

FIELD CROPS DEPARTMENT COURSE CONTENT AND BOOKS TO BE USED

1. SEMESTER

TURKISH LANGUAGE-I

(2+0) 2

ECTS:2

What is language, the place and importance of language in the life of a nation as a social institution; language-culture relationship, the place of Turkish language among the world languages, the development and historical periods of Turkish language, the current status of Turkish language and its spreading areas, sounds and classification in Turkish, sound features of Turkish and rules related to phonetics, syllable knowledge, spelling rules and application, punctuation marks and application, construction suffixes of Turkish language and application, noun and verb conjugations in Turkish, general information about composition, plans to be applied in composition writing.

Textbook:

- Turkish Language and Composition Information for Higher Education Students (KORKMAZ Z., ERCİLASUN A.B., ZULFİKAR H., AKALIN M., GULENSOY T. PARLATIR C., BİRİNCİ N.)

Auxiliary Textbooks:

- Applied Turkish Language and Composition Information, Prof.dr. Yakup KRASOY, Assist.Assoc.Prof. Dr. Orhan YAVUZ, Okt. Ahmet KAYASANDIK, Okt. Bekir DİREKÇİ.
- University Turkish Language and Composition Courses (YAVUZ K., YETİS K., BİRİNCİ N.)
- Turkish Language and Composition, Commission.
- Applied Turkish information, Osman

GÖKER. Turkish Language and Composition

Information, Fahri ÖZKAN.

BOTANICS-I

(3+0) 3

ECTS:4

Botanical Science, Cytology, Histology, Organography, Physiology, Genetics, Ecology and Systematics under the headings of Cell, Chemical Structure of the Cell and Ergastic Substances, Organic Composition of the Cell, Cell Division. Plant tissues, vegetative and generative organs of plants, nutrition and metabolic events in plants, growth, development, movement events, plant genetics, ecological characteristics of plants, naming of plants, plant parts, mosses, ferns, open-seeded plants, closed-seeded plants.

Textbook:

- Prof.Dr.Kamil Karamanođlu General Botany Beyođlu -Istanbul

Auxiliary Textbooks:

- Prof.Dr. Yıldırım Akman Botany, Palmiye Publications -Istanbul Linda E.Graham, James M.Graham, Lee W.Wilcox Plant Biology, Palmiye Publishing. Translation Editor Kani Isik

COMPUTER

(1+2) 2

ECTS:5

Computer hardware, software, operating system, internet and computer networks, word processing, electronic computing, presentation preparation software, system security, information ethics.

Textbook:

- Lecture notes of the lecturer

PHYSICS

(3+0) 3

ECTS:3

Physics and Measurement, Motion in One Dimension, Vectors, Two Dimensional Motion, Laws of Motion, Circular Motion and Other Applications of Newton's Laws, Work and Kinetic Energy.

Textbook:

- Physics for Science and Engineering I, Serway Beicher, Palme Publishing.

Auxiliary Textbooks:

- Fundamentals of Physics, Cengiz Yalçın
- Principles of Physics, Kemal Colakoglu

CLIMATE KNOWLEDGE

(2+0) 2

ECTS:4

Definition, importance, and development of climate information, Meteorology departments and application areas, Structure and properties of the atmosphere, Temperature, Air pressure, Wind, Humidity, Evaporation and clouds, Precipitation, Air masses and front systems, Meteorological observations, Observation park

Textbook:

- Climate Information and Climatic Measurement Technique, Prof. Dr. H. Hüseyin Öztürk, Birsen Publishing House

Auxiliary Textbooks:

- Moran, J.M., Morgan, D.M., Pauley, P.M. 1997. Meteorology: the atmosphere and the science of weather. Prentice Hall, New Jersey, USA .3. Türkeş, M. 2010. Climatology and Meteorology. Kriter publishing house, Istanbul.

CHEMISTRY

3(3+0)

ECTS: 5

Classification of Matter, Atomic Structure, Periodic Table and Properties, Chemical Bonding, Molecular Geometry, Chemical Reactions, Chemical Calculations, Gases, Solutions, Chemical Equilibrium, Equilibrium in Aqueous Solutions.

Textbook:

- General Chemistry (vol. I. and II.) Principles and Modern Applications (Tahsin Uyar) (6. Print)

Auxiliary Textbooks:

- Basic Chemistry (Volumes I and II) Molecular, Substances and Changes E. Kılıç, F. Köseoğlu, H. Yılmaz
- Modern Basic Chemistry (Volume I and II) (Mustafa Özcan)

MATHEMATICS

3(3+0)

ECTS: 5

Numbers, Intervals, Inequalities, Plane and Subsets of Plane, Functions, Limits and Applications, Continuity, Derivative and Applications, Indefinite States and Limits.

Textbook:

- Lecture Notes.

Auxiliary Textbooks:

- General Mathematics, Ekrem Kadioğlu, Muhammet Kamali, 2005, Erzurum
- General Mathematics, M. Kemal Sağel, Mine Aktaş, Pegema Publishing, 2008, Ankara.
- General Mathematics, Volume I, Mustafa Balcı, Balcı Publications, 2006, Ankara.
- Basic and General Mathematics, Volume I, Hilmi Hacısalihoğlu, Mustafa Balcı, 1988, Ankara.
- Other Books titled Basic Mathematics, General Mathematics or Mathematical Analysis.

2. SEMESTER

FIELD AGRICULTURE

(2+0) 2

ECTS:5

In the world and in our country, most of the areas allocated to agriculture are devoted to field agriculture. While dry farming is practiced in most of the agricultural areas, there are also irrigated and moist farming systems. General information on tillage, sowing, crop rotation, maintenance, harvesting and threshing in different agricultural systems will be given.

Textbook:

- Genctan, T., 1999. Field Agriculture. Trakya University Tekirdağ Faculty of Agriculture, Department of Field Crops, Tekirdağ.

Auxiliary Textbooks:

- Ceylan, A., 1994. Field Agriculture. Ege University Faculty of Agriculture, Department of Field Crops, Bornova, İzmir. Genç, İ., Tükel, T., Sağlamtimur, T., 1988. Çukurova University Faculty of Agriculture, Department of Field Crops, Adana. Sencar, Ö., Gökmen, S., Yıldırım, A., Kandemir, N., Field Crops Production. Gaziosmanpaşa University Faculty of Agriculture, Department of Field Crops, Tokat.

GENERAL MICROBIOLOGY

(1+2) 2

ECTS:4

Subject and sections of General Microbiology, classification and nomenclature of microorganisms, history of microbiology, microorganism groups, bacteria, rickettsia and chlamydia, eukaryotic microorganisms, fungi, algae, protozoa, viruses, bacteriophages, virus-like infectious agents, nutrition in microorganisms, environmental factors affecting reproduction, grouping of microorganisms according to nutritional status, anaerobic culture methods, production of viruses, genetics of microorganisms, control of microorganisms, physical methods, chemical methods, laboratory equipment and presentation in microbiology applications, microscope and its use, measurement of the size of microorganisms, preparation of media, measurement of PH, sterilization, preservation, isolation of microorganisms in the environment, obtaining pure culture and examination of their properties, microorganism counting methods, examination of yeasts and molds.

Textbook:

- Temiz, A. 1994. General Microbiology Application Techniques. Şafak Matbaacılık Ltd.Şti. Ankara, 266 Pages.

Auxiliary Textbooks:

- Lecture notes of the lecturer

AGRICULTURAL ECOLOGY

(3+0) 3

ECTS:5

Introduction to ecology, definition, light, temperature, soil factors, biotic factors, ecosystem, atmospheric

Events

Textbook:

- Eser, D., Geçit, H. 2010. Ecology Ankara University Faculty of Agriculture

Auxiliary Textbooks

- Gökmen, S., 2011. General Ecology. Nobel Publications.

