# Courses – ECTS Credits

Please click on any course to see details such as aims, course outcomes, contents, assessments and ECTS credits.

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| **1st Year** | | | | | | |
| Code | Course | | ECTS | C+P+L | M/E | Language |
| Fall Semester | | | | | | |
| 251211010 | [Zoology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Zoology) | 4 | | 2-2-0 | M | Turkish |
| 251211011 | [Botany](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_BOTANY) | 4 | | 2-2-0 | M | Turkish |
| 251211012 | [Physics](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_PHYSICS) | 4 | | 3-0-0 | M | Turkish |
| 251211013 | [Chemistry](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Chemistry) | 4 | | 2-2-0 | M | Turkish |
| 251211014 | [Mathematics](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Mathematics) | 3 | | 3-0-0 | M | Turkish |
| 251211015 | [Introduction to Field Crops](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Introduction_to_Field) | 2 | | 2-0-0 | M | Turkish |
| 251211006 | [Information Technology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Information_Technology) | 2 | | 2-0-0 | M | Turkish |
| 251211008 | [Turkish Language I](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Turkish_Language_I) | 2 | | 2-0-0 | M | Turkish |
| 251211016 | [Principles of Ataturk and Recent Turkish History I](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Atatürk’s_Pr._&) | 2 | | 2-0-0 | M | Turkish |
| 251211007 | [Foreign Language I](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Foreign_Language_I) | 3 | | 3-0-0 | M | English |
| Total of Fall Semester: | | 30 | |  |  |  |
| Spring Semester | | | | | | |
| 251212001 | [History of Agricultural and Deontology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_HISTORY_OF_AGRICULTURE) | 2 | | 2-0-0 | M | Turkish |
| 251212002 | [Surveying Technique](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_SURVEYING) | 4 | | 2-0-0 | M | Turkish |
| 251212012 | [Technical Drawing](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Technical_Drawing) | 4 | | 1-2-0 | M | Turkish |
| 251212005 | [Biochemistry](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Biochemistry) | 3 | | 2-0-0 | M | Turkish |
| 251212006 | [Meteorology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_METEOROLOGY) | 3 | | 2-0-0 | M | Turkish |
| 251212013 | [Microbiology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_MICROBIOLOGY) | 4 | | 2-0-0 | M | Turkish |
| 251212014 | [Agricultural Ecology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_AGRICULTURAL_ECOLOGY) | 3 | | 2-0-0 | M | Turkish |
| 251212009 | [Turkish Language II](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Turkish_language_II) | 2 | | 2-0-0 | M | Turkish |
| 251212015 | [Principles of Ataturk and Recent Turkish History II](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Principles_of_Ataturk) | 2 | | 2-0-0 | M | Turkish |
| 251212011 | [Foreign Language II](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Foreign_Language_II) | 3 | | 3-0-0 | M | English |
| Total of Spring Semester: | | 30 | |  |  |  |
| TOTAL OF YEAR : | | 60 | |  |  |  |
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| **2nd Year** | | | | | | |
| Code | Course | | ECTS | C+P+L | M/E | Language |
| Fall Semester | | | | | | |
| 251213010 | [Statistics](#_Statistics) | 4 | | 2-0-0 | M | Turkish |
| 251213019 | [Genetics](#_Genetics) | 3 | | 2-0-0 | M | Turkish |
| 251213012 | [Agricultural Economics](#_AGRICULTURAL_ECONOMICS) | 3 | | 2-0-0 | M | Turkish |
| 251213013 | [Food Science and Technology](#_Food_Science_and) | 3 | | 2-0-0 | M | Turkish |
| 251213018 | [Agricultural Structures and Irrigation](#_Agricultural__structures) | 3 | | 2-0-0 | M | Turkish |
| 251213015 | [Landscape Architecture](#_Landscape_Architecture) | 3 | | 2-0-0 | M | Turkish |
| 251213016 | [Horticulture](#_Horticulture) | 3 | | 2-0-0 | M | Turkish |
| 251213017 | [Professional Practice I](#_Professional_Practice_I) | 3 | | 0-4-0 | M | Turkish |
| 251213008 | [Foreign Language III](#a251213008) | 3 | | 3-0-0 | M | English |
| 251213020 | OHS-I | 2 | | 2-0-0 | M | Turkish |
| Total of Fall Semester: | | 30 | |  |  |  |
| Spring Semester | | | | | | |
| 251214009 | [Animal Production](#_Animal_Production) | 3 | | 2-0-0 | M | Turkish |
| 251214021 | [Agricultural Extension and Communication](#_Agricultural_Extension_and) | 2 | | 2-0-0 | M | Turkish |
| 251214011 | [Research and Experimental Methods](#_Research_and_Experimentation) | 4 | | 2-2-0 | M | Turkish |
| 251214012 | [Agricultural Machinery](#_Agricultural_Machinery) | 3 | | 2-0-0 | M | Turkish |
| 251214022 | [Soil Science](#_SOIL_SCIENCE) | 2 | | 2-0-0 | M | Turkish |
| 251214018 | [Plant Physiology](#_Plant_Physiology) | 3 | | 2-0-0 | M | Turkish |
| 251214015 | [Plant Protection](#_Plant_Protection) | 3 | | 2-0-0 | M | Turkish |
| 251214016 | [Professional Practice II](#_Professional_Practice_II) | 3 | | 0-4-0 | M | Turkish |
| 251214007 | [Foreign Language IV](#_Foreign_Language_IV) | 3 | | 3-0-0 | M | English |
| 251214019 | OHS-II | 2 | | 2-0-0 | M | Turkish |
| 251214020 | Summer Training I | 2 | | 0-0-0 | M | Turkish |
| Total of Spring Semester: | | 30 | |  |  |  |
| TOTAL OF YEAR : | | 60 | |  |  |  |

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| **3rd Year** | | | | | | |
| Code | Course | | ECTS | C+P+L | M/E | Language |
| Fall Semester | | | | | | |
| 251215011 | [Field Crops Biotechnology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Plant_Biotechnology_in) | 5 | | 2-2-0 | M | Turkish |
| 251215012 | [Genetic and Sitogenetic Essentials of Plant Breeding](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Genetic_and_Cytogenetic) | 4 | | 2-0-0 | M | Turkish |
| 251215013 | [Seed Technology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Seed_and_Seed) | 5 | | 2-2-0 | M | Turkish |
| 251215014 | [Graminous Forage Crops](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Graminous_Forage_Crops) | 4 | | 2-2-0 | M | Turkish |
| 251215015 | [Pests of Field Crops](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Pests_of_Field) | 3 | | 1-2-0 | M | Turkish |
|  | Elective Course I | 3 | | 3-0-0 | M | Turkish |
| 251215018 | [Professional Foreign Language I](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Professional_Foreign_Language) | 2 | | 2-0-0 | M | English |
| 251215019 | [Professional Practice III](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Professional_Practice_III) | 4 | | 0-4-0 | M | Turkish |
| Total of Fall Semester: | | 30 | |  |  |  |
| Spring Semester | | | | | | |
| 251216022 | [Edible Grain Legumes](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Edible_Legumes) | 3 | | 2-2-0 | M | Turkish |
| 251216012 | [Oil Seed Crops](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Oilseed_crops) | 4 | | 2-2-0 | M | Turkish |
| 251216013 | [Stimulants Plants](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Stimulant_Plants) | 3 | | 2-2-0 | M | Turkish |
| 251216023 | [Forage Legumes](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Forage_Legumes) | 3 | | 2-2-0 | M | Turkish |
| 251216015 | [Temperate Cereals](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Temperate_Cereals) | 4 | | 2-2-0 | M | Turkish |
| 251216016 | [Diseases of Field Crops](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Diseases_of_Field) | 2 | | 1-2-0 | M | Turkish |
|  | Elective Course II | 3 | | 3-0-0 | M | Turkish |
| 251216019 | [Professional Foreign Language II](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Professional_Foreign_Language_) | 2 | | 2-0-0 | M | English |
| 251216020 | [Professional Practice IV](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Professional_Practice_IV) | 4 | | 0-4-0 | M | Turkish |
|  | Summer Training II | 2 | | 0-0-0 | M | Turkish |
| Total of Spring Semester: | | 30 | |  |  |  |
| TOTAL OF YEAR: | | 60 | |  |  |  |
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| **4th Year** | | | | | | |
| Code | Course | | ECTS | C+P+L | M/E | Language |
| Fall Semester | | | | | | |
| 251217007 | [Meadow and Range Management](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Meadow_and_Range) | 3 | | 2-0-0 | M | Turkish |
| 251217008 | [Fiber Plants](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_FIBER_CROPS) | 5 | | 2-2-0 | M | Turkish |
| 251217009 | [Plant Genetic Resources and Biodiversity](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Plant_Genetic_Resources) | 4 | | 2-0-0 | M | Turkish |
| 251217010 | [Starch and Sugar Plants](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Starch_and_Sugar) | 5 | | 2-2-0 | M | Turkish |
| 251217011 | [Standardization and Storage of Field Crops](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Standardization_and_Storage) | 3 | | 2-0-0 | M | Turkish |
|  | Elective Course III | 3 | | 3-0-0 | E | Turkish |
|  | Social Elective Courses I | 3 | | 3-0-0 | E | Turkish |
| 251217017 | [Diploma Thesis](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#Diploma_thesis_I) | 4 | | 0-2-0 | M | Turkish |
| Total of Fall Semester: | | 30 | |  |  |  |
| Spring Semester | | | | | | |
| 251218008 | [Cool Season Cereals](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Cool_Season_Cereals) | 4 | | 2-2-0 | M | Turkish |
| 251218009 | [Medicinal and Aromatic Plants](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Medicinal_and_Aromatic) | 4 | | 2-2-0 | M | Turkish |
| 251218010 | [Special Plant Breeding](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Special_Plant_Breeding) | 5 | | 2-2-0 | M | Turkish |
| 251218011 | [Pasture and Range Improvement](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Pasture_and_Range) | 3 | | 2-0-0 | M | Turkish |
| 251218012 | [Mineral Nutrition of Field Crops](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_FERTILIZATION_OF_FIELD) | 4 | | 2-2-0 | M | Turkish |
|  | Elective Course IV | 3 | | 3-0-0 | E | Turkish |
|  | Social Elective Courses II | 3 | | 3-0-0 | E | Turkish |
| 251218018 | [Diploma Thesis](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#Diploma_thesis_II) | 4 | | 0-2-0 | M | Turkish |
| Total of Spring Semester: | | 30 | |  |  |  |
| TOTAL OF YEAR: | | 60 | |  |  |  |
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| Elective Courses (Out of Department) | | | | | | |
| Code | Course | | ECTS | C+P+L | M/E | Language |
| **Elective Course I** | | | | | | |
| 251215016 | [Weeds and the Struggle](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Weeds_and_Fights) | 3 | | 3-0-0 | E | Turkish |
| 251215017 | [Grape-like Fruits](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Small_Fruits) | 3 | | 3-0-0 | E | Turkish |
| **Elective Course II** | | | | | | |
| 251216017 | [Agricultural Valuation and Expertise](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Farm_Appraisal_and) | 3 | | 3-0-0 | E | Turkish |
| 251216018 | [Bee and Silkworm Rearing](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Bee_and_Silkworm) | 3 | | 3-0-0 | E | Turkish |
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| Elective Courses (In Department) | | | | | | |
| Code | Course | | ECTS | C+P+L | M/E | Language |
| **Elective Course III** | | | | | | |
| 251217012 | [Farming Systems](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Farming_Systems) | 3 | | 3-0-0 | E | Turkish |
| 251217013 | [Pasture and Range Ecology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Pasture_and_Range_) | 3 | | 3-0-0 | E | Turkish |
| 251217014 | [Energy Crops and Technology](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Energy_Crops_and) | 3 | | 3-0-0 | E | Turkish |
| **Elective Course IV** | | | | | | |
| 251218013 | [Turf Grasses Cultivation](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Turf_Grasses_Cultivation) | 3 | | 3-0-0 | E | Turkish |
| 251218014 | [Plant Reproduction Techniques](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Plant_Propagation_Techniques) | 3 | | 3-0-0 | E | Turkish |
| 251218015 | [Organic Farming](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Organic_agriculture) | 3 | | 3-0-0 | E | Turkish |
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| Social Elective Courses | | | | | | |
| Code | Course | | ECTS | C+P+L | M/E | Language |
| Social Elective Courses I | | | | | | |
| 251217015 | [First Aid](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_First_aid) | 3 | | 3-0-0 | E | Turkish |
| 251217016 | [Photography](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Photography) | 3 | | 3-0-0 | E | Turkish |
| Social Elective Courses II | | | | | | |
| 251218016 | [Study Methods in Nature](file:///C:\Users\Nazife\Desktop\ders%20içerik\ingilizce%20ders%20bilgi%20paketi%20gözde.doc#_Biological_Working_Methods) | 3 | | 3-0-0 | E | Turkish |

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311001 | **COURSE NAME** | Zoology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 2 | | 0 | 2 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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 | | | | 1 | | 20 |
| Project | | | |  | |  |
| Report | | | |  | |  |
| Others (Practise) | | | |  | | 20 |
| **FINAL EXAM** | | | | | |  | | | |  | | 40 |
| **PREREQUIEITE(S)** | | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Animal cell and its organels, types of cell division, animal tissues, organs and systems, systematics and taxonomy, rules of nomenclature, classification of animal groups, general features of the animal groups, soil animals and their agricultural importance, earthworms and their contibutions to soil and agricultural products, animal ecology and ethology, faunistic richness of Turkey. | | | | | | |
| **COURSE OBJECTIVES** | | | | | | Present and explain the subjects of zoology and animal groups. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | | To explain importance of animals among other organisms  To summarize structure and function of animal cell, tissues, organs and systems  To summarize importance of systematics and taxonomy  To explain general rules of classification and nomenclature  To summarize general features of animal groups  To recognise the soil animals and summarize their agricultural importance.  To explain the contributions of earthworms to soil and agricultural products.  To comment animal ecology and ethology  To present faunistic richness of Turkey  To explain subject that what can be done to protect this richness. | | | | | | |
| **TEXTBOOK** | | | | | | Koç H. General Zoology Course Notes | | | | | | |
| **OTHER REFERENCES** | | | | | | 1.Aktümsek A., Ünsal S., Kalyoncu L. (2007) Genel Zooloji, Ankara, Nobel publishing.  2.Mısırlıoğlu M. (2011) Omurgasız Hayvanlar Laboratuvar Kılavuzu, Ankara, Nobel publishing.  3.Mısırlıoğlu M. (2011) Topraksolucanları, Ankara, Nobel publishing.  4. Mısırlıoğlu M. (2014) Toprak Faunası, Ankara, Nobel publishing  5. Documentaries related the course. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | Computer and projection, microscope, stereo microscope, basin, microscope slides, lamels, pens, alcohol, formaldehyde, jars. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | General features of animals |
| 2 | Animal cell and its organels |
| 3 | Types of cell division |
| 4 | Animal tissues |
| 5 | Animal tissues |
| 6 | Organs and Systems |
| 7 | Organs and Systems |
| 8 | Animal ecology |
| 9 | Ethology |
| 10 | Systematic and taxonomy, Classification of animals |
| 11 | Systematic and taxonomy, Classification of animals |
| 12 | Soil animals and their agricultural importance |
| 13 | Earthworms and their contributions to soil and agriculture |
| 14 | Faunistic richness of Turkey |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **X** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **X** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  | **X** |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **X** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  | **X** |  |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic | **X** |  |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **X** |  |  |  |

**Instructor(s):** Assoc.Prof. Mete MISIRLIOĞLU

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251211011 | **COURSE NAME** | Botany |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 2 | | 0 | 2 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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 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 | 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 |
| 10 | Pollination and germination |
| 11 | Fruit, fruit types |
| 12 | Seed; structure, ovule develepment and structure, seed types |
| 13 | Plant Systematic and Plant Classification |
| 14 | Photosyntesis and respiration |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  | **X** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **X** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **X** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **X** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding | **X** |  |  |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic | **X** |  |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | X |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops | **X** |  |  |  |  |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251211012 | **COURSE NAME** | Physics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 3 | | 0 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | 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 | Work and kinetic energy |
| 7 | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **X** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):**

