. Sibel SARIÇAM **Date:**

**Signature**:

 **ESOGÜ Horticulture Department**

**Course Information Form**

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| SEMESTER | FALL |

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| **COURSE CODE** | 251313012 | **COURSE NAME** | Occupational health and Safety I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 3 | 2 | | 0 | 0 | | | 0 | 2 | Compulsory (+) Electıve ( ) | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Faculty of Agriculture** | | | | **Horticulture**  **[if it contains considerable design, mark with (√)]** | | | | | **Social Science** |
| 20 | | 20 | | | | 30 | | | | | 30 |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definition of occupational safety, occupational accidents, occupational diseases, occupational safety in workplaces and ergonomics | | | | | | |
| **COURSE OBJECTIVES** | | | | | Teach method of prevention of occupational accidents and occupational diseases, to make the risk analysis of the student, to be able to foresee and take precautions. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To protect the human health and increase the labor productivity by knowing the measures against work accidents and occupational diseases in the workplaces and to learn the regulations and related basic rights in this respect. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.To improve the physical conditions of the workplace, develop alternative solutions and solving  2.Design of the workplace conditions(noise, heat, dusti etc.) taking measurements, analyzing the results and interpretation.  3.Potential risks in the workplace, assessment and development of solutions to protect human health.  4. Learn the importance of ergonomics. | | | | | | |
| **TEXTBOOK** | | | | | Kahya, E. 2014, İş Güvenliği, ESOGÜ Yayın No:246, Eskişehir | | | | | | |
| **OTHER REFERENCES** | | | | | Yiğit,A., İş Güvenliği, 2013, Dora Basım-Yayın Dağıtım Ltd. Şti, Bursa  Bayır, M ve Ergül, M., 2006, İş güvenliği ve Risk Değerlendirme Uygulamaları, Bursa  Dizdar, E.N., 2008, İş Güvenliği, 4. Baskı, Murathan Yayınevi, Trabzon  Esin, A., 2006, Yeni Mevzuatın Işığında İş Sağlığı ve Güvenliği, TMMO MMO Yayın No: MMO/363/2, Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Explanation of topics with the help of visuals. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Course scope, execution, evaluation, occupational safety |
| 2 | Occupational health and Safety; importance, definition, purpose |
| 3 | Occupational safety culture and ergonomics |
| 4 | Institutions and organizations responsible for occupational health and safety |
| 5 | Work accidents (factors, types, performance measures) |
| 6 | Work accidents (causes, formation theories, statistics) |
| 7 | Mid-term exam - Work accidents (cost, investigations, measurement) |
| 8 | Prevention of work accidents, basic methods |
| 9 | Occupational diseases |
| 10 | Risk assessment |
| 11 | Basic safety precautions in workplaces |
| 12 | Basic safety precautions in workplaces |
| 13 | Basic safety precautions in workplaces |
| 14 | General evaluation and suggestions |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

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| **Instructor(s):** | **Date:** |
| **Signature(s)**: |  |

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Autumn |

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| **COURSE CODE** | 251313014 | **COURSE NAME** | Material Science |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 3 | | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (x) ELECTIVE () | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** | |
|  | | |  | | | | x | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** | |
| 1st Mid-Term | | | | | 1 | 40 | |
| 2nd Mid-Term | | | | |  |  | |
| Quiz | | | | |  |  | |
| Homework | | | | |  |  | |
| Project | | | | |  |  | |
| Report | | | | |  |  | |
| Others (………) | | | | |  |  | |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 60 | |
| **PREREQUIEITE(S)** | | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Atomic and crystal structure, plastic deformation, mechanical properties, damage, diffusion and phase diagrams, phase transformations, obtaining metal, polymer, ceramic and composite materials, electrical, magnetic and corrosive properties are covered. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The aim of the course is to teach the atomic and crystal structures of materials, their mechanical properties, internal structure changes with the effect of heat, obtaining and using metal, polymer, ceramic and composite materials, and choosing the appropriate material according to the application area. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | They understand the structures of the tools and equipment they will encounter in their professional lives. | | | | | | | |
| **COURSE OUTCOMES** | | | | | | 1. Knows the atomic and crystal structures of materials (PY-1).  2. Understands the mechanical properties of materials and chooses the appropriate material.  selects (PY-7).  3. Determines the internal structure changes of the materials with the effect of heat (PY-7).  4. Classifies materials according to their properties and usage areas  (PY-1, PY-2).  5. Knows the acquisition and use of metals and alloys (PY-2),  6. Knows obtaining and using polymers (PY-2),  7. Knows the production and use of ceramics and glasses (PY-2),  8. Knows the acquisition and use of composite materials (PY-2). | | | | | | | |
| **TEXTBOOK** | | | | | | • Malzeme Bilimi ve Mühendisliği, W. D. Callister, D. G. Rethwisch, 8. Ed., Nobel Yayınları. Önerilen Kaynaklar: • Malzeme Bilimi ve Mühendislik Malzemeleri Cilt 1 (Çeviri), M. Erdoğan, Nobel Yayınları. • Foundations of Materials Science and Engineering, William F. Smith, 4. Ed., New York, 2004. • The Science and Engineering of Materials, D. R. Askeland, PWS Publishing Co., 3. Ed., 1994. | | | | | | | |
| **OTHER REFERENCES** | | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | Projection | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | |
| 1 | Introduction to Materials Science | | | | | | | | | | | |
| 2 | Atomic Structure and Interatomic Bond | | | | | | | | | | | |
| 3 | Crystal Structure and Crystal Structure Defects | | | | | | | | | | | |
| 4 | Mechanical Properties | | | | | | | | | | | |
| 5 | Damage | | | | | | | | | | | |
| 6 | Midterm / | | | | | | | | | | | |
| 7 | Broadcasting | | | | | | | | | | | |
| 8 | Phase Diagrams | | | | | | | | | | | |
| 9 | Phase Transformations | | | | | | | | | | | |
| 10 | Metals and Alloys | | | | | | | | | | | |
| 11 | Manufacturing Methods and Heat Treatments of Metals | | | | | | | | | | | |
| 12 | polymers | | | | | | | | | | | |
| 13 | ceramics | | | | | | | | | | | |
| 14 | Composites; Electrical, Magnetic and Corrosive Properties | | | | | | | | | | | |
| 15,16 | Semester final exam | | | | | | | | | | | |

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| **THE DEGREE OF RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES** (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | | |
| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 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 |  | **X** |  |  |  |
| 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 | **X** |  |  |  |  |
| 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 |  | **X** |  |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |  |  |
| 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) |  |  | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  |  |  | **X** |
| 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 |  |  |  | **X** |  |
| 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 |  |  |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313015 | **COURSE NAME** | Stress Management |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Nature of stress and adaptation, adjustment disorders, stress management techniques, posttraumatic growth | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to provide awareness about stress, stress coping and management including nature of stress and adaptation, their impact on organization, various critical variables on these processes and several events such as emotion and their regulation, grief process and posttraumatic growth in which adaptation can be easily observed | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes all fundamentals regarding stress management that should be necessary for every person who are interested in this field. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Describes stress, coping and adaptation  2. Discusses stress resources, ways of coping and their impact on individual  3. Applies different stress management techniques to various conditions  4. Expresses stress and adaptation disorders  5. Explains adaptation processes to different stress resources | | | | | | |
| **TEXTBOOK** | | | | | Aldywin, C. M. (2007). Stress, Coping and Development. New York: Guilford Press | | | | | | |
| **OTHER REFERENCES** | | | | | Smith, J., C. (2002). Stress Management: A Comprehensive Handbook of Techniques and Strategies. New York: Springer Publishing Company | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of the course, definitions of stress and adaptation |
| 2 | Stress reactions and stress pyhsiology |
| 3 | Critical variables in stress: Control appraisal |
| 4 | Personality traits and social support |
| 5 | Ways of stress assessment |
| 6 | Assessmernt of coping with stress |
| 7 | Stress management techniques |
| 8 | Attachment and emotions |
| 9 | Emotion regulation |
| 10 | Adjustment disorders |
| 11 | Disaster management |
| 12 | Posttraumatic growth |
| 13 | Grief process and adaptation to chronic illlnesses |
| 14 | Immigration |
| 15,16 | Final Exam. |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313016 | **COURSE NAME** | Entrepreneurship |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Feasibility analysis , financial planning , strategies for firm growth , developing an effective business model | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1. Introduce students to the process of venture creation  2. Discuss core issues in creating a successful business.  3. Examine the major strategic decisions that entrepreneurs must make when creating a business.  4. Discuss operational and organizational challenges during the start-up phase  5. Examine the key elements of business planning.  6. Introduce students to the main issues when managing a new firm | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes all fundamentals regarding entrepreneurship that should be necessary for every person who are interested in this field. | | | | | | |
| **COURSE OUTCOMES** | | | | | - Explains the process of venture creation  - Discusses core issues in creating a successful business.  - Examines the major strategic decisions that entrepreneurs must make when creating a business.  - Discusses operational and organizational challenges during the start-up phase  - Explains the key elements of business planning.  - Discusses the main issues when managing a new firm | | | | | | |
| **TEXTBOOK** | | | | | Entrepreneurship: Successfully Launching New Ventures, Bruce R. Barringer & R. Duane Ireland, Fifth Edition, Global Edition, Pearson, 2016. | | | | | | |
| **OTHER REFERENCES** | | | | | - | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Course Introduction and Introduction to Entrepreneurship |
| 2 | Recognizing opportunities and generating ideas |
| 3 | Feasibility analysis |
| 4 | Developing an effective business model |
| 5 | Industry and competitor analysis |
| 6 | Industry and competitor analysis-continued |
| 7 | Writing a business plan |
| 8 | Writing a business plan-continued |
| 9 | Preparing the proper ethical and legal foundation |
| 10 | Building a new venture team |
| 11 | Financial Planning |
| 12 | Preparing for and evaluating the challenges of growth |
| 13 | Strategies for firm growth |
| 14 | Strategies for firm growth-continued |
| 15,16 | Final Exam. |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313017 | **COURSE NAME** | Leadership |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) **ELECTIVE (X )** | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Plant Protection**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Leadership theories, leadership change and innovation, motivation theories | | | | | | |
| **COURSE OBJECTIVES** | | | | | To inform students about leadership and motivation. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To contribute to plant protection students in leadership and management throughout their academic and business life. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1- It effectively uses new leadership approaches.  2-Know the relationship between leader behavior, motivation and performance.  3- Team management is implemented effectively.  4- Explain the leader behavior and performance relation in organizations  5- Can comment and criticize the historical development process of leadership concept. | | | | | | |
| **TEXTBOOK** | | | | | Related articles and lesson documents | | | | | | |
| **OTHER REFERENCES** | | | | | **-** | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Concept of Leadership and Features of Leadership |
| 2 | Behavioral Forms of Leaders |
| 3 | Acquisition and Development of Leadership Skills |
| 4 | Features Approach, Behavioral and Situational Leadership Approach |
| 5 | Charismatic Leadership, Transformational Leadership, Transactional Leadership |
| 6 | Strategic Leadership |
| 7 | Team Spirit Concept, Team Management and the Preface |
| 8 | Leadership and Team Management, Leader's Role in Team Management |
| 9 | Midterm Exam |
| 10 | Leadership in team management, coaching (mentoring) |
| 11 | Variables affecting leadership, Leadership Models |
| 12 | Motivation and Leadership, Motivation and Performance |
| 13 | Leader, Power and Politics in the performance of triplets |
| 14 | General review and discussion |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

**ESOGÜ Horticulture Department Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313018 | **COURSE NAME** | Turkish Folk Dance |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Folk Dance Art and music, music communication, ınstrument communication, nuances, understanding sensing and recognition of folk dance. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Students will obtain information about Turkish Folk Dance culture | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | For three hours in a week, students will deal with a subject out of their major subject. This may help students to be more efficient in their major subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Sudent recognizes importance and benefits of Turkish folk dance art. | | | | | | |
| **TEXTBOOK** | | | | | - | | | | | | |
| **OTHER REFERENCES** | | | | | - | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Dance hall, sportswear and sneakers, towel | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of Anatolian culture and local structuring, teaching of the first dance steps |
| 2 | Artvin region dances (Atabarı, Döne, Düz Horon) |
| 3 | Artvin region dances (Hemşin, Cilveloy, Teşi) |
| 4 | Artvin region dances (Vazriya Horonu, Coşkun Çoruh) |
| 5 | Artvin region dances (Teşi, Deli Horon) |
| 6 | İzmir Zeybek region dances (Harmandalı) |
| 7 | İzmir Zeybek region dances (Al Basma Zeybeği, Gündoğdu Zeybeği) |
| 8 | Mid-term Exam |
| 9 | İzmir Zeybek region dances (Kız Harmandalısı, Bergama Zeybeği) |
| 10 | İzmir Zeybek region dances (Ötme Bülbül, Kırmızı Buğday) |
| 11 | Learned Artvin and Izmir region of the stage made arrangements dance |
| 12 | Eskişehir region dances (Kırka Zeybeği, Yoğurdum var, Mendil) |
| 13 | Eskişehir region dances (Eskişehir Zeybeği, Kalkı da Vermiş Martinimin Galeyi, Kırka Kadın Zeybeği) |
| 14 | Eskişehir region dances (Düz Oyun, Ters Oyun, Kahveyi Kavururlar, Halkalı Şeker, Koca Öküz) |
| 15,16 | Final Exam / Learned Eskişehir and Izmir region of the stage made arrangements dance |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor:**

**Signature**: **Date:**

**** **ESOGÜ Horticulture Department Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313019 | **COURSE NAME** | Effective Communication |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Plant Protection**  **[if it contains considerable design, mark with √) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Communication, the basic components of communication, communication models, communication types, communication barriers, conflict resolution, empathy, effective presentation techniques, communication applications. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to acquire to students the basic knowledge and skills that will allow to communicate effectively with themselves and their environment. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | With this course, students can experience the increase of effectiveness and satisfaction for professional life by learning how to establish healthy communication with other individuals they encounter in working life. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To make a definition of communication  2. To know the basic components of communication  3. To compare the similarities and differences between communication models  4. To identify communication barriers  5. To design applications demonstrating oral, written and verbal communication skills  6. To use effective presentation techniques | | | | | | |
| **TEXTBOOK** | | | | | Baltaş, A. ve Baltaş, Z. (2015). *Bedenin dili.* İstanbul: Remzi.  Harvard Business Review . (2008). *Etkin iletişim.* İstanbul: Optimist.  İzgören, A. Ş. (2016). *Dikkat vücudunuz konuşuyor.* Ankara: Elma. | | | | | | |
| **OTHER REFERENCES** | | | | | Dökmen, Ü. (2016). *Sanatta ve günlük yaşamda iletişim çatışmaları ve empati.* İstanbul: Remzi. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector, computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Information about the course content and student responsibilities |
| 2 | Communication and the basic components |
| 3 | Communication models |
| 4 | Communication types (oral, written and verbal communication) |
| 5 | Communication types (oral, written and verbal communication) |
| 6 | Communication barriers |
| 7 | Communication barriers |
| 8 | Mid-term Exam |
| 9 | Problem solving in interpersonal communication |
| 10 | Problem solving in interpersonal communication |
| 11 | effective presentation techniques |
| 12 | effective presentation techniques |
| 13 | Project presentation and evaluation |
| 14 | Project presentation and evaluation |
| 15, 16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor:**

**Signature**: **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313020 | **COURSE NAME** | Mediation and expertise in law |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) **ELECTIVE (X )** | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | To have information about the expert agency | | | | | | |
| **COURSE OBJECTIVES** | | | | | To examine the methods of alternative solutions in Turkish domestic law and to research their effectiveness. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To provide information about the expertise institution to plant protection students. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1- To have knowledge about the development of the ADR concept in the domestic legal system;  2-To learn the development and place of the concept of arbitration in the domestic legal system;.  3- To be able to examine the regulations on the concept of Arbitration in the domestic legal system;  4- To learn the regulations on Mediation in the domestic legal system;  5- To be able to analyze the development of Mediation in the domestic legal system;  6- To be able to see the place of Mediation in the criminal justice system in the domestic legal system;  7- To be able to examine the mediation institution in TCK and CMK;  8- To be able to have information about the institution of expertise in the domestic legal system; To be able to have information about the institution of expertise in the domestic legal system; To be able to have information about the institution of expertise in the domestic legal system;  9- To be able to examine the regulations regarding the expert authority in the domestic legal system;  10- To be able to have information about the problems faced by the expert witness institution; | | | | | | |
| **TEXTBOOK** | | | | | Özbek, M. (2016). Alternatif Uyuşmazlık Çözümü, 4.Baskı.Ankara: Yetkin Yayınları.Tanrıver S. (2002). Bilirkişinin hukukî statüsü, yükümlülükleri, yetkileri ve sorumluluğu. Ankara: Yetkin Yayinları. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The concept of Arbitration in general |
| 2 | Differences between the concept of arbitration and similar concepts |
| 3 | Mediation - Arbitration distinction |
| 4 | Short trial - Arbitration distinction |
| 5 | The distinction between referee and expert |
| 6 | Arbitration in domestic law |
| 7 | Arbitration regulations in domestic law |
| 8 | Development of Mediation concept in domestic law |
| 9 | Midterm Exam |
| 10 | Studies on Mediation in Domestic Law |
| 11 | The effect of mediation in domestic law on the Turkish criminal justice |
| 12 | The place of mediation in the criminal justice system |
| 13 | Conciliation in TCK and CMK |
| 14 | Expertise concept in domestic law |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313021 | **COURSE NAME** | Glass Arts |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Oxides used in silicate-based glasses and their overall properties, different types of glasses, glass production methods, physical, chemical and mechanical properties of glasses | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give basic knowledge about glass occurrence mechanisms, different types of glasses, glass production methods and physical, chemical and mechanical properties of glass | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes all fundamentals regarding glass arts that should be necessary for every person who are interested in this field. | | | | | | |
| **COURSE OUTCOMES** | | | | | - Knows and classifies glass materials  - Classifies glass production methods  - Lists glass properties  - Analyzes the advantages of novel technologies in glass field. | | | | | | |
| **TEXTBOOK** | | | | | Musgraves, J. D., Hu, J., & Calvez, L. (2019). Springer Handbook of Glass: Springer International Publishing. | | | | | | |
| **OTHER REFERENCES** | | | | | **-** | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Glass definition, structure and glass theories |
| 2 | Glass oxides |
| 3 | Glass raw materials |
| 4 | Glass production methods |
| 5 | Glass coloring |
| 6 | Glass defects and characterization |
| 7 | Physical properties of glasses |
| 8 | Chemical properties of glasses |
| 9 | Mechanical properties of glasses |
| 10 | Different types of glasses: pure silica glass, alkali-silicate glasses |
| 11 | Soda-lime-silica glasses, lead-based glasses |
| 12 | Boron-silicate glasses, alumina-silicate glasses, phosphate-based glasses |
| 13 | Glass batch calculations |
| 14 | Glass batch calculations-continued |
| 15,16 |  |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251313022 | **COURSE NAME** | Works of Volunteering |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III. | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) **ELECTIVE (X )** | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | In the course, they will briefly see the working procedures and principles of non-governmental organizations in today's world, especially volunteering studies and civil society studies, their activities, and their strategies to explain themselves to the society in the context of publicity and public relations. In addition to these, there will be experience sharing where various non-governmental organizations convey their activities. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to provide students with conceptual competence in Civil Society and Volunteering and the strategic knowledge they will follow in order to be more productive as an NGO professional or volunteer. Besides the work of civil society organizations in the developing world and in Turkey will be discussed. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | With this lesson, the student; Will have sufficient conceptual knowledge about Volunteering Studies, Become aware of the activities and practices of non-governmental organizations, Learn the contributions of civil society studies within the social structure of a country, and be able to analyze these issues. | | | | | | |
| **COURSE OUTCOMES** | | | | | With this lesson, the student; He / she will have sufficient conceptual knowledge about Volunteering Studies, become knowledgeable about Civil Society practices, learn the relationship and effects between Civil Society Studies and Society of a country, and be able to analyze these issues. | | | | | | |
| **TEXTBOOK** | | | | | Current reports of international and national organizations | | | | | | |
| **OTHER REFERENCES** | | | | | **-** | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction in the context of Subject and Content |
| 2 | The Concept of Civil Society and NGOs |
| 3 | State and Civil Society in Turkey |
| 4 | Volunteering in Civil Society Organizations, Volunteer Management |
| 5 | Social Responsibility and Social Entrepreneurship |
| 6 | Communication, Campaign Execution and Public Relations Practices in NGOs |
| 7 | NGO reviews |
| 8 | NGO reviews |
| 9 | Midterm Exam |
| 10 | NGO reviews |
| 11 | NGO reviews |
| 12 | NGO reviews |
| 13 | NGO reviews |
| 14 | NGO reviews |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314025 | **COURSE NAME** | General Vegetable Growing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 4 | 1 | | 2 | 0 | | | 2 | 6 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  | 25 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Defining of the term of vegetable, classification of vegetables botanical and according to various characters, flowers in vegetables, propagation methods, important growth factors in vegetable, nursery production, soil preparation, planting, fertilizing and watering. | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aimed to increase the knowledge and abilities of students in basic principles of vegetable production | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Theoretical and practical information of vegetables production which has an important place in the horticultural crops is given in this course. | | | | | | |
| **COURSE OUTCOMES** | | | | | At the end of this course, the student will have the necessary knowledge on current situation problems of vegetable cultivation botanical classification according to the characteristics of vegetables, flower biology, reproduction of vegetables, important environmental conditions in vegetable crops production, growing of seedless, cultural practices such as soil preparation, planting, fertilization and irrigation. | | | | | | |
| **TEXTBOOK** | | | | | Genel Sebze Yetiştiriciliği Cilt I. A. GÜNAY, A. Ü. Z.F. Bahçe Bit. Böl. 1992. Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | Sebzecilik (Genel Teknikler Özel Uygulamalar) H. Kaygısız. Hasad Yay | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection device and pc. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description of vegetables, differences from other products, importance in 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 biology of flowers, edible parts, processing methods, cultivation seasons, duration of life etc. |
| 4 | Vegetable business operating characteristics |
| 5 | Important factors (climate; light, temperature, precipitation, humidity, wind and soil characteristics; depth, PH, salinity, etc.) that affect the choice of the place of vegetables business. |
| 6 | 1. Midterm exam, Important factors (climate; light, temperature, precipitation, humidity, wind and soil characteristics; depth, PH, salinity, etc.) that affect the choice of the place of vegetables business. |
| 7 | Reasons and importance factors to be considered for rotation |
| 8 | Vegetable reproduction methods. Vegetative and generative propagation methods, their advantages and disadvantages |
| 9 | Ttypes of vegetable seed (Open pollinated, hybrid, clone and synthetic cultivars. Germination of seeds, and some treatmentsof pregermination |
| 10 | Preparation of vegetable cultivation place; Calculate the amount seeds or seedlings per unit area. Sowing or planting depth |
| 11 | 2. Midterm exam, Preparation of vegetable cultivation place; Calculate the amount seeds or seedlings per unit area. Sowing or planting depth |
| 12 | Irrigation methods in vegetable crops cultivation, drip irrigation, surface irrigation, sprinkler irrigation and other methods, and their advantages and disadvantages |
| 13 | Application of fertilizer on vegetable, type of fertilizer at the time of giving, the way of giving, and the annual nursery |
| 14 | Course evaluation |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | X |  |  |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |

**Instructor(s):** Asst. Prof.Dr. Kenan SÖNMEZ **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251313006 | **COURSE NAME** | Agricultural Structures and Irrigation |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| IV | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (**X**) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | | X | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 50 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Agricultural structures, hydrology, soil-plant-water relations, agricultural drainage, irrigation water quality and salinity. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to provide knowledge about agricultural structures, irrigation, drainage and irrigation water quality | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learns the plain of agricultural structures and irrigation and drainage. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learning general planning feature of agricultural structures 2. Learning of business center and regulation 3. Learning examination of irrigation and drainage subject 4. Learning drainage methods 5. Learning irrigation water quality | | | | | | | |
| **TEXTBOOK** | | | | | Güngör, Y., Erözel, Z., Yıldırım, O. Sulama, Ankara Üniversitesi Ziraat Fakültesi Yayın No:1540, ders kitabı:493 | | | | | | | |
| **OTHER REFERENCES** | | | | | ***-*** | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Soil-plant-water ralations |
| 2 | Water intake rate of soil |
| 3 | Evapotranspration |
| 4 | Plant coeffecient |
| 5 | Irrigation yield |
| 6 | Midterm Exam, Need of irrigation water |
| 7 | Irrigation time planing |
| 8 | Irrigation methods (surface irrigation) |
| 9 | Irrigation methods (compressed irrigation) |
| 10 | Agricultural drainage |
| 11 | Irrigation water quality and salinity |
| 12 | Irrigation water quality and salinity |
| 13 | Agricultural structure |
| 14 | Agricultural structure |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251314027 | **COURSE NAME** | Soil Science and Plant Nutrition |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| IV | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (**X**) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | | X | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Diagnosing nutrient disorders of plants | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Determine for fertilizer needs while diagnosing nutrient disorders in growing crops include plant tissue analysis and visual symptoms of nutrient deficiency and toxicity. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To fertilize considering deficiency of plant nutrition. | | | | | | | |
| **COURSE OUTCOMES** | | | | | Diagnosing nutrient disorders and to determine which form of fertilizer needs by plants. | | | | | | | |
| **TEXTBOOK** | | | | | Gübreler ve Gübreleme Tekniği (2009). Prof. Dr. B. Kacar ve Prof. Dr. V. Katkat. | | | | | | | |
| **OTHER REFERENCES** | | | | | Bitki Beslemenin Esasları ve Bitkilerde Beslenme Bozukluğu Belirtileri (2008). Prof. Dr. Nesrin Yıldız.  Bitkilerde Beslenme Bozuklukları (2005). Prof. Dr. Mehmet Aktaş ve Mehmet Ateş. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Utilization of visual deficiency symptoms of plants |
| 2 | Plant analysis; tissue and total plant analysis methods |
| 3 | Interpretation of plant analysis; adequacy groups, critical concentration, ratio among plant nutritions, Kenworthy standard values |
| 4 | Soil Fertility Laws |
| 5 | Interpretation of soil testing; biological and field methods |
| 6 | Mid Term Exam- Interpretation of soil testing; biological and field methods |
| 7 | Greenhouse, Mitsherlich, Jenny, Neubauer, microbiological and isotopic methods; Knowledge of chemical analysis of soil |
| 8 | Total analysis and extraction methods of soil |
| 9 | Interpretation of plant analysis and soil testing |
| 10 | Calculation of fertilizer values |
| 11 | Mid Term Exam- Calculation of fertilizer values |
| 12 | Determination of suitable soil testing for region; Calibration of soil testing; critical value of soil testing |
| 13 | Economical use of fertilizer |
| 14 | Writing of Interpretation of soil testing |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGU Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314003 | **COURSE NAME** | Research and Experimental Methods |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | | **Laboratory** | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | | |
| 4 | | 2 | | 2 | | 0 | | 3 | 5 | COMPULSORY (**X**) ELECTIVE ( ) | | Turkish | | |
| **COURSE CATAGORY** | | | | | | | | | | | | | | |
| **Basic Science** | | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** | |
|  | | |  | | | | X | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | | **Quantity** | | **%** | |
| 1st Mid-Term | | | | | | 1 | | 40 | |
| 2nd Mid-Term | | | | | |  | |  | |
| Quiz | | | | | |  | |  | |
| Homework | | | | | |  | |  | |
| Project | | | | | |  | |  | |
| Report | | | | | |  | |  | |
| Others (………) | | | | | |  | |  | |
| **FINAL EXAM** | | | | |  | | | | | | 1 | | 60 | |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 = t2. 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 | | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | In theResearch 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 | | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | \* 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 | | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) To learn that information on the subject being studied can be obtained by carrying out experiments,  2) To learn that basic principles which are to be taken into consideration while carrying out an experiments,  3) To learn that the most appropriate experimental design depends on the amount of homogeneous experimental material and variable being studied  4) To learn to choose the most appropriate statistical method to analyze the collected data from experiments carried out in different experimental designs | | | | | | | | | |
| **TEXTBOOK** | | | | | 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 | | | | | | | | | |
| **OTHER 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. | | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculator | | | | | | | | | |
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| **COURSE SYLLABUS** | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | |
| 1 | Planning of the experiments, Basic principles in designing an experiment, Experimental error, Concept of Replication and Parallel, Comparison of two independent groups, | | | | | | | | | | | |
| 2 | F distribution and variance analysis (ANOVA) technique, Completely Randomized Design, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 3 | Multiple comparison methods, Little Significant Difference method, Duncan test, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 4 | Relation of F = t2. Assumptions of ANOVA, homogeneity control of variances, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 5 | Completely Block Design, Latin Square Design, Relative Efficiency, Missing observations, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 6 | Factorial Experiments, Factorial Experiments in Completely Randomized Design, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 7 | The concept of interaction, Simple and main effects, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 8 | Completely Block Factorial Experiments Design, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 9 | Split-plots in Completely Randomized Design, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 10 | Split-plots in Completely Block Design, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 11 | Repeated measurements experiments, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 12 | Repeated measurements experiments, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 13 | One Factor experiments with Repeated Measurements, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 14 | Two Factor experiments with Repeated Measurements, sample problem solutions and interpretation of results. | | | | | | | | | | | |
| 15,16 | Final exam | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314029 | **COURSE NAME** | Plant Protection |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√)** | | | | | **Social Science** |
|  | |  | | | | **√** | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Lab assignments) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The general information about plant diseases and pests will be given. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learn to pest and disease factors affecting the yield and quality of plants. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1)They will be able to explain the concept of plant disease and symptoms  2) They will be able to find out the relationship between plant diseases, abiotic and biotic factors  3) They will be able to apply knowledge of basic agricultural pest management  4) Students will be able to express what plant pest insects and diseases  5) They will be able to apply knowledge of general entomology such as insect morphology, physiology, reproduction biology and insect ecology. | | | | | | |
| **TEXTBOOK** | | | | | 1. Tarımsal Savaşım Yöntem ve İlaçları. 1993. Delen, N. Ege Üniversitesi Ziraat Fakültesi Ofset Basımevi, İzmir. | | | | | | |
| **OTHER REFERENCES** | | | | | 2. Agricultural Chemicals. 1991. Thomson, W. T. Book IV-Fungicides, Thomson Puplication, California. 3. Agricultural Chemicals. 1991. Thomson, W. T. Book III-Miscellaneous Agricultural Chemicals, Thomson Puplication, California. 4. Agricultural Chemicals. 1991. Thomson, W. T. Book I-Insecticides, Thomson Puplication, California. 5. The Pesticide Manual. 1995. Tomlin, C. Incorporating the Agrochemicals Handbook, Crop Protection Publication, U.K.  6. Tarımsal Zararlılarla Savaş Yöntem ve İlaçları. 1993. Öncüer, C. Ege Üniversitesi Basımevi, İzmir.  7. Tarımda İlaçlı Mücadelenin Temel Prensipleri. 1996. Kaygısız, H. Hasad Yayıncılık LTD. ŞTİ. Rebel Ofset, İstanbul.  8. Bitki Koruma El Kitabı. 2002. Anonymous. T.C. tarım ve Köyişleri Bakanlığı İzmir İl Müdürlüğü Yayınları No:352. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to concept of agricultural fight and the methods used in agricultural fight |
| 2 | Cultural precautions used against to plant disease |
| 3 | Biologic fight methods used against to plant disease |
| 4 | Domestic and foreign quarantine precautions used against to plant disease. |
| 5 | Chemical fight methods used against to plant pathogens. |
| 6 | Mid-Term Exam - Chemical fight methods used against to plant pathogens. |
| 7 | Field work; Properties of fungucides used in chemical fight |
| 8 | Cultural precautions using against agricultural pests |
| 9 | Field and laboratory work |
| 10 | Domestic and foreign quarantine precautions used against to pests. |
| 11 | Domestic and foreign quarantine precautions used against to pests |
| 12 | Biotechnique methods used against to pests. |
| 13 | Biologic and all fight methods used against to pests. |
| 14 | Chemical fight used against to pests and properties of pesticide. |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251313008 | **COURSE NAME** | Field Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 4 | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practise) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | |  | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Presentation of field crops, Cultivation of field crops | | | | | | |
| **COURSE OBJECTIVES** | | | | | To provide information the introduction and cultivation of field crops. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn enought information about cultivation technological techniques in field crops. | | | | | | |
| **COURSE OUTCOMES** | | | | | Understanding and use of arable crops farming in practice to gain the ability to field practicable technologic. | | | | | | |
| **TEXTBOOK** | | | | | Gökkuş, A., Kantar, F., Karadoğan, T., Koç, A. 2008. Tarla Bitkileri. Atatürk Üniv. Ziraat Fak. Ders yayınları, 190 s. Erzurum. | | | | | | |
| **OTHER REFERENCES** | | | | | Geçit, H. H., Çifçi, C. Y., Kolsarıcı, Ö., Ekiz, H. Tarla Bitkileri. Ankara Üniv. Ders Kitabı  Ceylan, A. Tarla Tarımı | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Field crop farming and historical development |
| 2 | The structure of agricultural statement in the world and our country |
| 3 | Agricultural production in the world and our country |
| 4 | Classification of field crops |
| 5 | Field farming systems |
| 6 | Purpose of soil tillage |
| 7 | Soil tillage in dry farming |
| 8 | Soil tillage in irrigated farming and moist farming |
| 9 | Fallow |
| 10 | Sowing (Sowing date, plant density and methods) |
| 11 | Crop rotation |
| 12 | Fertilization in field crops |
| 13 | Irrigation of field crops |
| 14 | Harvest for grain and forages |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** Prof.Dr. Mehmet Demir KAYA, **Date:**

Assoc.Prof.Dr. Nihal KAYAN

**Signature**:



**ESOGÜ Horticulture Department**

**Course Information Form**

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| SEMESTER | Spring |

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| **COURSE CODE** | 251314011 | **COURSE NAME** | Occupational health and Safety II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 4 | 2 | | 0 | 0 | | | 2 | 2 | Compulsory (+) Electıve ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Agriculture** | | | | **Horticulture**  **[if it contains considerable design, mark with (√)]** | | | | | **Social Science** |
| 20 | | 20 | | | | 30 | | | | | 30 |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | |  | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Occupational health and safety organization, occupational health and safety law no. 6311, agricultural issues | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach how to prevent work accidents and occupational diseases in the workplace and solve possible problems. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.To improve the physical conditions of the workplace, develop alternative solutions and solving also improve existing physical conditions in the workplace  2.Design of the workplace conditions(noise, heat, dusti etc.) taking measurements, analyzing the results and interpretation.  3.Potential risks in the workplace, assessment and development of solutions to protect human health. | | | | | | |
| **TEXTBOOK** | | | | | Kahya, E. 2014, İş Güvenliği, ESOGÜ Yayın No:246, Eskişehir | | | | | | |
| **OTHER REFERENCES** | | | | | Yiğit,A., İş Güvenliği, 2013, Dora Basım-Yayın Dağıtım Ltd. Şti, Bursa  Bayır, M ve Ergül, M., 2006, İş güvenliği ve Risk Değerlendirme Uygulamaları, Bursa  Dizdar, E.N., 2008, İş Güvenliği, 4. Baskı, Murathan Yayınevi, Trabzon  Esin, A., 2006, Yeni Mevzuatın Işığında İş Sağlığı ve Güvenliği, TMMO MMO Yayın No: MMO/363/2, Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Explanation of topics with the help of visuals. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPİCS** |
| 1 | The importance of occupational health and safety |
| 2 | Scope of work health and safety law numbered 6331 and its content |
| 3 | Strategies in natural disasters and business accidents |
| 4 | Safety of electrical and electrical equipment |
| 5 | Personal safeguards and usage policy |
| 6 | Obligations arising from work accidents and occupational diseases |
| 7 | Obligations arising from work accidents and occupational diseases |
| 8 | Midterm exam - Examination of occupational risks |
| 9 | Harmful factors in the workplace (physical, chemical, biological and psychological factors) |
| 10 | Harmful factors in the workplace (physical, chemical, biological and psychological factors) |
| 11 | Work related diseases and occupational diseases, mobbing |
| 12 | Work related diseases and occupational diseases, mobbing |
| 13 | Special groups in working life (child workers, female workers, seasonal agricultural workers) |
| 14 | Occupational and environmental health problems arising from industrial activities, protection and measures. |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

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| **Instructor(s):** | **Date:** |

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314031 | **COURSE NAME** | Intellectual Property Law |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 3 | **COMPULSORY ( )** ELECTIVE ( **X** ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Intellectual rights, distinctive signs, work, owner of the work, rights of the owner of the work, contracts related to the work, violations and lawsuits, Trademark law; concept, registration, protection and scope, the trademark being the subject of proceedings, the invalidity of the trademark, violations and lawsuits; Patent law; concept, inventor and right, granting a patent, rights arising from patents, invalidity of patent, violations and lawsuits, Industrial design law; concept, right to design, subject of design right to legal proceedings, invalidity of design right, violations and lawsuits. | | | | | | |
| **COURSE OBJECTIVES** | | | | | It is aimed to teach students the basic concepts of Intellectual Property Law | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Within the scope of the course, they will have information about intellectual property related issues that they will encounter within the scope of their profession | | | | | | |
| **COURSE OUTCOMES** | | | | | Understands the basic concepts of Intellectual Property Law. Gains information about national and international regulations and practices related to the subject. Learns the work, types of work, the rights of the owner of the work and ways of protection. Understands industrial property rights (such as trademark, patent, utility model, geographical indication). | | | | | | |
| **TEXTBOOK** | | | | | Lecture notes | | | | | | |
| **OTHER REFERENCES** | | | | | **-** | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector, computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Intellectual Property Law in General |
| 2 | Basic Principles |
| 3 | Main Elements of Intellectual Property System |
| 4 | Intellectual and Artistic Works |
| 5 | Spiritual Rights |
| 6 | Other Rights |
| 7 | Brands |
| 8 | Midterm Exam |
| 9 | Patents |
| 10 | Utility Models |
| 11 | Designs |
| 12 | Trade Names-Business Names-Trade Secrets- Know-how |
| 13 | New Plant Varieties-Integrated Circuit Topographies |
| 14 | Common Provisions Regarding Industrial Rights |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ HorticultureDepartment**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314032 | **COURSE NAME** | IT (Informatic) Law |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 3 | **COMPULSORY ( )** ELECTIVE ( **X** ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Forensic Information Technology, Information Systems Management, Freedom of Expression Debates on the Internet and Digital Activism, Information and Communication Technologies Law Practices, Information Security Law, Dangers Over the Internet and Their Effects on Our Social Life, Law and Technology, Data Protection Law | | | | | | |
| **COURSE OBJECTIVES** | | | | | In the informatics law course, it is aimed to examine the legal problems brought by information technologies and to seek solutions to the basic internet and legal problems | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Within the scope of the course, he/she will have information about the subjects related to informatics law that he/she will encounter within the scope of his/her profession. | | | | | | |
| **COURSE OUTCOMES** | | | | | Has the power to synthesize the relationship between information technologies and law.  Have basic information about IT Law resources and how to reach them.  Learns to define and analyze the problems related to IT law. | | | | | | |
| **TEXTBOOK** | | | | | Lecture notes | | | | | | |
| **OTHER REFERENCES** | | | | | . | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector, computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Information Technology |
| 2 | E-Commerce |
| 3 | Intellectual Property Law |
| 4 | Cyber Crimes and Case Studies |
| 5 | Surveillance and Listening Technologies |
| 6 | Informatics and Ethics |
| 7 | Forensic Informatics |
| 8 | Midterm Exam |
| 9 | Internet and Internet Technologies |
| 10 | Protection of Personal Data |
| 11 | Investigation and Prosecution Legal Procedures |
| 12 | International Legislation |
| 13 | Court Orders |
| 14 | Telecommunications Law |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314033 | **COURSE NAME** | State and Society |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 3 | **COMPULSORY ( )** ELECTIVE ( **X** ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | The characteristics of state administration and social life in Turks will be introduced under different headings | | | | | | |
| **COURSE OBJECTIVES** | | | | | It is aimed to explain the characteristics of state administration and social life in Turks and to teach their reflections to the present day. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Having the knowledge and skills to comment on social issues will enable her to be more successful in her profession | | | | | | |
| **COURSE OUTCOMES** | | | | | Learns the characteristics of the Ottoman state administration, especially in the Turks, by taking into account the historical development.  Gains knowledge about the understanding of sovereignty from the first Turkish states to the Ottomans.  Have knowledge about the way of establishing provincial and central government in Turks.  Gains knowledge about social groups and religious groups in Turkish society | | | | | | |
| **TEXTBOOK** | | | | | Abdullah Sağlam, Osmanlı Medeniyeti Tarihi, İstanbul, 2014, Kitapevi Pub. | | | | | | |
| **OTHER REFERENCES** | | | | | İbrahim Kafesoğlu, Türk Milli Kültürü Osman Turan, Türk Cihan Hakimiyeti Mefkuresi Tarihi, Bahaeddin Ögel, Türk Kültürünün Gelişme Çağları | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector, computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | State Understanding in Turks |
| 2 | Country and Nation Concept |
| 3 | Fundamentals of Understanding of Domination (Concepts of Justice and Security) |
| 4 | Central Management |
| 5 | Country Management |
| 6 | Municipality Services |
| 7 | Settlement Policy |
| 8 | Midterm Exam |
| 9 | Urbanites, Villagers, Konar-Nomads |
| 10 | Religious Groups |
| 11 | Social Institutions |
| 12 | Family Life |
| 13 | Culture Life |
| 14 | Educational System |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314034 | **COURSE NAME** | Critical Thinking |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Critical Thinking, Analytical Thinking, The importance of critical and analytical thinking, Basic features of critical and analytical thinking | | | | | | |
| **COURSE OBJECTIVES** | | | | | To gain basic knowledge about critical and analytical thinking and to gain habit of critical and analytical thinking | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes all fundamentals regarding critical thinking that should be necessary for every person who are interested in this field. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Defines the basic concepts of critical and analytical thinking  2. Expresses the stages of critical and analytical thinking  3. Discusses the factors affecting critical and analytical thinking  4. Applies critical and analytical thinking in real life | | | | | | |
| **TEXTBOOK** | | | | | Nosich, M. N. (2012). Eleştirel düşünme ve disiplinlerarası eleştirel düşünme rehberi (. Aybek, Çev.). Ankara: Anı. | | | | | | |
| **OTHER REFERENCES** | | | | | * Kurnaz, A. (2011). Eleştirel düşünme öğretimi etkinlikleri (İkinci Baskı). Konya: Eğitim Akademi. * Ruggiero, V. R. (2017). Eleştirel Düşünme İçin Bir Rehber. İstanbul: Alfa. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction, basic concepts |
| 2 | Brain as thinking organ, grouping of thinking styles and thinking |
| 3 | Involuntary thinking and features |
| 4 | Voluntary thinking and characteristics; methods of voluntary thinking |
| 5 | Critical and analytical thinking; basic characteristics and criteria of critical and analytical thinking |
| 6 | Stages of critical and analytical thinking |
| 7 | Factors affecting critical and analytical thinking |
| 8 | Factors affecting critical and analytical thinking-continued |
| 9 | Scope of critical and analytical thinking |
| 10 | Critical and analytical reading |
| 11 | Critical and analytical reading-continued |
| 12 | Critical and analytical listening |
| 13 | Critical and analytical listening-continued |
| 14 | Critical and analytic speaking |
| 15,16 | Final Exam. |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314035 | **COURSE NAME** | Music |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) **ELECTIVE (X )** | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic components of music, Basic music knowledge; staff, note, articulation, clefs, tone, scale, rhythm, Sound knowledge, musical instrument knowledge, Music types and forms in Turkey and in the world, Transition from traditional to contemporary music. Basic harmony, polyphony, The role of music in education, Musical hearing for the improvement of creativity. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach the general music rules in order to increase the student’s perception of music and to gain aesthetic, dynamic, innovative music understanding and behavior at the end of this process. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | It enables students to increase their musical perceptions and acquire hobbies. | | | | | | |
| **COURSE OUTCOMES** | | | | | Knows the basic components of music, basic music knowledge; note, pitch, interval, scale, rhythm and etc. concepts.  Knows the concept of the correct sound (detuned, tonal, atonal, intonation etc.).  Knows the types and forms of music in Turkey and in the world.  Understands and analyses the transition from traditional to contemporary music.  Understands the importance of the human voice and musical instruments in orchestration. knows and explains the importance of musical hearing for the improvement of the role of music in education and for the improvement of creativity. | | | | | | |
| **TEXTBOOK** | | | | | Say, A. (2003). Müzik Öğretimi, Müzik Ansiklopedisi Yayınları.  Sun, M. (1998). Temel Müzik Eğitimi. Yurt Renkleri Yayınevi, Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | **-** | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definitions (music, sound, history) |
| 2 | Basic information (porte, notes, articulation, openers, tone, range, rhythm, etc.) |
| 3 | The sounds of nature, sounds of music |
| 4 | Musical hearing |
| 5 | Three elements of music; rhythm, melody, harmony. |
| 6 | Universal and traditional voice systems |
| 7 | Music Formats |
| 8 | Solo Singing and Choral formations, |
| 9 | Midterm Exam |
| 10 | Instruments |
| 11 | Orchestral Instruments, Musical Instrument Communities, |
| 12 | In turkey, the traditional music |
| 13 | Famous Composers and their Works |
| 14 | Evaluation |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 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 |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