TURKISH LANGUAGE II**(2+0) 2****ECTS:2**

Adverb prepositions and their use in Turkish, Sentence Information, Elements of the sentence, Sentence analysis and applications, Types and application of oral composition, speech plan, preparatory speeches, good speech rules, unprepared speech types and applications, forms of expression in composition and its application, written composition types and applications, expression and sentence disorders and their correction, rules and research to be applied in the preparation of scientific writings, research and examination of scientific writing samples, development of correct and beautiful speaking and writing ability with selected examples from the history of thought from the world of literature and thought.

Textbook:

- Turkish Language and Composition Information for Higher Education Students (KORKMAZ Z., ERCİLASUN A.B., ZULFİKAR H., AKALIN M., GULENSOY T. PARLATIR C., BİRİNCİ N.)

Auxiliary Textbooks:

- Applied Turkish Language and Composition Information, Prof.Dr. Yakup KRASOY, Assist.Assoc.Dr. Orhan YAVUZ, Okt. Ahmet KAYASANDIK, Okt. Bekir DİREKÇİ.
- University Turkish Language and Composition Courses (YAVUZ K., YETİS K., BİRİNCİ N.)
- Turkish Language and Composition, Commission.
- Applied Turkish Information, Osman GÖKER.
- Turkish Language and Composition Information, Fahri ÖZKAN.

BOTANICS-II**(3+0) 3AKTS****: 5**

Structural science of organs: Anatomical and morphological structures of root-stem and leaf, metamorphosis. The growing environment of the corm and its adaptation to the environment with the way of life. Information about hydrophytes, hygrophytes, xerophytes and tropophytes. Parasitic and semi-parasitic plants. Reproduction in flowering plants: Vegetative and generative reproduction. Male and female organs

Occurrence. Flower states: Rasemus and Simous flower states. Flower diagrams and formulas. Fertilization and seed formation. Seed structure. Fruit structure and fruit types.

Textbook:

- Prof.Dr.Kamil Karamanođlu General Botany Beyođlu -Istanbul
- **Auxiliary Textbooks:** Prof.Dr. Yıldırım Akman Botany, Palmiye Publications - Istanbul Linda E.Graham, James M.Graham, Lee W.Wilcox Plant Biology, Palmiye Publishing. Translation Editor Kani Iřık

SOIL KNOWLEDGE

(2+2) 3AKTS

: 5

Definition of soil, Phases of soil, Soil formation processes and factors, Soil classification, Physical, Chemical and Biological properties of soil, Plant nutrition, Fertilizers and fertilization, Soil conservation and Soils of Turkey.

Textbook:

- Principles of Soil Science, 1993. Prof. Dr. Abdüsselam Ergene, Atatürk Univ. Publication No: 586, Faculty of Agriculture Publication No: 267, Textbook Series No: 42. Erzurum.

Auxiliary Textbooks:

- Akalan, C. 1988. Soil Science. Ankara University, Faculty of Agriculture Publications: 1058, Textbook: 309, Ankara.
- Soil Science, Saglam, T.M., Bahtiyar, M., Cangir, M.T., Tok, H.H. 1993. University, Tekirdađ Faculty of Agriculture, Department of Soil, Tekirdađ, 1993.

GENERAL ECONOMY

(3+0) 3AKTS

: 5

Economic Concepts, Economic Problem, Supply, Demand and Elasticity, Firms and Production, Production Costs, Utility, Preferences, Amenities and Consumption, Perfect Competition Market, Imperfect Competition Markets, Factor Markets, The Role of the Economist in Government, Macroeconomic Concepts, National Accounts, Financial Intermediaries, Monetary Policies.

Textbook:

- General Economics Lecture Notes, Editor: Fahri YAVUZ, 2008.

Auxiliary Textbooks:

- ABC of Economics, M İlker Parasız, Ezgi Kitabevi Yayınları

- Mikroiktisat, Muammer Yaylalı, Beta Basım yayım Dağıtım A.Ş. 2004, İstanbul.
- Macro Economics, Aziz Köklü, Sevinç Matbaası, 1984, Ankara.
- All Economics books on the market can be used as a supplementary textbook

3. SEMESTER

FIELD TRIAL TECHNIQUES

(2+2) 3AKTS

: 5

To organize the experiments established in field, greenhouse and laboratory conditions according to a specific experimental design and to evaluate the outputs through this technique. To provide the students with the knowledge of basic experimental techniques that they will need for their future researches. To make the selection of experimental design, planning and establishment of the experiment, evaluation and interpretation of the results obtained.

Textbook:

- Açıköz, N., 1983. Tarla Deneme Tekniği, Ege University Faculty of Agriculture Publications

Auxiliary Textbooks:

- Lecture notes of the lecturer

FOREIGN LANGUAGE I

(2+0) 2AKTS

: 2

Personal pronouns, Verb "to be", Have/has got, There is/are, Present progressive tense, Adjectives Quantity, Simple present tense, Modals, Comparatives and superlatives.

Textbook:

- English With Us

Auxiliary Textbooks:

- Essential Grammar In Use

PHYTOPATHOLOGY

(2+2) 3

ECTS:5

History, development, definition and classification of phytopathology and plant diseases. General information about non-parasitic (unfavorable meteorological factors, airborne waste materials, unfavorable soil factors) and parasitic (fungi, viruses, bacteria, weeds, phytoplasma, spiroplasma) disease agents. Methods of controlling these disease agents. Information about some diseases and some important weeds which are very important for our country.

Textbook:

- Döken, M.T., Demirci, E. and Zengin, H., 2005. Phytopathology. Atatürk University, Faculty of Agriculture, Erzurum.

Auxiliary Textbooks:

- Lecture notes of the lecturer

AGRICULTURAL ECONOMICS

(3+0) 3AKTS

: 5

The Place and Importance of Agriculture in the Economy, Characteristics of Agricultural Production and Agricultural Products, Natural Resources and Environmental Economics, Environmental Economics, Administration and Financing of Agricultural Enterprises, Agricultural Cooperatives and Organization, Cooperatives and Principles, Marketing of Agricultural Products, Agricultural Policy and International Trade, European Union and Rural Development.

Textbook:

- Agricultural Economics Lecture Notes, Erzurum, 2008

Auxiliary Textbooks:

- Karagölge, C., Kızıloğlu, S. and Yavuz, O., Basic Principles of Agricultural Economics. Atatürk University Faculty of Agriculture Publications: 324.1995.

AGRICULTURAL MACHINERY

(2+2) 3AKTS

: 5

Definition, stages and objectives of agricultural mechanization, mechanization in agriculture, Turkey agriculture and mechanization status, selection and operation principles of agricultural machinery, energy sources and machinery in agriculture, internal combustion engines, agricultural tractors, tillage tools and machinery, sowing, planting, fertilizing and maintenance machinery, agricultural warfare machinery, harvesting and threshing machinery, barn and poultry house mechanization.

Textbook:

- Agricultural Mechanization, Rahmi Keskin, Doğan Erdoğan, Ankara University Faculty of Agriculture Publications No: 1254, Ankara, 1992.

Auxiliary Textbooks:

- Agricultural Tools and Machines, Emin Mutaf, Ege University Faculty of Agriculture Publications No: 218, Izmir, 1984
- Principles of Agricultural Machinery, Poyraz Ülger, Emin Güzel, Birol Kayışoğlu, Bülent Eker, Bahattin Akdemir, Yunus Pınar, Yılmaz Bayhan, Cihangir Sağlam, Fakülteler Matbaası, İstanbul, 2002.
- Agricultural Machinery, Doğan Erdoğan, Ankara University Faculty of Agriculture publications No: 1540, Ankara, 2005.