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



**ESOGU Field Crops 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** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 2 | | 0 | 2 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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 (Practise) | | | |  | |  |
| **FINAL EXAM** | | | | | |  | | | |  | | 50 |
| **PREREQUIEITE(S)** | | | | | | None | | | | | | |
| **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 |
| 6 | Dipol moment, particular weight |
| 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **x** |  |  |  |

**Instructor(s):**

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

**ESOGU Field Crops 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** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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** | | | | | | 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 | Hyperbolic functions |
| 7 | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **x** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251211015 | **COURSE NAME** | [Introduction to Field Crops](#_Introduction_to_Field) |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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 KitabıCeylan, 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **X** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  | **X** |  |  |  |
| 4 | Life-long learning skills |  | **X** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | **x** |  |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding | **X** |  |  |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic | **X** |  |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | X |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops | **X** |  |  |  |  |

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

Assoc.Prof.Dr. Nihal KAYAN

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251311007 | **COURSE NAME** | Information Technology |

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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 ( ) | | 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** | | | | | Hardware of computer, functions of hardware units, Windows XP, Microsoft Word, Microsoft Excel, Data, formatting cells, page operations, functions, mathematical process, preparing Powerpoint presentation, general knowledge on internet will be discussed. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Main objective of the course is to inform basic information systems and technologies, and introduce usage areas in education to the students. It is to be able to use the automation system. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Basic knowledge, computer hardware, Windows, commit word, counting tables, preparing presentation. | | | | | | |
| **COURSE OUTCOMES** | | | | | To know information technologies  To comprehend place of computer in information technologies  To understand working principles of computer hardwares  To be able to use Windows operating system  To be able to use Microsoft Word program  To be able to use Microsoft Excel program  To be able to use Microsoft PowerPoint program  To be able to use automation | | | | | | |
| **TEXTBOOK** | | | | | 1. BAL, Hasan Ç., "Bilgisayar ve İnternet Kullanımı", 11. Basım, Akademisyen Yayınevi, 2002 2. Halvorson, M and Young, J.M., “Microsoft Office 97 ile çalışmak”, Arkadaş Yayınevi, 1999 3. Borland, R., “Microsoft Word 97 ile çalışmak”, Arkadaş Yayınevi, | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Dodge, M.,Kinita, C. and Stinson ,C., “Microsoft Excel 97 ile çalışmak”, Arkadaş Yayınevi, 1997 2. Güneş, A., Erkan, K., Koyuncu, B., Meder, M., Sağıroğlu, Ş., Yıldırım, M. ve Yıldız, F., “Temel Bilgi Teknolojisi Kullanımı”, Pegem A Yayıncılık, 2003 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Hardware of computer, functions of hardware units |
| 2 | Windows XP, symbols in Windows desktop, Windows communication boxes, taskbar, general Windows operations, file and folder operatins |
| 3 | Windows XP, start menu, Windows passenger, care of computer and other operations, backup |
| 4 | Safety of data and viruses, potential threats for data and precautions, how to keep backup, cleaning viruses |
| 5 | Microsoft Word, file operations, text operations, page view, adding file, object and picture/wordart |
| 6 | Microsoft Word, working on tables, working on drawings, page layout, sending the text to more than one person, equation organizing, printouts from a file |
| 7 | Important points of Word program, adjustments and clues |
| 8 | To recognise Microsoft Excel working sheet and cells, create formula, moving between cells, choosing cells |
| 9 | Data, forming cells, page operations, functions |
| 10 | Mathematical process and create formula, comparison functions, logical functions |
| 11 | Mid-term exam – Use of automation |
| 12 | Text functions, trigonometric functions, creating graphic |
| 13 | Preparing Powerpoint presentation |
| 14 | Information on internet, connection to internet, making search in internet, internet concepts |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **x** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **x** |  |  |
| 4 | Life-long learning skills | **x** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **x** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **x** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **x** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **x** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **x** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **x** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **x** |  |  |

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

**Signature**:

**Signature**: 

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251511008 | **COURSE NAME** | Turkish Language I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 2 | | 0 | - | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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** | | | | | | 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 | Foreıgn 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, |
| 11 | Words specıes accordıng to meanıng feature |
| 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **x** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **x** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251211016 | **COURSE NAME** | Atatürk’s Pr. & The History of Rev. I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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** | | | | | | 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 | Exam Establishment of the Turkish law and educational system |
| 11 | National Struggle to Sakarya Victory; National Struggle in Education and Culture |
| 12 | Nationalism, Etatism and Populism. |
| 13 | Securalism, Revoluationism |
| 14 | General ecalutation. |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **x** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **x** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251211007 | **COURSE NAME** | Foreign Language I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 3 | | 0 | 0 | | | 0 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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 (Practise) | | | |  | |  |
| **FINAL EXAM** | | | | | |  | | | |  | | 60 |
| **PREREQUIEITE(S)** | | | | | | None | | | | | | |
| **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.  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 | Present Simple tense, questions, short answers HIS MUSIC, HER SHOW, THEIR CHARITIES |
| 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  | **X** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **x** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212001 | **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** | | | | **Field Crops**  **[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** | | | | | 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/ |
| 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **x** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **x** |  |  |
| 3 | Professional and ethical responsibility |  | **x** |  |  |  |
| 4 | Life-long learning skills |  |  | **x** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **x** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **x** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **x** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **x** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **x** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **x** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **x** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **x** |  |

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

**Signature**:



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212002 | **COURSE NAME** | Technical Drawing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 1 | | 2 | 0 | | | 2 | 4 | COMPULSORY (**√** ) ELECTIVE ( ) | | **Turkish** |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Garden Crops**  **[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** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | - Line Types and Its Use  -Basic Geometric Drawings  -Front view, top view, left side view of a shape  - Scale and dimensioning  -Section views and sectional drawings  -Perspective drawing | | | | | | |
| **COURSE OBJECTIVES** | | | | | -This course focuses on teaching technical drawing rule education, development of drawing ability  -Get ability to explain designed object with drawing, | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Teaching technical drawing rules education, drawing another shapes and objects using that rules. | | | | | | |
| **COURSE OUTCOMES** | | | | | -Learn the rules of Technical Drawing  -Gain ability to use Technical Drawing equipments  - Gain perception to three dimension | | | | | | |
| **TEXTBOOK** | | | | | All the resources releated Technical Drawing books can be used | | | | | | |
| **OTHER REFERENCES** | | | | | All the resources releated the Technical Drawing can be used. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | All the resources releated the Technical Drawing are used. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to Technical Drawing- Aim and Importance |
| 2 | Line types and Its uses |
| 3 | Basic Geometrical Drawing |
| 4 | Basic Geometrical Drawing |
| 5 | Orthographic Projections |
| 6 | Orthographic Projections |
| 7 | Scale- Dimensioning |
| 8 | Scale- Dimensioning |
| 9 | Midterm Exam |
| 10 | Section views and sectional drawings |
| 11 | Section views and sectional drawings |
| 12 | Perspective drawing |
| 13 | Perspective drawing |
| 14 | Perspective drawing |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **x** |  |  |  |  |
| 3 | Professional and ethical responsibility |  | **x** |  |  |  |
| 4 | Life-long learning skills |  | **x** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **x** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **x** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **x** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **x** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **x** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | **x** |  |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **x** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **x** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

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

**Signature**:



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 2 | | 0 | 0 | | | 2 | 3 | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **x** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **x** |  |  |
| 4 | Life-long learning skills |  | **x** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **x** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **x** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **x** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **x** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **x** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops | **x** |  |  |  |  |

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

**Signature**:

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**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212006 | **COURSE NAME** | Meteorology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** |
| II | 2 | | 0 | 0 | | | 2 | 3 | | COMPULSORY ( X)  ELECTIVE ( ) | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | **%** |
| Mid-Term | | | | 1 | | 40 |
| Quiz | | | |  | |  |
| Homework | | | |  | |  |
| Project | | | |  | |  |
| Report | | | |  | |  |
| Others (practice) | | | |  | |  |
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| **FINAL EXAM** | | | | |  | | | |  | | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Importence of meteorology, composition and layer of atmosphere, solar energy, temperature, frost, air humudity, precipitation, evaporation, air pressure, wind, clouds. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to teach atmosphere’s event and change, explain this event’s conclusion, describe effects on agriculture of meteorology and meteorological events. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learns the effects of different weather events on agriculture | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Know the meteorological events  2.Know how formation meteorological events  3. Know how effects agriculture of meteorological events | | | | | | |
| **TEXTBOOK** | | | | | Sezgin, F. 2001. Meteorology, Adnan Menderes University Agricultural Faculty, 85 p. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector and computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition of meteorology, history, weather events-agriculture relationships |
| 2 | Atmosphere |
| 3 | Solar energy, affecting factors on solar energy |
| 4 | Solar energy measurement, temperature |
| 5 | Affecting factors on temperature, thermic regime |
| 6 | Agricultural importance of temperature, temperature measuring |
| 7 | Frost, frost forecast methods, methods of fighting with frost event |
| 8 | Air humudity |
| 9 | Precipitation, precipitation types, precipitation shapes |
| 10 | Precipitation regimes, agricultural importance of precipitation, precipitation measuring |
| 11 | Evaporation, agricultural importance of evaporation, air pressure |
| 12 | Wind, wind kinds |
| 13 | Agricultural importance of wind |
| 14 | Clouds |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **x** |  |  |  |
| 3 | Professional and ethical responsibility |  | **x** |  |  |  |
| 4 | Life-long learning skills |  | **x** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **x** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **x** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  | **x** |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **x** |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **x** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **x** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **x** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **x** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

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| **Prepared by:** Doç.Dr. Nihal KAYAN | **Date:** |
| **Signature(s)**: |  |



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212013 | **COURSE NAME** | Microbiology |

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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** | | | | **Field Crops**  **[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 | | | | | 1 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (Practise) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | This course focuses on the general principles of microbiology and includes the following topics: Historical development of microbiology. Classification of microorganisms. General characteristics of the bacteria, yeasts, molds and macro fungi. Factors affecting the microbial growth. Control of microbial growth. Microbial metabolism. Microbial ecology. The roles of microorganisms in the elemental cycles in nature. application lesson, Introduction of some important tools and equipment used in microbiology laboratories, microbiological methods (painting and staining methods, isolation and identification, counting techniques); students gain practical issues such as isolation of microorganisms from natural sources is provided. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Introduce the diversity of microorganisms. To teach beneficial or harmful effects of microorganisms on the environment. To teach the role of microorganisms in biogeochemical cycles. To teach importance of soil, water and the airborne microorganisms. teach rules in the laboratory of microbiology and students gain practical issues such as isolation of microorganisms from natural resources is provided. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | After completing Microbiology Course, students will be able to interpret and evaluate a range of scientific literature in microbiology. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1-Describes the historical development of microbiology  2-Describes the classification and diversity of microorganisms  3-Compares the overall cell structure of prokaryotes and eukaryotes.  4-Describes the general morphological and biological characteristics of bacteria, yeasts, fungi and viruses.  5-Describes microbial metabolic pathways in general terms. Compares aerobic respiration, anaerobic respiration, and fermentation.  6-Lists the environmental factors required for microbial growth.  7-Describes the common methods used to control microbial growth.  8-Discusses the role of microorganisms in carbon, nitrogen and sulphur cycles. Describes the importance of these cycles for agriculture.  9. Microorganisms under a microscope using painting techniques to distinguish  10. Using the techniques of isolation and count of microorganisms in different environments | | | | | | | |
| **TEXTBOOK** | | | | | 1**.**Demirbağ Z. (2006). General Microbiology, Trabzon. 2 Demirbağ Z. and Demir İ. (2005).. General Microbiology Laboratory (2. Edition), Trabzon | | | | | | | |
| **OTHER REFERENCES** | | | | | Madigan MT, Martinko JM, Parker J. (2009) 11th Edition (translation: Çökmüş, C.). Brock Biology of Microorganisms. Palme Publishing, Ankara.  Arda M. (2000). Basic Microbiology Medisan, Ankara.  Bilgehan H. (1999). Basic Microbiology and Immunology. Barış Publications, Faculties Bookstore, İzmir.  Özçelik S (2009). General Microbiology (3th Edition). Süleyman Demirel University, Faculty of Agriculture. Isparta.Temiz A. (1996) General Microbiology Application TechniquesHatiboğlu Publishing Ankara.. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and data show, Introduction of some important tools and equipment used in microbiology laboratories | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The definition and history of Microbiology. Classification of microorganisms practice: Rules of the microbiology laboratory |
| 2 | Functional anatomy of prokaryotic and eukaryotic cells:- morphological and anatomical characteristics of prokaryotic cells practice: Introduction of some important tools and equipment used in microbiology laboratories |
| 3 | Functional anatomy of prokaryotic and eukaryotic cells:- morphological and anatomical characteristics of prokaryotic cells practice: microbiological methods (Gram dyeing) |
| 4 | Functional anatomy of prokaryotic and eukaryotic cells:- morphological and anatomical characteristics eukaryotic cells practice: investigation mold |
| 5 | General characteristics of fungi practice: investigation yeasts |
| 6 | General characteristics of viruses. practice: microbiological methods (Sports dyeing) |
| 7 | Microbial growth and growth curves practice: microbiological methods (counting techniques) |
| 8 | Environmental factors required for microbial growth practice: Nutritional requirements of microorganisms |
| 9 | Methods *to* control microbial growth*: 1.* Physical*.* Methods *practice: Determination of biochemical properties of microorganisms* |
| 10 | Methods *to* control microbial growth*: 2.* Chemical Methods *practice: microbiological methods (isolation and identification)* |
| 11 | Types of microbial metabolism: aerobic and anaerobic respiration practice: microbiological methods (isolation and identification) |
| 12 | Types of microbial metabolism: fermentation practice: investigation microorganisms in our environment |
| 13 | Microbial ecology: interactions between microorganisms and their environment practice: investigation microorganisms in our environment |
| 14 | Microbial ecology: role of microorganisms in elemental cycles practice: Techniques to obtain pure culture |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **x** |  |  |  |
| 3 | Professional and ethical responsibility |  | **x** |  |  |  |
| 4 | Life-long learning skills |  | **x** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **x** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **x** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **x** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **x** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **x** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **x** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **x** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops | **x** |  |  |  |  |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212014 | **COURSE NAME** | Agricultural Ecology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| II | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **x** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **x** |  |  |  |  |
| 3 | Professional and ethical responsibility |  | **x** |  |  |  |
| 4 | Life-long learning skills | **x** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **x** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **x** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **x** |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | **x** |  |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **x** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **x** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **x** |  |  |

**Instructor(s):** **:** Prof.Dr. Ali KOÇ

Doç.Dr. Nihal KAYAN

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212009 | **COURSE NAME** | Turkish Language II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| II | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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)** | | | | | 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 | | | | | | | |

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| **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, V |
| 7 | Notify in written VI |
| 8 | Honorifics |
| 9 | Official correspondence |
| 10 | Scientific literature |
| 11 | Scientific literature |
| 12 | Verbal lecture |
| 13 | Effectıve presentatıon skılls |
| 14 | Sample letters |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **x** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **x** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212015 | **COURSE NAME** | Principles of Ataturk and Recent Turkish History II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| II | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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** | | | | | | 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 | Foreign Policy of Turkish Republic |
| 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **x** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **x** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251212011 | **COURSE NAME** | Foreign Language II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| II | 3 | | 0 | 0 | | | 0 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | **Field Crops**  **[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** | | | | | | 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.  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 | 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 |
| 6 | Before, After, Everyday activities WHAT TIME DO YOU GET UP ? |
| 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, |
| 11 | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  | **X** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **x** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):**

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251213010 | **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** | | | | **Field Crops**  **[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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **x** |  |  |  |
| 3 | Professional and ethical responsibility | **x** |  |  |  |  |
| 4 | Life-long learning skills | **x** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **x** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **x** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **x** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **x** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **x** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **x** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **x** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **x** |  |  |

**Instructor(s):** Asst.Prof.Dr. Yasemin GEDİK **Signature**: **Date:** 22.11.2017

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251213019 | **COURSE NAME** | Genetics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **x** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **x** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **x** |  |  |
| 4 | Life-long learning skills |  | **x** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **x** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **x** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **x** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **x** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **x** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **x** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **x** |  |  |