** ESOGÜ Horticulture Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314036 | **COURSE NAME** | Photography |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| IV | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish | |
| **COURSE CATEGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | |  | | | |  | | | | | | x |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 30 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Photograph machines, snapshot values, objectives, kinds of light sources, light effects, expose, ASA/ISO values, clarifying systems, diaphragm values, film/sensor sizes will be discussed. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Basic photography knowledge and abilities will be gain to students by informing about photograph machines and objectives. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn to use fotograph machines and taking a picture in factory and field conditions. | | | | | | | |
| **COURSE OUTCOMES** | | | | | To choose fotograph machines through purpose  To choose objectives through purpose  To detect source and direction of the light  To take picture by automatic adjustments  To take picture by manuel (by hand) adjustments | | | | | | | |
| **TEXTBOOK** | | | | | Doble, R.G., 2011, Her Yönüyle Dijital Fotoğrafçılık, ISBN: 9789755096841, Arkadaş Yayınevi, 336 sayfa. | | | | | | | |
| **OTHER REFERENCES** | | | | | Bayar, Ö.M., Bayar, A., 2012, Dijital Fotoğrafçılık, Kodlab Yayınları, 248 sayfa.  Freeman, M., 2012, Fotoğrafta Pozlama Teknikleri ve Yaratıcılık, Say Yayınları, 192 sayfa. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Camera, projector | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Photograph machines |
| 2 | Film/sensor sizes |
| 3 | Objectives I |
| 4 | Objectives II |
| 5 | Kinds of light sources |
| 6 | Analyzing of effects of light |
| 7 | Mid-term Exam / Using of automatic program modes |
| 8 | Handling and carrying machine |
| 9 | Semi automatic expose modes |
| 10 | Expose control |
| 11 | Effects of ASA/ISO values to photograph |
| 12 | Clarifying systems in photograph machines |
| 13 | Effects of diaphragm values to photograph |
| 14 | Effects of snapshot values to photograph |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor:**

**Signature**: **Date:**

** ESOGÜ Horticulture Department Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314037 | **COURSE NAME** | Marbling Art |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Historical development of Turkish marbling art, using areas, earth dye processing, preparing of bile, application of different marbles, marbling trials on different materials like ceramic biscuit, and fabric, will be discussed. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To introduce Turkish marbling art and to be gained knowledge and abilities on marbling applications. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | - | | | | | | |
| **COURSE OUTCOMES** | | | | | To recognize the marbling art  To have information on marbling applications | | | | | | |
| **TEXTBOOK** | | | | | Dere, Ö.F., 2011, Ebru Sanatı, İsmek Yayınları, ISBN: 978-9944-100-30-4, 193 sayfa. | | | | | | |
| **OTHER REFERENCES** | | | | | Sönmez, N., 2001, Ebru, Verlag Anadolu yayınları. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector, marbling tools | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | What is marbling |
| 2 | History of marbling |
| 3 | Tye vat and thickener kinds |
| 4 | Bile |
| 5 | Paint and brush, paper and other material |
| 6 | Mid-term Exam |
| 7 | Marbling application |
| 8 | Marbling forms |
| 9 | Flower marbles |
| 10 | Akkase marbles |
| 11 | Wavy marbles |
| 12 | Application of marble to fabric |
| 13 | Application problems and solutions |
| 14 | Marbling trials on different materials like ceramic biscuit, and fabric |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor:**

**Signature**: **Date:**

**** **ESOGÜ Horticulture Department Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251314038 | **COURSE NAME** | Diction |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with(√)]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Correct breathing techniques, adjustment of voice, clear and accurate pronunciation, correct emphasizing of syllables and making sentence, using voice effectively, controling excitement, effective and fluent speech techniques, will be discussed. | | | | | | |
| **COURSE OBJECTIVES** | | | | | It was aimed to get knowledge and ability on some subjects like correct emphasizing of syllables, making sentence, adjustment of voice, and effective speech. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To have speech ability in front of community. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn basic knowledge on diction.  To gain the ability of making speech in front of crowd  To be able to speak in front of people without lack of concentration  To be able to speak unprepared  To know the rules of effective speaking  To be able to express feelings and thoughts fluently, comfortably and properly.  To use of gestures and mimics consiciously.  Providing an effective conversation knowing intonation, emphasis, melody. | | | | | | |
| **TEXTBOOK** | | | | | Şenbay, N., 2012, Söz ve Diksiyon Sanatı, Yapı Kredi Yayınları, ISBN:9753630146, 147 sayfa. | | | | | | |
| **OTHER REFERENCES** | | | | | Taşer, S., 2012, Konuşma Eğitimi, Pegasus Yayınları, ISBN:6054263202, 376 sayfa. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Correct breathing techniques |
| 2 | Breathing through diaphragm |
| 3 | Adjustment of voice |
| 4 | Clear and accurate pronunciation |
| 5 | Brightness |
| 6 | Diction |
| 7 | Mid-term Exam / Correct emphasizing of syllables and making sentence |
| 8 | Speech mistakes |
| 9 | Using voice effectively I |
| 10 | Using voice effectively II |
| 11 | Controling excitement |
| 12 | Effective and fluent speech techniques |
| 13 | Rhetoric forms |
| 14 | Keeping attention alive |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **x** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor:**

**Signature**: **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315015 | **COURSE NAME** | General Viticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 1 | | 2 | 0 | | | 2 | 4 | COMPULSORY(X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The purpose of this course is to provide students with a better understanding of general viticulture. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | It aims to teach all basic knowledge in viticulture and to enable students to use theoretical and practical knowledge in their own professional life. | | | | | | |
| **COURSE OUTCOMES** | | | | | To gain an understanding of the history and development of viticulture, knowledge of viticulture in the world and Turkey, an understanding of the vine's morphological structure and ecological requirements, to gain information on viticulture reproduction techniques, the establishment of a new vineyard, pruning systems, grape evaluation methods and determining harvest criteria, and knowledge of viticulture cultural practices. | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | Çelik, S. 1998. Bağcılık (Ampeloloji) Cilt-1. 426 s, Tekirdağ.  Weaver, R.J., 1976. Grape Growing. John Wiley and Jons, 371 s. Coombe, B.G. and Dryı, P.R.1992 Viticulture (Vol.1,2) Winetitles, Adelaide. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection and pc. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm |
| 8 | Vine propagation techniques – I (cuttings, grafting, rootstocks and sapling production) |
| 9 | Vineyard site technique and winter pruning in viticulture (shape-product pruning) |
| 10 | Winter pruning (shape-product pruning) and trellis systems in viticulture |
| 11 | Summer pruning in viticulture (canopy management, tip removal, shoot orientation, cluster manipulations, cane girdling) |
| 12 | Grape evaluation and harvest criteria |
| 13 | Cultural practices and post-harvest process in viticulture (tillage, ırrigation, fertilization, disease and pest control) |
| 14 | Cultural practices and post-harvest process in viticulture (tillage, ırrigation, fertilization, disease and pest control) |
| 15, 16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 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 |  | **x** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **x** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **x** |  |  |
| 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) | **x** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  |  | **x** |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **x** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Turcan TEKER **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315016 | **COURSE NAME** | Ornamental Plants Cultivation |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 1 | | 2 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | It will enable students to have information about the ornamental plants sector and its branches | | | | | | |
| **COURSE OUTCOMES** | | | | | 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. | | | | | | |
| **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. | | | | | | |
| **OTHER 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. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm Exam |
| 9 | İndoor Plants |
| 10 | Propagation of Indoor Plants |
| 11 | Landscape Plants |
| 12 | Propagation of Landscape Plants |
| 13 | Bulbous Plants |
| 14 | Propagation of Bulbous Plants |
| 15 | Final |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Sibel SARIÇAM

**Signature**:  **Date:**

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**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315017 | **COURSE NAME** | Propagation Techniques of Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 1 | | 2 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | This course covers generative and vegetative propagation methods of horticultural crops, and propagation methods for fruits, vegetables, vineyards and ornamental plants. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give detailed information about the methods and principles of propagation of horticultural crops. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | - | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. to be learn knowledge about the methods used in the propagation of Horticultural crops  2. to be learn methods for propagation according to the type of fruit species  3. to be learn methods for propagation of vegetables, grapes and ornamental plants | | | | | | |
| **TEXTBOOK** | | | | | M. Yılmaz, Bahçe Bitkileri Yetiştirme Tekniği  Hartmann, H.T., Kester, D.E., Davies, Jr.F., Geneve, R.L., 1997. Plant Propagation Principles and Practies. Sixth Edition, Prentice Hall, New Jersey  Özbek, S., 1978. Genel Meyvecilik (Kışın Yaprağını Döken Meyve Türleri). Çukurova Üniversitesi Ziraat Fakültesi Yayınları No. 128. Ders Kitabı 11 | | | | | | |
| **OTHER REFERENCES** | | | | | *-* | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Propagation methods in horticulture |
| 2 | Generative propagation method |
| 3 | Vegetative propagation methods |
| 4 | Propagation with layering |
| 5 | Propagation with cuttings and practice |
| 6 | I.Midterm Exam - Propagation with cuttings |
| 7 | Propagation with grafting |
| 8 | Rootstocks used in Horticulture |
| 9 | Bud graftings and practice |
| 10 | Cleft and tongue graftings and practice |
| 11 | II.Midterm Exam - Cleft and tongue graftings |
| 12 | Propagation by specialized vegetative structures |
| 13 | Propagation by tissue culture |
| 14 | Propagation by tissue culture |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc.Prof.Dr. Volkan OKATAN **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315013 | **COURSE NAME** | Professional Practice I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 0 | | 4 | 0 | | | 0 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Department of land and to make practical training courses in laboratory. Improve the knowledge by technical tours. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The practice ability sophisticating and making technical tours to students about all lessons. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To make progress on using theoretical knowledge in practice. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. acquired some practical knowledge about vegetable crops  2. acquired some practical knowledge about fruit cultivation  3. acquired some practical knowledge about vineyard cultivation  4. acquired some practical knowledge about the cultivation of ornamental plants  5. Future projection composes by technical tours to institutions and establishments | | | | | | |
| **TEXTBOOK** | | | | | *-* | | | | | | |
| **OTHER REFERENCES** | | | | | *-* | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** All Teaching Members **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315018 | **COURSE NAME** | Organic Agriculture in Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY () ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Organic agriculture and general principles, law and instruction of organic agriculture, sertification system, production methods of organic fruit and vegetable growing and organic viticulture | | | | | | |
| **COURSE OBJECTIVES** | | | | | Teaching the general principles of organic agriculture that it's healty production methods for environment and human, sertification systems, low and instruction of organic agriculture, faced problems and analysis methods in organically production systems | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about organic agriculture in horticulture. | | | | | | |
| **COURSE OUTCOMES** | | | | | Knows organic agriculture and basic principles  Knows evolution proses of organic agriculture  Knows law and instruction of organic agriculture  Knows organic agriculture sertification system  Knows organic fruit, vegetable growing methods and organic viticulture, faced problems and analysis methods | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | Agriculture, Environment and Food Security (2002) (Edited: N. Scialabba and C. Hattam), Environment and Natural Resources Series No:4, FAO, Rome, 258 p. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | General basis of organic agriculture |
| 2 | Developing prosess of organic agriculture in the World and Turkey |
| 3 | Low and instruction of organic agriculture |
| 4 | Sertification system of organic agriculture |
| 5 | Inrease 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315019 | **COURSE NAME** | Professional English |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (X ) ELECTIVE ( ) | | English |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | To teach words and patterns required in programs, help to express oneself and prepare to career in future. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give information about proffesional terminology in foreing language and to give ability to use proffesional terminology | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about proffesional terminology in foreign language | | | | | | |
| **COURSE OUTCOMES** | | | | | To have general knowlegde about proffesional terminology in foreing language  Understands proffesional terminology while reading, speaking, listening and writing  Understands the importance of international communication | | | | | | |
| **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 | | | | | | |
| **OTHER REFERENCES** | | | | | Eser, D., Tarımsal Ekoloji Terimler Sözlüğü II.Baskı Ankara Üniversitesi Ziraat Fakültesi Yayınları  Ebcioğlu, N., Bitki Adları Sözlüğü, İnkılap kitabevi | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Dictionary | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Turkish Translations exercise in documents about Vegetable Propagation |
| 9 | Midterm Exam- Turkish Translations exercise in documents about Ornamental Plants 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315020 | **COURSE NAME** | Sustainable Agriculture in Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE ( X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definition of sustainable agriculture, reasons, application principles, organic agriculture, good agricultural practices (Good Agricultural Practices, GAP), The GLOBALGAP Protocol as a agriculture and production standard, Examples of sustainable agricultural practices in horticulture. | | | | | | |
| **COURSE OBJECTIVES** | | | | | It is aimed to teach the students the definition, aims, principles, sustainable agriculture systems in horticultural crops. Learn the importance and practices of environment and consumer friendly production methods. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | In recent days when environmentally friendly production methods have gained importance, students will be able to learn and apply these techniques in terms of horticultural crops. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn reason and principles of sustainable agriculture.  To have knowledge on organic agriculture that one of sustainable agriculture methods.  To have knowledge on good agricultural practices.  To have information on GLOBALGAP protocol. | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Organic agriculture and it’s principles |
| 6 | 1. Mid-term exam, Organic agriculture and it’s principles |
| 7 | Good Agricultural Practices (GAP) |
| 8 | Good Agricultural Practices (GAP) |
| 9 | Good Agricultural Practices (GAP) |
| 10 | GLOBALGAP Protocol |
| 11 | Samples of sustainable agriculture in horticulture |
| 12 | Samples of sustainable agriculture in horticulture |
| 13 | Sustainable use of agricultural resources |
| 14 | Sustainable use of agricultural resources |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315021 | **COURSE NAME** | Biotechnology in Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | | 1 | 25 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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, micro-propagation, gene transfer techniques, production of transgenic horticultural crops | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach plant tissue culture techniques utilized in practice. Application of biotechnological methods to crops. Students are be able to know basic principles in biotechnology. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Recent applications of plant biotechnology to improve the quality and yield of horticultural crops will be acquired | | | | | | |
| **COURSE OUTCOMES** | | | | | * Learn plant tissue culture techniques used in practice. * Learn how to establish a plant tissue culture laboratory * Learn ingredients of plan tissue culture medium and practice how to prepare it. * Learn sources of explants for plant tissue culture and how to prepare explants * Understand importance of plant tissue culture for plant breeding, conserve genetic resources, gene transfer principles. | | | | | | |
| **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 | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to biotechnology |
| 2 | Principles of *in-vitro* culture |
| 3 | Culture conditions and factors effecting tissue culture |
| 4 | Plant regeneration by organogenesis and embryogenesis |
| 5 | I. Midterm exam, Haploidy |
| 6 | Haploid plant production and its use in plant breeding |
| 7 | Protoplast culture and somatic hybridization |
| 8 | Micro-propagation |
| 9 | *In vitro* germplasm conservation |
| 10 | Gen transfer |
| 11 | II. Midterm, transgenic plants |
| 12 | Gen transfer methods |
| 13 | Reasont development in transgenic plants |
| 14 | Development of transgenic plants |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315022 | **COURSE NAME** | Horticultural Crops Diseases and Control |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ()ELECTIVE (X) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction of fungal-borne diseases that cause problems in horticultural crops and methods of control. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To inform about the economic importance and spread of pathogenic fungus species, hosts, symptoms, biology and control methods against them in Horticulture. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Graduates by learning the economic importance and distribution of pathogenic fungi species in horticulture, their hosts, symptoms, biology and the control methods applied against them. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Knows the fungus species that cause disease in horticultural plants.  2) Knows which disease symptoms occur in horticultural plants.  3) Knows the biology of the disease agent fungus.  4) Knows the economic importance and spreading conditions of the disease.  5) Knows which methods to use in control diseases. | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | Kurt Ş. 2020. Bitki Fungal Hastalıkları, Akademisyen Kitabevi, Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector and computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1-3 | Solanaceae family diseases |
| 4 | Onion and garlic diseases |
| 5 | Cucurbits diseases |
| 6-7 | Crucifers diseases |
| 8 | Midterm Exam |
| 9 | Edible vegetables diseases |
| 10-11 | Legume diseases |
| 12-13 | Fungal diseases of annual ornamental plants |
| 14-15 | Fungal diseases in perennial park and ornamental plants |
| 16 | Grapevine diseases |
| 17 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**



**ESOGÜ Horticultural Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 251315023 | **COURSE NAME** | Modern Fruit Growing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 2 | | 2 | - | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Agriculture Engineering Profession**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | | 1 | 10 |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Thanks to this course, the person who takes the course will learn the practices related to modern orchards in the world by doing it personally. | | | | | | |
| **COURSE OUTCOMES** | | | | | The concept of modern fruit growing is clearly settled in the mind. It is learned by experiencing how dwarf trees and dense planting practices affect the physiology and yield status of trees. | | | | | | |
| **TEXTBOOK** | | | | | Book title; Intensive Orchard Management, Author; Dr. Bruce H. Barritt, Publication Year; 1992, ISBN;0-9630659-1-2, List price; $30 | | | | | | |
| **OTHER REFERENCES** | | | | | General Fruiting, Editors; R. Gerçekçioğlu et al., Chapter 12. Pruning of Fruit Trees. Pages 385-449. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Pruning saw and pruning shears | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |  |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Adequate knowledge of Agricultural Engineering and fruit growing in particular; the ability to apply theoretical and applied knowledge in these fields to model and solve problems related to modern fruit growing | **x** |  |  |
| 2 | Ability to identify, define, formulate and solve problems related to Agricultural Engineering and modern orchard management by selecting and applying appropriate analysis and modeling methods | **x** |  |  |
| 3 | The ability to design a complex system by applying garden design and production models in line with a determined goal. | **x** |  |  |
| 4 | Ability to learn, develop, select and use modern techniques and tools required for Agricultural Engineering practices and to make effective use of information technologies |  | **x** |  |
| 5 | Ability to design, experiment, collect data, analyze and interpret results, to design a garden setup for the study of Agricultural Engineering and Horticulture problems | **x** |  |  |
| 6 | Ability to work individually and in interdisciplinary and interdisciplinary teams |  | **x** |  |
| 7 | Ability to communicate effectively in Turkish orally and in writing, and the ability to use/develop foreign language knowledge about modern fruit growing | **x** |  |  |
| 8 | Ability to communicate effectively in Turkish orally and in writing, and the ability to use/develop foreign language knowledge about modern fruit growing |  | **x** |  |
| 9 | Professional and ethical responsibility awareness |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Yakup ÖZKAN