- Agricultural Tools and Machines, Erol Kasap, Bekir Engürülü, Özkan Çiftçi, K. Sedat Kılınç, Mesut Gölbaşı, Hakan Başaran, Mustafa Akkurt, Ministry of Agriculture and Rural Affairs DAGMEM, Ankara, 1998.
- Farm Power And Machinery Management ,Donnell HUNT, Eight Edition. The Iowa State University Press, 1983, Iowa, USA. .
- Agricultural Machinery, Bahri Gökçebay, Ankara University Faculty of Agriculture Publications
No: 979, Ankara, 1986.
- Agricultural Machinery, Serdar Öztekin, Nobel Kitabevi, ISBN:975-8561-65-0, Adana, 2006.
- Agricultural Machinery, Fahri Deligönül, Cukurova University Faculty of Agriculture Textbook No: 4, Adana, 1988.
- Motor and Vehicle Information, İbrahim Hoşgören, TC. Ministry of Agriculture and Rural Affairs Çankırı Provincial Directorate Agricultural Vocational High School and Agricultural Mechanization Training Center Directorate, Çankırı, 1992.

AGRICULTURAL STRUCTURES AND IRRIGATION

(3+0)

3AKTS

: 4

Introduction to cultural technique; Planning of rural settlement and business location; Environmental conditions in agricultural structures; Agricultural business structures and planning principles Importance and necessity of irrigation; Water-yield relations; Turkey's soil and water resources potential and sufficiency; Soil-water-plant relations; Infiltration; Evapotranspiration; Effective rainfall; Irrigation efficiencies; Irrigation interval and amount of irrigation water; Irrigation Methods

Textbook:

- Kültürteknik, Okuroğlu, M., Yağanoğlu, A. V., Şahin, Ü., 1998. Atatürk Univ., Faculty of Agriculture Textbooks Publication No: 213, Erzurum
- Kültürteknik (Solved problems), Okuroğlu, M., Yağanoğlu, A. V., Şahin, Ü., 1994. Atatürk Univ., Faculty of Agriculture Textbooks Publication No. 213, Erzurum, Erzurum, 1994: 213, Erzurum,

Auxiliary Textbooks:

- Irrigation, Y. Güngör, A.Z. Erözel, O. Yıldırım, Ankara Uni. Faculty of Agriculture Course
Book No:478, Ankara, 2002.
- Irrigation and Drainage Engineering, R. Kanber, R. Çakır, A.F. Tarı, Ministry of Agriculture and Rural Affairs, APK Daire Bşk. Publication No: 122, Ankara, 2002.
- Kültürteknik (Solved Problems), A.V. Yağanoğlu, M. Okuroğlu, Ü. Şahin,

2001, Atatürk Uni. Faculty of Agriculture. Course Publications No: 213,
Erzurum, 2001.

- Irrigation, R. Kanber, Çukurova Uni. Textbooks No:A-52, Adana, 1999.
- Irrigation, L. Delibaş, Trakya Uni. Tekirdag Faculty of Agriculture. Lecture Note: 52, Tekirdag, 1989

STATISTICS

(3+0) 3AKTS

: 4

Basic Concepts, Descriptive Statistics (Frequency tables, Figures and graphs), Location and Distribution Measures, Probabilities, Population Distributions, Sampling Plans and Sample Distributions, Confidence Limits, Hypothesis Tests, Non-Parametric Tests, Regression and Correlation.

Textbook:

- Introduction to Statistics, Necati YILDIZ, Ömer AKBULUT and Hüdaverdi BİRCAN, *Aktif Publishing House*, Erzurum, 2002.

Auxiliary Textbooks:

- Applied Statistics, Necati YILDIZ and Hüdaverdi BİRCAN, *Atatürk University Faculty of Agriculture Offset Facility*, Erzurum, 1994.

4. SEMESTER

PLANT GENETICS AND CYTOGENETICS

(3+0) 3AKTS

: 6

Definition and history of genetics, cell concept, prokaryotic and eukaryotic cell, chromosomes, genetic events, main branches of genetics, Mendelian genetics and basic principles, problem solving, chromosome and morphology, sexual reproduction in plants, pollination and fertilization, mitosis and meiosis, molecular genetics and gene concept, population genetics.

Textbook:

- Yıldırım, A., Kandemir, N., Karadağ, Y., Sakin, M.A., 2004. Genetics, Gaziosmanpaşa University Faculty of Agriculture Publications No: 64 Lecture Notes Series No: 32, Tokat

Auxiliary Textbooks:

- Elçi, Ş., Sancak, C., 2009. Research Methods and Observations in Cytogenetics

INSTRUMENTAL ANALYSIS

(3+0) 3

ECTS:5

The aim of this course is to give information about the fundamentals of instrumental methods

This document has been signed with a secure electronic signature in accordance with the electronic signature law numbered 5070.

You can access the document confirmation at <http://ebys.igdir.edu.tr/document/records/public.search> with Document No.: 26144459-300-E.655 and Barcode No.: 328321.

such as spectroscopic techniques, chromatographic techniques, thermal methods, etc. and analytical applications of instrumental techniques in environmental protection and control applications.

Textbook:

- Instrumental Analysis (Skoog, Holler Nieman)

Auxiliary Textbooks:

- Lecture notes of the lecturer

GENERAL ZOOLOGY**(2+2) 3AKTS****: 4**

Basic and up-to-date information about animal breeding will be given.

Textbook:

- Animal Cultivation (Aquaculture), 2. Edition, Editor Mehmet ERTUĞRUL, Ankara, 1997.

Auxiliary Textbooks:

- Lecture notes of the lecturer

FOREIGN LANGUAGE II**(2+0) 2AKTS****: 3**

Future tense, Future progressive tense, Was/were, Simple past tense, Present Perfect tense, Past Perfect Tense, Relative Clauses, Passive voice.

Textbook:

- English With Us

Auxiliary Textbooks:

- Essential Grammar In Use

GARDEN PLANTS**(2+2) 3AKTS****: 5**

Classification of horticultural crops, the value of Turkey in terms of horticulture, biological characteristics of horticultural crops, ecological requirements of horticultural crops, physiological characteristics of horticultural crops, propagation of horticultural crops, fruit, vegetable garden and vineyard establishment, annual maintenance works.

Textbook:

- General Horticulture, Y.S. Ağaoğlu, H. Çelik, M. Çelik, Y. Fidan, Y. Gülşen, A. Günay, -N. Halloran, A.I. Köksal, R. Yanmaz, Ankara University Faculty of Agriculture Education, Research and Development Foundation Publications No: 4, 1995.

Auxiliary Textbooks:

- Lecture notes of the lecturer

PLANT PHYSIOLOGY**(3+0) 3****ECTS:5**

Within the scope of the course, root systems in plants and factors affecting their distribution, water uptake, nutrient uptake, photosynthesis and daily gain (net photosynthesis), developmental stages in plants, germination physiology and dormancy, plant growth substances, general principles of resistance to diseases and adverse conditions will be explained by giving examples.

Textbook:

- Taiz, L and Zeiger, E. Plant Physiology. 2008. (Turkish translation ed:İsmail Türkan). Palme Publishing, Ankara.

Auxiliary Textbooks:

- Kadioglu, A. 1999. Plant Physiology

ENTOMOLOGY**(2+2) 3AKTS****: 4**

The main animal groups important in agriculture, external and internal structure systems of insects, development and diapause in insects, classification of insects, some important pests in our country and control methods used against them.