**Instructor(s):** Asst.Prof.Dr. Muhammet KAYA **Signature**: **Date:**

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251213012 | **COURSE NAME** | AGRICULTURAL ECONOMICS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (x ) ELECTIVE ( ) | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | 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., 2013. Agricultural Economics, Ekin Publishing, Bursa 2013.  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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **X** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **X** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **X** |  |  |  |

**Instructor(s):** Dr. Nihal CAN AĞIRBAŞ **Signature**: D**ate:** 21.11.2017

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251213013 | **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** | | | | **Field Crops**  **[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** | | | | | 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 | Canned foods techniques |
| 7 | Milk 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 |
| 15,16 | 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **X** |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  | **X** |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **X** |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **X** |  |  |  |

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

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251213018 | **COURSE NAME** | Agricultural Structures and Irrigation |

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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** | | | | **Field Crops**  **[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** | | | | | 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 relations |
| 2 | Water intake rate of soil |
| 3 | Evapotranspration |
| 4 | Plant coeffecient |
| 5 | Irrigation yield |
| 6 | Need of irrigation water |
| 7 | Irrigation time planning |
| 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **X** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **X** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **X** |  |  |  |

**Instructor(s):** Asst. Prof. Ertuğrul KARAŞ **Signature**: **Date:** 

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | **251213015** | **COURSE NAME** | Landscape Architecture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | 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, Garden Flowers, 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 | Use of Plant Material in Landscape Architecture |
| 5 | Landscape Design and Landscape Design Stages |
| 6 | Landscape Planning and Landscape Planning Stages |
| 7 | Gymnospermae Plants and Dendrological Properties |
| 8 | Gymnospermae Plants and Dendrological Properties |
| 9 | Planting Principles |
| 10 | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **X** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  | **X** |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **X** |  |  |  |

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

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251213016 | **COURSE NAME** | Horticulture |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | 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 | 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 |
| 15,16 | 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **X** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **X** |  |  |  |

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



**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251213017 | **COURSE NAME** | Professional Practice I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| III | 0 | | 4 | 0 | | | 0 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 100 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The use of theoretical knowledge in practice. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aim to transfer the theoretical knowledge they have learned to the practice. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn practice applications in Agriculture Engineering | | | | | | | |
| **COURSE OUTCOMES** | | | | | Cool season field crops plants  Soil preparation,  To learn sowing,  To identify agricultural machinery and equipments  To identify field crops plants  To identify the problems in field crops production and produce solutions to problems  Using the knowled gained in the practise in lifetime | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Soil preparation and cultivation |
| 2 | Soil preparation and cultivation |
| 3 | Sowing of cool season cereals |
| 4 | Sowing of cool season cereals |
| 5 | Sowing of winter industrial crops |
| 6 | Sowing of winter industrial crops |
| 7 | Sowing of cool season edible legume crops |
| 8 | Sowing of cool season edible legume crops |
| 9 | Sowing of forage crops |
| 10 | Sowing of forage crops |
| 11 | Emergence surveying |
| 12 | Emergence surveying |
| 13 | Evaluation |
| 14 | Storage and conservation of oilseed crops |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  | **X** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **X** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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



**ESOGÜ Field Crops Department**

**Course Information Form**

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| SEMESTER | Fall |

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| **COURSE CODE** | 251213008 | **COURSE NAME** | Foreign Language III |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 0 | 3 | COMPULSORY (x) ELECTIVE ( ) | | English |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | 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, Elementary 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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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Linking Ideas:present and past - IMAGES |
| 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 | Present Simple tense, questions, short answers HIS MUSIC, HER SHOW, THEIR CHARITIES |
| 12 | Present simple, DO YOU HAVE A BIG FAMILY ? |
| 13 | Present Simple, Wh questions MEET YOUR PERFEC PARTNER |
| 14 | Be going to for plans – THE PERFECT HOLIDAY |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **X** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **X** |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | X |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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| **Instructor(s):** | D**ate: Signature(s)**: |
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**ESOGÜ Field Crops Department**

**Course Information Form**

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| SEMESTER | FALL |

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| **COURSE CODE** | 251313020 | **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** | | | | **Field Crops**  **[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 | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **X** |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  | **X** |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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

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**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251214009 | **COURSE NAME** | Animal Production |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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)** | | | | | 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. | | | | | | |

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| **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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **X** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):** Asst. Prof. Dr. Zekeriya Kıyma **Signature**: **Date:**

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 2512140121 | **COURSE NAME** | Agricultural Extension and Communication |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 4 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | Definition of agricultural extension, effects to rural development, rural sociology, 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. Değirmenci, Y., Manyaz, İ., Güzelaydın, I., Erkuş, E., Koçak, F., Arı, B., 2015. Tarımsal Yayım ve Danışmanlık, Ankara 2. Özkaya, T., 1996. Tarımsal Yayım ve Haberleşme. Ege Üniversitesi, Ziraat Fakültesi Yayınları, Yayın No: 520, Bornova,İzmir. 3. Armağan, G., Tarımsal Yayım ve Haberleşme Ders Notları (2011) | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Ceylan, C., 2005. Yayımcı Rehberi, TKB Yayım Dairesi Başkanlığı, Tarımsal Yayım Serisi, 2005/1. 2. Ceylan, C. Tarımsal Yayım İletişimi Ders Notu (2006/2007 Güz). 3. Ceylan, C.İ., Köksal, Ö., Akın, A. GAP Bölgesinde Tarımsal Üretim Sürecinde Bilgi İhtiyaçlarının Karşılanmasında Tarım Danışmanlarının Yeri. 4. Gümüşçü, A., 2004. Çiftçi Eğitim ve Tarımsal Yayım. T.E.A.E. Bakış, Sayı6, Eylül 2004. | | | | | | |
| **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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **x** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **x** |  |
| 3 | Professional and ethical responsibility | **x** |  |  |  |  |
| 4 | Life-long learning skills | **x** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **x** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **x** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **x** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **x** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **x** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | **x** |  |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **x** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **x** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **x** |  |  |

**Instructor(s):** Dr. Nihal CAN AĞIRBAŞ **Signature**:  **Date:**  20.11.2017



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251214011 | **COURSE NAME** | Research and Experimentatal Methods |

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| **SEMESTER** | | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | | |
| IV | | | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | | |
| **COURSE CATAGORY** | | | | | | | | | | | | | | | |
| **Basic Science** | | | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | | | 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 | | | | | | | | |
| **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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **x** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **x** |  |  |  |
| 3 | Professional and ethical responsibility |  | **x** |  |  |  |
| 4 | Life-long learning skills | **x** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **x** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **x** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **x** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **x** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **x** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **x** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **x** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **x** |  |  |  |

**Instructor(s):** Asst. Prof. Dr. Yasemin GEDİK **Signature**: **Date:** 22.11.2017

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251214012 | **COURSE NAME** | Agricultural Machinery |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | Basic concepts related to farm machinery, description of the power and work, classification, basic information about construction properties and working principles. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To inform students for the following subjects; development of agricultural mechanization; energy and agriculture; engines; tractors; soil tillage tool and machines; sowing; planting; fertilizing and husbandry machines; irrigation machines; crop protection machines; harvesters; machinery in animal production; greenhouse mechanization; farm machinery management. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To gain basic knowledge in farm machinery area, to recognize farm power and work with machines, to know construction and working principles and solve the problems in this area. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1 . Description of general concepts related to farm machinery  2 . Explanation of internal combustion engines, soil tillage tools and machinery, sowing; planting; fertilizing and husbandry machines; irrigation machines; crop protection machines; harvesters  3 . Selects suitable machines for farm enterprises  4 . Make plans in farm enterprises and enables machines to work in convenient times  5 . Has knowledges with usage and adjustments of farm machinery.  6 . Protects farm machines in good conditions and shape  7 . Solves problems related to farm machinery | | | | | | |
| **TEXTBOOK** | | | | | ERDOĞAN, D., 2005. Farm Machiney. Ankara Uni., Ziraat Fakültesi, Yayın No: 1548, Ders Kitabı: 501, Ankara Üniversitesi Basımevi, 142 s., Ankara | | | | | | |
| **OTHER REFERENCES** | | | | | -KESKİN, R. ve d. ERDOĞAN, 1984. Tarımsal Mekanizasyon. Ankara Ünv, Ziraat Fak. Yayınları: 927, Yardımcı Ders Kitabı: 262, 325 s., Ankara-SARAL, A. ve A. ONURBAŞ AVCIOĞLU, 2002 Motorlar ve Traktörler. Ankara Ünv, Ziraat Fak. Yayınları: 1529, Ders Kitabı: 482, 294 s., Ankara. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Course books, other books with course contents, semposium, etc. Power point presentations, catalogues; farm tools and machineries. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Machinery in agriculture |
| 2 | Energy and agriculture |
| 3 | Engines |
| 4 | Tractors |
| 5 | Soil tool and machinery |
| 6 | Planting machines |
| 7 | Fertilizing and husbandry machines |
| 8 | Irrigation machines |
| 9 | Crop protection machines |
| 10 | Harvesting machines |
| 11 | Threshing machines |
| 12 | Barn and poultry mechanization |
| 13 | Greenhouse mechanization |
| 14 | Selection and management of farm machinery |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **X** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **X** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):** Asst. Prof. Ertuğrul KARAŞ **Signature**: **Date:** 24.11.2017

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251214022 | **COURSE NAME** | SOIL SCIENCE |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| IV | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | To teach defining the soil formation and plant nutrition elements in soil | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To learn soil formation and the basic principles of plant nutrition, to get detailed information on plant nutrients, their functions on plants, interactions with each others. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Being informed on the basic theoretical knowledge of plant nutrition and to be capable of using this knowledge | | | | | | | |
| **COURSE OUTCOMES** | | | | | Able to define soil formation and soil morphology, Being informed on plant nutrition. | | | | | | | |
| **TEXTBOOK** | | | | | Özbek H., Kaya Z., Gök M ve Kaptan H. (1993). Toprak Bilimi**,** Ders Kitabı. No: 16. Çukurova Üniversitesi Ziraat Fakültesi, Adana.  Kacar B ve Katkat V. (2009). Bitki Besleme. Nobel Yayın, No:849. | | | | | | | |
| **OTHER REFERENCES** | | | | | Altınbaş Ü, Çengel M, Uysal H, Okur B, Okur N, Kurucu Y ve Delibacak S, (2008). Toprak Bilimi. Ders Kitabı. No: 557. Ege Üniversitesi Ziraat Fakültesi, İzmir. Horst Marschner, (1997). Mineral Nutrition of Higher Plants | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to soil science and description of soil. |
| 2 | Soil formation, soil morphology and horizons |
| 3 | Physical properties of soil |
| 4 | Soil water types. |
| 5 | Chemical properties of soil |
| 6 | Organic matter |
| 7 | Land Use and Soil environment relations |
| 8 | Soil and plant transport mechanisms of plant nutrition |
| 9 | The definition and history of plant nutrition |
| 10 | Classification of plant nutrients, |
| 11 | Macro nutrients (N, P, K, Ca, Mg, S) |
| 12 | Micro nutrients (Fe, Cu, Zn, Mn, Mo, B, CI…) |
| 13 | Beneficial nutrients (Se, Al,Na, Si, Co, et) |
| 14 | The relations of plant nutrient disorders and disease |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  | **X** |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **X** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):** Assoc. Prof.Dr. Nurdilek Gülmezoğlu **Signature**:  **Date:** 24.11.2017

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251214018 | **COURSE NAME** | Plant Physiology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (Lab assignments) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Structure of plant cells, plant water relations, the importance of basic plant nutrients in plant physiology, photosynthesis, nitrogen and sulfur assimilation, transport of photosynthesis products, Respiration, concepts in plant growth and development, factors affecting growth and development, growth and some important physiological processes in development, plant resistance to various environmental conditions. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Provide basic information about the physiology of plants. All the anabolic and catabolic events that occur in plants, and to explain how the growth and development occurs in plants. | | | | | | |
| **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** | | | | | - Learn stucture of plant cell, plant-water relations and transport of mineral substances in plants  - Understand water absorbtion and loss events and transport of organic substances in plants  - Understand photosynthesis, respiration and fermentation metabolism  - Learn knowledge nitrogen metabolism in plants  - Learn plant growth and development, and their interactions with plant hormones  - Understand plant physiological response to environmental stress and their signal transduction ways in plants | | | | | | |
| **TEXTBOOK** | | | | | - Bitki Fizyolojisi (Burhan Kacar, A. Vahap Katkat, Şule Öztürk), 4. Baskı, Nobel Yayınları | | | | | | |
| **OTHER REFERENCES** | | | | | Bitki Fizyolojisi (Taiz&Zeiger, Çeviri Editörü: İsmail Türkan, Palme Yayıncılık).  Plant Physiology (Salisbury&Ross, Wadsworth Publishing) | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The structure of plant cells |
| 2 | Enzymes and their functions |
| 3 | Relationship between water and the cell, water collection and transport, water loss |
| 4 | Plant nutrient elements |
| 5 | Collection and transport of nutrient elements |
| 6 | Collection and transport of nutrient elements |
| 7 | Photosynthesis, |
| 8 | Nitrogen and sulphur assimilation |
| 9 | Transportation of photosynthesis products |
| 10 | Respiration |
| 11 | Respiration |
| 12 | Growth, growth movements, |
| 13 | Plant hormones and their functions |
| 14 | Stress physiology |
| 15,16 | Fınal 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  | **X** |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):** Prof.Dr. Murat OLGUN **Signature**:

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251214015 | **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 | 3 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | 1.Agricultural Chemicals. 1991. Thomson, W. T. Book IV-Fungicides, Thomson Puplication, California. 2.Agricultural Chemicals. 1991. Thomson, W. T. Book III-Miscellaneous Agricultural Chemicals, Thomson Puplication, California. 3.Agricultural Chemicals. 1991. Thomson, W. T. Book I-Insecticides, Thomson Puplication, California. 4.The Pesticide Manual. 1995. Tomlin, C. Incorporating the Agrochemicals Handbook, Crop Protection Publication, U.K.  5.Tarımsal Zararlılarla Savaş Yöntem ve İlaçları. 1993. Öncüer, C. Ege Üniversitesi Basımevi, İzmir.  6.Tarımda İlaçlı Mücadelenin Temel Prensipleri. 1996. Kaygısız, H. 7.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 | 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **X** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  | **X** |  |  |  |
| 4 | Life-long learning skills |  | **X** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **X** |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):** Assoc.Dr. Coşgun GÜÇLÜ **Signature**: **Date:**



**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251214016 | **COURSE NAME** | Professional Practice II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| IV | 0 | | 4 | 0 | | | 0 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 100 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The use of theoretical knowledge in practice. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aim to transfer the theoretical knowledge they have learned to the practice. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn practice applications in Agriculture Engineering | | | | | | | |
| **COURSE OUTCOMES** | | | | | Warm season field crops plants  Soil preparation,  To learn sowing,  To identify agricultural machinery and equipments  To identify field crops plants  To identify the problems in field crops production and produce solutions to problems  Using the knowled gained in the practise in lifetime | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Soil preparation and cultivation |
| 2 | Soil preparation and cultivation |
| 3 | Sowing of forage crops |
| 4 | Sowing of forage crops |
| 5 | Sowing of edible legume crops |
| 6 | Sowing of edible legume crops |
| 7 | Sowing of industrial crops |
| 8 | Sowing of industrial crops |
| 9 | Sowing of temperate cereals |
| 10 | Sowing of temperate cereals |
| 11 | Emergence surveying |
| 12 | Emergence surveying |
| 13 | Cultural practices in plants |
| 14 | Cultural practices in plants |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  | **X** |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **X** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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



**ESOGÜ Field Crops Department**

**Course Information Form**

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| SEMESTER | Spring |

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| **COURSE CODE** | 251214007 | **COURSE NAME** | Foreign Language IV |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 3 | | 0 | 0 | | | 0 | 3 | COMPULSORY (x) ELECTIVE ( ) | | English |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[if it contains considerable design, mark with (√)]** | | | | | **Social Science** |
| **√** | |  | | | |  | | | | |  |
| **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** | | | | | 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, Elementary 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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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Linking ideas; present and past İMAGES |
| 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 | Present simple, Wh questions, Before, After, Everyday activities WHAT TIME DO YOU GET UP ? |
| 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 | Be going to for plans – THE PERFECT HOLIDAY |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **X** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **X** |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | X |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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| **Instructor(s):** | **Date: 28.11.12 Signature(s)**: |