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315005 | **COURSE NAME** | Determination of Plant Fertilizer Requirements and Fertilization |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| V | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introducing horticulture crops, explaining effects of factors to fertilization, learning of fertilization timing, application form of fertilizers to horticultural plants. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Learning of fertilization timing, application form of fertilizers to fruit and vegetable plants. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Identification of basic principles on fertilization programs and application the programs in selected plants | | | | | | |
| **COURSE OUTCOMES** | | | | | -Learning Application forms, timing, and amount of fetilization, and gaining ability on application of fertilization of plants.  - Preperation of specific fertilization program for horticultural plants. | | | | | | |
| **TEXTBOOK** | | | | | Kacar B. ve Katkat A.V. 2011. Gübreler ve Gübreleme Tekniği, 4. Basım, ISBN: 978-605-5426-20-0, Nobel yayıncılık Kızılay, Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | Anaç D. 2010. Önemli Kültür Bitkilerinin Gübrelenmesi. Bornova –İzmir.  Zengin M. ve Özbahçe A. 2010. Bitkilerin iklim ve toprak istekleri. Atlas akademi Yayınları. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Mid-term Exam - Fertilization and nutrition of most common fruits |
| 7 | Fertilization and nutrition of most common fruits |
| 8 | Fertilization and nutrition of most common fruits |
| 9 | Fertilization and nutrition of most common fruits |
| 10 | Effective factors in fertilization of vegetables such as economical and environmental |
| 11 | Fertilization and nutrition of most common vegetables |
| 12 | Fertilization and nutrition of most common vegetables |
| 13 | Fertilization and nutrition of most common vegetables |
| 14 | Fertilization and nutrition of most common vegetables |
| 15,16 | Final Exam |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315006 | **COURSE NAME** | Agriculture and Environment |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | | 1 | 20 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Agricultural practices and environment | | | | | | |
| **COURSE OBJECTIVES** | | | | | Protection of environment in relation to agricultural practices | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Awareness in agricultural applications | | | | | | |
| **COURSE OUTCOMES** | | | | | To make ecologically sensible agricultural production  To have the ability of utilizing agricultural and industrial waste in agricultural production | | | | | | |
| **TEXTBOOK** | | | | | Unpublished lecture notes | | | | | | |
| **OTHER REFERENCES** | | | | | Organic Agriculture and Environment (Prof. Dr. S. Kırımhan, Uğurer Publishing, 2005) | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definitions of agriculture and environment, and their importance in life |
| 2 | Environmental problems |
| 3 | Sources of environmental pollution, industrial and agricultural |
| 4 | Stubble burning affects and protection |
| 5 | Animal and plant wastes and residues |
| 6 | Midterm exam- Plant nutrients, chemical fertilizers and environment; Pesticides |
| 7 | Plant nutrients, chemical fertilizers and environment; Pesticides |
| 8 | Biogas production from animal wastes |
| 9 | Water pollution and use of treated waters in agriculture |
| 10 | Management of sewage sludge in agricultural applications |
| 11 | Midterm exam – Waste Management |
| 12 | Management of distillary waste of alcohol production from sugar beet, in agriculture; Soil losses in relation of sugar beet harvest |
| 13 | Environmental problems of olive-oil wastes and use in agriculture |
| 14 | Environmental affects of Murgul Smelter and geothermal energy production in B. Menderes basin |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATİON FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315025 | **COURSE NAME** | Beekeeping |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Giving teorical and practical experiences on bee breeding | | | | | | |
| **COURSE OBJECTIVES** | | | | | General aspects on breeding and rearing of honeybee | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Information will be given in the form of detecting problems in beekeeping and correcting them, choosing the right applications for high efficiency. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Basic and applied information about beekeeping, sufficient information about application methods in bee management. 2. The ability to identify problems related to beekeeping and develop solutions, the ability to choose and apply appropriate methods for this purpose. 3. Ability to collect data, prepare projects and conduct research on beekeeping 4. Ability to follow scientific and technological developments related to beekeeping, develop strategies and transfer them to animal production 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 | | | | | | |
| **TEXTBOOK** | | | | | 1.Bal Arısı Biyolojisi ve Yetiştiriciliği. Doç.Dr. Sibel Silici, Elif Yayınevi Yayınları | | | | | | |
| **OTHER 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.Il.USA. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | --- | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Seasonal works in beekeeping |
| 9 | Midterm exam |
| 10 | Nectar and pollen sources |
| **11** | Queen rearing |
| 12 | Production of honey and other bee products |
| 13 | Apitherapy |
| 14 | Honey bee diseases and pests |
| 15 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251315026 | **COURSE NAME** | Fruit and Vegetable Processing Technology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| V | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X ) | | TURKİSH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Food Engineering Profession**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 | | | | | | |
| **COURSE OBJECTIVES** | | | | | To explain the fruit and vegetable processing technologies and laboratory controls and analysis methods of the processed fruit and vegetable products. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To gain knowledge of the composition and processing technologies of fruit and vegetable products, which are major foods. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.To understand the importance of fruit and vegetables contents and structure on fruit and vegatable.  2.To learn about industrial fruit and vegetables processes.  3.To understand last product evaluation economically during process application production of high quality fruit and vegetable processing.  4.To learn the basic steps of a process.  5.To learn about safe fruit and vegetable products production.  6.To learn about technological process basics.  7.Able to solve problems at important production points for product quality  8.Able to solve problems at important production points for product quality | | | | | | |
| **TEXTBOOK** | | | | | 1.Cemeroğlu, B., Yemenicioğlu, A., Özkan, M., “Meyve ve Sebzelerin Bileşimi ve Soğukta Depolanmaları”, Gıda Teknolojisi Derneği, (2001).  2.Cemeroğlu, B., Karadeniz, F., “Meyve Suyu Teknolojisi”, Gıda Teknolojisi Derneği, (2001).  3.Cemeroğlu, B., Karadeniz, F., Özkan, M., “Meyve ve Sebze İşleme Teknolojisi”, Gıda Teknolojisi Derneği, (2001). | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Cemeroğlu, B., (ed). ‘Gıda Mühendisliğinde Temel İşlemler’ Gıda Teknolojisi Derneği, (2005).  2.Lopez, A. A complete course in canning and related processes, (1987) | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | PC  Data Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | They shell gains the ability to have sufficient background in mathematics, science and engineering subjects and to apply knowledge in these fields to food engineering problems. | **X** |  |  |
| 2 | They shell gain the ability to select and apply appropriate analytical methods and modeling techniques in order to identify, define, formulate and solve food engineering problems. | **X** |  |  |
| 3 | They shell gain the ability to analyze a system or process and apply modern design methods to meet the desired requirements. |  | **X** |  |
| 4 | They shell gain management skills, analytical thinking and problem-solving, knowledge about project management and business practices, awareness of entrepreneurship, innovation and sustainability. |  | **X** |  |
| 5 | They shell gain R&D capability with the ability to design experiments / projects, conduct experiments, collect data, analyze and interpret results. |  | **X** |  |
| 6 | They shell gain the ability to communicate effectively in oral and written communication in human relations. |  |  | **X** |
| 7 | They shell gain the skills to work effectively and take responsibility in individual or multi-disciplinary teams. |  |  | **X** |
| 8 | They shell gain the ability to choose and use modern techniques and tools required for food engineering applications and to have adequate and current technical knowledge about food legislation. | **X** |  |  |
| 9 | They shell gain awareness of respecting and observance of protecting professional, academic and scientific ethical values. |  | **X** |  |
| 10 | They shell gain awareness of food engineering and food safety practices, evaluation of nutrition, health and environmental interactions and the legal dimensions of these practices. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251315027 | **COURSE NAME** | Agricultural Extension, Communication and Ethic |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY () ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | | 1 | 20 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definition of agricultural extension, effects to rural development, organization schedule of Ministry of Agriculture and related corporations, group methods in agricultural extension, applications in extension education and its effects, agricultural extension process and applications in the World and in our country, discrepancy and moderation will be discussed. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Importance of agricultural extension and communication will be explained, methods in agricultural extension will be informed. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Importance of agricultural extension and communication will be comprehended by students, to know how and which method to use in applications, to give the basic knowledge to make effective extension work. | | | | | | |
| **COURSE OUTCOMES** | | | | | To have the ability of planning and application of agricultural extension methods that will be used through career. | | | | | | |
| **TEXTBOOK** | | | | | 1. Anonim, 2006. Eskişehir İl Tarım Müdürlüğü Verileri. 2. Anonim, 2006. Tarım ve Köyişleri Bakanlığı Verileri. 3. Ceylan, C.İ., Köksal, Ö., Akın, A. GAP Bölgesinde Tarımsal Üretim Sürecinde Bilgi İhtiyaçlarının Karşılanmasında Tarım Danışmanlarının Yeri. 4. Ceylan, C. Tarımsal Yayım İletişimi Ders Notu (2006/2007 Güz). | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Ceylan, C., 2005. Yayımcı Rehberi, TKB Yayım Dairesi Başkanlığı, Tarımsal Yayım Serisi, 2005/1. 2. Gümüşçü, A., 2004. Çiftçi Eğitim ve Tarımsal Yayım. T.E.A.E. Bakış, Sayı6, Eylül 2004. 3. Özkaya, T., 1996. Tarımsal Yayım ve Haberleşme. Ege Üniversitesi, Ziraat Fakültesi Yayınları, Yayın No: 520, Bornova,İzmir. 4. Değirmenci, Y., Manyaz, İ., Güzelaydın, I., Erkuş, E., Koçak, F., Arı, B., 2008. Tarımsal Yayım ve Danışmanlık, Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition of agricultural extension, and effects to rural development |
| 2 | Organization schedule of Ministry of Agriculture, related corporations, extension services and regulations |
| 3 | Agricultural extension process and applications in the World and in our country |
| 4 | Characteristics of extension education, school educationi and comparisons |
| 5 | Applications in extension education and its effects |
| 6 | Methods in agricultural extension |
| 7 | Individual methods, general look to group methods in agricultural extension |
| 8 | Semtinizing of group methods in agricultural extension |
| 9 | Communication techniques and using body language |
| 10 | What is motivation, how it’s used, and it’s techniques |
| 11 | Discrepancy and moderation |
| 12 | Making extension illustration together with students |
| 13 | General look to agricultural extension and communication, effects of extension |
| 14 | Preparation to exam, revision of the units |
| 15,16 | Final exam. |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316019 | **COURSE NAME** | Horticultural Crop Breeding |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 1 | | 2 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | | 1 | 25 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction to breeding, plant reproduction models, sources of variation, Heterosis, parent selection, plant introductions and genetic variability, Formation of populations via hybridization, artificial hybridization techniques, interspecies hybridization, genotip and environment interactions, mutation breeding, Bulk method, mass selection in self-fertile plants, Pedigree method, obtaining homozygous lines from doubled haploids, backcross hybridization, open pollinated cultivars from cross breeding plants, synthetic cultivars, hybrid cultivars, F1, F2 cultivars), breeding of self pollinating plants, Hyride breeding, breeding of synthetic cultivars, Hybrid seed production, marker assistat selection, biotechnology in plant breeding | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach plant breeding methods and how these methods are used to improve plant characteristics | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learns the breeding of horticultural plants. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Understanding and practicing horticultural plant breeding methods 2) Understanding nad practicing molecular breeding methods 3) Being able to improve plant characteristics using breeding methods  4) Understanding biotechnological applications of breeding methods | | | | | | |
| **TEXTBOOK** | | | | | Jack Brown, Peter Caligari, 2008. An Introduction to Plant Breeding, Blackwell Publishing | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to breeding, plant reproduction models, sources of variation |
| 2 | Inbreeding, Heterosis, parent selection |
| 3 | Plant introductions and genetic variability, Formation of populations via hybridization |
| 4 | Hybridization techniques, interspecies hybridization |
| 5 | Recurrent selection, genetic sterilities, genetic progress |
| 6 | Midterm Exam, mutation breeding |
| 7 | Genotip and environment interactions, mutation breeding |
| 8 | Breeding for disease and insect resistance, Bulk method, Single seed descent method |
| 9 | Mass selection in self-fertile plants, Pedigree method, early progeny tests, obtaining homozygous lines from doubled haploids, backcross hybridization, |
| 10 | Breeding of clonally propagated plants, breeding of self pollinating plants |
| 11 | Midterm Exam, Hybrid breeding |
| 12 | Hybrid breeding, Hybrid seed production, marketing and distribution of new cultivars, national germplasm systems, plant conservation, certification and patenting |
| 13 | MAS (marker assisted selection) |
| 14 | Haploid plants. Anther and pollen culture, biotechnology in breeding, |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316020 | **COURSE NAME** | Engineering Design |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 2 | | 2 | 0 | | | 3 | 6 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes all fundamentals regarding engineering design that should be given in each Horticulture program. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students solve real life problems related to Horticulture by using acquired basic science and basic engineering knowledge. The student can design to meet the desired requirements. The student can identify, formulate and solve engineering problems. Students can integrate their individual creativity with teamwork. The student gains awareness of professional and ethical responsibility. 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. Student can make cost analysis, compare alternatives and compare their strengths and weaknesses, and use modern engineering methods. | | | | | | |
| **TEXTBOOK** | | | | | Distance Education, Horticulture department textbooks, lecture notes and online resources | | | | | | |
| **OTHER REFERENCES** | | | | | **-** | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm Examination |
| 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 | Final Examination |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316021 | **COURSE NAME** | Physiology of Horticultural Plants |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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 | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Physiological events that occur in plants illustrate the recognition of known and required by the plant breeding, farming, affecting the driving factors such as productivity and quality issues so learned. | | | | | | |
| **COURSE OUTCOMES** | | | | | -Understands the importance of physiological events in horticultural crop cultivation, analyzes the physiological problems; develops solutions  -Knows the fundamentals of growth and development of horticultural crops; and transfer to practice.  -Knows the effective internal and external factors of growth and development; learns the application of control and management techniques and transfer these techniques to practice.  -Controls and manages the abiotic stress conditions in horticultural crops. | | | | | | |
| **TEXTBOOK** | | | | | - | | | | | | |
| **OTHER REFERENCES** | | | | | - 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). | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Germination, spouting and rooting |
| 9 | Apical dominancy, flowering, photoperiodicity, |
| 10 | Dormancy and its mechanism |
| 11 | Flower and fruit drop, Maturity,Aging |
| 12 | Sterility and incompatibility, parthenocarpy and apomixes in horticultural crops |
| 13 | Tropisms, Vernalisation, thermoperiodism and regeneration |
| 14 | Abiotic Stresses |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Cenap YILMAZ

**Signature**: **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring, |

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| **COURSE CODE** | 251316022 | **COURSE NAME** | Vegetable seed production and certification |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 5 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | To have passed the General Vegetables course | | | | | | |
| **COURSE DESCRIPTION** | | | | | Situation in our country, Seed concern, flower structure, seed formation, seed classes, seed morphology and physiology in horticulture, seed growth and development, ecological properties of seed production and seed production, protection and isolation, seed producer’s declarations, drying seeds, seed storage, the stages of the seed certification system, seed registration, hybrit seed, seed gene banks.. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to produce, use, trade and standardize vegetative organs used as seeds, to produce seeds, to register them, to carry out the necessary technical and bureaucratic procedures for certification, to determine their compliance with field and laboratory standards, to teach the rules and standards theoretically and practically. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | The significance of seed on plant production and certification system of seed production will be taught. | | | | | | |
| **COURSE OUTCOMES** | | | | | To be able to explain the seed concept, seed classes, and importance of the seed on the plant production  To be able to explain the principles of registration of vegetable species  To be able to explain the process of seed certification system  To be able to state the importance of field controls on seed certification process  To be able to state the importance of laboratory tests on seed certification process  To be able to discuss the problems of seed production sector  To have the ability and knowledge in case of making certificated seed production | | | | | | |
| **TEXTBOOK** | | | | | 1 Şehirali, S. 1997. Tohumluk ve Teknolojisi, Fakülteler Matbaası, İstanbul.  2-Tohum, Tohumculuk ve Teknolojileri, 2019.Bitki Islahçıları Alt Birliği 4-cilt  3-Er, C., Başalma, D. 2020.Tohumculuk ve Tohumluk, Temel ilkeler ve teknoloji, Nobel Akademik Yayıncılık. | | | | | | |
| **OTHER REFERENCES** | | | | | 1-Copeland, LO., McDonald, MB. 1995. Seed Science and Technology, Kluwer Academic Publishers, Boston/Dordrecht/London.  2-George, Raymond A.T. 1996. Vegetable seed production, 3rd edition, CAB International, Oxfordshire, United Kingdom. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Effects of biotic and abiotic factors on vegetable seed production |
| 9 | Required isolation distances in seed production, necessary conditions in seed producing organization |
| 10 | Drying and storage of seeds |
| 11 | Mid-term exam / 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) |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Dr. Ögr. Üyesi Sıtkı ERMİŞ

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316023 | **COURSE NAME** | Fertilization Biology of Horticultural Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | | 1 | 25 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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, parthenocarpy, incompatibility, fertilizer cultivars, controlled hybridization and emasculation will be discussed. | | | | | | |
| **COURSE OBJECTIVES** | | | | | It was aimed to give information on pollination and fertilization of horticultural plant species to students. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Basic knowledge will be given about breeding on species basis.  The course will be usefull on orchard and garden establishment in choosing varieties and fertilizer varieties. | | | | | | |
| **COURSE OUTCOMES** | | | | | Understanding pollination and fertilization of horticultural plant species.  To gain the ability of practicing breeding techniques.  To choose proper varieties and fertilizers on orchard establishment.  To gain the ability of detecting problems in pollination, fertilization, fruit set and to develop solutions. | | | | | | |
| **TEXTBOOK** | | | | | Özçağıran, R., 2000. Bahçe Bitkilerinde Döllenme Biyolojisi (Ders notları). Ege Universitesi Ziraat Fakültesi, Bahçe Bitkileri Bölümü. | | | | | | |
| **OTHER 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. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Pollination and flower structures, infloressens – rasemoz-kimos |
| 2 | Flower structures of fruits and vegetables |
| 3 | Pollen and embryo sac formation |
| 4 | Self sterility and dicogamy |
| 5 | Pollination of some fruit species, controlled hybridization and emasculation |
| 6 | Mid-term exam / Controlled hybridization and emasculation |
| 7 | Pollen cariers (Wind, insects, water, birds); Factors effecting pollination |
| 8 | Fertilization |
| 9 | Germination of pollen and factors effecting pollen development |
| 10 | Incompatibility; Fertilization of some fruit species and fertilizer varieties |
| 11 | Mid-term exam / Incompatibility |
| 12 | Fertilization of vegetables |
| 13 | Abnormalities in generatif reproduction of plants, apomixis, parthenocarpy, parthenospermy, stenosphermocarpy, poliploidy |
| 14 | Seed and fruit development, kseni-metakseni, fruit falls |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

|  |  |
| --- | --- |
| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316024 | **COURSE NAME** | Propagation of Seasonal Flower |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE ( X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | To have passed the Ornamental Plants Cultivation course | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Annual, biannual and perennial seasonal flowers will be explained and propogation methods of these flowers will be teached. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To have knowledge about seosonal flower and their propogation methods. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.To have recognize seosonal flowers  2.To have general knowledge about seasonal flowers that is grown annual, bi-annual and perennial  3. To have learn ecological demands and propogation methods of them | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | - | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The importance of seasonal flowers and their dendrological features |
| 2 | The production of seasonal flowers, the features and preparation and maintenance of seosonal 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 | The production use growing demands and care of Impatiens hawkeri, Ipomea, Lathyrus, Lobelia, Mathiola, Mesembrianthemum |
| 9 | Midterm Exam |
| 10 | The production use growing demands and care of Nigella, Petunia, Phlox, Portulaca, Salvia, Tagates, |
| 11 | The production use growing demands and care of Verbena, Zinnia, Rudbeckia, Cineraria, Viola, Primula |
| 12 | The production use growing demands and care of Pelargonium, Papaver, Armeria, Amberboa imperialis, Cleome, Datura |
| 13 | The production use growing demands and care of Erigeron, Gentiana, Gypsophila, Aquilegia, Saxifraga, Silene, |
| 14 | Visiting seasonal flower production area |
| 15 | Final |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |

**Instructor(s):** Assoc.Prof.Dr. Sibel SARIÇAM

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316025 | **COURSE NAME** | Seedling - Nursery Growing and Certification |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | | 1 | 25 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Vegetable ans 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To get information about production of vegetable seedling and nursery production. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about production of vegetable seedling and nursery production. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn the principles of seedling production  To use general propagation methods where needed.  To learn nursery production methods and share these information to the producers  To make sectoral analysis. | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | Yılmaz, S., Çelik, H., Zengin, S., Fırat, A.F., . (2009). Tohum, fide ve çesit seçimi. Örtüaltı Biber Yetistiriciliği. 4. Bölüm.49-58s. Batı Akdeniz Tarımsal Aras. Enst., Antalya. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection and pc. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm exam / Potted seedling production |
| 7 | Grafted vegetable seedling production; Planning and establishing tree nursery |
| 8 | Nursery production methods |
| 9 | Grafting and maintenance works after grafting |
| 10 | Propagation with cuttings |
| 11 | Midterm exam / Sectoral analysis |
| 12 | Layering and other propagation methods; The quality properties of fruit scions |
| 13 | Rootstocks and their properties that used in nursery |
| 14 | Certification processes |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316026 | **COURSE NAME** | Outdoor Ornamental Plants Propogation |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | To have passed the Ornamental Plants Cultivation course | | | | | | |
| **COURSE DESCRIPTION** | | | | | Propogation of woody plants such as tree and shrub for landscape application | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main goals of the course are to learn outdoor woody plants and propagation methods of these plants | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about woody ornamental plants, its ecolological conditions and propogation methods of these plants. | | | | | | |
| **COURSE OUTCOMES** | | | | | 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 propogation of woody ornamental plants. | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | Mamıkoğlu, N.G. (2007). Türkiye’nin Ağaçları ve Çalıları, NTV Yayınları, İstanbul, 727s. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The situation of outdoor ornamental plants in world and Turkey and the place of these plants in the country economy |
| 2 | Propogation 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 | General information about Angiospermae plants |
| 9 | Midterm exam |
| 10 | Angiospermae outdoor plants (Trees) |
| 11 | Angiospermae outdoor plants (Trees) |
| 12 | Angiospermae outdoor plants (Trees) |
| 13 | Angiospermae outdoor plants (Shrubs) |
| 14 | Angiospermae outdoor plants (Shrubs) |
| 15 | Final |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |

**Instructor(s):** Assoc. Prof. Dr. Sibel SARIÇAM

**Signature**:  **Date:**



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316027 | **COURSE NAME** | Mushroom Growing Technique |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Mushroom production in Turkey and in the world, nutritional value of mushroom, production techniques, compost requirements, environmental conditions necessary for production will be given. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to teach the basic principles of cultivation of the mushroom to the students. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This is the main course that informed about  It is a course that introduces the mushroom, which has an important place in the field of horticultural crops, and gives principles theoretical and applied information about cultivation techniques and commercial production of mushroom. | | | | | | |
| **COURSE OUTCOMES** | | | | | At the end of this course, student will have the necessary information about  1.Production of mushroom mycelium,  2.Compost preparation  3.Sterilization  4.Ecological needs at different stages of development  5.Cultivation of common mushrooms  6.Harvest and Packaging | | | | | | |
| **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 | | | | | | |
| **OTHER REFERENCES** | | | | | \* Kültür Mantarı Yetiştiriciliği, Erkel, İ. TAV yayınları, Yalova, 1993.  \* Mantar Yetiştirme. Günay, A., Abak, K., Koçyiğit, A.E. Saypa Kitap ve Yayınevi, Ankara, 1992. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Taxonomy and nutritional value of common mushroom, mushroom production in Turkey and in the world |
| 2 | Mushroom production places; preparation for growing |
| 3 | Classification of mushrooms according to their growing characteristics |
| 4 | Cultivation techniques and preparation of climate-controlled indor cultivation place |
| 5 | Steps to commercial cultivation |
| 6 | 1. Mid-term exam, starting mushroom mycelium |
| 7 | Materials used in making compost, formulations and preparation of compost; Pasteurization and disinfection of compost |
| 8 | Cultivation of mycelium, irrigation and temperature |
| 9 | İrrigation and temperature at harvest time |
| 10 | Classification and packaging |
| 11 | 1. Mid-term Exam, |
| 12 | Mushroom Pest and Disease |
| 13 | Mushroom use and preservation methods |
| 14 | Storage and Marketing |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316028 | **COURSE NAME** | Pruning and Training in Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | In this course Fruit trees pruning and training techniques used are discussed as theoretical and practical | | | | | | |
| **COURSE OBJECTIVES** | | | | | To gain experiences and get information about pruning fruit trees and training systems. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Get to know pruning, aims and can comprehend the effects. 2. To be able to learn pruning times. 3. To put into practice the training forms that applied to fruit trees. 4. To be able to learn technical operations that applied in pruning. 5. To know pruning and training forms that applied to different fruit species. 6. To learn pruning methods that applied in different age periods of trees. 7. To get information about pruning tools and machinery. | | | | | | |
| **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 | | | | | | |
| **OTHER 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)* | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Mid-term exam - Cautions during pruning |
| 7 | Cautions during pruning |
| 8 | Training systems in fruit trees |
| 9 | Training systems in fruit trees |
| 10 | Training systems in fruit trees |
| 11 | Mid-term exam - Training systems in fruit trees |
| 12 | Training systems in fruit trees |
| 13 | Pruning of yielded trees |
| 14 | Rejuvenation pruning |
| 15 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof.Dr. Yakup ÖZKAN **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316029 | **COURSE NAME** | Pests of Horticultural Crops and Control |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description, biology, damage and their control of important pests in vegetable, fruit, vineyard and ornament plants. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Objective of this course, description, biology, damage and their control of important pests in fruit, vegetable, vineyard and ornament plants in Turkey are teach. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To know pests of horticultural plants. | | | | | | |
| **COURSE OUTCOMES** | | | | | Knowledge about description, biology, damage and their control of important pests in vegetable, fruit, vineyard and ornament plants are learning understand, improve.  Knowledge about description, biology, damage and their control of important pests in vegetable, fruit, vineyard and ornament plants in to procedures can be transfer. | | | | | | |
| **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. | | | | | | |
| **OTHER REFERENCES** | | | | | *-**Anonymous, 2008. Zirai Mücadele Teknik Talimatları, Cilt 1. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 283 s. Anonymous, 2008. Zirai Mücadele Teknik Talimatları, Cilt 2. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 260 s. Anonymous, 2008. Zirai Mücadele Teknik Talimatları, Cilt 4. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 388 s. Anonymous, 2008. Zirai Mücadele Teknik Talimatları, Cilt 5. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 301 s. Anonymous, 2008. Zirai 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* | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Chordata, Mollusca, Nematoda |
| 2 | Arthropoda, Arachnida, |
| 3 | Arthropoda, Insecta, Hemiptera |
| 4 | Thysanoptera, |
| 5 | Hemiptera |
| 6 | Hemiptera |
| 7 | Midterm |
| 8 | Coleoptera |
| 9 | Coleoptera |
| 10 | Coleoptera |
| 11 | Diptera |
| 12 | Hymenoptera |
| 13 | Lepidoptera |
| 14 | Lepidoptera, |
| 15 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |

**Instructor(s):** Assoc.Prof.Dr. Refik BOZBUĞA **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316006 | **COURSE NAME** | Medicinal and Aromatic plants |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 6 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (**X**) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | | X | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 30 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (practice) | | | | | 1 | | 20 |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | History, importance, ecology, agronomy, harvesting, storage, chemical composition of medicinal and aromatic plants | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Comprehension of the importance of medicinal and aromatic plants in Turkey and World, teaching medicinal and aromatic plants and their agronomic practices in Turkey | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Applicability of knowledge gained with production projects | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Comprehension of importance of medicinal and aromatic plants.  2. Learning cultivation of important in medicinal and aromatic plants  3. Learning general information in medicinal and aromatic plants  4. Processing, storage and drying of seeds in these crops  5. Giving information to about these plants for production, proceeding and marketing plan | | | | | | | |
| **TEXTBOOK** | | | | | Ceylan, A. 1995. Tıbbi Bitkiler, Ege Üni. Zir. Fak. Yayınları, 312, İzmir | | | | | | | |
| **OTHER REFERENCES** | | | | | Baydar, H. 2005. Tıbbi Aromatik ve Keyf Bitkileri, SDÜ Zir. Fak. Yayınları, 51, Isparta  Koç, H. 1999. İlaç baharat bitkileri, GOÜ Zir. Fak. Yayınları, 40. Tokat. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction, history of medicinal plants, importance, basic concepts, classifications |
| 2 | Secondary metabolites of drugs (Primery metabolits, sekondeyr metabolits: alkaloids, glikosides, essential oils) |
| 3 | Spices, harvesting, drying, sterilization, storing priciples of drugs |
| 4 | Essential oils, Perfumery, Aromatherapy, Distillation, Extraction Methods. |
| 5 | Traditional Drug Preparation and Uses |
| 6 | Apiaceae family |
| 7 | Apiaceae family |
| 8 | Lamiaceae family |
| 9 | Lamiaceae family |
| 10 | Asteraceae family |
| 11 | Asteraceae family |
| 12 | Chenopodiaceae family |
| 13 | Solaneceae family |
| 14 | Other families |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** **Date:**

**Signature**:

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**ESOGÜ Horticulture Department Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316030 | **COURSE NAME** | Agricultural Tools and Machinery |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| I | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY () ELECTIVE ( X ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√)]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic concepts of agricultural machinery, introduction, classification, construction features and working principles of agricultural force and construction machinery. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Development of mechanization in agriculture; energy and agriculture; engines; tractors; tillage tools and machinery; To inform students about sowing, planting, fertilizing and maintenance machines, irrigation machines, agricultural war machines, harvesting-threshing machines, mechanization in livestock, farm mechanization, agricultural machinery management. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | The participant will gain basic information about the selection, adjustment, use of agricultural machinery related to her field and increasing the success of the machine. | | | | | | |
| **COURSE OUTCOMES** | | | | | - Defines mechanization, explains Turkey's agricultural mechanization level  - Knows and explains the concepts of work efficiency, workability, timeliness  - Classes, compares and explains the features of engines and tractors  - Classifies soil tillage machines, distinguishes them and explains their effects on soil  - Definitions, features, working principles of sowing, planting, maintenance and fertilizing machines  - Explains plant protection machines and working principles  - Explains irrigation machines and systems  - Explains the harvesting machines and reveals their varieties and types and their related features.  - Explains transport and transmission machinery | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Information laboratory, Projection | | | | | | |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Agriculture Overview and Basic Concepts |
| 2 | Energy and Agriculture |
| 3 | Motors |
| 4 | Tractors |
| 5 | Tillage Tools - Machinery |
| 6 | Tillage Tools - Machinery |
| 7 | Sowing Machines |
| 8 | MIDTERM |
| 9 | Planting Machines |
| 10 | Fertilizing Machines |
| 11 | Spraying Machines |
| 12 | Hoeing machines |
| 13 | Irrigation Machines |
| 14 | Harvest - Threshing Machines |
| 15 | Agricultural Machinery Management |
| 16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |

**Instructor:**

**Signature**: **Date:**

**ESOGU Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316031 | **COURSE NAME** | Animal Production |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 3 | | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | | **Basic Engineering** | | | | **Horticulture Department Profession**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** | |
|  | | | X | | | |  | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** | |
| 1st Mid-Term | | | | | 1 | 40 | |
| 2nd Mid-Term | | | | |  |  | |
| Quiz | | | | |  |  | |
| Homework | | | | |  |  | |
| Project | | | | |  |  | |
| Report | | | | |  |  | |
| Others (………) | | | | |  |  | |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 60 | |
| **PREREQUIEITE(S)** | | | | | | No | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Importance and scope of livestock in agricultural production, current situation of livestock in Turkey and world; Important terms in animal production; Definition and scope of some concepts in animal breeding; Requirements for profitable animal husbandry; Some economically important yields; Reproduction in livestocks; Breeding methods; Concepts of species and breed; Characteristics of cattle, buffalo, sheep and goat breeds raised in Turkey, care and management of livestocks; Broiler and laying chicken husbandry; Animal shelters: Feeds used in animal nutrition, nutrients, digestion and absorption, classification of feeds. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The objective of the course is to provide basic information on animal husbandry, animal breeds, reproduction, nutritonal, and basic knowledge of a sustainable and profitable animal production. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | | To provide practical information related to livestock husbandry as well as knowledge of animal breeding beneficial during persons professional life. | | | | | | | |
| **COURSE OUTCOMES** | | | | | | Knowing what animal husbandry activities are as agricultural activities and what they cover.  Understanding the terms such as breed and species in animal production, knowing the important livestock breeds and their characteristics in Turkey and in the world.  To gain the ability to prepare the infrastructure for the maintenance and feeding of livestock, herd management and to solve the problems that may be encountered in the field.  Having general knowledge about crossbreeding, selection, breeding. | | | | | | | |
| **TEXTBOOK** | | | | | | Course notes | | | | | | | |
| **OTHER REFERENCES** | | | | | | *ZOOTEKNİYE GİRİŞ DERS NOTLARI 2009 (Prof. Dr. Saim Boztepe, Arş. Gör. İbrahim Aytekin, Arş. Gör. Selçuk Kaplan)Hayvan Yetiştirme (U.Ü. Ziraat Fak. Ders Notları No: 71), Genel Zootekni Ders Notları (Yrd Doç Dr Ali Rıza Aksoy, 1994, Kars).*  *Aydın, Refiye, 2001. Koyun ve Keçi Yetiştiriciliği. Tarım ve Köyişleri Bakanlığı Yayın Dairesi Başkanlığı Matbaası, Kavaklıdere/ANKARA.*  *Taşkın, T., Özdoğan, M., Önenç, S., 2010. Keçi Yetiştirme ve Besleme. Hasd Yayıncılık Ltd. Şti., Ümraniye/İSTANBUL.*  *Türkoğlu, M., Sarıca, M., 2009. Tavukçuluk Bilimi. Bey Ofset Matbaacılık, ANKARA.* | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | No special tool its needed. | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | |
| 1 | An Introduction to animal breeding | | | | | | | | | | | |
| 2 | The importance of livestock in world and Turkish agriculture, domesticization process of animals, concept of species and race. | | | | | | | | | | | |
| 3 | Definition and scope of important concepts in animal production | | | | | | | | | | | |
| 4 | Reproduction, birth, practical breeding operations in farm animals | | | | | | | | | | | |
| 5 | Cattle breeding, care and management of important cattle breeds, calves, heifers and cows | | | | | | | | | | | |
| 6 | Estrus and breeding, pregnancy, birth, prenatal and postnatal care in cows | | | | | | | | | | | |
| 7 | Breeding cattle selection | | | | | | | | | | | |
| 8 | Small ruminant husbandry | | | | | | | | | | | |
| 9 | Chicken coops, breeding chicken for meat and egg, hatching, slaughtering. | | | | | | | | | | | |
| 10 | Poultry in Turkey and in the world, poultry breeds, poultry breeding. | | | | | | | | | | | |
| 11 | Concepts of animal breeding, inheritance and selection. | | | | | | | | | | | |
| 12 | Nutrients, digestion and absorption, digestive system types. | | | | | | | | | | | |
| 13 | Factors affecting the nutritional value of feeds, feed classification. | | | | | | | | | | | |
| 14 | Calculation for yield and maintanence, ration preparation. | | | | | | | | | | | |
| 15,16 | Final exam | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instractor:** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316032 | **COURSE NAME** | Agricultural Valuation and Expertise |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY () ELECTIVE ( X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Concept of farm appraisal, farm appraisal methods and expertise | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach concepts regarding farm appraisal, farm appraisal methods and preparation of expert reports concerning with farm appraisal | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn the farm appraisal methods when the students expertise on agricltural issues | | | | | | |
| **COURSE OUTCOMES** | | | | | Recognize concepts of farm appraisal methods,  Concerning farm appraisal methods  Prepare expert reports regarding farm appraisal  Data analysis and evaluation | | | | | | |
| **TEXTBOOK** | | | | | Rehber E, 2008. Tarımsal kıymet Takdiri (değerleme) ve Bilirkişilik. Ekin Kitabevi, 162s. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Concept and history of farm appraisal |
| 2 | Farm appraisal methods |
| 3 | Market method |
| 4 | Market method |
| 5 | Cost method |
| 6 | Cost method |
| 7 | Cost method |
| 8 | Income method |
| 9 | Income method |
| 10 | Income method |
| 11 | Income method |
| 12 | Farm appraisal applications and expertise |
| 13 | Farm appraisal applications and expertise |
| 14 | Farm appraisal applications and expertise |
| 15,16 | Final exam. |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):**

**Signature**: **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316033 | **COURSE NAME** | Weeds |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY() ELECTIVE (**X**) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Weed biologies, ecological requirements, economic values, and different herbicides in crops and weeds is to make information on methods of control. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Development of weed science and culture in all aspects of its relations with the introduction of plants are aimed. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about weeds that faced through horticultural growing, their management and control. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn the general information about herbology science  To know the economic significance, direct and indirect effects of weeds  To know the damages of weeds for cultivated plant  To know the development stages of weeds  To learn the reproduction and dissemination of weeds  To learn and use different control methods for weed control theorically and practically  To know the classification of herbicides and herbicides registered in Turkey | | | | | | |
| **TEXTBOOK** | | | | | Özer, Z., Kadıoğlu, İ., Önen, H., ve Tursun, N., 2001. Herboloji (Yabancı Ot Bilimi) Gaziosmanpaşa Üniversitesi Ziraat Fakültesi Yayınları No:20 Kitap Serisi No:10, 3. Baskı, Tokat | | | | | | |
| **OTHER REFERENCES** | | | | | Güncan, A., 2009. Yabancı Otlar ve Mücadele Prensipleri. Selçuk Üniversitesi, Ziraat Fakültesi, 4. Baskı, Konya | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction, history, basic concepts, differences between wild herb and weed. |
| 2 | Systematic and taxonomy |
| 3 | Generative reproduction, seed development, germination |
| 4 | The seed number of weeds, life and distribution of seeds |
| 5 | Vegetative reproduction of weeds; Apical dominancy and vegetative propagation |
| 6 | Mid-term exam Vegetative reproduction of weeds; Apical dominancy and vegetative propagation |
| 7 | Development stages of grass weeds |
| 8 | Development stages of broad leaved weeds |
| 9 | Ecology, biotic and abiotic factors |
| 10 | Allelopathy |
| 11 | Allelopathy |
| 12 | Population dynamics of weeds; Selectivity of herbicides |
| 13 | The mode of action of herbicides |
| 14 | Weed control as cultural managements, mechanical, biological, and chemical control |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc.Prof.Dr. Filiz ÜNAL **Date:**