Textbook:

- Yildirim, E., 2007. General Entomology. 2nd Edition. Atatürk University Faculty of Agriculture Publications No: 234, Faculty of Agriculture Offset Facility, Erzurum, 218 pp.

Auxiliary Textbooks:

- Karaca, I. and R. Ay. Entomology (Plant Protection). Süleyman Demirel University, Faculty of Agriculture Publication No: 26.
- Kansu, A., 1994. General Entomology. Kıvanç Basımevi, 426 p.

5. SEMESTER

VOCATIONAL SELECTIVE COURSES-I (COURSE 1) (This course is available from 0700005001 course group to be taken, see below).

VOCATIONAL SELECTIVE COURSES-I (COURSE 2) (This course is available from 0700005001 course group to be taken, see below).

VOCATIONAL SELECTIVE COURSES-I (COURSE 3) (This course is available from 0700005001 course group to be taken, see below).

ELECTIVE COURSE (COURSE 1) (This course will be taken from 0701105000 course group, see below.)

WHEATGRASS FORAGE CROPS

(2+2) 3

ECTS:5

General structural characteristics of forage crops, general characteristics of important forage crops genera, structural characteristics of some forage crops species will be covered.

Textbook:

- Forage Crops. R. Avciođlu, R. Hatipođlu and Y. Karadađ (Eds.), 3 Vol. Ministry of Agriculture and Rural Affairs, Ankara. 2009.

Auxiliary Textbooks:

- Cultivation of forage crops, Gençkan, M. S. 1981. Ege Uni. Faculty of Agriculture. Yay. No. 467. İzmir. 1981.
- Genetic Resources of Forage Plants. J. G. Mc Ivor and R. A. Bray (eds.) pp. 63-81. CSIRO. Vega Press Pty Ltd. Blackburn, Australia. 1983
- Forage Crops, Açıkgöz, E. Uludađ Uni. Güç. Foundation Yay. No. 182. Bursa. 2001.
- Legume and wheat forage crops. Elçi, Ş. Ministry of Agriculture and Rural Affairs. Mart Matbaası, İstanbul. 486 s. 2006.

MEADOW PASTURE MANAGEMENT

(3+2) 4

ECTS:5

The aim of this course is to teach meadow and pasture terms and meadow pasture management concepts correctly and to make students aware of the important differences between meadow and pasture management and to explain the functions, sustainable use and importance of meadows and pastures from natural vegetation in terms of animal production.

Textbook:

- Altın, M., Gökkuş, A. and Koç, A. 2011. Meadow and Pasture Management. Republic of Turkey Ministry of Agriculture and Rural Affairs General Directorate of Agricultural Production and Development. Ankara.
- Gökkuş, A., Koç, A. and B. Çomaklı, 2000. Meadow - Pasture Application Guide. Atatürk University Faculty of Agriculture Publications No: 142, 139 p., Erzurum. Recommended

Auxiliary Textbooks:

- Pasture Law Training and Implementation Manual, 1999. Meadow-Pasture Management and Reclamation, Department of Meadow, Pasture, Crops and Watershed Development, Ankara.

- Tükel, T. and R. Hatipoğlu, 1997. Meadow - Pasture Management. Çukurova University Faculty of Agriculture General Publication No: 191, Textbooks Publication No: A-59, 152 p., Adana.
- Gökkuş, A. and Koç, A. 2001. Pasture and Grassland Management. Ataturk Univ. Faculty of Agriculture. Course Yay. No: 228, Erzurum.

OIL PLANTS

(1-2) 2AKTS

: 5

Introducing the botanical and herbal characteristics of some of the plants mentioned below as oil crops. To give the students the cultivation techniques applied for the production of these plants.

Textbook:

- Arıoğlu, H., 1999. Oil crops cultivation and breeding. Ç.Ü. Faculty of Agriculture. General publication No:220. Adana.

Auxiliary Textbooks:

- Özgüven, M., 1995. Oil Crops Volume: II, Ç.Ü. Zir.Fak. Textbook: No:47. Adana.
- Koç, H., 2001. Oil Crops. Gaziosmanpaşa Uni. Zir.Fak. Publications No:58, Textbooks series No:22, Tokat.

HISTORY OF ATATURK'S PRINCIPLES I

(2+0) 2AKTS

: 2

Concept Information, Ottoman Empire and its Collapse, Tanzimat and Constitutional Monarchy Periods, Intellectual Movements in the Last Period of the Ottoman State, Important Military and Political Events Leading to the Disintegration of the Ottoman State, World War I, Secret Sharing Projects during the First World War and Treaties Ending the War, Mondros Armistice and Occupations, The Birth of the National Struggle Movement and National Organizations, The Birth of the National Struggle Movement and National Organizations, National Struggle Period and Mustafa Kemal Atatürk's Life, Mustafa Kemal Pasha's Exit to Samsun, Amasya Declaration and Erzurum Congress, Sivas Congress and Mustafa Kemal Pasha's Arrival in Ankara, The Opening of the Last Ottoman Parliament and the Declaration of Misak-ı Milli, The Grand National Assembly Period, Uprisings in the National Struggle and Kuvay-ı Milli.

Textbook:

- Atatürk's Principles and History of Revolution-I, II, III. (Commission)

Auxiliary Textbooks:

- Atatürk-Nutuk I-II-III

VOCATIONAL FOREIGN LANGUAGE

(2+0) 2AKTS

: 2

It is aimed to translate texts from English to Turkish and from English to Turkish in a way that will improve the students' professional level English, to gain professional experience to the students and to improve their professional English with the translations made.

Textbook:

- Lecture notes of the lecturer, recommended reference books

6. SEMESTER

VOCATIONAL SELECTIVE COURSES-II (COURSE 1) (This course is available from 0700006001 course group to be taken, see below).

VOCATIONAL SELECTIVE COURSES-II (COURSE 2) (This course is available from 0700006001 course group to be taken, see below).

VOCATIONAL SELECTIVE COURSES-II (COURSE 3) (This course is available from 0700006001 course group to be taken, see below).

ELECTIVE COURSE (COURSE 1) (This course will be taken from 0701106000 course group, see below.)

LEGUMINOUS FORAGE CROPS

(2+2) 3

ECTS:6

Importance, use, climate, soil and nutrient requirements, crop rotation, seedbed preparation, sowing, fertilization, irrigation, weed, disease and pest control, seed production, harvesting and storage of leguminous forage crops such as alfalfa, sainfoin, clover, clover, vetches and vetches

Textbook:

- Açıkgöz, E., Forage Crops.2001 Uludağ University, Faculty of Agriculture, Department of Field Crops. Uludag University Empowerment Foundation Publication No: 182.

Auxiliary Textbooks:

- Heath, M.E., Barnes, R.F., Metcalfe, D.S., 1985. Forages. The Science of Grassland Agriculture. Iowa State University Press.
- Elçi, Ş., 2005. Legume and Wheatgrass Forage Crops. T.C. Ministry of Agriculture and Rural Affairs Publications.
- Gençkan, M. S., 1983. Forage Crops Agriculture. Ege University, Faculty of Agriculture Publications No: 467.
- Manga, İ., Acar, Z., Ayan, İ., 1995. Legume Forage Crops. Ondokuz Mayıs University Faculty of Agriculture. Lecture Note: No, 7.

MEDICINAL AND AROMATIC PLANTS**(3+2) 4AKTS****: 7**

To know and classify the main medicinal plants, to know the origin, distribution and botanical characteristics of the main medicinal plants, to learn the cultivation techniques and quality criteria of these plants, to realize the importance of harvesting and drying processes and storage in these plants, to examine medicinal plants according to their active ingredients, to examine secondary metabolites and their functions, to understand the importance of secondary metabolites, to understand the properties of active ingredients and their role in their usage areas, to be aware of the economic importance of this group of plants.