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| SEMESTER | Spring |

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| **COURSE CODE** | 251214019 | **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** | | | | **Field Crops**  **[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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **X** |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  | **X** |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  | **X** |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251215011 | **COURSE NAME** | Field Crops Biotechnology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 2 | 0 | | | 3 | 5 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (………) | | | | | 1 | | 10 |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **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 disease-free plants by tissue culture and micropropagation, basic principles of plant transformation by *Agrobacterium,* direct gene transfer techniques in plant transformation, production of herbicide-tolerant and insect-resistant transgenic field crops | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to teach the recent applications of plant biotechnology in field crops | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Recent applications of plant biotechnology to improve the quality and yield of field crops will be acquired | | | | | | | |
| **COURSE OUTCOMES** | | | | | Learning the utilization of the plant cell and tissue culture in field crop production  Learning the use of gene transfer techniques to crop plants  Learning the development of insect and herbisite-resistant filed crops.  Experiencing the utilization of biotechnology in plant breeding | | | | | | | |
| **TEXTBOOK** | | | | | Babaoğlu, M., Gürel, E., Özcan, S. (2004) Bitki Biyoteknolojisi I: Doku Kültürü ve Uygulamaları. S.Ü. Vakfı Yayınları, Konya. Özcan, S., Gürel, E., Babaoğlu, M. (2004) Bitki Biyoteknolojisi II: Genetik Mühendisliği ve Uygulamaları. S.Ü. Vakfı Yayınları, Konya | | | | | | | |
| **OTHER REFERENCES** | | | | | -Slater, A., Scott, N., Fowler, M. (2004) Plant Biotechnology. Oxford University Press, New York.  Oksman-Caldentey, K. M. and Barz W.H. (2006) Plant Biotechnology and Transgenic Plants. Plant Biotechnology Book from C.H.I.P.S., USA Halford, N. (2006) Plant Biotechnology: Current and Future Applications of Genetically Modified Crops. AgritechPublications, NY, USA. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Basic plant biotechnology laboratory | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and history plant tissue culture |
| 2 | Basic nutrient media used in plant tissue culture |
| 3 | Culture conditions and factors effecting tissue culture |
| 4 | Plant regeneration by organogenesis and embryogenesis |
| 5 | Protoplast culture and somatic hybridization 1 |
| 6 | Protoplast culture and somatic hybridization 2 |
| 7 | Haploid plant production and its use in plant breeding, Production of disease-free plants by tissue culture and micropropagation |
| 8 | *In vitro* germplasm conservation |
| 9 | Plant transformation by *Agrobacterium* |
| 10 | Direct gene transfer techniques in plant transformation |
| 11 | Development of herbicide-tolerant transgenic field crops |
| 12 | Development of insect-resistant transgenic field crops |
| 13 | Development of disease-resistant transgenic field crops |
| 14 | Production of transgenic plants in the world and their advantages and possible risks |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **X** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  | **X** |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  | **X** |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic | **X** |  |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):** Assoc. Prof. Dr. Süleyman AVCI

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251215012 | **COURSE NAME** | Genetic and Cytogenetic Essentials of Plant Breeding |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (**X**) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | Students have to be taken genetics course | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Examination of genetic and cytogenetic issues encountered in applications of plant breeding | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course objective is to give information about genetic and cytogenetic essentials of plant breeding as preparation for a course of special plant breeding. However, students make more concrete the previously taken genetic course | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Contributes to the basic principles of plant breeding. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To obtain information on the evolution of cultivated plants 2. Learns the differences between cultivars and wild species. 3. Knows the genetic and cytogenetic principles of plant breeding | | | | | | | |
| **TEXTBOOK** | | | | | Şehirali, S. ve M. Özgen, 2006. “Bitki Islahı” Ders Kitabı, A.Ü. Ziraat Fakültesi Yayınları, Anakara Üniversitesi Matbaası, Ankara.  Singh, Ram J. Plant cytogenetics, Crc Press. Boca Raton London New York Washington, D.C | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Elçi, Ş. 1994. Sitogenetikte araştırma yöntemleri ve gözlemler, YYÜ Yayınları 2. Sybenga, J. 1992. Cytogenetics in plant breeding. Springer-Verlag | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Concepts of Genetics and cytogenetics and the history |
| 2 | Structure of chromosome and gene and function |
| 3 | DNA structure and function |
| 4 | Sources of variation in cultivated plants |
| 5 | Heterosis |
| 6 | Cytogenetic applications in plant breeding |
| 7 | Incompatibility systems in plants and Infertility |
| 8 | Mutations |
| 9 | Between Qualitative genes relationships |
| 10 | Between quantitative genes relationships |
| 11 | Ploidy and autopolyploids |
| 12 | Allopolyploids |
| 13 | Aneuploidy, obtaining of addition lines |
| 14 | Aneuploidy, obtaining of substitution lines |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **X** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **X** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **X** |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding | **X** |  |  |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic | **X** |  |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |

**Instructor(s):** Assoc. Prof. Dr. Süleyman AVCI

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

**ESOGU Field Crops Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | AUTUMN |

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| **COURSE CODE** | 251215013 | **COURSE NAME** | SEED SCIENCE and TECHNOLOGY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 2 | 0 | | | 3 | 5 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | |  | | | | |  | | 50 |
| **PREREQUIEITE(S)** | | | | | **NONE** | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Seed, seed materials and vegetative reproduction materials, seed formation, development, germination and physiology, dormancy, viability and viability tests, seed processing and storage | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aims to teach seed morphology, chemical contents, the conditions required for seed germination, stages of seed germination, dormancy, seed viability and tests, seed processing technology | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn the structure, physiology and properties of seed and seed materials used in reproduction in field crops | | | | | | | |
| **COURSE OUTCOMES** | | | | | To knowledge about seed and seed material used in field crops production, learn the contents of the seed types and, understands the importance of seeds for cultivation | | | | | | | |
| **TEXTBOOK** | | | | | Şehirali S. 1997. Tohumluk ve Teknolojisi. Fakülteler Matbaası, 422s.  Sağsöz S. 1995. Tohumluk Bilimi. Atatürk Ü. Yayınları. Roberts E.H. 1974. Viability of Seeds. Chapman and Hall Ltd. London, 448 p. | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Seed and seed materials |
| 2 | Plant propagation |
| 3 | Fertilization and pollination |
| 4 | Seed formation and nutrient accumulation in seeds (cereals, legumes and oil seeds) |
| 5 | Dormancy and the factors causing dormancy in seeds |
| 6 | Germination and factors causing seed germination |
| 7 | Seed viability tests |
| 8 | Seed production ecology |
| 9 | Seed production system |
| 10 | Seed cleaning and drying |
| 11 | Seed storage |
| 12 | Factors affecting the viability of seed during storage |
| 13 | Changes viability loss in stored seeds |
| 14 | Seed disinfecting |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **X** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  | **X** |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

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

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251215014 | **COURSE NAME** | Grass Forage Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | | **Laboratory** | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** | |
| V | 2 | | 2 | | 0 | | 3 | 4 | | COMPULSORY (X) ELECTIVE ( ) | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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) | | | | | 1 | | |  |
| **FINAL EXAM** | | | |  | | | | | 1 | | | 60 |
| **PREREQUIEITE(S)** | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | Agriculture of cultivated grass species as forage crops | | | | | | | | |
| **COURSE OBJECTIVES** | | | | Identification and cultivation techniques of grasses forage species | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | The places of grasses species in Turkey and World, animal nutrition, soil and water conservation roles, botanical features, soil and climate willingness, planting, maintenance, harvesting and storage | | | | | | | | |
| **COURSE OUTCOMES** | | | | 1. Problems of grasses plant species and solution proposal  2. Diagnosis of grasses species  3. The importance of grasses  4. Feed value, advantages and disadvantages  5. Grasses forage crops aquaculture techniques  6. Silage plants and silage construction | | | | | | | | |
| **TEXTBOOK** | | | | Açıkgöz, E., Yem Bitkileri.2001 Uludağ Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü. Uludağ Üniversitesi Güçlendirme Vakfı Yayın No:182. | | | | | | | | |
| **OTHER REFERENCES** | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | |  | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of gramineae family |
| 2 | Differences of between grasses and legumes |
| 3 | Grasses species physiology and ecology |
| 4 | Red canarygrass |
| 5 | Wheatgrass species |
| 6 | Wheatgrass species |
| 7 | Bermudagrass |
| 8 | Avena, Hordeum, Koeleria and Agrostis species |
| 9 | Ryegrass |
| 10 | Orchardgrass |
| 11 | Smooth bromegrass |
| 12 | Fescue |
| 13 | Silage plants |
| 14 | Panicoideae |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  | **X** |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  | **X** |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **X** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  | **X** |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **X** |  | **X** |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  | **X** |  |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  | **X** |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  | **X** |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  | **X** |  |

**Instructor(s):** Prof. Dr. Halil İbrahim ERKOVAN

**Signature: Date:**

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251215015 | **COURSE NAME** | Pests of Field Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 1 | | 2 | 0 | | | 2 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | Knowledge pests of about cereals, industrial, forage crops, such as snails, nematodes, mites, insects and other groups, their morphological, biological properties, symptoms of damage and their natural enemies. Control methods (cultural measures, physical and biological control, biotechnical methods and chemical control), key pests, integrated pest management method and information and implementation of Integrated pest management in our country and in the world. Side effects of the pest control methods. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aims to describe of pest species on field crops and to teach pest morphology, biology, damage, their natural enemies, control methods and advance of facility to applying control methods | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn the pest species and control methods;  To select correct methods and apply | | | | | | | |
| **COURSE OUTCOMES** | | | | | Learn basic theoretical knowledge about the pest species field crops  Learn control methods  Learn side effects of control methods to environmental | | | | | | | |
| **TEXTBOOK** | | | | | Özbek, H., ve R. Hayat, 2003. Tahıl, Sebze, Yem ve Endüstri Bitki Zararlıları. Atatürk Üniversitesi Ziraat Fakültesi Yayınları No: 340, Ziraat Fakültesi Ofset Tesisi, Erzurum, 320 s. | | | | | | | |
| **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 3. T. C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara, 332 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, 634 pp.. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, power point presentations, books, pest samples, pest damaged plant samples | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Chordata, Mollusca, Crustacea |
| 2 | Nematoda |
| 3 | Arthropoda, Arachnida, Prostigmata; Arthropoda, Insecta, Orthoptera |
| 4 | Hemiptera |
| 5 | Hemiptera |
| 6 | Hemiptera |
| 7 | Hemiptera |
| 8 | Thysanoptera, Coleoptera |
| 9 | Coleoptera |
| 10 | Coleoptera |
| 11 | Lepidoptera |
| 12 | Lepidoptera |
| 13 | Lepidoptera |
| 14 | Diptera |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  | **X** |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **X** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **X** |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **X** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops | **X** |  |  |  |  |

**Instructor(s):** Assoc. Prof. Dr. Coşkun GÜÇLÜ

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251215018 | **COURSE NAME** | Professional Foreign Language I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | | | | 1 | | 20 |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | Foreign Language I and II | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Learning professional foreign language and study techniques, reading professional texts in English, comprehension and translation techniques, sentence structures, times and patterns used in academic papers, sample text investigation about field crops, tillage, sowing, hoeing, fertilization, irrigation, harvest and blend and vocabulary | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aims to read and understand the articles about field crops cultivation and to establish an international communication | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To gain ability to read and understand English articles related to the field crops | | | | | | | |
| **COURSE OUTCOMES** | | | | | To knowledge English vocabulary and language about Field crops’ tillage, planting, fertilizing and irrigation etc. | | | | | | | |
| **TEXTBOOK** | | | | | Academic articles and books on topics to be processed | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | English-Turkish, Turkish - English Dictionary | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Sentence structures in English |
| 2 | Sentence structures used in academic papers |
| 3 | Structure and development of academic articles |
| 4 | Academic articles for fertilization and pollination biology of plants and |
| 5 | Cereals and edible grain legumes in English and usages in the text |
| 6 | Cereals and edible grain legumes in English and usages in the text |
| 7 | Industrial and Forage crops in English and usage in the text |
| 8 | Vocabulary and translation methods for tillage in field crops cultivation |
| 9 | Vocabulary and translation methods for sowing in field crops cultivation |
| 10 | Vocabulary and translation methods for hoeing in field crops cultivation |
| 11 | Vocabulary and translation methods for irrigation in field crops cultivation |
| 12 | Vocabulary and translation methods for fertilization in field crops cultivation |
| 13 | Vocabulary and translation methods for harvest and blend in field crops cultivation |
| 14 | Tools and machinery used in field crops |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **X** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  | **X** |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **X** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |

**Instructor(s):** Assist. Prof. Dr. Zehra AYTAÇ

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251215019 | **COURSE NAME** | Professional Practice III |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 0 | | 4 | 0 | | | 0 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 100 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The use of theoretical knowledge in practice. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aim to transfer the theoretical knowledge they have learned to the practice. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn practice applications in Agriculture Engineering | | | | | | | |
| **COURSE OUTCOMES** | | | | | Cool season field crops plants  Soil preparation,  To learn sowing,  To identify agricultural machinery and equipments  To identify field crops plants  To identify the problems in field crops production and produce solutions to problems  Using the knowled gained in the practise in lifetime | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Soil preparation and cultivation |
| 2 | Soil preparation and cultivation |
| 3 | Sowing of cool season cereals |
| 4 | Sowing of cool season cereals |
| 5 | Sowing of winter industrial crops |
| 6 | Sowing of winter industrial crops |
| 7 | Sowing of cool season edible legume crops |
| 8 | Sowing of cool season edible legume crops |
| 9 | Sowing of forage crops |
| 10 | Sowing of forage crops |
| 11 | Emergence surveying |
| 12 | Emergence surveying |
| 13 | Evaluation |
| 14 | Storage and conservation of oilseed crops |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills | **X** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  | **X** |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |

**Instructor(s):**

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216022 | **COURSE NAME** | Edible Legumes |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** |
|  | 2 | | 2 | 0 | | | 3 | 3 | | COMPULSORY ( X)  ELECTIVE ( ) | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | **%** |
| Mid-Term | | | | 1 | | 30 |
| Quiz | | | |  | |  |
| Homework | | | |  | |  |
| Project | | | |  | |  |
| Report | | | |  | |  |
| Others (practice) | | | | 1 | | 20 |
|  | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Importance of edible legumes at nutrition and crop rotation; economic importance of edible legumes in the world and Turkey; biological nitrogen fixation; bacterial inoculation; lentil, chickpea, bean, faba bean, pea, cowpea (economical importance, origins, morphological properties, chemical contents, adaptation,cultivation) | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to provide knowledge and ability to find scientific and practical solution to problems at growing edible legumes | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Recognize to edible legumes and learns to growing | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Know the importance of edible legumes  2. Know the morphological properties of edible legumes  3. Know the adaptation of edible legumes  4. Know the biological nitrogen fixation  5. Know the bacterial inoculation  6. Know the growing techniques of edible legumes | | | | | | |
| **TEXTBOOK** | | | | | Şehirali, S. 1988. Yemeklik tane Baklagiller, Ankara Üniversitesi Ziraat Fakültesi, Yayın No: 1089. | | | | | | |
| **OTHER REFERENCES** | | | | | Azkan, N. 2002. Yemeklik Tane Baklagiller, Uludağ Üniversitesi Ziraat Fakültesi, Yayın No: 40 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector and computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Importance of edible legumes at nutrition and crop rotation |
| 2 | Economic importance and adaptation of edible legumes |
| 3 | Biological nitrogen fixation |
| 4 | Nodule formation and influencing factors of nitrogen fiksasion, bacterial inoculation |
| 5 | Economical importance, origins, morphological properties, chemical contents, adaptation, importance of rotation of lentil |
| 6 | Cultivation of lentil and it’s diseases and pests |
| 7 | Economical importance, origins, morphological properties, chemical contents, adaptation, importance of rotation of chickpea |
| 8 | Cultivation of chickpea and it’s diseases and pests |
| 9 | Economical importance, origins, morphological properties, chemical contents, adaptation of bean |
| 10 | Cultivation of bean and it’s diseases and pests |
| 11 | Economical importance, origins, morphological properties, chemical contents, adaptation of faba bean |
| 12 | Cultivation of faba bean and it’s diseases and pests |
| 13 | Economical importance, origins, morphological properties, chemical contents, adaptation and cultivation of pea, pea’s diseases and pests. |
| 14 | Economical importance, origins, morphological properties, chemical contents, adaptation and cultivation of cowpea, cowpea’s diseases and pests. |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **X** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility | **X** |  |  |  |  |
| 4 | Life-long learning skills | **X** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **X** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