**Signature**:

**ESOGU Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316008 | **COURSE NAME** | Organic Animal Growing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture Department Profession**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | | 1 | 20 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | No | | | | | | |
| **COURSE DESCRIPTION** | | | | | Organic farming, comparison of conventional and organic livestock production, reasons for organic animal husbandry, organic animal husbandry and production policies, legal regulations, problems and solutions of organic livestock production. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach students; similarities and differences between organic and conventional farming, production of organic animal products according to legal regulations, and economy of organic animal production. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Principles of organic animal husbandry, animal branch organic farming, and legal requirements in this area will be learned. | | | | | | |
| **COURSE OUTCOMES** | | | | | Understanding the differences between organic and conventional farming.  Knowledge of the causes of the emergence of organic livestock production.  Perform follow-up and economic analysis of the organic livestock market.  Legislation in this area and knowledge of the principles of organic animal husbandry. | | | | | | |
| **TEXTBOOK** | | | | | Organik Tarımın Esasları ve Uygulanmasına İlişkin Yönetmelik (2010) Yayımlandığı Resmi Gazetenin Tarihi: 18 Ağustos, Sayı: 27676. [www.tarim.gov.tr](http://www.tarim.gov.tr) | | | | | | |
| **OTHER REFERENCES** | | | | | Birinci Uluslararası Organik Hayvansal Üretim ve Gıda Güvenliği Kongresi, Tebliğler Kitabı, 28 Nisan-1 Mayıs 2004, Kuşadası.  Petek, M., Üstüner, H., 2004. Organik Hayvancılık, Geçmişe duyulan özlem mi? Geleceğe yatırım mı? 1. Veteriner Zootekni Kongresi Tebliğler kitabı, Elazığ.  Ergün, A., Tuncer, Ş.D., 2001. Yemler, yem hijyeni ve teknolojisi. Medisan Yayınevi, Ankara.  Petek, M., 2010. Organik Hayvancılık. Türkiye IV. Organik tarım Sempozyumu, Erzurum. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | None | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition of organic livestock production, overview. |
| 2 | Organic animal production in the world and in Turkey, |
| 3 | Establishment of organic animal production enterprises and principles (animal selection and transition time) |
| 4 | Principles of organic animal husbandry (breeding, hosting, maintenance, transport and slaughter) |
| 5 | Principles of organic animal feed (and feed water quality, quantity, and method of administration) |
| 6 | Midterm Exam - Organic milk production |
| 7 | Organic milk production, maintenance and management; Organic red meat production and slaughter of animals |
| 8 | Organic eggs and chicken meat production, maintenance and management |
| 9 | Organic goat-sheep's milk and meat production |
| 10 | The importance of nutrition in organic livestock production |
| 11 | Midterm Exam- Certification |
| 12 | Certified organic concentrate feed and hay production; Certification, logo and certification institution |
| 13 | Regulation on implementation of organic livestock production in Turkey |
| 14 | Regulation on implementation of organic livestock production in Turkey |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instractor:** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251316014 | **COURSE NAME** | Professional Practice II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 6 | 0 | | 4 | 0 | | | 0 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Department of land and to make practical training courses in laboratory. Improve the knowledge by technical tours. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The practice ability sophisticating and making technical tours to students about all lessons. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To make progress on using theoretical knowledge in practice. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. acquired some practical knowledge about vegetable crops  2. acquired some practical knowledge about fruit cultivation  3. acquired some practical knowledge about vineyard cultivation  4. acquired some practical knowledge about the cultivation of ornamental plants  5. Future projection composes by technical tours to institutions and establishments | | | | | | |
| **TEXTBOOK** | | | | | *-* | | | | | | |
| **OTHER REFERENCES** | | | | | *-* | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** All Teaching Members **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 251317027 | **COURSE NAME** | Cool Season Vegetables |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | | 1 | 25 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | To have passed the General Vegetables course | | | | | | |
| **COURSE DESCRIPTION** | | | | | The cultivation of economically important vegetable species 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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, asparagus, lettuce-salad, cabbage, cauliflower, broccoli, radish, spinach, carrot). | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | It is a course in which theoretical and practical information is given about the cultivation and cultural treatments of vegetables, which have an important place in the field of horticultural crops. | | | | | | |
| **COURSE OUTCOMES** | | | | | At the end of this course, the student will have the necessary knowledge about;  1- Climate and soil requirements of winter vegetables  2- Reproduction forms of winter vegetables,  3- Growing techniques of winter vegetables  4- Morphological characteristics of winter vegetables  5- Cultural treatments such as soil preparation, sowing, planting, fertilization and irrigation. | | | | | | |
| **TEXTBOOK** | | | | | 1. Kültür Sebzeleri (Sebze Yetiştirme) Vural, H., Eşiyok, D., Duman, İ. Ege Üniv. Ziraat Fak. Bahçe Bitkileri Bölümü, İzmir,. 2005  2. Özel Sebzecilik. Şalk, A., Arın, L., Deveci M., Polat S. 2008. Onur Grafik Matbaa ve Reklam Hizmetleri İst. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Onion Cultivation |
| 2 | Onion Cultivation |
| 3 | Garlic Cultivation |
| 4 | Leek Cultivation |
| 5 | Lettuce-Salad Cultivation |
| 6 | I. Midterm exam, Lettuce-salad cultivation |
| 7 | Cabbage Cultivation |
| 8 | Cabbage Cultivation |
| 9 | Cauliflower- Broccoli Cultivation |
| 10 | Cauliflower- Broccoli Cultivation |
| 11 | II. Midterm, Pea cultivation |
| 12 | Radish Cultivation |
| 13 | Carrot Cultivation |
| 14 | Spinach Cultivation |
| 15,16 | Semester final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317028 | **COURSE NAME** | Pome and Stone Fruits |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | | **Labratory** | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 0 | | 0 | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | **Evaluation Type** | | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | | 1 | 25 |
| 2nd Mid-Term | | | | | | 1 | 25 |
| Quiz | | | | | |  |  |
| Homework | | | | | |  |  |
| Project | | | | | |  |  |
| Report | | | | | |  |  |
| Others (………) | | | | | |  |  |
| **FINAL EXAM** | | | |  | | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | 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. | | | | | | | |
| **COURSE OBJECTIVES** | | | | The purpose of this course is to give the students knowledge on growing of pome and stone fruit species. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | Students will be informed about growing and maintenance of pome and stone fruits that intensively grown in our country. | | | | | | | |
| **COURSE OUTCOMES** | | | | To learn the growing and breeding techniques, varieties, harvesting and marketing of apple, pear, quince, persimmon, peach, nectarin, apricot, plum, cherry- sourcherry.  To recognize the morphologic and pomologic characteristics of these species.  To know the ecologic characteristics of the species and advise the appropriate species and cultivars to the growers and different areas.  To recognize the possible problems in growing period of these species and develop solution advisories. | | | | | | | |
| **TEXTBOOK** | | | | Özçağıran, 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.  Özçağıran, 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 Yaprağını Döken Meyve Türleri. | | | | | | | |
| **OTHER 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 | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | Projection | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Classification of fruits |
| 2 | Apple growing |
| 3 | Apple growing |
| 4 | Pear growing |
| 5 | Pear growing |
| 6 | Mid-term exam / Quince growing |
| 7 | Persimmon growing |
| 8 | Peach growing |
| 9 | Apricot growing |
| 10 | Apricot growing |
| 11 | Mid-term exam / Plum growing |
| 12 | Plum growing |
| 13 | Cherry-sourcherry growing |
| 14 | Cherry-sourcherry growing |
| 15, 16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317004 | **COURSE NAME** | Storage and Marketing of Horticultural Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 0 | 0 | | | 2 | 2 | Compulsory ( X) Electıve ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will have information about the importance of preservation, harvest and post-harvest and marketing of the product. | | | | | | |
| **COURSE OUTCOMES** | | | | | To be able to determine the right harvest time in garden products,  To be able to take measures against quality losses in garden products due to structural changes,  To be able to make different applications in order to prevent quality losses,  Ability to preserve different garden products,  To be able to create projects for modern preservation methods and  It is to detect the deterioration of the products during storage. | | | | | | |
| **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. | | | | | | |
| **OTHER 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. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection | | | | | | |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Rafet ASLANTAŞ

**Signature**:  **Date:**

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**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| --- | --- |
| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 251317029 | **COURSE NAME** | Tropical Fruits |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about growing and maintenance of tropical fruits growing | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn the growing and breeding techniques, varieties, harvesting and marketing ananas, mango, cherimoya, lichi, guava, pithaya, papaya, passion fruit and star fruit  To recognize the morphologic and pomologic characteristics of these species.  To know the ecologic characteristics of the species and advise the appropriate species and cultivars to the growers and different areas.  To recognize the possible problems in growing period of these species and develop solution advisories. | | | | | | |
| **TEXTBOOK** | | | | | - | | | | | | |
| **OTHER REFERENCES** | | | | | Paul, R.E., 2010. Tropical Fruits V.I. Cabi publication, 408 Pages, ISBN:9781845936723 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Mid-term exam - Mango growing |
| 8 | Pithaya growing |
| 9 | Cherimoya growing |
| 10 | Litchi growing |
| 11 | Guava growing |
| 12 | Papaya growing |
| 13 | Passion fruit growing |
| 14 | Starfruit growing |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Cenap YILMAZ

**Signature**:  **Date:** 22.09.2022

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317030 | **COURSE NAME** | New Techniques on Fruit Growing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE ( X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | In this course, new techniques and developments on fruit growing will be discussed theoretically and practically. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To gain knowledge on subjects on new orchard plantations, training and pruning systems, cultural techniques and harvest methods. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To comprehend new orchard plantations, training and pruning systems, cultural techniques and harvest methods theoretically and practically. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn fruit cultivars and rootstocks.  To learn current orchard plantations.  To recognise new training and pruning systems.  To learn new cultural techniques and harvest methods.  To teach different cultural techniques to growers. | | | | | | |
| **TEXTBOOK** | | | | | Yılmaz, M. 1994. Bahçe Bitkileri Yetiştirme Tekniği. Çukurova Üniversitesi Basımevi, Adana. | | | | | | |
| **OTHER REFERENCES** | | | | | Hartmann, H.T., Kester, D.E., Davies, Jr.F., Geneve, R.L., 1997. Plant Propagation Principles and Practies. Sixth Edition, Prentice Hall, New Jersey  Özbek, S., 1978. Genel Meyvecilik (Kışın Yaprağını Döken Meyve Türleri). Çukurova Üniversitesi Ziraat Fakültesi Yayınları No. 128. Ders Kitabı 11 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317031 | **COURSE NAME** | Agricultural Ethics and Entrepreneurship |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 25 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | NOTE: The obligation of your department to take the courses related to agricultural production and especially horticultural production and the Agricultural Economics course | | | | | | |
| **COURSE DESCRIPTION** | | | | | Entrepreneurship and innovation concepts and features, business idea development, creativity exercises and business modeling, business plan concept and elements and applications for development, business model and business plan preparation, effective communication and presentation, marketing management and innovation management, and experience sharing with exemplary entrepreneurs . | | | | | | |
| **COURSE OBJECTIVES** | | | | | To introduce students to the importance and role of successful entrepreneurship and entrepreneurship in the field of horticultural crops and to prepare them for practice by teaching the basic concepts of entrepreneurship, entrepreneurial characteristics and the importance of entrepreneurship in agriculture;  To promote the culture of entrepreneurship among students, to introduce entrepreneur candidates to the concept of business plan and to contribute to increasing the level of knowledge, skills and awareness about business establishment and entrepreneurship. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Agricultural engineers will be able to successfully apply their expertise in agricultural production methods and technologies, if they acquire the basic management and entrepreneurship knowledge necessary for them to exist in business life in today's intense competitive conditions. The course will contribute to the success of students in their professional lives by providing these basic information. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To be able to explain the basic functions and entrepreneurial characteristics of entrepreneurship  2. To be able to comprehend the techniques and stages of establishing a business  3. To be able to discuss the conditions and possibilities of agricultural entrepreneurship  4. To be able to analyze the decision-making process and economic results in agricultural entrepreneurship  5. To be able to apply the principles of agricultural entrepreneurship | | | | | | |
| **TEXTBOOK** | | | | | KOSGEB Girişimcilik El Kitabı, 2019 (Editör: Prof. Dr. B. Zafer ERDOĞAN). <https://www.kosgeb.gov.tr/Content/Upload/Dosya/Bagimsiz/GEK.pdf>  Dersi veren öğretim üyesi tarafından hazırlanan PowerPoint Sunumu. | | | | | | |
| **OTHER REFERENCES** | | | | | Girişimcilik (3. Baskı). Beta, İstanbul Luecke, R. (2008) Girişimcinin El Kitabı, İş Bankası Kültür Yayınları, İstanbul Akın, H.B. (2010)  Temel İşletme: Girişimcilik, İş Kurma ve Yönetim, Adres Yayınları,Ank. Küçük, O. (2009). Girişimcilik ve Küçük İşletme Yönetimi, Seçkin Yayınları, Ankara Hisrich, R. D., Peters,M.P. ve Shepherd, D.A. (2008).  Entrepreneurship, Boston : McGraw Katz, J.A. ve Green, R.P. (2009). Entrepreneurial Small Business, Boston : McGraw-Hill Alexander Osterwalder, Yves Pigneur, 2012.  İş Modeli Üretimi. Optimist Yayın Dağıtım Gürüz, D. ve Eğinli, A.T. (2013).  Etkili Sunum Teknikleri, Detay Yayıncılık, Ankara Karaca, T. (2013).  Girişimciler İçin Kolay ve Hızlı İş Planı Hazırlama. Sinemis Yayınları. Kotler, P., Keller, K. L., Ancarani, F., and Costabile, M. (2014)  <https://www.kosgeb.gov.tr/Content/Upload/Dosya/Girisimciligi%20Gelistirme%20Destek%20Programi/4-FRM.15.02.02%20(00)%20Yeni%20Giris%CC%A7imci%20Program%C4%B1%20I%CC%87s%CC%A7%20Modeli%20Formu-Copy1.pdf>  Güncel haberler ve makaleler | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector, flipchart and 64x90 paper, red, green and white A4 size thin cardboard, pencils as much as the number of students. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Course content, plan, presentations, project assignment, learning methods, assessment, implementation of the entrepreneurial tendency questionnaire  Testing the concepts of entrepreneurship and innovation, entrepreneurial characteristics and the foundations of entrepreneurship |
| 2 | Entrepreneurship, innovation and entrepreneurship concepts |
| 3 | Creative thinking and idea generation methods |
| 4 | Business plan concept and elements (market research, marketing plan, production plan, management plan, financial plan) |
| 5 | Business plan concept and its elements (market research, marketing plan, production plan, management plan, financial plan) applications |
| 6 | Effective communication methods for entrepreneurship Considerations in Preparing and Presenting a Business Plan |
| 7 | Midterm |
| 8 | Considerations in Preparing and Presenting a Marketing Management Business Plan |
| 9 | Management, Production, Marketing and Finance in Small Businesses |
| 10 | Sharing experience with exemplary entrepreneurs, mentoring practice and Issues to be Considered in Preparing and Presenting a Business Plan-I |
| 11 | Sharing experience with exemplary entrepreneurs, mentoring practice and Considerations in Preparing and Presenting a Business Plan-II |
| 12 | An exemplary entrepreneurial business visit in the field of agricultural production |
| 13 | Project presentations |
| 14 | Project presentations |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **x** |  |  |
| 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 |  |  | **x** |
| 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 |  | **x** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **x** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **x** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **x** |  |  |
| 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) |  |  | **x** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  | **x** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**  **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317032 | **COURSE NAME** | Edible Wild Vegetables |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 2 | | 2 |  | | | 3 | 4 | COMPULSORY ( ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Recognition of uncultivated plants collected from nature and consumed as vegetables. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learns the plants grown in nature and collected by consumers theoretically and practically. | | | | | | |
| **COURSE OUTCOMES** | | | | | Recognizes wild plants that can be consumed.  Learns the conditions in which wild plants grow.  Learns the effects in terms of health. | | | | | | |
| **TEXTBOOK** | | | | | Herkes için yenebilir yabani bitkiler ve yararlı otlar. Jim Meuninck, Derya Engin, 2004, 1. bs. | | | | | | |
| **OTHER REFERENCES** | | | | | Yaprağı Yenen Sebzeler, Halil Demir. 2007. Hasad Yayıncılık | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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, Researching the possibilities of growing wild plants. |
| 9 | Investigation of the possibilities of growing wild plants. |
| 10 | Detection of wild plants in nature |
| 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 |  |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 this information accurately |  | **X** |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant prof. Kenan SÖNMEZ

**Signature**:  **Date:** 23.09.2004

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317033 | **COURSE NAME** | Wild Fruits |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Collection, selection and evaluation of wild fruit species will be covered. | | | | | | |
| **COURSE OUTCOMES** | | | | | Learns the collection, processing methods, breeding, varieties, harvesting and preparation of wild apple, pear and plum species in wild form.  Recognize the morphological and pomological features of these fruit species.  Knows the ecological characteristics of fruit species within the scope of the course and can suggest suitable species and varieties for different regions.  Develops solutions by knowing the problems that may arise during the cultivation of these species. | | | | | | |
| **TEXTBOOK** | | | | | Internet printouts  Lecture Notes | | | | | | |
| **OTHER REFERENCES** | | | | | Internet printouts  Lecture Notes | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description of wild fruits |
| 2 | Importance of wild fruits in terms of health and their place in economy |
| 3 | Example of wild fruit species: Cranberry |
| 4 | Example of wild fruit species: Hawthorn |
| 5 | Example of wild fruit species: Rosehip |
| 6 | Example of wild fruit species: Berberis vulgaris (Female saltpeter) |
| 7 | Midterm / |
| 8 | Example of wild fruit species: Medlar |
| 9 | Example of wild fruit species: Rowan |
| 10 | Example of wild fruit species: Blackberry |
| 11 | Example of wild fruit species: Mountain Strawberry |
| 12 | Example of wild fruit types: wild apple |
| 13 | Example of wild fruit species: wild pear |
| 14 | Example of wild fruit species: wild plum |
| 15,16 | Semester final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Volkan OKATAN **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317034 | **COURSE NAME** | Protected Cultivation of Vegetable Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  | 25 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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 practice. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This is the main course that informed about protected cultivation and information is given theoratically and practically on protected cultivation | | | | | | |
| **COURSE OUTCOMES** | | | | | The student knows the definition, importance, priority and economics of protected cultivation of vegetable. Usage possibilities of tunnels and greenhouses in protected cultivation of vegetable, equipment used protected cultivation of vegetable. Cultures such as soil or perlite, rock wool, cocopeat, peat etc. preparation of growing media, planting, fertilization and irrigation will have the necessary knowledge. | | | | | | |
| **TEXTBOOK** | | | | | Örtüaltı Sebzeciliği, Sevgican, A., Ege Univ. Ziraat Fak. Yayın No. 528, Bornova-Izmir, 2002. | | | | | | |
| **OTHER REFERENCES** | | | | | *-* | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection and pc. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm exam, Soil preparation and struggle with weed in greenhouse |
| 7 | Cultural practices in protected cultivation |
| 8 | Soilless culture possibilities in greenhouse cultivation |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** Asst.Prof.Dr. Kenan SÖNMEZ **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317035 | **COURSE NAME** | Cut Flower Cultivation |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | To have passed the Ornamental Plants Cultivation course | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction of the cut flower industry and important cut flower species and cultivation | | | | | | |
| **COURSE OBJECTIVES** | | | | | Introducing important cut flower species and teaching production methods | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | It will enable them to have information about important cut flower species, general growing conditions and production methods. | | | | | | |
| **COURSE OUTCOMES** | | | | | 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; | | | | | | |
| **TEXTBOOK** | | | | | Tanrıverdi, F. 1993. Çiçek Üretim Tekniği, Sera ve Açık Alanlarda Saksı, Kesme ve Bahçe Çiçeği Yetiştirme İlkeleri Ders Kitabı, İnkilap Kitabevi, İstanbul.  Tissier et al. (1989). Seralarda Kesme Çiçek Yetiştiriciliği, Çukurova Üni. Ziraat Fakültesi Yardımcı Ders Kitabı No.23 Adana | | | | | | |
| **OTHER REFERENCES** | | | | | Özzambak, E., Zeybekoğlu, E. (2004). Serada Topraksız Gerbera Yetiştiricliği, İzmir Ticaret Odası Yayın No: 140  Altan, s. (1992). Süs Bitkileri Üretim Tekniği, Çukurova Üni. Ziraat Fak. Ders Kitabı No:104, Adana | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Chriysanthemum Propagation |
| 6 | Gerbera Propagation |
| 7 | Anthurium Propagation |
| 8 | Alstroemeria Propagation |
| 9 | Midterm exam |
| 10 | Gladiol Propagation |
| 11 | Orchids Propagation |
| 12 | Daffodil Propagation |
| 13 | Tulip Propagation |
| 14 | Lilium Propagation |
| 15 | Final |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |

**Instructor(s):** Assoc. Prof. Dr. Sibel SARIÇAM

**Signature**:  **Date:**

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**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317036 | **COURSE NAME** | Greenhouse fruit growing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE ( X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | New greenhouse system garden installations, new cultivation and pruning systems, tillage, maintenance and harvesting methods will be comprehended theoretically and practically. | | | | | | |
| **COURSE OUTCOMES** | | | | | Emphasizes the importance of fruit growing  Explains the situation of fruit growing in our country.  Defines greenhouse fruit growing  Explain the reasons and advantages of greenhouse fruit growing  It teaches the cultivation of greenhouse fruits in some berry types practically. | | | | | | |
| **TEXTBOOK** | | | | | - | | | | | | |
| **OTHER REFERENCES** | | | | | Course notes | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm - Current pruning and training systems |
| 8 | fruit growing systems |
| 9 | Dressing systems used under cover |
| 10 | Pruning |
| 11 | Other cultural processes used in greenhouse fruit growing |
| 12 | An applied example in greenhouse fruit cultivation: Strawberry cultivation under cover |
| 13 | An applied example in greenhouse fruit cultivation: Blackberry cultivation under cover |
| 14 | An applied example in greenhouse fruit cultivation: Blueberry cultivation under cover |
| 15, 16 | Semester final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Volkan OKATAN  **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317037 | **COURSE NAME** | Vineyard Plantation Technique |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 2 | - | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | To have a passing grade in the General Viticulture course. | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | As a result of learning detailed information about vineyard plantation techniques, the individual develops a decision-making mechanism for the work that needs to be done and gains the ability to plan the vineyard site. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Knows the ecological and economic factors to be considered in the vineyard establishment,  2) Learns the planning of planting,  3) Gains pre-facility planning skills,  4) Gains experience in soil types, factors, and analysis,  5) Knows the correct rootstock and variety selection,  6) Creates an action plan for the preparation of the vineyard area,  7) Knows the post-planting maintenance procedures and learns the wire finishing system preference correctly. | | | | | | |
| **TEXTBOOK** | | | | | Çelik, H., Ağaoğlu, Y.S., Fidan, Y., Marasalı, B., Söylemezoğlu G., 1998. Genel Bağcılık, Sunfidan Mesleki Kitaplar Serisi:1, Ankara | | | | | | |
| **OTHER 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. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm |
| 8 | Supply of Planting Materials (Sapling Use) |
| 9 | Preparation of the Vineyard Site for Planting |
| 10 | Vine Planting |
| 11 | Maintenance Activities After Plantation |
| 12 | Training and Pruning |
| 13 | Determination of the Choice of Trellis Systems |
| 14 | Economical Factors to Consider in the Selection of Vineyard Sites |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 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 |  | **x** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **x** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **x** |  |  |
| 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) | **x** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  |  | **x** |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **x** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Turcan TEKER