Textbook:

- Kamil İlisulu, 1992, Ankara University, Faculty of Agriculture, Publications, p. 302

Auxiliary Textbooks:

- Ceylan, A., 1995, Medicinal Plants I, (3rd Bsm.), E.Ü., Faculty of Agriculture. Publication No: 312
- Ceylan, A., 1996, Medicinal Plants II, (2nd Bsm.), E.Ü., Faculty of Agriculture. Publications No: 481
- Ceylan, A., 1994, Medicinal Plants III, (1st Bsm.), E.Ü., Faculty of Agriculture. Publications No: 509.

HISTORY OF ATATÜRK PRINCIPLES II**(2+0) 0AKTS****: 2**

Kuva-yı Milli, The Entente States' Projects of Sharing Turkey, I. İnönü War, II. İnönü War, Great Offensive, Mudanya Armistice, Turkish Revolution, Constitutional Movements, Political Parties after the National Struggle, Transition to Multi-Party Period, Reactions Against the Regime, Reforms in the Field of Law, Reforms in the Field of Education, Reforms in the Social Field, Atatürk's Foreign Policy, Turkish Foreign Policy in the Period 1930-1938, Atatürk's Principles and Reforms, Atatürk's Economic Policy, General Situation in the Period 1930-1938.

Textbook:

- Atatürk's Principles and History of Revolution-I, II, III. (Commission)

Auxiliary Textbooks:

- Atatürk and Turkish Republic History, Hacettepe Univ. Institute of Atatürk's Principles and Revolution History.
- Atatürk's Principles and Revolution History, Gazi Univ. (Commission).

PROFESSIONAL FOREIGN LANGUAGE II**(2+0)2AKTS****: 3**

The aim of foreign language teaching is to teach students the basic rules of the foreign language, to develop their foreign language vocabulary, to understand what they read in a foreign language and to express themselves orally or in writing.

Textbook:

- Lecture notes of the lecturer, recommended reference books

7. SEMESTER

INTERNSHIP

0(0+0)

ECTS: 4

Students receive practical training related to the courses they take.

VOCATIONAL SELECTIVE COURSES-III (COURSE 1) (This course is available from 0700007001 course group to be taken, see below).

VOCATIONAL SELECTIVE COURSES-III (COURSE 2) (This course is available from 0700007001 course group to be taken, see below).

PLANT CULTIVATION

(2+2) 3

ECTS:6

Introducing the basic concepts and techniques of development, conservation and seed production of new commercial varieties with the help of modern techniques based on genetic principles.

Textbook:

- Tosun, F., Saęsöz, S., 1998. Atatürk University Faculty of Agriculture Textbooks Publications N:172. Erzurum.

Auxiliary Textbooks:

- Demir, I. and Turgut, I. 1999. General Plant Breeding. Ege Univ. Zir. Fak. Publication No. 496. Izmir. 454 s.

COOL CLIMATE CEREALS

(3+2) 4

ECTS:5

To increase their level of knowledge on Cool Climate Cereals. To develop the necessary infrastructure levels in scientific studies. To gain theoretical and practical knowledge and skills related to botany, chemistry and agriculture of Cool Climate Cereals. To gain the ability to produce practical measures for the solution of problems related to the subject and technically equipped. To gain the knowledge of the importance of Cool Climate Cereals in human and animal nutrition and in the industrial field. To emphasize that the Grain + Fallow system in the areas where Cool Climate Cereals are cultivated is wrong.

Textbook:

- Elçi, Ş., Kolsarıcı, Ö. and Geçit, H.H. 1994. Field Crops (2nd Edition). Ankara University Faculty of Agriculture Textbook. Publication no: 1385, Textbook: 399, Ankara.

Auxiliary Textbooks:

- Kün, E. 1988. Cool Climate Cereals. Ankara Univ. Faculty of Agriculture. Textbook, Publication no: 1032. Textbook:299. Ankara.
- Yürür, N. Cool Climate Cereals. 1994. Uludağ University Faculty of Agriculture. Textbook Publication No: 7-030-0256.p:250

GRADUATION STUDY - I (Annual)

0(0+2)

ECTS: 2

The fourth year student prepares a graduation thesis in the form of an application or literature review under the supervision of a faculty member.

SOCIAL-CULTURAL COURSE (COURSE 1) (This course is available from 9900001062 course group to be taken, see below).

8. SEMESTER

VOCATIONAL SELECTIVE COURSES-IV (COURSE 1) (This course is available from 0700008001 course group to be taken, see below).

VOCATIONAL SELECTIVE COURSES-IV (COURSE 2) (This course is available from 0700008001 course group to be taken, see below).

EDIBLE LEGUMES

(2+2) 3AKTS

: 5

To teach the origin, distribution areas and taxonomy of edible grain legumes, to teach the factors affecting yield and quality, to teach cultivation techniques, to teach the breeding objectives and breeding methods of edible grain legumes

Textbook:

- Sepetoğlu, H. 1994. Edible Grain Legumes. Ege Univ. Faculty of Agriculture. Publications No: 24, Bornova, Izmir.

Auxiliary Textbooks:

- Recommended Reading: Grain Legums, Summerfield R.J., Roberts E.H., pp. 859.
- Grain Legums, A.U. Agricultural Faculty publication: 1089. pp: 1-428
- Chemistry and Biochemistry of Legums, 1st edition, Arora S.K, (Editor) pp. 259-351.

SEED SCIENCE AND TECHNOLOGY

(3+0) 3AKTS

: 4

Formation and germination of seeds, determination of physical and biological values, certification of seeds and the importance of certified seeds are explained.

Textbook:

- Seed Standards and Application Principles. T.C. Ministry of Agriculture and Rural Affairs, General Directorate of Protection and Control, Seed Registration and Certification Center Directorate, 190 p., Ankara.

Auxiliary Textbooks:

- Field Control Principles and Forms. T.C. Ministry of Agriculture and Rural Affairs, General Directorate of Protection and Control, Seed Registration and Certification Center Directorate, 72 p., Ankara.
- Eser, B., Saygılı, G., İlker, E. 2005 (Editors). Seed Science and Technology. Ege University, Seed Technology Application and Research Center Publication No.3, Volume I and Volume II 908 p., Bornova - İzmir. Sağsöz, S. 1995.
- Seed Science. Atatürk University Publications No. 677, Faculty of Agriculture publications No. 302, 299 p., Erzurum.
- Şehirali, S. 1989. Seed and Technology. Ankara University Press, 330 pp, Ankara.

GRASS PLANTS AND GREEN AREA FACILITY**(3+0) 3****ECTS:6**

Grass plants, structural properties of grass plants, quality criteria of grass plants, the effect of ecological factors on grass areas, soil preparation in grass areas, sowing or planting of grass areas, maintenance operations in grass areas, artificial grass areas, diseases and pests in grass areas, different mixtures of grass areas.

Textbook:

- Açıkgöz, E., 1994. Construction and Maintenance Technique of Grass Areas. Environmental Landscape Architecture Publications, Bursa.

Auxiliary Textbooks:

- Lecture notes of the lecturer

GRADUATION STUDY - I (Annual)**0(0+2)****ECTS: 2**

The fourth year student prepares a graduation thesis in the form of an application or literature review under the supervision of a faculty member.

SOCIAL-CULTURAL COURSE (COURSE 1) (This course is available from 9900001154 course group to be taken, see below).