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| **Prepared by:** Assoc. Prof. Nihal KAYAN | **Date:** |
| **Signature(s)**: |  |



**ESOGÜ Field Crops Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216012 | **COURSE NAME** | Oilseed Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | Evaluation of oilseed crops in the World and Turkey husbandry, trade of oilseed crops and edible oils, classification of oilseed crops, soil and climatic requirements of oilseed crops, growth and development physiology, cultivation techniques and breeding of oilseed crops | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aims to identify the oilseed crops and to teach the cultivation, techniques and breeding of oilseed crops | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn the cultivation, technologies and breeding of oilseed crops | | | | | | | |
| **COURSE OUTCOMES** | | | | | Learn basic theoretical knowledge about the crops and vegetable oils Learn the cultivation and breeding of oilseed crops  Gain the seed production and hybrid seed production techniques  Learn seed storage and conservation of oilseed crops | | | | | | | |
| **TEXTBOOK** | | | | | Arıoğlu, H., 1999. Yağ Bitkileri Yetiştirme ve Islahı. Çukurova Ün. Ziraat Fakültesi Genel Yayın No: 220, Adana, Türkiye | | | | | | | |
| **OTHER REFERENCES** | | | | | Weiss, E.A. 1983. OilseedCrops. LeonordHillBooks, New York, USA.Gürbüz, B., M.D. Kaya ve A. Demirtola. 2003. Ayçiçeği Tarımı, Hasad Yayıncılık, 100 s.Carter, J. 1978. Sunflower Science and Technology. Wisconsin, USA. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Edible oils and importance of oilseed crops in the World and Turkey |
| 2 | Classification oilseed crops and edible oils |
| 3 | Basic knowledge on oilseed crops and edible oils and oil and fatty acid |
| 4 | Utilization and processing of oilseed crops |
| 5 | Uses and ecological requirements of sunflower |
| 6 | Sunflower cultivation and breeding |
| 7 | Soybean cultivation and breeding |
| 8 | Sesame cultivation and breeding |
| 9 | Rapeseed/canola cultivation and breeding |
| 10 | Safflower cultivation and breeding |
| 11 | Groundnut cultivation and breeding |
| 12 | Other oilseed crops and utilization |
| 13 | Genetics and biotechnology of oilseed crops |
| 14 | Storage and conservation of oilseed crops |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Prof. Mehmet Demir KAYA

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216013 | **COURSE NAME** | Stimulants Plants |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VI | 2 | | 2 | 0 | | | 3 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | | | | 2 | | 10 |
| Homework | | | | | 1 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Course contents contains: tobacco plant, anise, hops, tea and other minor crops; their introduction and cultivation. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim is to give detailed information of tobacco and other stimulant plants which have economical importance for Turkey (anise, tea, and hops) | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. have general information about stimulant plants 2. learn tobacco in details, its cultivation 3. learn anise in details, its cultivation 4. learn hops in details, its cultivation 5. learn tea plant in details, its cultivation | | | | | | | |
| **TEXTBOOK** | | | | | Ceylan,A. Tıbbi Bitkiler II (Uçucu Yağ İçerenler). E.Ü. Ziraat Fakültesi yayınları no.481, 188s, Bornova-İzmir.  Keyf Bitkileri-I (2003) (Prof.Dr. Celal Er ve Dr. Mustafa Yıldız) Keyf Bitkileri-II (2010)(Prof.Dr. Bilal Gürbüz) | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of stimulant plants |
| 2 | The historical development of tobacco, systematic, and distribution |
| 3 | Botanical characteristics of tobacco plants |
| 4 | The chemical structure of the tobacco leaves |
| 5 | General properties of tobacco according to geographical regions |
| 6 | Ecology of tobacco of tobacco |
| 7 | Cultivation and adaptation |
| 8 | Anise production and trade in Turkey |
| 9 | Anise cultivation, harvesting and processing |
| 10 | Hops production and trade in Turkey |
| 11 | Hops cultivation, harvesting and processing |
| 12 | Tea production and trade in Turkey |
| 13 | Tea cultivation, harvesting and processing |
| 14 | A brief description of other minor stimulant crops |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Assist. Prof. Duran KATAR

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

**ESOGÜ Field Crops Department**

**COURSE INFORMATION FORM**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216023 | **COURSE NAME** | Forage Legumes |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 6 | 2 | | 2 | 0 | | | 3 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | |  | | | | X | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | |  | | 30 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (Oral examination) | | | | |  | | 20 |
| **FINAL EXAM** | | | | |  | | | | |  | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | This course teaches agricultural and morphological properties of Forage Legumes widely grown in the world and Turkey | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course objective is to give information about an important Forage Legumes species for agriculture with plant characteristics, climate and soil characteristics, usage and cultivation techniques | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | With this course learns to Forage Legumes used animal feding. | | | | | | | |
| **COURSE OUTCOMES** | | | | | |  |  | | --- | --- | |  | 1. Recognize the important Forage Legumes  2. About cultivation of fodder crops have the latest information  3. Learns the fundamentals of the cultivation of Forage Legumes |   4. Learns the importance of cultivation of fodder crops for country | | | | | | | |
| **TEXTBOOK** | | | | | Açıkgöz, E., Yem Bitkileri.2001 Uludağ Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü. Uludağ Üniversitesi Güçlendirme Vakfı Yayın No:182.  Avcıoğlu, R., Hatipoğlu, R., Karadağ, Y. 2009. Yem Bitkileri. T.c. Tarım ve Köyişleri Bakanlığı, Tarımsal Üretim ve Geliştirme Genel Müdürlüğü. | | | | | | | |
| **OTHER REFERENCES** | | | | | Elçi, Ş., 2005. Baklagil ve Buğdaygil Yem Bitkileri. T.C. Tarım ve Köyişleri Bakanlığı Yayınları. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The current status of cultivation of Forage Legumes in the world and in Turkey, problems and solutions |
| 2 | The importance of Forage Legumes and taxonomy |
| 3 | In the Forage Legumes, importance of nitrogen fixation and formation by *Rhizobium* bacteria |
| 4 | Importance of *Medicago sativa,* general description of species, soil and climate requirements, planting and maintenance, fodder production |
| 5 | Importance of *Onobrychis sativa*, soil and climate requirements, planting and maintenance |
| 6 | Importance of *Vicia* sp.*,* general description of species, soil and climate requirements, planting and maintenance, fodder production |
| 7 | Importance of *Trifolium* sp.*,* general description of species, soil and climate requirements, planting and maintenance, fodder production-1 |
| 8 | Importance of *Trifolium* sp.*,* general description of species, soil and climate requirements, planting and maintenance, fodder production-2 |
| 9 | Importance of *Melilotus* sp.*,* general description of species, soil and climate requirements, planting and maintenance, fodder production |
| 10 | Importance of *Lotus corniculatus,* soil and climate requirements, planting and maintenance, fodder production. |
| 11 | Importance of *Astragalus cicer* and *Lathyrus sativus*, soil and climate requirements, planting and maintenance, fodder production. |
| 12 | Importance of *Pisum sativum* ssp. *arvense*, soil and climate requirements, planting and maintenance, fodder and seed production. |
| 13 | Importance of *Glycine max* and *Trigonella foenum-graecum* |
| 14 | Importance of *Lupinus* sp. and *Coronilla* sp. |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Assoc. Prof. Dr.: Süleyman AVCI

**Signature**: **Date:** 17.11.2017

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216015 | **COURSE NAME** | Temperate Cereals |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VI | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (practise) | | | | | 1 | | 20 |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Importance of hot season cereals for human and animal nutrition, morphology and physiology of hot season cereals, growing stages, quality factors, breeding methods, disease and pests. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give information in characteristic breeding of hot season cerals. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | **1-** Selection genotypes, suitable to area.  **2-** Selection of suitable production techniques for genotypes.  **3-** Harvesting, drying, storage technologies | | | | | | | |
| **COURSE OUTCOMES** | | | | | **1-** To acquire and use learning skills in morphology, physiology and growth in hot season cereals.  **2-** To acquire and use learning skills in practice. | | | | | | | |
| **TEXTBOOK** | | | | | Kün, E. 1985. Sıcak İklim Tahılları. AÜZF Yy: 953, Ders kitabı: 275, Ankara, 317 s. | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.- Aldrich, S.R. , W.O. Scott and E.R. Leng. 1975. Wobern Corn Production. 2nd. Rd., A and L Publication, USA, 378 p.2. Poehlman, J. M. Breeding Field Crops, Prof. Emertius Univ. of Misouri, Columbia. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Cereal morphology |
| 2 | Adaptation and importance of cereals. |
| 3 | Economic importance, morphology, taxonomy of corn. |
| 4 | Adaptation and culture of corn. |
| 5 | Standardisation of corn |
| 6 | Breeding of corn |
| 7 | Economic importance, morphology, taxonomy, Adaptation and culture of rice |
| 8 | Adaptation and culture of rice |
| 9 | Rice breeding |
| 10 | Rice standardisation |
| 11 | Economic importance, morphology, taxonomy of millet |
| 12 | Breeding and culture of millet |
| 13 | Breeding and culture of millet |
| 14 | The other cereals. |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Prof. Murat OLGUN

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216016 | **COURSE NAME** | Diseases of Field Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 1 | | 2 | 0 | | | 2 | 2 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (Lab assignments) | | | | | 1 | 10 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | To teach pathogens, symptoms and management methods of the diseases in cereals, industrial crops and forage crops in Turkey | | | | | | |
| **COURSE OBJECTIVES** | | | | | The general information about field crops’ diseases, biology, management methods will be given. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn the important diseases and factors affecting the yield and quality of field crops. | | | | | | |
| **COURSE OUTCOMES** | | | | | Knows the economic importance of plant diseases  Learns the symptoms of diseases  Learns the adverse effects of the pathogens and diseases on yield and quality of the field crops  Knows the factors inducting diseases in field crops  Learns field and laboratory works on diagnostics of diseases  Knows the methods against to diseases in field crops plants | | | | | | |
| **TEXTBOOK** | | | | | 1. Tarımsal Savaşım Yöntem ve İlaçları. 1993. Delen, N. Ege Üniversitesi Ziraat Fakültesi Ofset Basımevi, İzmir. 2. Erdiler, G. 1985. Fitopatoloji. A.Ü.Z.F. Ders Kitabı, 228s | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Economic importance of diseases |
| 2 | Factors inducting the diseases (virus, bacteria, fungi) |
| 3 | Diseases of wheat and their control |
| 4 | Diseases of barley and their control |
| 5 | Diseases of maize and their control |
| 6 | Diseases of maize and their control |
| 7 | Diseases of rice and their control |
| 8 | Diseases of chickpea and their control |
| 9 | Diseases of lentil and bean, and their control |
| 10 | Diseases of sunflower and their control |
| 11 | Diseases of potato and their control |
| 12 | Diseases of sugar beet and their control |
| 13 | Diseases of cotton and their control |
| 14 | Diseases of alfalfa and their control |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):**

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



**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216019 | **COURSE NAME** | Professional Foreign Language II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VI | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | | | | 1 | | 20 |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Learning foreign language and study techniques, understanding reading, comprehension and translation used in academic writings, reading and understanding techniques in genetics, cytogenetic, field crops, self-open pollination, flower morphology, tissue culture, gene transfer | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach basic concepts in professional foreign language | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To give opportunity to strengthen concepts in professional foreign language  To follow new developments in related subjects | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. to enhace the knowledge and ability of Professional English Language  2. to follow the development in Professional English Language | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Reading, comprehension and translation techniques in subjects written in English |
| 2 | Reading, comprehension and translation techniques in subjects written in English |
| 3 | Reading, comprehension and translation techniques in subjects written in English |
| 4 | Reading, comprehension and translation techniques in subjects written in English |
| 5 | Tenses used in academic writing |
| 6 | Tenses used in academic writing |
| 7 | Field crops and plant breeding |
| 8 | Genetic |
| 9 | Cytogenetic |
| 10 | Flowering morphology and pollination biology |
| 11 | Tissue culture |
| 12 | Tissue culture |
| 13 | Gene transferring |
| 14 | Vocabulary |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **X** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** .Prof. Murat OLGUN

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

** ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216020 | **COURSE NAME** | Professional Practice IV |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VI | 0 | | 4 | 0 | | | 0 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 100 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The use of theoretical knowledge in practice. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aim to transfer the theoretical knowledge they have learned to the practice. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn practice applications in Agriculture Engineering | | | | | | | |
| **COURSE OUTCOMES** | | | | | Warm season field crops plants  Soil preparation,  To learn sowing,  To identify agricultural machinery and equipments  To identify field crops plants  To identify the problems in field crops production and produce solutions to problems  Using the knowled gained in the practise in lifetime | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Soil preparation and cultivation |
| 2 | Soil preparation and cultivation |
| 3 | Sowing of forage crops |
| 4 | Sowing of forage crops |
| 5 | Sowing of edible legume crops |
| 6 | Sowing of edible legume crops |
| 7 | Sowing of industrial crops |
| 8 | Sowing of industrial crops |
| 9 | Sowing of temperate cereals |
| 10 | Sowing of temperate cereals |
| 11 | Emergence surveying |
| 12 | Emergence surveying |
| 13 | Cultural practices in plants |
| 14 | Cultural practices in plants |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills | **X** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251217007 | **COURSE NAME** | Meadow and Range Management |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| Fall |  | |  |  | | |  |  | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (Practise) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The lesson covers issues for rangeland meadow improving | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Comprehention of different improving methods of rangeland and meadows. Gainining skills on how to decide which improving methods should be used in a given conditions. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Recent condition of range and meadows, problems of the rangelands in our country, sustainable and effective use of this areas | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1- Can define rangeland meadow terms  2- Can define rangeland and meadow mixtures  3- Can understand that different methods can be used to control weeds  4- Determination of fertilization needs of rangeland and gaining experience how to apply it  5- Can understand water management in rangeland and methods of soil-water conservation  6- Gaining skills about establishing structure and facilities for animal management  7- Can comprehend the previous breeding studies and can us efor future programs. | | | | | | | |
| **TEXTBOOK** | | | | | Altın, M., A. Gökkuş ve A. Koç, 2011. Çayır ve Mera Yönetimi I ve II, T.C. Tarım Bak. Yay. | | | | | | | |
| **OTHER REFERENCES** | | | | | Holochek, J. l:, R.D. Pieper and C.H. Herbel, 2004. Range Management Principles and Practices. Prentice Hall Publ. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | - | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Concept of pasture and highland meadows, forage resources, in the basic priciples of pasture and rangeland improvement |
| 2 | Pasture mixtures, groups of plant used in the mix, a mixture of properties and pasture seed bed preparation |
| 3 | Artifical Cultivation of pasture and rangeland management |
| 4 | Alien plants in pastures and their control |
| 5 | Incineration and biological control in rangeland |
| 6 | The effect of burning on pasrure plants, controlled burning and after burning rangeland management |
| 7 | Nutrient cycles in grassland, plant and animal matter in terms of minerals and fertilizers |
| 8 | Benefits of organic fertilizer and inorganic fertilizers |
| 9 | Pasture plants in the water systems, irrigation and drainage |
| 10 | The soil and water conservation, erosion and protection method in pasture plants |
| 11 | Facilitatories easing the animal management in rangeland |
| 12 | Subdividing and maintenance of pasture |
| 13 | Points needs to be paid attention in grassland breeding |
| 14 | Presentation slides of pasture breeding-related studies, particularly in our region. |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **x** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **x** |  |
| 3 | Professional and ethical responsibility |  |  |  | **x** |  |
| 4 | Life-long learning skills |  |  |  | **x** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **x** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **x** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **x** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):** Prof. Dr. Ali KOÇ