**Signature**:  **Date:** 20.06.2022

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317012 | **COURSE NAME** | Diploma Thesis I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Graduate Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | (Presentation of Thesis) | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Making research, preparing project and presentation of conclusions as thesis on a subject on related disciple of choosen lecturer. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Making research and application, preparing project, evaluating values and presenting the consequences by the students on a subject on horticulture will be provided. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To add the ability of research, application and presentation on particular subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | To gain the ability of making research, application and presentation on a subject on horticulture.  To gain the ability of preparing a project, and presenting the consequences successfully on a professional subject. | | | | | | |
| **TEXTBOOK** | | | | | Related documents and web source | | | | | | |
| **OTHER REFERENCES** | | | | | Related documents and web source | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Studying on selected subject with choosen lecturer |
| 2 | Studying on selected subject with choosen lecturer |
| 3 | Studying on selected subject with choosen lecturer |
| 4 | Studying on selected subject with choosen lecturer |
| 5 | Studying on selected subject with choosen lecturer |
| 6 | Studying on selected subject with choosen lecturer |
| 7 | Studying on selected subject with choosen lecturer |
| 8 | Studying on selected subject with choosen lecturer |
| 9 | Studying on selected subject with choosen lecturer |
| 10 | Control of preparations |
| 11 | Control of preparations |
| 12 | Presentation of graduate thesis |
| 13 | Presentation of graduate thesis |
| 14 | Presentation of graduate thesis |
| 15 |  |

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| **THE DEGREE OF RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES** (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | | |
| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 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 |  | **X** |  |  |  |
| 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 |  |  |  | **X** |  |
| 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 |  |  |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |  |  |
| 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) |  | **X** |  |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  |  |  | **X** |
| 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 |  |  | **X** |  |  |
| 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 |  | **X** |  |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |  |  |

**Instructor(s):** All teaching members **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317014 | **COURSE NAME** | Ornamental Plants Cultivation and Applications I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 0 | | 2 | 0 | | | 1 | 3 | Compulsory (X ) Electıve ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 100 |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 100 |
| **PREREQUIEITE(S)** | | | | | To have passed the Ornamental Plants Cultivation course | | | | | | |
| **COURSE DESCRIPTION** | | | | | Making applications about ornamental plants growing technique, researching resources, preparing and presenting projects | | | | | | |
| **COURSE OBJECTIVES** | | | | | To enable them to research a subject about ornamental plants in detail, to carry out its application, to make a report and to present this subject they have prepared. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To gain theoretical and practical information about ornamental plants as well as general information about their applications. | | | | | | |
| **COURSE OUTCOMES** | | | | | They have knowledge and skills about growing ornamental plants. | | | | | | |
| **TEXTBOOK** | | | | | Orçun, E. (1972). Özel Bahçe Mimarisi Dendroloji, İğne Yapraklı Ağaç ve Ağaçcıklar, Cilt I, İzmir.  Orçun, E. (1972Peyzaj Mimarisi Dendroloji, Yapraklı Ağaç-Ağaçcıkların Özellikleri ve Peyzaj Mimarisinde Kullanılışları, Cilt II, İzmir.  Ceylan, G. (2004). Dış Mekan Süs Bitkileri ve Payzajda Kullanımları, Flora Yayınları, İstanbul. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Ornamental Plants Cultivation and research of the thesis topic |
| 2 | Determination of the thesis topic |
| 3 | Literature review on the thesis topic |
| 4 | Literature review on the thesis topic |
| 5 | Literature review on the thesis topic |
| 6 | Literature review on the thesis topic |
| 7 | Literature review on the thesis topic |
| 8 | Literature review on the thesis topic |
| 9 | Literature review on the thesis topic |
| 10 | Literature review on the thesis topic |
| 11 | First evaluation (Control of the study program, presentation to the consultant, continuation of the study in line with the suggestions |
| 12 | Collection of missing data and corrections |
| 13 | Corrections |
| 14 | Corrections |
| 15,16 | Presentation |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Sibel SARIÇAM

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317015 | **COURSE NAME** | Fertilization Biology Practices in Fruits I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | | 1 | 40 |
| **FINAL EXAM** | | | | | (Project) | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Literature screening, project preparation and presentation the topic on fertilization biology of fruits. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn searching literature,  To learn summary the literature,  To learn evaluating th results of literature,  Understanding and interpretation of the results,  Reporting the results of the researches,  Presenting the project  Ability to use the information obtained from the course in lifetime | | | | | | |
| **TEXTBOOK** | | | | | Different literatures on the subject | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm exam |
| 7 | Evaluating the literature |
| 8 | Writing the results |
| 9 | Writing the results |
| 10 | Preparing the results as a report |
| 11 | Preparing the results as a report |
| 12 | Evaluating the report |
| 13 | Presentation of the project |
| 14 | Presentation of the project |
| 15,16 | Evaluation of the project |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc.Prof. Yasemin EVRENOSOĞLU

**Signature**:  **Date:**

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**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 251317016 | **COURSE NAME** | Cultivating Vegetables and Applications I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 100 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | |  |  |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Literature search, project preparation, presentation and implementation on the cultivation of vegetables | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | The ability to have theoretical and applied knowledge about vegetable growing and to use this knowledge. | | | | | | |
| **COURSE OUTCOMES** | | | | | Learning to literature search  Learning to sense, summarize and evaluate the literature  Project preparation and practice  Submit a project report  The ability to use the results obtained | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 251317017 | **COURSE NAME** | Fruit Growing Techniques and Applications I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | | (Project) | | | | | 1 | 100 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Literature screening, project preparation and presentation the topic on fruit growing. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn searching literature,  To learn summary the literature,  To learn evaluating th results of literature,  Understanding and interpretation of the results,  Reporting the results of the researches,  Presenting the project  Ability to use the information obtained from the course in lifetime | | | | | | |
| **TEXTBOOK** | | | | | Different literatures on the subject | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm exam |
| 7 | Evaluating the literature |
| 8 | Writing the results |
| 9 | Writing the results |
| 10 | Preparing the results as a report |
| 11 | Preparing the results as a report |
| 12 | Evaluating the report |
| 13 | Presentation of the project |
| 14 | Presentation of the project |
| 15,16 | Evaluation of the project |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist.Prof. Cenap YILMAZ

**Signature**: **Date:** 22.0.2022



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 251317018 | **COURSE NAME** | MINOR VEGETABLES - I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The research will be conducted on any topic related to minor vegetables, and a research project will be designed to evaluate and successfully transfer the results. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be given the ability to conduct research and practice on any subject related to minor vegetables. The ability to create a project on any professional subject and successfully convey the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Kenan SÖNMEZ

**Signature**: **Date:** 20.06.2022

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 251317022 | **COURSE NAME** | Fruit Culture I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | 0 | | | 1 | 3 | Compulsory ( X) Electıve ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | It will add the ability to research, practice and present on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be provided with the ability to conduct research and practice on any subject related to Horticulture and to present it.  The ability to create a project on any professional subject and successfully transfer the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Related documents and internet resources | | | | | | |
| **OTHER REFERENCES** | | | | | Related documents and internet resources | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Rafet ASLANTAŞ **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| --- | --- |
| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317024 | **COURSE NAME** | MINOR FRUITS - I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | 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. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Volkan OKATAN

**Signature**:  **Date:** 20.06.2022



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| --- | --- |
| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 251317025 | **COURSE NAME** | Viticulture Practices - I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be given the ability to conduct research and practice on any subject related to viticulture. The ability to create a project on any professional subject and successfully convey the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Turcan TEKER

**Signature**:  **Date:** 20.06.2022



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 251317026 | **COURSE NAME** | Vegetable seed practices - I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be given the ability to conduct research and practice on any subject related to Vegetable seed practices. The ability to create a project on any professional subject and successfully convey the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Sıtkı ERMİŞ

**Signature**: **Date:** 20.06.2022

 **ESOGÜ Horticultural Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 251317041 | **COURSE NAME** | MODERN ORCHARDS MANAGEMENT I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | - | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Türkçe |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Agriculture Engineering Profession**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | - | - |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | | - | - |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Graduation thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Thesis presentation | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Thanks to this course, the person who takes the course gains theoretical or applied skills on issues related to modern orchards in the world. | | | | | | |
| **COURSE OUTCOMES** | | | | | Gains equivalent knowledge of modern orchard management practices in the world. | | | | | | |
| **TEXTBOOK** | | | | | Book title; Intensive Orchard Management, Author; Dr. Bruce H. Barritt, Publication Year; 1992, ISBN;0-9630659-1-2, List price; $30 | | | | | | |
| **OTHER REFERENCES** | | | | | General Fruiting, Editors; R. Gerçekçioğlu et al., Chapter 12. Pruning of Fruit Trees. Pages 385-449. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Articles and presentations on the subject | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |  |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Adequate knowledge of Agricultural Engineering and fruit growing in particular; the ability to apply theoretical and applied knowledge in these fields to model and solve problems related to modern fruit growing | **x** |  |  |
| 2 | Ability to identify, define, formulate and solve problems related to Agricultural Engineering and modern orchard management by selecting and applying appropriate analysis and modeling methods | **x** |  |  |
| 3 | The ability to design a complex system by applying garden design and production models in line with a determined goal. | **x** |  |  |
| 4 | Ability to learn, develop, select and use modern techniques and tools required for Agricultural Engineering practices and to make effective use of information technologies |  | **x** |  |
| 5 | Ability to design, experiment, collect data, analyze and interpret results, to design a garden setup for the study of Agricultural Engineering and Horticulture problems | **x** |  |  |
| 6 | Ability to work individually and in interdisciplinary and interdisciplinary teams |  | **x** |  |
| 7 | Ability to communicate effectively in Turkish orally and in writing, and the ability to use/develop foreign language knowledge about modern fruit growing | **x** |  |  |
| 8 | Ability to communicate effectively in Turkish orally and in writing, and the ability to use/develop foreign language knowledge about modern fruit growing |  | **x** |  |
| 9 | Professional and ethical responsibility awareness |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Yakup ÖZKAN

**Signature**:  **Date:** 20.06.2022

**ESOGU Horticulture Department**

**Course Information Form**

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| **SEMESTER** |  |

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| **COURSE CODE** |  | **COURSE NAME** | Internship |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
|  | |  | |  |  | | |  |  | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | | **Basic Engineering** | | | | **Horticulture Department Profession**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** | |
|  | | | X | | | |  | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** | |
| 1st Mid-Term | | | | | 1 | 40 | |
| 2nd Mid-Term | | | | |  |  | |
| Quiz | | | | |  |  | |
| Homework | | | | |  |  | |
| Project | | | | |  |  | |
| Report | | | | |  |  | |
| Others (………) | | | | |  |  | |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 60 | |
| **PREREQUIEITE(S)** | | | | | | No | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | As a part of this course internships will done for 30 working days in a lump at the end of the 6th semester. Students do their internship in institutions which found by their own, related to the field (can be private or government institutions), with the permission of the related commission. Students who did not complete the 30 working days required internship even if they fulfill the necessary of the requirements for graduation. After completing their internship, students submit the reports and data sheets to commission. After the checking of all materials, students which are eligible to enter the internship exam, subjected to exam and evaluated as successful or unsuccessful. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The purposes of the practice study are; to consolidate the students’ theoretical knowledge and experience gained over their bachelor period, to contribute to the skills and experience they will have acquired in in-class and lab applications, to identify the responsibilities, relationships, the organization steps, manufacturing process and technologies about their practice-work field. Besides, the aims of this course are; to demonstrate the students’ capabilities by attending the R&D activities and project works, to help improve their perceptions about the solutions of engineering problems, to contribute for identifying their areas of interest, to gain an experience about the business life and to enable the recognition of the functioning of the institutions. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | | Students will gain theoretical and practical professional knowledge in the institutions where they do internship. | | | | | | | |
| **COURSE OUTCOMES** | | | | | | Students will gain theoretical and practical professional knowledge in the institutions where they do internship. | | | | | | | |
| **TEXTBOOK** | | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | |  | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | |
| 1 | Gathering of the required materials from the students | | | | | | | | | | | |
| 2 | Gathering of the required materials from the students | | | | | | | | | | | |
| 3 | Gathering of the required materials from the students | | | | | | | | | | | |
| 4 | Gathering of the required materials from the students | | | | | | | | | | | |
| 5 | Gathering of the required materials from the students | | | | | | | | | | | |
| 6 | Gathering of the required materials from the students | | | | | | | | | | | |
| 7 | Breeding cattle selection | | | | | | | | | | | |
| 8 | Evaluation of the intern materials | | | | | | | | | | | |
| 9 | Evaluation of the intern materials | | | | | | | | | | | |
| 10 | Evaluation of the intern materials | | | | | | | | | | | |
| 11 | Evaluation of the intern materials | | | | | | | | | | | |
| 12 | Final Exam | | | | | | | | | | | |
| 13 | Evaluation of the final exam | | | | | | | | | | | |
| 14 | Preparation of examination note lists | | | | | | | | | | | |
| 15,16 | Final exam | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instractor:** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318023 | **COURSE NAME** | Subtropical fruits |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Classification, history, distribution, economical importance, morphological and pomological characteristics, fertilization biology, ecological requirements, propagation, plantation and maintenance of olive, pomegranate, fig, loquat and tea will be discussed. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The purpose of this course is to give the students knowledge on growing of olive, pomegranate, fig, loquat and tea species. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about growing and maintenance of subtropical fruits growing | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn the growing and breeding techniques, varieties, harvesting and marketing olive, pomegranate, fig, loquat and tea.  To recognize the morphologic and pomologic characteristics of these species.  To know the ecologic characteristics of the species and advise the appropriate species and cultivars to the growers and different areas.  To recognize the possible problems in growing period of these species and develop solution advisories. | | | | | | |
| **TEXTBOOK** | | | | | Subtropik İklim Meyveleri, K. Mendilcioğlu, Ege Üniversitesi, Ziraat Fak. Ders Notları, İzmir, 2000. | | | | | | |
| **OTHER REFERENCES** | | | | | Yılmaz, C., 2007. Nar. Hasad yayıncılık, 276 s. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Olive growing |
| 2 | Olive growing |
| 3 | Olive growing |
| 4 | Pomegranate growing |
| 5 | Pomegranate growing |
| 6 | Pomegranate growing |
| 7 | Mid-term exam - Fig growing |
| 8 | Fig growing |
| 9 | Fig growing |
| 10 | Loquat growing |
| 11 | Mid-term exam - Loquat growing |
| 12 | Loquat growing |
| 13 | Tea growing |
| 14 | Tea growing |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Cenap YILMAZ

**Signature**:  **Date:** 22.09.2022



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318024 | **COURSE NAME** | Warm-season vegetables |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 25 |
| 2nd Mid-Term | | | | | 1 | 25 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | To have passed the General Vegetables course | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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). | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | It is a course in which theoretical and practical information is given about the cultivation and cultural treatments of vegetables, which have an important place in the field of horticultural crops. | | | | | | |
| **COURSE OUTCOMES** | | | | | At the end of this course, the student will have the necessary knowledge about;  1- Climate and soil requirements of warm season vegetables  2- Reproduction forms of warm season vegetables,  3- Growing techniques of warm season vegetables  4- Morphological characteristics of winter vegetables  5- Cultural treatments such as soil preparation, sowing, planting, fertilization and irrigation. | | | | | | |
| **TEXTBOOK** | | | | | 1. Kültür Sebzeleri (Sebze Yetiştirme) Vural, H., Eşiyok, D., Duman, İ. Ege Üniv. Ziraat Fak. Bahçe Bitkileri Bölümü, İzmir,. 2005  2. Özel Sebzecilik. Şalk, A., Arın, L., Deveci M., Polat S. 2008. Onur Grafik Matbaa ve Reklam Hizmetleri İst. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Tomato Cultivation |
| 2 | Tomato Cultivation |
| 3 | Tomato Cultivation |
| 4 | Pepper Cultivation |
| 5 | Pepper Cultivation |
| 6 | I. Midterm exam, Eggplant Cultivation |
| 7 | Eggplant Cultivation |
| 8 | Watermelon Cultivation |
| 9 | Cucumber Cultivation |
| 10 | Melon Cultivation |
| 11 | II. Midterm, Pumpkin cultivation |
| 12 | Zucchini Cultivation |
| 13 | Beans Cultivation |
| 14 | Okra Cultivation |
| 15,16 | Semester final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU

**Signature**:  **Date:**

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**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318025 | **COURSE NAME** | Berries |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE () | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The purpose of this course is to give the students knowledge on growing of strawberry, blackberry, raspberry, gooseberry, ribes, blueberry, and mulberry species. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about growing and maintenance of temperate zone fruits that intensively grown in our country. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn the growing, processing and breeding techniques, varieties, harvesting and marketing strawberry, blackberry, raspberry, gooseberry, ribes, blueberry, and mulberry.  To recognize the morphologic and pomologic characteristics of these species.  To know the ecologic characteristics of the species and advise the appropriate species and cultivars to the growers and different areas.  To recognize the possible problems in growing period of these species and develop solution advisories. | | | | | | |
| **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 | | | | | | |
| **OTHER 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, SanFrancisco. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to small fruits |
| 2 | Strawberry growing |
| 3 | Strawberry growing |
| 4 | Strawberry growing |
| 5 | Blackberry growing |
| 6 | Mid-term exam / Blackberry growing |
| 7 | Blackberry growing |
| 8 | Raspberry growing |
| 9 | Raspberry growing |
| 10 | Gooseberry growing |
| 11 | Mid-term exam / Gooseberry growing |
| 12 | Ribes growing |
| 13 | Blueberry growing |
| 14 | Mulberry growing |
| 15 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Volkan OKATAN **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318026 | **COURSE NAME** | Nut Fruits |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 0 | 0 | | | 2 | 5 | Compulsory ( ) Electıve ( X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Cultural history, systematics, ecological demands, reproduction, cultivation, annual maintenance, production, trade and role in human nutrition of nut fruit species. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | With this course, students will have an idea about all the topics that are important in their professional life related to the stone fruit species, which is an important group of horticultural crops. | | | | | | |
| **COURSE OUTCOMES** | | | | | From nut fruit species;  Important information on the cultural history, systematics, cultivation, annual maintenance, production, trade and role of Hazelnut, Almond, Walnut, Pistachio, Chestnut, Pecan, Locust and Pistachio species in human nutrition. | | | | | | |
| **TEXTBOOK** | | | | | Genetics, Genomics and Breeding of Stone Fruits. Chittaranjan Kole, Albert G. Abbott. | | | | | | |
| **OTHER REFERENCES** | | | | | Production Technology of Stone Fruits. Mohammad Maqbool Mir, Umar Iqbal, Shabir Ahmad Mir. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection | | | | | | |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Yakup ÖZKAN

**Signature**: Prof. Dr. Rafet ASLANTAŞ  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318027 | **COURSE NAME** | New Advances in Horticulture Breeding |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 2 | 0 | | | 3 | 4 | Compulsory ( ) Electıve ( X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definition and scope of horticultural breeding and new developments in the related field. | | | | | | |
| **COURSE OBJECTIVES** | | | | | With this course, students will be taught about new developments in horticultural breeding. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | In addition to gaining basic professional information by teaching new developments in horticulture breeding theoretically, special examination of species groups within the scope of the course will also provide important sectoral information in their professional lives. | | | | | | |
| **COURSE OUTCOMES** | | | | | Obtaining basic information about the methods used in horticultural breeding,  Learning new techniques used in horticultural breeding,  It is to obtain information about special breeding purposes and breeding studies of species groups in horticultural crops. | | | | | | |
| **TEXTBOOK** | | | | | Baydar, H. 2020. Bitki Genetiği ve Islahı. Nobel Akademik Yayıncılık, Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | Emiroğlu, Ü ve Bürün, H. Bitki Islahı Temel Kavramlar ve Mekanizmalar. Nobel Akademik Yayıncılık, Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection | | | | | | |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Rafet ASLANTAŞ