0700005001 Coded Elective Courses

PLANT RESISTANCE BREEDING

(2+0) 2AKTS

: 3

Definition and Importance of Plant Strength Breeding, Genetic Mechanism of Plant Strength, Plant Strength Types, Breeding Methods Use of Aneuploidy in Strength Breeding, Provision of Strength by Translocation, General Introduction of Genetic Engineering Techniques, Theoretical Transfer of Genetic Engineering Applications in Strength Breeding

Textbook:

- Breeding Plant Resistant to Insect. F.G Maxwell, P.R Jennings. Department of Entomology Texas A and M. University.1980

Auxiliary Textbooks:

- Plant Breeding. R.W Allard . University of Agronomy Davis, California. 1960.
- Breeding for Durable Disease and Pest Resistance. Food and Agriculture Organization or the United Nations. 1984
- Genetic Transformationin Plants. R. Walden. Open University Press. Milton Keynes.1988.
- Plant Strength Breeding Lecture Notes

VEGETATION STUDIES and MEASUREMENTS

(2+0) 2

ECTS:3

To increase the level of knowledge about the Properties of Meadow Pasture Plant Communities and Measurement Methods, To create awareness that there are plant species from other families that animals can graze in meadow-pasture areas, except for the Wheatgrass and Legume families that animals graze willingly, To increase their skills on how meadow-pasture vegetation surveys are made and evaluated, To gain the knowledge of how important meadow-pasture areas have an important place in terms of animal nutrition and preventing soil erosion, With this acquisition, the characteristics and measurement methods of meadow-pasture plant communities, To gain the knowledge of how important meadow-pasture areas have an important place in terms of proper use, To gain the knowledge of how to calculate the number of animals that can be grazed according to the structure and production potential of vegetation in order to create a uniform grazing balance, To create awareness that poisonous, thorny and tasteless weeds that cause deaths in animals from time to time in meadow-pasture areas, To gain the ability to produce practical measures to solve problems To develop the necessary infrastructure levels in scientific studies.

Textbook:

- Avcıoğlu, R, 1996. Characteristics and Investigation of Meadow Pasture Plant Communities (II. Edition). Ege Univ. Faculty of Agriculture. Yay. No: 466, Izmir.

Auxiliary Textbooks:

- Gökkuş, A., Koç, A. and B. Çomaklı, 2000. Meadow - Pasture Application Guide. Atatürk University Faculty of Agriculture Publications No: 142, 139 p., Erzurum.
- Pasture Law Training and Implementation Manual, 1999. Meadow-Pasture Management and Reclamation. Department of Grassland, Forage Crops and Watershed Development, Ankara.
- Meadow and Pasture Plants of Turkey, 2008. Republic of Turkey Ministry of Agriculture and Rural Affairs, General Directorate of Agricultural Production and Development, Ankara.

SCIENTIFIC WRITING and PRESENTATION TECHNIQUES (2+0) 2 ECTS:3

Effective language use in scientific reports, the concept of language efficiency in writing, spelling rules, computer writing and desktop publishing, showing data with graphs and charts, formal structure of the research, writing the report text, preparing the text for computer presentation and presentation techniques.

Textbook:

- Lecture notes of the lecturer

HISTORY OF AGRICULTURE and PROFESSIONAL ETHICS (2+0) 2 ECTS:3

Development of Agriculture from the Early Ages to the Present, Agricultural Production History of Turks and Anatolia, Effective Principles, Approaches and Methods in Today's Agricultural Production Systems and the Reasons for Their Emergence, Definition and Scope of Agricultural Engineering, Concept of Professional Ethics, Professional Ethics of Agricultural Engineering, Legal Regulations on Agricultural Production and Agricultural Engineering constitute the general framework of the course.

Textbook:

- Direk, M., 2010, History of Agriculture and Deontology, Eğitim Kitabevi, ISBN: 978-605-4392-1-7, KONYA.

Auxiliary Textbooks:

- Özçelik, A., 2005, History of Agriculture and Deontology, Ankara University Press, ISBN: 975-98163-0-X, ANKARA.

0700006001 Coded Elective Courses

FIELD CROPS PROPAGATION TECHNIQUES (2+0) 2 ECTS:3

Basic principles of plant propagation, propagation techniques, practical methods, applied techniques in laboratory, greenhouse and field, root and shoot development in laboratory conditions, acclimatization to external conditions, transfer to greenhouse after rooting will be

explained theoretically and practically.

Textbook Lecture notes of the lecturer

PERFUMERY PLANTS

(2+0) 2

ECTS:3

Explanation of the main perfumery plants in the group of medicinal and aromatic plants. Giving information about the active ingredients in perfumery plants. The use of this group of plants and their active ingredients in perfume and cosmetics industry.

Textbook:

- Ceylan, A., 1995, Medicinal Plants I, (3rd Bsm.), E.Ü., Faculty of Agriculture. Publications No: 312, Ceylan, A., 1996, Medicinal Plants II, (2nd Bsm.), E.Ü., Faculty of Agriculture. Publications No: 481, Ceylan, A., 1994, Medicinal Plants III, (1st Bsm.), E.Ü., Faculty of Agriculture. Publications No: 509.

Auxiliary Textbooks:

- Kamil İlisulu, 1992, Ankara University, Faculty of Agriculture, Publications, p. 302
- Mc.Nair, J. B., 1965 Studies in Plant Chemistry, Los Angeles, California, 90005 Howard G. M., Perfumes, Cosmetics and Soaps, Chapman and Hall, London.
- Akgül, A., 1993. Spice Science and Technology Selçuk University Faculty of Agriculture, Department of Food Science and Technology Ankara 101-104

GEOGRAPHIC INFORMATION SYSTEM APPLICATIONS IN FIELD CROPS

(2+0) ECTS:3

Geographic Information Systems (GIS) concept. Basic GIS applications. Environmental applications. Infrastructure-engineering practices. Property practices. Socioeconomic applications.

Textbook:

- Yomralıoğlu, T., 2000, "Geographic Information Systems: Basic Concepts and Applications", Akademi Kitapevi, Trabzon

Auxiliary Textbooks:

- Longley A. P., Goodchild M. F., Maguire, D. J., Rhind, D. W., 2001. "Geographic Information Systems and Science", John Wiley & Sons, England.

PROJECT PREPARATION TECHNIQUES

(3+0) 3

ECTS:3

Project concepts, projects and characteristics of field crops, determination of project subject and project decision, project justification and market study, project scale and site selection, technical aspects of the project, project expenses and revenues, technical evaluation of projects, financial evaluation of projects, economic evaluation of projects, EU project cycle management

Textbook:

- Erkuş, A., Rehber, E., 1998, Project Preparation Technique, Ankara University Faculty of Agriculture Publications, Publication No: 1496, Ankara.

Auxiliary Textbooks:

- İnan, İ. H., 2000, Project Preparation and Evaluation Technique, Tekirdağ. -Cinemre, H. A., 2001, Project Preparation and Evaluation, Ondokuz Mayıs University Faculty of Agriculture Textbook, No: 41, Samsun.

0700007001 Coded Elective Courses

MEADOW PASTURE IMPROVEMENT (3+0) 3AKTS : 4

In this context, to determine the methods that can be applied in a meadow and pasture to be improved, to determine the factors to be considered when establishing an artificial meadow and pasture facility, to determine the species and mixtures according to ecological factors in lean and mixed sowing and to gain the knowledge and skills to realize the methods that can be used in meadow and pasture improvement.

Textbook:

- Altın, M., A.Gökkuş and A.Koç, 2005, Meadow Pasture Improvement, Ministry of Agriculture and Rural Affairs, Ankara.

Auxiliary Textbooks:

- Avcıoğlu, R. H.Soya and H.Geren, 2009, Pasture Law No. 4342 Applications and Pasture Reclamation and Amenagement, Antalya.
- Gençkan, M.S., 1985:Meadow-Maereland Culture, Amenagmanı, Islahı, EÜZF Yay.No:483.