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

**ESOGU Field Crops Department**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **SEMESTER** | Autumn |

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| **COURSE CODE** | 251217008 | **COURSE NAME** | FIBER CROPS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 2 | | 2 | 0 | | | 3 | 5 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | |  | | | | |  | | 50 |
| **PREREQUIEITE(S)** | | | | | **NONE** | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Natural fibers and vegetable fiber sources, fiber crops production and trade in the world and Turkey, cultivation of cotton, flax and hemp plants, fiber production techniques | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach the cultivation and techniques of important fiber crops in the World and Turkey | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn cultivation techniques of fiber crops and acquision fiber process | | | | | | | |
| **COURSE OUTCOMES** | | | | | Makes the classification and definition of fibers  Understands the economic importance of fiber crops  Learns the trade in fiber crops  Knows cultivation of cotton, flax and hemp plants  Gains information about breeding of cotton, flax and hemp plants | | | | | | | |
| **TEXTBOOK** | | | | | Mert, M., 2009. Lif Bitkileri. Nobel Yayınları No: 1446, 277s. | | | | | | | |
| **OTHER REFERENCES** | | | | | Arslan, N., Ö. Kolsarıcı. 1995. Lif Bitkileri Ders notları. Ankara Üniversitesi Ziraat Fakültesi Tarla Bitkileri Bölümü | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition, importance and classification of fiber |
| 2 | Current status of fiber crops in the World and Turkey and their international trade |
| 3 | Utilization of cotton plant and its history |
| 4 | Species and importance of cotton plant |
| 5 | Ecological requirements of cotton plant |
| 6 | Cotton cultivation and fiber process |
| 7 | Cotton breeding and available cultivars |
| 8 | Utilization and systematic classification of flax plant |
| 9 | Ecological requirement and cultivation of flax |
| 10 | Methods of obtaining flax fiber and flax breeding |
| 11 | Utilization and systematic classification of hemp plant |
| 12 | Ecological requirement and cultivation of hemp |
| 13 | Methods of obtaining hemp fiber and hemp breeding |
| 14 | Other fiber crops and utilization |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **x** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **x** |  |
| 3 | Professional and ethical responsibility |  |  |  | **x** |  |
| 4 | Life-long learning skills |  |  |  | **x** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **x** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **x** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **x** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):** Assist.Prof. Duran KATAR

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251217009 | **COURSE NAME** | Plant Genetic Resources and Biodiversity |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (**X**) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | | x | | | | X | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 25 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 25 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The course contents consists of information about plant collection, protection and storoge.The definition of plant biodiversity and information about national and international regulations. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the lesson is to give info about the importance of germplasm, plant collection methods, protection, storoge and documentation of plant genetic resources. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students understand the importance of plant genetic resources and biodiversity in breeding and in particular will use the information in the future. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Be able to understand the importance of plant genetic resources of our country  2.Be able to learn the principles of plant collection  3.Be able to have knowlodge about herbarium, seed collection, sampling from fruit trees  4.Be able to learn conservation and storage of plant genetic resources  5.Be able to have knowlodge about evaluation of stored plant genetic resources  6.Learn about plant biodiversity on a global and national scale  7.Be able to identify components of biodiversity | | | | | | | |
| **TEXTBOOK** | | | | | Bitkisel Gen Kaynakları, S. Şehirali ve M. Özgen, Ankara Üniv. Zir.Fak. Yayınları: 1020 Ders Kitabı: 294, 1987. Işık, K. 1996. Biyolojik Çeşitlilik ve Orman Gen kaynaklarımız (Biological Diversity and our Forest Genetic Resources). Orman Bakanlığı Yayını , No. 13, Ankara, 120 pp. | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition of biodiversity, importance, aims to maintain biodiversity |
| 2 | Ecosystem and habitat diversity in Turkey |
| 3 | The importance of diversity of species, red data books and red lists |
| 4 | Definition of genetic diversity on earth, and the importance of genetic diversity center |
| 5 | The importance of functional diversity |
| 6 | Laws and international conventions related to biodiversity |
| 7 | Principles of crop plant germplasm studies |
| 8 | Coordination and Education of crop plant germplasm studies |
| 9 | Collection methods |
| 10 | Storage of plant genetic resources |
| 11 | Factors affecting the viability of the seed |
| 12 | Protection of plant genetic resources |
| 13 | Production, renewal and evaluation |
| 14 | New approaches to prevention and the use of plant genetic resources |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **x** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **x** |  |
| 3 | Professional and ethical responsibility |  |  |  | **x** |  |
| 4 | Life-long learning skills |  |  |  | **x** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **x** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **x** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **x** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):** Assist. Prof. Dr. Zehra AYTAÇ

**Signature**: **Date:** 22.11.2017



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251217010 | **COURSE NAME** | Starch and Sugar Plants |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 2 | | 2 | 0 | | | 3 | 5 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 (Practise) | | | | | 1 | | 20 |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description of starch and sugar crops, history and classification of potato, sugar beet. Problems and solutions in production of these crops, ecology, cultivation and properties of starch and sugar crops. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Gaines in information about new technologies in starch and sugar crops. Giving information to students on new technologies, cultivation techniques, processing, in starch and sugar crops. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Increasing comprehension and skills in morphology, adaptation and cultivation techniques in starch and sugar crops. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To understand the importance of potatoes and sugar beet in agriculture  2. To give solution to problems in cultivation of industrial crops such as potato and sugar beet  3. To obtain information the morphology, physiology, ecology and cultivation techniques of potato and sugar beet. | | | | | | | |
| **TEXTBOOK** | | | | | Er, C. Ve Uranbey, S. 2009. Nişasta şeker bitkileri, Ankara Üniversitesi Ziraat Fak. Yayınları, 1573, Ankara | | | | | | | |
| **OTHER REFERENCES** | | | | | Arıoğlu, H. 2002. Nişasta şeker bitkileri, Ç.Ü. Zir. Fak Yayınları, 188, Adana  Özgür, O. E. 2009. Şeker pancarı yetiştirilmesi, Amasya Şeker Fabrikası G.M. Yayınları | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of starch and sugar crops |
| 2 | Systematic and production of potato |
| 3 | General characteristics of potato |
| 4 | Potato cultivation |
| 5 | Potato breeding |
| 6 | Midterm exam |
| 7 | Jarusalem architoke, Plant characteristic of sugar beet |
| 8 | Systematic and production of sugar beet |
| 9 | General characteristic of sugar beet |
| 10 | Sugar beet production |
| 11 | Sugar beet breeding |
| 12 | Sugar beet seed production |
| 13 | Systematic and General characteristic of sugar cane |
| 14 | Sugar cane production and breeding |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **x** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **x** |  |
| 3 | Professional and ethical responsibility |  |  |  | **x** |  |
| 4 | Life-long learning skills |  |  |  | **x** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **x** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **x** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **x** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):** Yrd. Doç. Dr. Duran KATAR

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251217011 | **COURSE NAME** | Standardization and Storage of Field Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | Definition about standard and standardization, principles of standardization, quality criteria of field crops, processing and preparation for market of products, modern storage techniques. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to provide knowledge about harvest, preparation for market, drying, processing, packaging, classification and storage of field products. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn storage and preparation for market od field products. | | | | | | | |
| **COURSE OUTCOMES** | | | | | Know the definition about standard and standardization  Know the pirinciples of standardization  Know the quality criteria of field products  Know the preparation for for market of field products  Know the storage techniques of field products | | | | | | | |
| **TEXTBOOK** | | | | | Bayraktar, N., Adak, M.S. 1997. Tarla Bitkilerinin standardizasyonu ve depolaması ders notları (basılmamış). Ankara Üniversitesi Ziraat Fakültesi Tarla Bitkileri Bölümü, Ankara. | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Enter to standardization and storage of field crops |
| 2 | Standardization and storage of cereals |
| 3 | Quality factors on cereals |
| 4 | Storage of field products |
| 5 | Drying of field products |
| 6 | Drying of field products |
| 7 | Storage type |
| 8 | Sales of agricultural products |
| 9 | Standardization and storage of cotton |
| 10 | Standardization and storage of tobacco |
| 11 | Standardization and storage of potato |
| 12 | Standardization and storage of sunflower |
| 13 | Standardization and storage of sunflower |
| 14 | Dry grass storage and Silage making principles |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  | **x** |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **x** |  |
| 3 | Professional and ethical responsibility |  |  |  | **x** |  |
| 4 | Life-long learning skills |  |  |  | **x** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **x** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **x** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **x** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **x** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **x** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  | **x** |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  | **x** |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **x** |

**Instructor(s):** Prof. Murat OLGUN

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218008 | **COURSE NAME** | Cool Season Cereals |

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| **SEMESTER** | | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | | |
| VIII | | | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | | |
| **COURSE CATAGORY** | | | | | | | | | | | | | | | |
| **Basic Science** | | | | **Basic Engineering** | | | | **Field Crops**  **[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 (Practise) | | | | | 1 | | 20 | |
| **FINAL EXAM** | | | | | | |  | | | | | 1 | | 50 | |
| **PREREQUIEITE(S)** | | | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | | Importance of cereals adaptation development, physiological developments, germination, tillering, flowering, nutritiens yellowbery, maturation stages, wheat, barley, rye, oat, triticale, their economic importance, growing areas, taxonomy, agronomic techniques, harvest, pest and diseases, standardization, seed production. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | | To give information in economic importance, adaptation, morphology, physiology, diseases and pests, agronomy, cytogenetic of cool season cereals to students | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | | To acquire information about cool season cereals, to increase analysis ability information in agricultural activities | | | | | | | | |
| **COURSE OUTCOMES** | | | | | | | 1. To understand the importance of cereal production  2. To get information about morphology, physiology, adaptation, production of cool season cereals.  3. To create new project in production of cereals for human/animal consumption  4. To give information in solution of problems in seed production | | | | | | | | |
| **TEXTBOOK** | | | | | | | Kün, E. 1983. Serin İklim Tahılları. AÜZF. Yy: 875, ders kitabı: 240, Ankara, 307 s. | | | | | | | | |
| **OTHER REFERENCES** | | | | | | | Anonymous. 1967. Wheat and wheat improvement. Eds. K.S. Quisenberry, L. P. Reitz, Ame. Soc. Of Argon; Madison, Wisconsin, USA, 360 p.  Gökgöl, M. 1969. Serin İklim Hububatı Ziraatı ve Islahı. Özaydın matbaası, İstanbul,407 s.  Yürür, N. 1994. Serin İklim Tahılları ( Tahıllar – I). Uludağ Üniversitesi basımevi, 250 s. | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | |  | | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | | |
| 1 | Economic importance of cereals | | | | | | | | | | | | |
| 2 | Adaptation of cereals | | | | | | | | | | | | |
| 3 | Morphology and physiology of cereals | | | | | | | | | | | | |
| 4 | Seed storage of cereals | | | | | | | | | | | | |
| 5 | Standardization of cereals | | | | | | | | | | | | |
| 6 | Wheat | | | | | | | | | | | | |
| 7 | Wheat | | | | | | | | | | | | |
| 8 | Barley | | | | | | | | | | | | |
| 9 | Rye | | | | | | | | | | | | |
| 10 | Rye | | | | | | | | | | | | |
| 11 | Oat | | | | | | | | | | | | |
| 12 | Oat | | | | | | | | | | | | |
| 13 | Triticale | | | | | | | | | | | | |
| 14 | Triticale | | | | | | | | | | | | |
| 15,16 | Final exam | | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Prof. Murat OLGUN

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

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**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218009 | **COURSE NAME** | Medicinal and Aromatic Plants |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Assist. Prof. Zehra AYTAÇ, Asist.Prof. Duran KATAR

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218010 | **COURSE NAME** | Special Plant Breeding |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 2 | | 2 | 0 | | | 3 | 5 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | Main principles in plant breeding, plant propagation systems, heritability, breeding methods for self and cross pollinated plants, resistance breeding for biotic and abiotic stress conditions | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Purpose of plant breeding, determination of technigues for main forget. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | **1-** Determination of method to improve genotype.  **2-** Creating gene bank and its use.  **3-** Suitable selection method.  **4-** Performance evaluation | | | | | | | |
| **COURSE OUTCOMES** | | | | | **1-** Learning and using plant breeding methods.  **2-** Acquiring method and ability of genotype improvement. | | | | | | | |
| **TEXTBOOK** | | | | | Şehirali, S., M.Özgen. 2002. Bitki Islahı, Ankara Üniversitesi Yy. No: 1527, Ders kitabı: 480, Ankara, 261 s. | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Allard, R.W.1960. Principles of Plant Breeding, John Wiley and Sons Inc., New York, London, Sydney, 485p.2.Anonymous, 1983. Crop Breeding, Ed. D.R. Wood, Ame. Soc. Of Argon. Modison, Wisconsin, 294p.3.Demir, I., İ, Turgut. 1999. Genel Bitki ıslahı, Ders Kitabı, Ege Üniversitesi Ziraat Fakültesi Yy. No: 496, 451 s.4.Müntzing, A.1979. Triticale, Results and Problems, Verlag Paul Parey, Berlin and Hamburg, 103 p. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Principle of plant breeding, genetic and cytogenetic. |
| 2 | Reproduction of plants. |
| 3 | Genetic variability in plants. |
| 4 | Genetic variability in plants. |
| 5 | Breeding methods in self-pollinated plants. |
| 6 | Breeding methods in self-pollinated plants. |
| 7 | Breeding methods in open pollinated plants. |
| 8 | Breeding methods in open pollinated plants. |
| 9 | Breeding methods in vegetative propagated plants. |
| 10 | Polyploidy in plants. |
| 11 | Breeding of disease resistance. |
| 12 | Resistance mechanism |
| 13 | Resistance mechanism. |
| 14 | Breeding methods in disease resistance methods in open pollinated. |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic | **X** |  |  |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Prof. Murat OLGUN, .Prof. Mehmet Demir KAYA

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218011 | **COURSE NAME** | Range and Meadow Development |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (Practise) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The lesson covers issues for rangeland meadow improving | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Comprehention of different improving methods of rangeland and meadows. Gainining skills on how to decide which improving methods should be used in a given conditions. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Students learn development basics of the rangelands | | | | | | | |
| **COURSE OUTCOMES** | | | | | Can define rangeland meadow terms  Can define rangeland and meadow mixtures  Can understand that different methods can be used to control weeds  Determination of fertilization needs of rangeland and gaining experience how to apply it  Can understand water management in rangeland and methods of soil-water conservation  Gaining skills about establishing structure and facilities for animal management  Can comprehend the previous breeding studies and can us efor future programs. | | | | | | | |
| **TEXTBOOK** | | | | | Altın M, Gökkuş A ve Koç A, 2005. Breeding pasture-meadow grasses. Gökkuş A, Koç, A ve Çomaklı B, 2005. Pasture-meadow grasses Application Guide. | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Concept of pasture and highland meadows, forage resources, in the basic priciples of pasture and rangeland improvement |
| 2 | Pasture mixtures, groups of plant used in the mix, a mixture of properties and pasture seed bed preparation |
| 3 | Artifical Cultivation of pasture and rangeland management |
| 4 | Alien plants in pastures and their control |
| 5 | Incineration and biological control in rangeland |
| 6 | The effect of burning on pasrure plants, controlled burning and after burning rangeland management |
| 7 | Nutrient cycles in grassland, plant and animal matter in terms of minerals and fertilizers |
| 8 | Benefits of organic fertilizer and inorganic fertilizers |
| 9 | Pasture plants in the water systems, irrigation and drainage |
| 10 | The soil and water conservation, erosion and protection method in pasture plants |
| 11 | Facilitatories easing the animal management in rangeland |
| 12 | Subdividing and maintenance of pasture |
| 13 | Points needs to be paid attention in grassland breeding |
| 14 | Presentation slides of pasture breeding-related studies, particularly in our region. |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **X** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Prof. Dr. Ali KOÇ