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318028 | **COURSE NAME** | Special Viticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | To have a passing grade in the General Viticulture course. | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach the growth and development stages of the vine,  To gain knowledge about bud, shoot, and root systems in the vine,  To provide a detailed understanding of grapevine physiology and biology,  To teach vine breeding methods,  To convey the grain structure and development stages,  To determine the harvest criteria according to the evaluation methods in viticulture,  To explain the use of development and growth regulators in viticulture,  To teach the production and importance of table, wine and raisins,  General ampelography definitions, vine rootstock and use in viticulture to gain knowledge on the issues. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | In addition to the general knowledge of viticulture, more specific issues in viticulture will be explained in detail, enabling them to know about special viticulture. | | | | | | |
| **COURSE OUTCOMES** | | | | | 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. | | | | | | |
| **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. | | | | | | |
| **OTHER 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. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm |
| 8 | Vine Breeding (Polyploidy and Clone Selection Studies) |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 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 |  | **x** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **x** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **x** |  |  |
| 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) | **x** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  |  | **x** |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **x** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Turcan TEKER **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318029 | **COURSE NAME** | Soilless Culture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 2 |  | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (**X** ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Soilless culture methods, plant nutrition in soilless culture, advantages and disadvantages in soilless culture. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To provide the ability to follow the causes, production techniques and current developments of soilless agriculture | | | | | | |
| **COURSE OUTCOMES** | | | | | * To learn the soilless culture systems * Cultivate the plants in the soilless culture   - To be able to plan and manage soilless cultivation at commercial level | | | | | | |
| **TEXTBOOK** | | | | | -Gül, A. 2008. Topraksız Tarım. Hasad yayıncılık, 144 s. | | | | | | |
| **OTHER REFERENCES** | | | | | * Savvas, D. and Passam H. 2002. Hydroponic Production of Vegetables and Ormamentals. Embryo Publishing, Greece, 463p. * Douglas, J. S. 1985. Advanced Guide to Hydroponics.BAS Printers Lmt, GB.368 p. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | I. midterm exam, examples to soilless production |
| 7 | Plant nutrition in hydroponic cultivation |
| 8 | Nutrient solution preparation |
| 9 | Nutrient solution preparation |
| 10 | Sample Nutrient Solution Recipes |
| 11 | Examples to soilless production |
| 12 | Advantages and disadvantages of soilless culture |
| 13 | Environmental impact of soilless culture |
| 14 | Latest developments in Soilless Agriculture |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  | **X** |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318030 | **COURSE NAME** | Rootstock scion relationships of fruits |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE ( X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | In this course, physiological relationships of rootstock and scion of fruits will be discussed theoretically and practically. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To gain knowledge on subjects about rootstocks of fruits, their usage, grafting, incompatibilities of rootstock and scion. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To comprehend incompatibilities of rootstock and scion and to prevent these problems theoretically and practically. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn rootstocks of different fruit species.  To learn practice of grafting methods.  To recognise problems at different rootstock and scion combinations.  To learn how to prevent incompatibility problems.  To teach different cultural techniques to growers. | | | | | | |
| **TEXTBOOK** | | | | | Özçağıran, R. 1974. Meyve Ağaçlarında Anaç İle Kalem Arasındaki Fizyolojik ilişkiler. Ege Üniversitesi Basımevi, İzmir. | | | | | | |
| **OTHER REFERENCES** | | | | | Yılmaz, M. 1994. Bahçe Bitkileri Yetiştirme Tekniği. Çukurova Üniversitesi Basımevi, Adana. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **X** |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**  **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318031 | **COURSE NAME** | Intelligent agriculture |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 8 | | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY () ELECTIVE (X) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** | |
|  | | |  | | | | x | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** | |
| 1st Mid-Term | | | | | 1 | 40 | |
| 2nd Mid-Term | | | | |  |  | |
| Quiz | | | | |  |  | |
| Homework | | | | |  |  | |
| Project | | | | |  |  | |
| Report | | | | |  |  | |
| Others (………) | | | | |  |  | |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 60 | |
| **PREREQUIEITE(S)** | | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | 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. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | 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. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | To learn how today's technologies are used in the agricultural sector, especially in the fields of horticultural crops. | | | | | | | |
| **COURSE OUTCOMES** | | | | | | 1) Defines the concept of smart agriculture and its components  2) Explain wireless communication systems  3) Reduces input costs in agricultural production by using Smart Agriculture systems  4) It contributes to the protection of the environment by using less chemicals  5) Provides information on smart agriculture application technologies  6) Have knowledge about smart agriculture systems in Turkey and in the world.  7) Prepares different presentations on any subject.  8) Learns the use of Internet, Search engines and E-mail | | | | | | | |
| **TEXTBOOK** | | | | | | Internet printouts  Lecture Notes | | | | | | | |
| **OTHER REFERENCES** | | | | | | Internet printouts  Lecture Notes | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | Projection | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | |
| 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 | Midterm / Almond cultivation | | | | | | | | | | | |
| 7 | Introduction of sensors and modules used in digital transformation systems in agriculture | | | | | | | | | | | |
| 8 | Smart Agriculture Applications | | | | | | | | | | | |
| 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 | Semester final exam | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |

**Instructor(s):** Assoc. Prof. Volkan OKATAN **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318032 | **COURSE NAME** | Trends and Alternative Practices in Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 2 | 0 | | | 3 | 4 | Compulsory ( ) Electıve ( X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Current trends and approaches in modern horticultural cultivation. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Examining the current situation in horticulture cultivation, teaching current trends and teaching the basics and aims of modern cultivation. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course, which aims to teach department students new techniques applied in horticultural cultivation, will open up horizons about the future of the sector as well as vocational education. | | | | | | |
| **COURSE OUTCOMES** | | | | | To have information about the current situation in the cultivation of modern horticultural crops;  To be informed about current trends in horticultural cultivation. | | | | | | |
| **TEXTBOOK** | | | | | Advences in Fruit Breeding, Purdue University Press.  Tarım ve Gıdada Yatırım Trendleri 2050, Rachid Serraj & Prabhu Pingali Scala Yayıncılık, 2021. | | | | | | |
| **OTHER REFERENCES** | | | | | Topraksız Tarım ve Bitki Besleme Teknikleri, Nobel Akademik Yayıncılık. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Modern Yetiştiriciliğin Temelleri; Akıllı Tarım |
| 9 | Modern Yetiştiriciliğin Temelleri; Akıllı Tarım II |
| 10 | Modern Yetiştiriciliğin Hedefleri; Piyasa Tercihlerine Uygun Yetiştiricilik |
| 11 | Modern Yetiştiriciliğin Hedefleri; Hassas Tüketici Gruplarına Yönelik Yetiştiricilik |
| 12 | Modern Yetiştiriciliğin Hedefleri; Yöresel Ürünlerin Sertifikalı ve Patentli Yetiştiriciliği |
| 13 | Modern Yetiştiriciliğin Hedefleri; Modern Muhafaza Yöntemleri |
| 14 | Modern Yetiştiriciliğin Hedefleri; Sanayiye Uygun Üretim |
| 15,16 | Final |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 | **X** |  |  |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Rafet ASLANTAŞ **Date:**

**Signature**:

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**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251317006 | **COURSE NAME** | Postharvest Physiology of Horticultural Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | | 1 | 20 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 criters, effects of postharvest processes on product quality, effects of different storage methods on product resistance and marketing. Physiological and parasitic deterioration in horticultural plants. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Examination of physiological changes occurring after harvest in fruits, vegetables and ornamental plants | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To give knowledge and gain ability on postharvest physiology of horticultural crops | | | | | | |
| **COURSE OUTCOMES** | | | | | To know after harvest losses and their reasons in horticultural crops  To determine after harvest changes occurring in horticultural crops  To detect, explain and prevent physical and biochemical changes after harvest occurring in horticultural crops  To be able to create proper storage conditions for horticultural crops and to prevent losses | | | | | | |
| **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. | | | | | | |
| **OTHER 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. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Physiological events and inportance 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 | 1. 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 |

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| **THE DEGREE OF RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES** (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | | |
| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 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 | **X** |  |  |  |  |
| 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 |  |  |  | **X** |  |
| 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 |  |  | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  |  |  |  | **X** |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  |  |  |  | **X** |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  |  |  | **X** |
| 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) |  |  |  |  | **X** |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  |  |  | **X** |
| 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 |  |  | **X** |  |  |
| 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 | **X** |  |  |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |  |  |

**Instructor(s):** **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318033 | **COURSE NAME** | Citrus Trees |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 50 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The purpose of this course is to give the students knowledge on growing of sweet orange, mandarin, grapefruit, lemon, sour orange and kumquat species. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students will be informed about growing and maintenance of citrus fruits that intensively grown in our country. | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn the growing and breeding techniques, varieties, harvesting and marketing sweet orange, mandarin, grapefruit, lemon, sour orange and kumquat.  To recognize the morphologic and pomologic characteristics of these species  To know the ecologic characteristics of the species and advise the appropriate species and cultivars to the growers and different areas.  To recognize the possible problems in growing period of these species and develop solution advisories. | | | | | | |
| **TEXTBOOK** | | | | | - | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Davies, F.S., Albrigo, L.G. 1994. Citrus. Typeset by Solidus (Bristol) Limitedts, Great Britain.  2. Tanrıverdi, F., 1987. Subtropik Meyve Türleri. Atatürk Üniversitesi Ziraat Fakültesi Ders Notları, Erzurum.  3. Tuzcu, Ö., 2000. Turunçgiller (Ders Notları) Ç. Ü. Adana.  4. Mendilcioğlu, K., 1991. Turunçgiller. E.Ü. Zir. Fak. Ofset Basımevi, Bornova, İzmir. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Mid-term exam - The biological properties of citrus fruits |
| 8 | Citrus fruits and climate |
| 9 | Citrus fruits and soil |
| 10 | Propagation of citrus |
| 11 | Propagation of citrus |
| 12 | Citrus nursery |
| 13 | Orchard establishment, tillage, and irrigation of citrus fruits |
| 14 | Fertigasyon, pruning, harvest in citrus orchard |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **X** |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318012 | **COURSE NAME** | Diploma Thesis II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Graduate Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | (Presentation of Thesis) | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | Making research, preparing project and presentation of conclusions as thesis on a subject on related disciple of choosen lecturer. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Making research and application, preparing project, evaluating values and presenting the consequences by the students on a subject on horticulture will be provided. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To add the ability of research, application and presentation on particular subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | To gain the ability of making research, application and presentation on a subject on horticulture.  To gain the ability of preparing a project, and presenting the consequences successfully on a professional subject. | | | | | | |
| **TEXTBOOK** | | | | | Related documents and web source | | | | | | |
| **OTHER REFERENCES** | | | | | Related documents and web source | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Studying on selected subject with choosen lecturer |
| 2 | Studying on selected subject with choosen lecturer |
| 3 | Studying on selected subject with choosen lecturer |
| 4 | Studying on selected subject with choosen lecturer |
| 5 | Studying on selected subject with choosen lecturer |
| 6 | Studying on selected subject with choosen lecturer |
| 7 | Studying on selected subject with choosen lecturer |
| 8 | Studying on selected subject with choosen lecturer |
| 9 | Studying on selected subject with choosen lecturer |
| 10 | Control of preparations |
| 11 | Control of preparations |
| 12 | Presentation of graduate thesis |
| 13 | Presentation of graduate thesis |
| 14 | Presentation of graduate thesis |
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| **THE DEGREE OF RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES** (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | | |
| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 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 |  | **X** |  |  |  |
| 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 |  |  |  | **X** |  |
| 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 |  |  |  | **X** |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants |  | **X** |  |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards | **X** |  |  |  |  |
| 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) |  | **X** |  |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  |  |  | **X** |
| 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 |  |  | **X** |  |  |
| 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 |  | **X** |  |  |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills |  |  | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |  |  |

**Instructor(s):** All teaching members **Date:**

**Signature**:

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318014 | **COURSE NAME** | Ornamental Plants Cultivation and Applications II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 0 | | 2 | 0 | | | 1 | 3 | Compulsory (X ) Electıve ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 100 |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 100 |
| **PREREQUIEITE(S)** | | | | | To have passed the Ornamental Plants Cultivation course | | | | | | |
| **COURSE DESCRIPTION** | | | | | Making applications about ornamental plants growing technique, researching resources, preparing and presenting projects | | | | | | |
| **COURSE OBJECTIVES** | | | | | To enable them to research a subject about ornamental plants in detail, to carry out its application, to make a report and to present this subject they have prepared. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To gain theoretical and practical information about ornamental plants as well as general information about their applications. | | | | | | |
| **COURSE OUTCOMES** | | | | | They have knowledge and skills about growing ornamental plants. | | | | | | |
| **TEXTBOOK** | | | | | Orçun, E. (1972). Özel Bahçe Mimarisi Dendroloji, İğne Yapraklı Ağaç ve Ağaçcıklar, Cilt I, İzmir.  Orçun, E. (1972Peyzaj Mimarisi Dendroloji, Yapraklı Ağaç-Ağaçcıkların Özellikleri ve Peyzaj Mimarisinde Kullanılışları, Cilt II, İzmir.  Ceylan, G. (2004). Dış Mekan Süs Bitkileri ve Payzajda Kullanımları, Flora Yayınları, İstanbul. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Ornamental Plants Cultivation and research of the thesis topic |
| 2 | Determination of the thesis topic |
| 3 | Literature review on the thesis topic |
| 4 | Literature review on the thesis topic |
| 5 | Literature review on the thesis topic |
| 6 | Literature review on the thesis topic |
| 7 | Literature review on the thesis topic |
| 8 | Literature review on the thesis topic |
| 9 | Literature review on the thesis topic |
| 10 | Literature review on the thesis topic |
| 11 | First evaluation (Control of the study program, presentation to the consultant, continuation of the study in line with the suggestions |
| 12 | Collection of missing data and corrections |
| 13 | Corrections |
| 14 | Corrections |
| 15,16 | Presentation |

|  |  |  |  |  |
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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Sibel SARIÇAM

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318015 | **COURSE NAME** | Fertilization Biology Practices in Fruits II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 20 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | | 1 | 40 |
| **FINAL EXAM** | | | | | (Project) | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | Fertilization Biology Practices in Fruits I course must be successfully completed | | | | | | |
| **COURSE DESCRIPTION** | | | | | Literature screening, project preparation and presentation the topic on fertilization biology of fruits. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn searching literature,  To learn summary the literature,  To learn evaluating th results of literature,  Understanding and interpretation of the results,  Reporting the results of the researches,  Presenting the project  Ability to use the information obtained from the course in lifetime | | | | | | |
| **TEXTBOOK** | | | | | Different literatures on the subject | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm exam |
| 7 | Evaluating the literature |
| 8 | Writing the results |
| 9 | Writing the results |
| 10 | Preparing the results as a report |
| 11 | Preparing the results as a report |
| 12 | Evaluating the report |
| 13 | Presentation of the project |
| 14 | Presentation of the project |
| 15,16 | Evaluation of the project |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Yasemin EVRENOSOĞLU

**Signature**:  **Date:**

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**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251317016 | **COURSE NAME** | Cultivating Vegetables and Applications II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 100 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | |  |  |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Literature search, project preparation, presentation and implementation on the cultivation of vegetables | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | The ability to have theoretical and applied knowledge about vegetable growing and to use this knowledge. | | | | | | |
| **COURSE OUTCOMES** | | | | | Learning to literature search  Learning to sense, summarize and evaluate the literature  Project preparation and practice  Submit a project report  The ability to use the results obtained | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment | **X** |  |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  | **X** |  |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Nuray ÇÖMLEKÇİOĞLU

**Signature**:  **Date:**

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318017 | **COURSE NAME** | Fruit Growing Techniques II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 0 | | 2 | 0 | | | 1 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | |  |  |
| **FINAL EXAM** | | | | | (Project) | | | | | 1 | 100 |
| **PREREQUIEITE(S)** | | | | | The course of “Fruit Growing Techniques I” must be taken. | | | | | | |
| **COURSE DESCRIPTION** | | | | | Literature screening, project preparation and presentation the topic on fruit growing. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn searching literature,  To learn summary the literature,  To learn evaluating th results of literature,  Understanding and interpretation of the results,  Reporting the results of the researches,  Presenting the project  Ability to use the information obtained from the course in lifetime | | | | | | |
| **TEXTBOOK** | | | | | Different literatures on the subject | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 | Midterm exam |
| 7 | Evaluating the literature |
| 8 | Writing the results |
| 9 | Writing the results |
| 10 | Preparing the results as a report |
| 11 | Preparing the results as a report |
| 12 | Evaluating the report |
| 13 | Presentation of the project |
| 14 | Presentation of the project |
| 15,16 | Evaluation of the project |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) |  | **X** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  |  | **X** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist.Prof. Cenap YILMAZ

**Signature**:  **Date:** 22.09.2022



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318018 | **COURSE NAME** | MINOR VEGETABLES - II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 7 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The research will be conducted on any topic related to minor vegetables, and a research project will be designed to evaluate and successfully transfer the results. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be given the ability to conduct research and practice on any subject related to minor vegetables. The ability to create a project on any professional subject and successfully convey the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Kenan SÖNMEZ

**Signature**:  **Date:** 20.06.2022



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318034 | **COURSE NAME** | MINOR FRUITS - II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | 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. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Volkan OKATAN

**Signature**:  **Date:** 20.06.2022

**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318022 | **COURSE NAME** | Fruit Culture II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 0 | | 2 | 0 | | | 1 | 3 | Compulsory ( X) Electıve ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Practice) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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 | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | It will add the ability to research, practice and present on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be provided with the ability to conduct research and practice on any subject related to Horticulture and to present it.  The ability to create a project on any professional subject and successfully transfer the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Related documents and internet resources | | | | | | |
| **OTHER REFERENCES** | | | | | Related documents and internet resources | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Conducting literature research on thesis topics determined within the scope of the relevant course |
| 2 | Conducting literature research on thesis topics determined within the scope of the relevant course |
| 3 | Conducting literature research on thesis topics determined within the scope of the relevant course |
| 4 | Conducting literature research on thesis topics determined 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 | Checking the graduation thesis |
| 11 | Checking the graduation thesis |
| 12 | Presentation of graduation thesis |
| 13 | Presentation of graduation thesis |
| 14 | Presentation of graduation thesis |
| 15,16 |  |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 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 | **X** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **X** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **X** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  | **X** |  |
| 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) | **X** |  |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  | **X** |  |
| 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 |  |  | **X** |
| 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 |  | **X** |  |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **X** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Rafet ASLANTAŞ  **Date:**

**Signature**:



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318035 | **COURSE NAME** | Viticulture Practices - II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be given the ability to conduct research and practice on any subject related to viticulture. The ability to create a project on any professional subject and successfully convey the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Turcan TEKER

**Signature**:  **Date:** 20.06.2022



**ESOGÜ Horticulture Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251318036 | **COURSE NAME** | Vegetable Seed Practices - II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 0 | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Horticulture**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Diploma Thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Presentation of Thesis | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Develop the ability to research and practice on the determined subject. | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be given the ability to conduct research and practice on any subject related to vegetable seed practices. The ability to create a project on any professional subject and successfully convey the results will be gained. | | | | | | |
| **TEXTBOOK** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **OTHER REFERENCES** | | | | | Researched, relevant documents and resources on the subject. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |
| 15,16 | Final Exam |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 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 |  | **x** |  |
| 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 | **x** |  |  |
| 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 | **x** |  |  |
| 4 | To have the skill of utilizing different techniques for sustainable usage and protection of genetic resources in horticultural area and environment |  | **x** |  |
| 5 | To have the ability of describing, classification and growing fruits, vegetables, grapevine and ornamental plants | **x** |  |  |
| 6 | To have the skill of establishing and operating orchards, greenhouses and vineyards |  |  | **x** |
| 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) |  | **x** |  |
| 8 | To have the skill of using and applying biotechnology on horticulture |  |  | **x** |
| 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 |  | **x** |  |
| 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 |  |  | **x** |
| 11 | To have the ability of getting the data on horticultural area, and evaluation, recording, project creation and application skills | **x** |  |  |
| 12 | To have the ability of working in individual, multiple and different disciplined teams, and having the responsibility |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assistant Prof. Dr. Sıtkı ERMİŞ

**Signature**:  **Date:** 20.06.2022



**ESOGÜ Horticultural Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | SPRING |

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| **COURSE CODE** | 251318037 | **COURSE NAME** | MODERN ORCHARDS MANAGEMENT II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | - | | 2 | - | | | 1 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Türkçe |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Agriculture Engineering Profession**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Graduation thesis) | | | | | 1 | 50 |
| **FINAL EXAM** | | | | | Thesis presentation | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | 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. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 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. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Thanks to this course, the person who takes the course gains theoretical or applied skills on issues related to modern orchards in the world. | | | | | | |
| **COURSE OUTCOMES** | | | | | Gains equivalent knowledge of modern orchard management practices in the world. | | | | | | |
| **TEXTBOOK** | | | | | Book title; Intensive Orchard Management, Author; Dr. Bruce H. Barritt, Publication Year; 1992, ISBN;0-9630659-1-2, List price; $30 | | | | | | |
| **OTHER REFERENCES** | | | | | General Fruiting, Editors; R. Gerçekçioğlu et al., Chapter 12. Pruning of Fruit Trees. Pages 385-449. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Articles and presentations on the subject | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 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 |  |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Adequate knowledge of Agricultural Engineering and fruit growing in particular; the ability to apply theoretical and applied knowledge in these fields to model and solve problems related to modern fruit growing | **x** |  |  |
| 2 | Ability to identify, define, formulate and solve problems related to Agricultural Engineering and modern garden management by selecting and applying appropriate analysis and modeling methods | **x** |  |  |
| 3 | The ability to design a complex system by applying garden design and production models in line with a determined goal. | **x** |  |  |
| 4 | Ability to learn, develop, select and use modern techniques and tools required for Agricultural Engineering practices and to make effective use of information technologies |  | **x** |  |
| 5 | Ability to design, experiment, collect data, analyze and interpret results, to design a garden setup for the study of Agricultural Engineering and Horticulture problems | **x** |  |  |
| 6 | Ability to work individually and in interdisciplinary and interdisciplinary teams |  | **x** |  |
| 7 | Ability to communicate effectively in Turkish orally and in writing, and the ability to use/develop foreign language knowledge about modern fruit growing | **x** |  |  |
| 8 | Ability to communicate effectively in Turkish orally and in writing, and the ability to use/develop foreign language knowledge about modern fruit growing |  | **x** |  |
| 9 | Professional and ethical responsibility awareness |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Yakup ÖZKAN

**Signature**:  **Date:** 20.06.2022