PLANT BIOTECHNOLOGY (3+0) 3AKTS : 4

Definition of biotechnology, its use and applications in agricultural production, tissue culture techniques, genetic engineering methods and genetic modifications in plants of agricultural importance will be given.

Textbook:

- Plant Biotechnology (Prof. Dr. Rüştü Hatipoğlu), Ç. Ü. Faculty of Agriculture Publications, 2008.

Auxiliary Textbooks:

- Lecture notes of the lecturer

NISASTA and SUGAR PLANTS

(3+0) 3AKTS

: 4

The history, importance and utilization of starch sugar crops, production practices, maintenance, problems and solutions to these problems.

Textbook:

- Çukurova University Faculty of Agriculture General Publication No: 188, Prof.Dr. Halis Arıoğlu Ankara University Faculty of Agriculture Publications Prof.Dr. Celal Er, Araş. Gör. Serkan Uranbey

Auxiliary Textbooks:

- Lecture notes of the lecturer

FIBER PLANTS

(3+0) 3AKTS

: 4

Fiber crops evolution, morphology, physiology, seed structure, germination, rooting, stem, branching, leaf, flowering, fertilization, fruit and seed formation, tillage, seed bed preparation, fertilization, seed, irrigation, weed control, harvesting, threshing, storage, warehouse pests, diseases and pests of fiber crops, breeding and quality.

Textbook:

- Kara, K., 2010. Fiber Crops Cultivation and Breeding. Atatürk University Faculty of Agriculture Publications No: 239.

Auxiliary Textbooks:

- Günel, E. 1993. Fiber Crops Cultivation Technique. Yüzüncü Yıl University Faculty of Agriculture Publications No: 6. Van Mert, Mehmet, 2007.
- Fundamentals of Cotton Agriculture. Chamber of Agricultural Engineers Technical Publications Series No: 7
- Mert, M.,2009.Fiber Plants. Nobel Publication No: 1446 Science Sciences: 96, Nobel Science and Research Center Publication No: 52
- İncekara, F. 1979. Industrial Plants and Breeding. Fiber Crops and Breeding. Ege University Faculty of Agriculture Publications No: 65. 294 pages.

WARM CLIMATE CEREALS

(3+0) 3AKTS

: 4

This course covers maize (*Zea mays* L.), rice (*Oryza sativa* L.), millets (*Sorghum* ssp., *Panicum* ssp., *Setaria italica* L.) and cassava (*Phalaris canariensis* L.). Introduction to cool climate cereals: Economic importance, adaptation, morphology, physiology, storage and standardization. Details of each plant: Economic importance, origin, cytogenetics, taxonomy, Turkish varieties, standardization, adaptation, cultivation techniques, diseases and pests.

Textbook:

- K n, E. 1997. Cereals II (Warm season cereals). Cereals II (Warm season cereals). Ankara Univ. Faculty of Agriculture. Textbook, Publication No: 1360. Textbook: 394. Ankara.

Auxiliary Textbooks:

- K rtok, Y.1998. Maize growing and usage Kocaoluk Publishing Industry and Tic. Ltd. Őti, 445 p., Istanbul. Olson, R.A., and K. J. Frey, 1987.
- Nutritional Quality of Cereal Grains: Genetic and Agronomic Improvement. American Society of Agronomy, Inc. #28 in the series Agronomy, pps 511., Madison, Wisconsin, USA.
- Sprague, G.F. and Dudley, J.W. 1992.(Ed).Corn and Corn Improvement. American Society of Agronomy, Inc. Agronomy No.18, pps.986, USA. S rek, H. 2002.
- Rice farming, Hasad Publishing Ltd.Őti. Atlan Matbaası, 240 p., Kadık y-Istanbul

0700008001 Coded Elective Courses

Fodder Crops Storage and Storage**(3+0)3AKTS****: 4**

Preservation of forage crops, the importance of pre and post harvest in the preservation of forage crops, the importance of drying and withering in the preservation of forage crops, feed quality of stored forage crops, evaluation of forage crops.

Textbook:

- Forage conservation

Auxiliary Textbooks:

- Lecture notes of the lecturer

GOOD AGRICULTURAL PRACTICES**(3+0) 3AKTS****: 4**

To be able to comprehend what good agricultural practices are To be able to comprehend basic information about good agricultural practices To be able to plan good agricultural practices To be able to realize good agricultural practices To be able to organize and evaluate reports or projects related to good agricultural practices To be able to recommend good agricultural practices.

Textbook:

- DurmuŐođlu, E., and Tosun, N., 2011. Good Agricultural Practices. E. .Z.F. Department of Plant Protection, Bornova-İzmir, 120 pp.

Auxiliary Textbooks:

- Luning, edited by P. A.; Devlieghere, F.; Verhé, R. (2006). Safety in the agri-food chain. Wageningen, The Netherlands: Wageningen Academic Publishers. ISBN 90-76998-77-9

quality standards and storage of field products

(3+0) 3AKTS : 4

Information is given about the importance of standardization, standards and storage methods of important field crops.

Textbook:

- Arslan, N., Yilmaz, G., Karadag, Y., 1999. STANDARDIZATION AND STORAGE IN FIELD PRODUCTS. Gaziosmanpaşa Univ. Zir. Fak. Yay., No:13, Tokat. TSE Field Products Standards

Auxiliary Textbooks:

- Lecture notes of the lecturer

ALTERNATIVE FEED CROPS (3+0) 3AKTS : 4

Apart from the common forage plant species (legumes and wheatgrasses) cultivated in agricultural areas, to create awareness of which species are found in natural areas and which are suitable for cultivation as forage plants and which are suitable for cultivation as forage plants and which species can be used in animal nutrition. To give the necessary information about the nutrient content, climate and soil requirements, cultivation and usage areas of these species.

Textbook:

- Tan, M and Temel, S., 2012. Alternative Forage Crops. Atatürk University Course Publications No: 246, Erzurum.

Auxiliary Textbooks:

- Lecture notes of the lecturer

PLANT GENETIC RESOURCES (3+0) 3AKTS : 4

The constant change in biotic and abiotic pressures in environmental conditions necessitates that plant breeding studies should also be continuous. New problems arising in plants require the use of appropriate gene resources (currently used cultivars, unused old cultivars)

varieties, primitive cultivars or local varieties, transitional forms and wild species) can be identified, conserved and utilized by utilizing classical and modern techniques. With this basic understanding, "Plant Gene Resources" course covers the concept and scope of plant gene resources; gene and propagation centers of plants; genetic resource erosion; principles of gene resources studies (coordination of studies and training studies); finding and collection (purpose of collection, plant and region priorities in collection, optimum plant collection and methods, seed collection, herbarium sampling, collection records, gene bank studies); conservation and storage (principles of seed storage, seed viability in storage, seed and environment relations in storage, principles of vegetative storage, flower powder storage, storage systems); production and regeneration of gene resources; evaluation and utilization; information storage (documentation).

Textbook:

- Basic References Şehirali, S. and M. Özgen, 1987. "Plant Genetic Resources" Textbook, A.Ü. Faculty of Agriculture Publications, No: 1020, Textbook No: 294, A. Ü. Basımevi, Ankara, 239 pp.

Auxiliary Textbooks:

- Regular publications of the International Plant Genetic Resources Institute (IBPGR)

0701105000 Coded Elective Courses

GENERAL VITICULTURE

(1+2) 2AKTS

: 4

Giving basic information to students about vine biology, physiology and anatomy.

Textbook:

- Çelik,H., Ağaoğlu,Y.S., Fidan Y., Marasalı,B., Söylemezoğlu, G.1998.General Viticulture Sunfidan Mesleki Kitaplar Serisi:1, 253 pp, Ankara.