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

ESOGÜ Field Crops Department

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218012 | **COURSE NAME** | Mineral Nutrition of Field Crops |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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) | | | | | 1 | | 10 |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | **-** | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Plant nutrients, deficiency of plant nutrients, fertilization of field crops and fertilization technique | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is supported the student to get information about the feeding of plants, fertilization methods and fertilizer efficiency marrow to provide insight by making the right fertilization | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn function of fertilizers and to find solutions for yield and quality losses in field crops | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Identifies the elements required in plants nutrition  2. Recognize the signs of lack of nutrient elements  3. Fertilizers and fertilization will learn techniques | | | | | | | |
| **TEXTBOOK** | | | | | Kacar, B., Katkat, A.V. (2009). Gübreler ve Gübreleme Tekniği. Nobel Yayın Dağıtım Tic. Ltd. Şti. | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Güneş A., Alpaslan M., İnal A. (2000). Bitki Besleme ve Gübreleme. Ankara Üniversitesi Ziraat fakültesi Yayın No:1514, Ders Kitabı: 467.  2. Güzel N., . Gülüt K. Y., Büyük G. (2002). Toprak Verimliliği ve Gübreler. Toprak Yönetimine Giriş. 2002, Ç.Ü. Ziraat Fakültesi Genel Yayın No 246, Ders Kitapları Yayın No:80, Adana. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Needed elements in plant nutrition |
| 2 | Essential plant nutritions |
| 3 | Mechanism of nutrient uptake in plants |
| 4 | Deficiency of plant nutrients |
| 5 | Definition of fertilizers and fertilization |
| 6 | Definition of fertilizers and fertilization |
| 7 | Definition of fertigation fertilizers |
| 8 | Definition of fertigation fertilizers |
| 9 | Methods of fertilization |
| 10 | Fertilization of wheat |
| 11 | Fertilization of maize |
| 12 | Fertilization of maize |
| 13 | Fertilization of sugar beet |
| 14 | Fertilization of sunflower and potato |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Assoc. Prof. Nurdilek Gülmezoğlu

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218018 | **COURSE NAME** | Diploma Thesis II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 0 | | 2 | 0 | | | 1 | 4 | COMPULSORY (**X** ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | 70 |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | |  | |  |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Literature screening, project preparation and preseantation the topic on field crops | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aims of the course are to study the topic on field 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** | | | | |  | | | | | | | |
| **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 | Summary of the literature |
| 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** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills | **X** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **X** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):**

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251215016 | **COURSE NAME** | Weeds and The Struggle |

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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** | | | | **Field Crops**  **[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** | | | | | Chemical fighting methods against weeds, characteristics of herbicides, herbicides – plants - soil, weed management in different crop plants, different weed management methods against to important weeds | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach the some important weeds in field crops and weed management | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learn weed and weed management strategies affecting the yield and quality of field crops. | | | | | | | |
| **COURSE OUTCOMES** | | | | | Indentify the weed affecting field crops  Learn chemical control methods against the weeds  Learn the principle of chemical control  Chemical control methods against different weed species  Identify parasitic weeds and learn the management  Know the herbicides | | | | | | | |
| **TEXTBOOK** | | | | | S.Maden;S.Toros ve S.Sözeri 1999. Tarımsal savaşım Yöntem Ve İlaçları. | | | | | | | |
| **OTHER REFERENCES** | | | | | 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 | Increasing yields and science of weeds |
| 2 | Classification of weeds |
| 3 | Vegetative breeding and storage changing of weeds |
| 4 | Germination and dormancy in weeds |
| 5 | Abiotic factors affect weeds |
| 6 | Abiotic factors affect weeds |
| 7 | Biotic factors affect weeds - competition |
| 8 | Biotic factors affect weeds - allelopathy |
| 9 | Importance, benefit and damage of weeds, |
| 10 | Biotic factors affect weeds – effect of human and animals |
| 11 | Struggle criteria |
| 12 | Precautions – cultural, mechanical, physical and biological |
| 13 | Chemical struggle, classification of herbicides, intake and transportation in plants |
| 14 | Mechanism of action, adverse effects and symptoms |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  | **X** |  |
| 3 | Professional and ethical responsibility |  |  |  | **X** |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  | **X** |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | **X** |  |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  | **X** |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |

**Instructor(s):** Assoc. Prof. Dr. Coşkun GÜÇLÜ

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** |  | **COURSE NAME** | TURKISH FOLK DANCE |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** | |
| VII | 3 | | 0 | 0 | | | 3 | 3 | | COMPULSORY ( )  ELECTIVE (X ) | TURKISH | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Fıeld Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | |  | | | | ( ) | | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | | **%** |
| Mid-Term | | | | 100 | | | 40 |
| Quiz | | | |  | | |  |
| Homework | | | |  | | |  |
| Project | | | |  | | |  |
| Report | | | |  | | |  |
| Others (………) | | | |  | | |  |
|  | | | |  | | |  |
| **FINAL EXAM** | | | | |  | | | | 100 | | | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **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 EDUCATION** | | | | | 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.  Student realizes importance of Turkish folk music in communication.  Student learns types of Turkish folkdance, music and instruments. | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Dance hall, Sport wear and shoes. | | | | | | | |
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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 | İzmir Zeybek region dances (Al Basma Zeybeği, Gündoğdu Zeybeği) |
| 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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| **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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |

**Instructor(s):**

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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

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| **COURSE CODE** | 251216017 | **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** | | | | **Field Crops**  **[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** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | **X** |  |  |  |  |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **X** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):**

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

**T.C. ESKİŞEHİR Osmangazİ UNIVERSITY**

**AGRICULTURAL FACULTY**

**FİELD CROPS DEPARTMENT**

#### COURSE INFORMATION FORM

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| --- | --- |
| **SEMESTER** | Autumn |

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| **COURSE CODE** | 251217012 | **COURSE NAME** | Field Farming Systems |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** | |
| 7 | 3 | | 0 | 0 | | | 3 | 3 | | COMPULSORY ( )  ELECTIVE (X ) | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | |  | | | | X | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | | **%** |
| Mid-Term | | | | 2 | | | 50 |
| Quiz | | | |  | | |  |
| Homework | | | |  | | |  |
| Project | | | |  | | |  |
| Report | | | |  | | |  |
| Others (practice) | | | |  | | |  |
|  | | | |  | | |  |
| **FINAL EXAM** | | | | |  | | | | 1 | | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Field farming systems, dry farming, fallow, irrigated farming, irrigation methods, drainage, salinity, moist farming, soil water, soil air, organic, matter, mineral matter, purpose of soil tillage, soil tillage methods, soil tillage in dry farming, conventional and conservation soil tillage methods, soil tillage in irrigated farming, soil tillage in moist farming, soil pressure, burning stubble. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main of the course is to teach field farming systems and explain differences between basic field farming systems. Especially, student to have knowledge about the soil tillage which is an important topic of the dry farming | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Having knowledge about dry farming, irrigated farming and moist farming and to learn the different agricultural practices in these systems. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Know the field farming systems  2. Know the different agricultural practices in field farming systems.  3. Know the purpose of soil tillage and soil tillage methods  4. Know the conventional and conservation tillage methods  5. Know the soil tillage in dry farming, irrigated farming and moist farming | | | | | | | |
| **TEXTBOOK** | | | | | Gençtan, T. 2006. Tarla Tarımı, Namık Kemal Üniversitesi Ziraat Fakültesi Ders Kitabı,Yayın No: 11. | | | | | | | |
| **OTHER REFERENCES** | | | | | Ceylan, A. 1994. Tarla Tarımı. Ege Üniversitesi Ziraat Fakültesi Yayınları, İzmir | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector and computer | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Field farming systems |
| 2 | Dry farming, fallow |
| 3 | İrrigated farming, irrigation methods |
| 4 | Drainage, salinity, moist farming |
| 5 | Soil mineral matter, soil organic matter |
| 6 | Soil water, soil air |
| 7 | Purpose of soil tillage |
| 8 | Soil tillage methods |
| 9 | Soil tillage time in fallow areas |
| 10 | Soil tillage deep in dry farming areas |
| 11 | Conventional soil tillage and conservation soil tillage |
| 12 | Soil tillage in irrigated farming |
| 13 | Yield increases with water |
| 14 | Soil tillage in moist farming, soil pressure, burning stubble |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** |  | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences | | **X** |  |  |
| 3 | Professional and ethical responsibility | | **X** |  |  |
| 4 | Life-long learning skills | | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | | **X** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management | | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | |  | **X** |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding | |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic | |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops | |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | | |

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| **Prepared by:** Doç.Dr. Nihal KAYAN | **Date:** |
| **Signature(s)**: |  |

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**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251216018 | **COURSE NAME** | Bee and Silkworm Rearing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops Department**  **[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** | | | | | The importance of bees and silk-worm rearing, honey bee breeds, morphological features used to determine breeds, tasks of bees, inside and outside of the bee hive, bee products, formation and composition of honey maintenance of bees through season, honey harvest, life stages of silkworm, formation and production of silk, maintenance of silk worms, problems and possible solutions in apiculture and sericulture. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To emphasize importance of bee products in human health and nutrition and role of bees in pollination. Providing information about issues like creating a healthy bee colonies to ensure profitable production and to help pollination in crop production to increase the quality and efficiency, importance of silk production and give basic knowledge about creating the infrastructure for a profitable production. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Bee and silkworm cultivation, production of quality products in these areas and social and economic contributions of bee and silkworm cultivation will be taught. | | | | | | |
| **COURSE OUTCOMES** | | | | | It is aimed to introduce honeybee and silkworm rearing with theoretical knowledge and practices and teach methods of obtaining high-quality products. | | | | | | |
| **TEXTBOOK** | | | | | Şahan Ü., 2011. İpekböcekciliği. Dora Yayınları, Bursa.  Akbay, R., 1986. Arı ve İpekböceği Yetiştirme. A.Ü.Zir. Fak. Yayın. 956 / 276. Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | Genç, F., Dodoloğlu, A., 2003. Arıcılığın Temel Esasları. Atatürk Üniversitesi Yayınları No: 931. Atatürk Üniversitesi Ziraat Fakültesi Ofset Tesisi, Erzurum.  Güler, Ahmet, Bal Arısı (*Apis mellifera* L.) . Ondokuzmayis Universitesi Ziraat Fakultesi Ders Kitabı No:55 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | None | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The importance of beekeeping in agricultural production, beekeeping in the world and in Turkey, breeds of bees. |
| 2 | Colony development, nutrition, duties of colony members, basic structural differences among members, colony life cycle. |
| 3 | Anatomy and physiology of the honey bee, behaviors of honey bee: age-related division of labor, communication, feeding puppies, building honey comb, defense, air-conditioning, cleaning, nectar, pollen, water, collection and processing. |
| 4 | Honey bee genetics and breeding, starting beekeeping, equipment, record-keeping. |
| 5 | Colony management of honeybees: early spring maintenance, spring maintenance; feeding, assembly, renewal of queen bees, control of colony splitting, summer care, honey flow, and additional of honey comp, harvesting honey. |
| 6 | Midterm Exam |
| 7 | Colony Management: Fall care and wintering, colony splitting, looting prevention, water supply, honey comp renewal, transport, Queen bee and male bee. |
| 8 | Types of silkworm, their place in systematic, the story of the birth and spread of silk worm around the world, sericulture in the word, Europe and Turkey, economics of sericulture, morphological and physiological characteristics. |
| 9 | Life cycle of silkworm, classification and distribution, cocoon-selection, gender identification, disease control. |
| 10 | Preparation of seed production, storage of eggs, incubation conditions, larval stage, the preparation of care facilities, temperature and humidity conditions. |
| 11 | Care and feeding through different age periods, types, properties of hangers, hanging methods. |
| 12 | Cocoon harvesting, strangulation, classification, characteristics of cocoon, pulling silk, cooking, properties of silk. |
| 13 | The main diseases and pests, legal status and organization, planting mulberries for sericulture. |
| 14 | Problems and solutions of sericulture. |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | **X** |  |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):**

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



**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251217014 | **COURSE NAME** | Energy Crops and Technology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY (**X**) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | | **Social Science** |
|  | | x | | | | 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** | | | | | Utilization and description of economically important energy crops, production potential, situation of energy crops in the world and Turkey, environmental effects and processing technology | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Aims to teach energy crops in the world and its economical importance, Starch and sugar crops used in bioethanol production, oilseed crops used in biodiesel production, plant and algae used in biomass production, production technologies, potentials, environmental impacts | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn the crops used in energy production and processing technologies | | | | | | | |
| **COURSE OUTCOMES** | | | | | To gain experience about renewable energy resources such as biodiesel, bioethanol and biomass, production potential of energy crops and their impact on environment and renewable energy resources | | | | | | | |
| **TEXTBOOK** | | | | | 1. Acaroğlu, M. 2007. Alternatif Enerji Kaynakları. Nobel Yayın No:1253. Teknik Bilimler: 96. Ankara. 609 s.  2. Öğüt, H. and H. Oğuz, 2006. Biyodiezel. Üçüncü Milenyum Yakıtı. Nobel Yayın No:745. Ankara. 190 s. 3. Akova, İ. 2008. Yenilenebilir Enerji Kaynakları. Nobel Yayınevi. Ankara. 194 s. | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition, importance and classification of biofuels |
| 2 | Development and expansion of biofuels |
| 3 | The effects of biofuels on agriculture and the environment |
| 4 | Biogas part 1 |
| 5 | Biogas part 2 |
| 6 | Biodiesel part 1 |
| 7 | Biodiesel part 2 |
| 8 | Bioethanol |
| 9 | Biohydrogen |
| 10 | Energy plants |
| 11 | Energy plants |
| 12 | Energy plants |
| 13 | Energy plants |
| 14 | Energy plants |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **x** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **x** |  |  |
| 3 | Professional and ethical responsibility |  | **x** |  |  |  |
| 4 | Life-long learning skills | **x** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **x** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  | **x** |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  | **x** |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **x** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **x** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies | **x** |  |  |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  | **x** |  |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **x** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops | **x** |  |  |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  | **x** |  |  |  |

**Instructor(s):** Assist. Prof. Dr. Zehra AYTAÇ

**Signature**: **Date:** 22.11.2017

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218013 | **COURSE NAME** | Turf Grasses Cultivation |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE ( **X** ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (Oral examination) | | | | | 1 | | 10 |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Morphological properties of plants used in the area of grass, legumes, grasses and other plants to introduce and practical lawn area facility | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aim that define plants belonging to the family of legumes and grasses used for lawn area and teach green area facility. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course will provide to reinforce of learned in Graminous Forage Crops course and Forage Legumes course. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Identification of turfgrass to be morphological, ecological and physiological.  2.According to aim of use learns prepare the mixture  3.Establishment and maintenance in lawn area is learned by this course | | | | | | | |
| **TEXTBOOK** | | | | | Açıkgöz, E. (1994): Çim Alanlar, Yapım ve Bakım Tekniği. Çevre Peyzaj Mimarlığı Yay. No. 4, Bursa, 203 s. | | | | | | | |
| **OTHER REFERENCES** | | | | | Avcıoğlu, R., 1997. Çim Tekniği, Yeşil Alanların Ekimi Dikimi ve Bakımı. Ege Üniv. Matbaası. Bornova-İzmir, 271s.  Elçi, Ş. (2005). Baklagil ve Buğdaygil Yem Bitkileri. Tarım ve Köyişleri Bakanlığı Yayınları, 486 s. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Factors while maintaining the lawn areas |
| 2 | General morphological features of Turfgrasses |
| 3 | While establishing lawn area are used in species (Graminous Forage Crops) |
| 4 | While establishing lawn area are used in species (Forage Legumes) |
| 5 | While establishing lawn area are used in species (Other family) |
| 6 | Midterm Exam |
| 7 | Weed control and Drainage |
| 8 | Preparing the soil |
| 9 | Substances used as soil amendments |
| 10 | Seed mixtures I |
| 11 | Seed mixtures II |
| 12 | Planting time, planting techniques, planting depth and seed rate |
| 13 | Practice of lawn area establishment (seed preparation, and weighing) |
| 14 | Practice of lawn area establishment (soil preparation, planting, watering and maintenance) |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  | **X** |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Assoc. Prof. Süleyman AVCI

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218014 | **COURSE NAME** | Plant Reproduction Techniques |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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 | | | | | 1 | | 5 |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Reproduction with seeds, root suckers, cuttings, methods of layering, grafting and tissue culture. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aim to teach the techniques used for the propagation of plants | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. describe propagation techniques  2. define vegetative propagation  3. define generative propagation | | | | | | | |
| **TEXTBOOK** | | | | | Lecture notes, CD’s | | | | | | | |
| **OTHER REFERENCES** | | | | | Anadolu Üniversitesi yay. No 904 Açık Öğretim Fakültesi Yay. No:486  **Propagating from Cuttings** by John Mason Paperback book <http://www.acsbookshop.com/products/2108-propagating-from-cuttings.aspx> | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of Plant Propagation |
| 2 | Seed Propagation |
| 3 | Spore Propagation |
| 4 | Bulbous, tuberous and wax plants Propagation I |
| 5 | Bulbous, tuberous and wax plants Propagation II |
| 6 | Midterm exam |
| 7 | Cutting Propagation |
| 8 | Graft Propagation I |
| 9 | Graft Propagation II |
| 10 | Layer Propagation I |
| 11 | Layer Propagation II |
| 12 | Propagation of Plants by Tissue Culture |
| 13 | Propagation of Plants by Tissue Culture |
| 14 | Transplantation of rooted plants and container plant |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  |  | **X** |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution | **X** |  |  |  |  |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality | **X** |  |  |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  | **X** |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  | **X** |  |  |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  | **X** |  |  |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Assoc. Prof. Süleyman AVCI

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218015 | **COURSE NAME** | Organic Farming |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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** | | | | | Importance of organic agriculture, organic agriculture in Turkey, generally rule of organic agriculture, growing techniques on organic agriculture, field crops on organic agriculture. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main of the course is to learn generally rules of organic agriculture and to learn agriculture production techniques that respect the environment. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To learn practical rules of organic agriculure | | | | | | | |
| **COURSE OUTCOMES** | | | | | Know the importance of organic agriculture  Know the generally rules of organic agriculture  Know the growing techniques of organic agriculture | | | | | | | |
| **TEXTBOOK** | | | | | Er, C. 2000. Organik Tarım ders notları, Ankara Üniversitesi Ziraat Fakültesi. | | | | | | | |
| **OTHER REFERENCES** | | | | | Taşbaşlı, H., Zeytin, B. 2003. Organik tarımın genel ilkeleri. T.C. Tarım ve Köy İşleri Bakanlığı yayınları. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Importance of organic agriculture and history of organic agriculture |
| 2 | Practice of organic agriculture |
| 3 | Organic agriculture in Turkey, some definition on organic agriculture |
| 4 | Generally rules of organic agriculture |
| 5 | Generally principles of organic agriculture |
| 6 | Midterm exam |
| 7 | Rotation on organic agriculture |
| 8 | Rotation on organic agriculture |
| 9 | Soil productivity on organic agriculture |
| 10 | Soil tillage on organic agriculture |
| 11 | Variety and seed on organic agriculture |
| 12 | Plant nutrition on organic agriculture |
| 13 | Plant nutrition on organic agriculture |
| 14 | Weed control on organic agriculture and field crops on organic agriculture |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  | **X** |  |  |
| 3 | Professional and ethical responsibility | **X** |  |  |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information | **X** |  |  |  |  |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  | **X** |  |  |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  | **X** |  |  |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):**

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251217015 | **COURSE NAME** | First Aid |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE ( X ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | General first aid information, triage, basic life support, bleedings, injories, sensory loss, heart attack, stroke, fractures and spraind, drowning in water,burnst, poisoning. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to describe general first aid knowlodge and both natural disasters and accidents we face in our daily lives. The target of the course is to provide our students succeeded to have the fist aid certificate approved by the ministry of health. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | May take courage to conscious aiding. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To comprehend the importance of first aid 2. To feel confident about aiding someone 3. To able to work coordinately with other helpful people in a natural disasters 4. To gain self-confidence about aiding 5. To be able to avoid any possible mistakes during first aid | | | | | | | |
| **TEXTBOOK** | | | | | Armağan, E., İlk yardım | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | General first aid information |
| 2 | Evaluation of patient and scene of accident |
| 3 | Triage |
| 4 | Basic life support |
| 5 | First aid in bleeding |
| 6 | First aid in injuries |
| 7 | First aid in injuries |
| 8 | Hypoglycemia, heart attack, stroke, diffuculty in breathing, allergy |
| 9 | Fractures and sprains |
| 10 | Rectal, aural and nasal foreign body |
| 11 | Drowning in water |
| 12 | First aid in burnst |
| 13 | First aid in poisoning and animal bites |
| 14 | First aid in poisoning and animal bites |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  | **X** |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |

**Instructor(s):**

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

**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 251217016 | **COURSE NAME** | Photography |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY () ELECTIVE (X ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Field Crops**  **[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)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction to photography, machines and objectives, principles of shutter speed, aperture and exposure, light and color at photograph, composition, photo shooting techniques, digital photographs. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to provide knowledge about photography and practical photography education. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learning photo shooting techniques and use it. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learning basic photography knowledge 2. Learning cameras, objectives and principlers of shutter speed, aperture and exposure. 3. Learning depth of field, light and color, composition 4. Learning photo shooting techniques 5. learning digital photographs | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to phptography |
| 2 | Types and working principles of the machines |
| 3 | Types and working principles of the objectives |
| 4 | Shutter speed, aperture and exposure principles |
| 5 | Shutter speed, aperture and exposure principles |
| 6 | Depth of field, light and color of photograph |
| 7 | Depth of field, light and color of photograph |
| 8 | Light and color of photograph |
| 9 | Composition |
| 10 | Composition |
| 11 | Photo shooting techniques |
| 12 | Photo shooting techniques |
| 13 | Digital photographs |
| 14 | Digital photographs |
| 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 gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  |  | **X** |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |

**Instructor(s):**

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

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**ESOGU Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218016 | **COURSE NAME** | Study Methods in Nature |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE (X) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | [**Basic Engineering**](http://tureng.com/search/basic%20engineering) | | | | **Field Crops**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | |  | | | |  | | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic rules of nature life, identification of basic equipments, the rules of natural living environment of different nature, sheltering, [nutrition](http://tureng.com/search/nutrition), dressing, [state of emergency](http://tureng.com/search/state%20of%20emergency), first aid principles, biological sample acquisition rules, storage of biological samples, keeping records, nature observation, team work and principles, social values ​​that should be considered in the nature . | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The purpose of this course is to ensure the basic knowledge necessary for biological studies in nature for students. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To benefit the experienced student from his/her own knowledge, related to professional practices gathered from his/her millieu efficiently and securely. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Adapt to environments outside of urban life 2. Research planning skills 3. Self- sufficiency in nature 4. To detect problems that may arise in advance and to be [preparedness](http://tureng.com/search/preparedness) 5. Learn biological sampling methods 6. Personal equipment selection and useage 7. Ability to use technical devices in exemplified studies 8. To understand regional cultural values and [points to take into consideration](http://tureng.com/search/points%20to%20take%20into%20consideration) 9. Life-long learning skills | | | | | | | |
| **TEXTBOOK** | | | | | 1. Doğada Yaşam Temel Eğitim Notları, Dr. Hakan ÇALIŞKAN, 2006 2. Biyolojik Koleksiyonlar, Ömer Kaya Gülen, Hacettepe –Taş Kitapçılık, 1985 | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Gould. J.E. ( ) Handbook of Methods fort the Behavioral and Biological Sciences..CRC pres 2. Aydıngün, H. (1997). Doğada Yaşam ve Gezi Notları. İstanbul, Yayınevi yayıncılık. 3. Gülen,Ö.K., (1985). Biyolojik Koleksiyonlar. Ankara. Hacettepe Taş Kitapçılık B. (2002). 4. Tilton, B., (2000). Doğada ilk yardım.İstanbul. 5. Kıyak, S. , (2000). Entomolojik Müze Materyalleri. Ankara 6. Howes, C.(2003). Caving. 7. Çanakcıoğlu, H. (1993). Böceklerin Toplanma-Preparasyon Muhafaza ve teşhisleri. 8. Kuş gözlemciliği 9. Amfibiler, Prof. Dr. Ali Demirsoy, Meteksan, 1997 10. Türkiye Sürüngenleri I-II, Prof. Dr. Muhtar Başoğlu, Doç Dr. İbrahim Baran, 1980   Türkiye Kuşları, Prof. Dr. İlhami Kiziroğlu, Türkiye Kuşları, OGM yayınları, 1989 | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Basic materials for camping (sleeping bag, mat, backpack, heater)  Sampling equipments ([travelling box](http://tureng.com/search/travelling%20box))  [Measuring instruments](http://tureng.com/search/measuring%20instruments) ([electronic thermometer](http://tureng.com/search/electronic%20thermometer), anemometer, muisture meter, current meter) | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic rules of nature life |
| 2 | The rules of natural living environment of different nature |
| 3 | Descrıptıon of basıc equıpment used |
| 4 | Sheltering |
| 5 | [Nutrition](http://tureng.com/search/nutrition) |
| 6 | Midterm |
| 7 | Dressing; [State of emergency](http://tureng.com/search/state%20of%20emergency), first aid principles |
| 8 | Biological studies; planning |
| 9 | [Preparation](http://tureng.com/search/preparation), [implementation](http://tureng.com/search/implementation), assesment |
| 10 | Team work and its important |
| 11 | Biological sample acquisition rules |
| 12 | Storage of biological samples |
| 13 | Nature observation, keeping records |
| 14 | Social values ​​that should be considered in the nature . |
| 15-16 | Final Exam |

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| **ID** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international |  |  |  |  | **X** |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills | **X** |  |  |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  | **X** |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management | **X** |  |  |  |  |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  |  |  | **X** |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):** Assist.Prof. Hakan ÇALIŞKAN, Lecturer Sibel ŞENTÜRK

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

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218017 | **COURSE NAME** | Diction |

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| **SEMESTER** | | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | | |
| VIII | | | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY () ELECTIVE (X) | | Turkish | | |
| **COURSE CATAGORY** | | | | | | | | | | | | | | | |
| **Basic Science** | | | | **Basic Engineering** | | | | **Field Crops**  **[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 | | | | |  | | 30 | |
| Homework | | | | |  | |  | |
| Project | | | | |  | |  | |
| Report | | | | |  | |  | |
| Others (practice) | | | | |  | |  | |
| **FINAL EXAM** | | | | | | |  | | | | | 1 | | 40 | |
| **PREREQUIEITE(S)** | | | | | | | The quota of the course must be limited up to 24 students. If the number of students passes 24, another class can be opened. | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | | On the context of phonics and effective communication analyzing the sounds; Properly, fluently and understandable speaking; using body language effectively; removing the speech disorders; during the business life and career being able to express ourselves in oral speech easily; being able to speak in front of a community and improving the skill of making effective presentation. Speech types like symposium, panel discussion, conference and forum. Effective listening methods. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | | Cognizing the integrative feature of common, standard language by removing the pronunciation of the birth place. While expressing the feelings and thoughts, using the sentences properly by making the best pronunciations of sounds and words. Realizing the fineness of the art of speaking well and effectively by paying attention to intonations, pauses and stresses. Learning the ways and methods of making impression on the audience. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | | Providing the being transferred properly of the professional knowledge with a proper Turkish. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | | | After completed this course, students can;  **1.** express themselves easily and effectively in verbal communication during business life;  **2**describe the basic concepts and terms about verbal speech;  **3.** prepare verbal/ written texts in different verbal/ written expression types by using the methods of ordering and improving ideas;  **4.** use the grammar of Turkish properly and efficiently;  **5.** apply the diction methods (like breathing techniques, articulation, stress and intonation) to be able to speak well, properly and effectively;  **6.** use efficiently their voice and body language.  **7.** express their thoughts verbally by making prepared / unprepared speeches in front of a community and evaluate their own speeches.  **8.** develop their self-confident feelings by getting the skill of expressing their ideas in an integrated way during the business life and social sphere.  **9.** plan what, where, how and how much they will say by ordering the words and without digressing the topic during their speeches.  **10.** improve the talent of quick thinking beside speaking.  **11.** improve the skills of being convincing and reassuring while speaking. | | | | | | | | |
| **TEXTBOOK** | | | | | | | 1. Ses Bilimi ve Diksiyon, GÜLER, Eser; HENGİRMEN Mehmet, Engin Yayınları, Ankara, 2005. 2. Spikerlik ve Türkçenin Kullanımı, ÜNSAL, Füsun; ŞAHİN, Hakan, TRT Eğitim Dairesi Başkanlığı, Ankara, 2014. | | | | | | | | |
| **OTHER REFERENCES** | | | | | | | 1.Alıştırmalı Diksiyon Sanatı, ŞENBAY, Nüzhet, MEB Yayınları, İstanbul, 1991.2.  Söz Söyleme ve Diksiyon, GÜRZAP, Can, Remzi Kitabevi, İstanbul, 2006.3. İmlâ Kılavuzu, Türk Dil Kurumu Yayınları, Ankara. | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | | Slide | | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | | |
| 1 | Introduction; acquaintance, information about course content, references and grading.  The content of speaking: the relation of communication-language-thought and speaking. | | | | | | | | | | | | |
| 2 | The place of verbal and written expressions in the communication; the relation between the voice and character. | | | | | | | | | | | | |
| 3 | The features of a good speaker and the features of a good speech voice. | | | | | | | | | | | | |
| 4 | Relaxation, discharging the mind, heating the body; breathing (diaphragm works, the use and keep of voice). | | | | | | | | | | | | |
| 5 | The occurrence of the sound and speech organs; voice and the features of voice. | | | | | | | | | | | | |
| 6 | Tone and Intonation; melody, duration. | | | | | | | | | | | | |
| 7 | Tone and Intonation; melody, duration | | | | | | | | | | | | |
| 8 | Stressing and pause. | | | | | | | | | | | | |
| 9 | Stressing and pause. | | | | | | | | | | | | |
| 10 | Speech, the value of speech (artistic function, daily function); the rules and defects of speech. | | | | | | | | | | | | |
| 11 | The speech types: unprepared speech, prepared speech. | | | | | | | | | | | | |
| 12 | Discussion, contest, open forum, panel, forum and symposium. | | | | | | | | | | | | |
| 13 | Speech Practices. | | | | | | | | | | | | |
| 14 | Speech Practices. | | | | | | | | | | | | |
| 15,16 | Final exam | | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **X** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  |  |  | **X** |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems |  |  |  |  | **X** |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  |  |  | **X** |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |

**Instructor(s):**

**ESOGÜ Field Crops Department**

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 251218034 | **COURSE NAME** | Effective Communication |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** |
|  | 3 | | 0 | 0 | | | 3 | 3 | | COMPULSORY ( )  ELECTIVE ( x ) | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Fıeld Crops**  **[if it contains considerable design, mark with (√) ]** | | | | | **Social Science** |
| 20 | | 20 | | | |  | | | | | 60 |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | |  | | 30 |
| 2nd Mid-Term | | | |  | |  |
| Quiz | | | |  | |  |
| Homework | | | |  | |  |
| Project | | | |  | | 30 |
| Report | | | |  | |  |
| Others (practice) | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | |  | | 40 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **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 and 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 | Communication barriers |
| 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** | **5** | **4** | **3** | **2** | **1** |
| 1 | To gain the ability to express yourself, ability to communicate effectively with colleagues from national and international | **X** |  |  |  |  |
| 2 | The ability of solving problems related to the field crops by using theoretical and practical knowledge gained in Basic Sciences |  |  |  |  | **X** |
| 3 | Professional and ethical responsibility |  |  | **X** |  |  |
| 4 | Life-long learning skills |  |  | **X** |  |  |
| 5 | To use initiative, individual and team-work skills, comparative thinking skills in solving problems | **X** |  |  |  |  |
| 6 | To have the necessary knowledge about field crops and environment and the ability to follow current information |  |  |  |  | **X** |
| 7 | To analyze the problems and components limiting yield and quality of plant and animal production, design skills by producing a solution |  |  |  |  | **X** |
| 8 | To recognize field crops species and varieties, and to knowledge about the physiological events plants, seed and quality |  |  |  |  | **X** |
| 9 | To have information about ecology, biodiversity and sustainable resource management |  |  |  |  | **X** |
| 10 | To select and use modern techniques and tools related to the field and ability to benefit information technologies |  |  | **X** |  |  |
| 11 | The ability to use proper statistical methods in evaluation of research results on Field Crops cultivation and breeding |  |  |  |  | **X** |
| 12 | The ability to use modern and conventional breeding methods by learning the basics of plant genetic and cytogenetic |  |  |  |  | **X** |
| 13 | The ability to use theoretical and applied knowledge modern cultivation techniques related to cereals, edible legumes, industrial crops, meadow, pasture and forage crops |  |  |  |  | **X** |
| 14 | To knowledge about quality, standardization, storage and marketing of field crops |  |  | **X** |  |  |
|  | (5: Very high, 4: High, 3: Medium, 2: Low, 1: Very low) | | | | | |