Auxiliary Textbooks:

- Celik,S. 1998. Viticulture (Ampelology) Volume-1. 426 p, Tekirdag

- Ađaođlu, Y.S. 1999 Scientific and Applied Viticulture. Kavaklıdere Education Publications.
No: 1, 205 pp Ankara.

COOL CLIMATE VEGETABLES (2+2) 3AKTS : 4

Basic and general principles of cool climate vegetable species and their cultivation giving.

Textbook:

- Gūnay A. 2006. Vegetable growing 1 and 2. 2.Vural et al.2000. Culture Vegetables. E.Ü.Z.F. Department of Horticulture-İZMİR

Auxiliary Textbooks:

- Lecture notes of the lecturer

HORTICULTURE PRODUCTION TECHNIQUE (2+2) 3AKTS : 4

Giving fruit, vegetable and vine production techniques to students

Textbook:

- Horticultural Technique, Authors: Hudson T. Hartman, Dale E. Kester, Translators: Nurettin Kaşka, Muhsin Yılmaz, Çukurova University Faculty of Agriculture Publications: 79, Textbook No: 2

Auxiliary Textbooks:

- General Fruit Growing, R.Gerçekçiođlu, Ş. Bilginer, A. Soylu. Nobel Publications, p.480.

ORNAMENTAL PLANTS CULTIVATION (1+2) 2AKTS : 4

Definition of outdoor ornamental plants and their importance in urban and rural landscapes; classification of plants according to different physical criteria (norm, form, texture, branching); physical and biological differences between leafy and coniferous plants; taxonomic, morphological, biological characteristics, ecological and cultural requirements, propagation methods, important cultivars and characteristics of important trees, shrubs, trees, shrubs and climbing-climbing species.

Textbook:

- Lecture notes of the lecturer

insect morphology and physiology (2+2) 3AKTS : 4

Defining and determining the place of Insecta class in Arthropoda branch, structure, shape and extensions of the body wall and molting, insect embryology, structure and extensions of the head, thorax and abdomen, structure and functions of sensory organs, respiratory, digestive, excretory, nervous systems, structure and function of blood, structure and function of hormones will be explained.

Textbook:

- Basic Rules of Life II. Ali Demirsoy 1995, General Entomology. I. Akif Kansu.

Auxiliary Textbooks:

- The Insects, Structure and Function. Fourth edition R.F. C

MICOLOGY

(3+0) 3AKTS

: 4

Introduction to the kingdom of fungi, basic concepts in mycology, cell structure in fungi, ecology of fungi, vegetative structure of fungi, propagation of fungi

Textbook:

- Mycology-I Prof. Dr. Mehmet ÖNER, Ege Univ. Publication, 180 pp.
- Mycology-II Prof. Dr. Mehmet ÖNER, Ege Univ. Publication, 136 pp.

Auxiliary Textbooks:

- Mushroom Science, Prof. Dr. Gıyasettin KAŞIK, Selçuk University, Konya, 432 pp.

GENERAL HERBOLOGY

(1+2) 2

ECTS:4

Development of herbology, benefits and damages of weeds, biology and ecology of weeds, advantages of weeds over cultivated plants, general methods used in the control of weeds, classification of herbicides, basic information about the use of herbicides, introduction of weeds that cause problems in agricultural areas.

Textbook:

- Özer, Z. et al. 2001. Herbology (Weed Science) GOP University Agriculture Fak Yay. No: 20 TOKAT.

Auxiliary Textbooks:

- Lecture notes of the lecturer

RURAL DEVELOPMENT

(2+0) 2

ECTS:4

Rural development and basic concepts, relations between rural development and other disciplines, definition of rural areas and basic characteristics of rural areas in Turkey and in some countries, rural

Basic working areas and objectives in development practices, objectives, tools and methods applied in rural development studies, basic features of rural development policies and practices, rural development policies and policy changes in the EU, changes in rural development policies in the world, rural development policies in Turkey, evaluation of practices and results, evaluation of the results of rural development projects implemented and being implemented in Turkey, potential identification and inventory studies in rural development, problem analysis techniques in rural development studies, priority setting, risk analysis and solution approaches, Turkey-National Rural Development Strategy.

Textbook:

- Bakırcı, M., 2007. Rural Development in Turkey, Nobel Academic Publishing, 416 pp.

Auxiliary Textbooks:

- Lecture notes of the lecturer

AGRICULTURAL MANAGEMENT

(2+2) 3AKTS

: 4

The concept of agribusiness, classification of agricultural enterprises, characteristics, the purpose of business analysis and data collection, criteria used in the analysis of agricultural enterprises, the results of the activities of agricultural enterprises and the measurement of their success status, business planning definition, purpose and data used in planning, basic concepts and applications used in business planning, budgeting method; methods and applications, program planning method; methods and applications, linear programming method; basic concepts and assumptions linear programming method; profit maximization, graphical solution, interpretation of results, linear programming method; model building, simplex solution, interpretation of simplex solution results, sensitivity analysis, cost minimization, graphical and simplex solution, interpretation

Textbook:

- Rehber, E., Tipi, T., 2005. Agricultural Management and Planning. Uludag University, ISBN:975-6149-06-X.

Auxiliary Textbooks:

- Kay, R.D., W.M., Edwards, P.E. Duffy, 2004, Farm Management, 5th Edition, Mc Graw Com. Inc
- Castle, E.N., M.H. Becker, A.G.Nelson, 1987, Farm Business Management, The Decision Making Process, Macmillan Pub. Company.
- Erkuş, A., R. Demirci, 1996, Agricultural Management and Planning, A.Ü. Zir.Fak. Yay., Publication no: 1435, Textbook: 417, Ankara.
- Inan, İ.H., Agricultural Business Management and Planning Lecture Note, Tekirdag, 2008.

Agricultural Valuation and Expertise

(2+0) 2AKTS

: 4

The nature of agricultural valuation, time value of money, objectives in valuation, criteria taken into account in valuation, valuation methods, valuation in agricultural lands, valuation in agricultural enterprises, valuation in orchards, valuation in lands covered with fruitless trees, valuation in structures, valuation in lands, valuation in agricultural credit applications, determination of pollution damages in agriculture, expert witness and expert report preparation.

Textbook:

- Gülten, Ş., 2000, Kıymet Takdiri, Atatürk Univ. Faculty of Agriculture. Publication No: 202, Erzurum.

Auxiliary Textbooks:

- Mülayim, Z.G., 2008, Agricultural Valuation and Expertise, Yetkin Publications, Ankara.
- Rehber, E., 2008, Agricultural Valuation and Expertise, Ekin Publications, Bursa

0701106000 Coded Elective Courses

FRUIT GROWING TECHNIQUE (2+2) 3AKTS : 4

General and basic information about propagation methods and pruning that can be used in fruit species provision of information.

Textbook:

- Lecture notes of the lecturer

ECOLOGY and PHYSIOLOGY OF HORTICULTURE PLANTS (1+2)2AKTS : 4

Giving information about ecological and physiological characteristics of horticultural plants.

Textbook:

- Kacar, B., Katkat, V., Öztürk, Ş. 2002. Plant Physiology. Uludağ Univ. Empowerment Foundation Publication. Bursa, S. 563.

Auxiliary Textbooks:

- Eriş, A., 2007. Physiology of Horticultural Plants. Uludağ University Faculty of Agriculture Lecture Notes No: 11, VI. Edition, Bursa, S. 152.

WARM CLIMATE VEGETABLES

(1+2) 2AKTS

: 4

With this course; It is aimed to give general characteristics of warm climate vegetables, to explain morphological characteristics of vegetable species such as pepper, okra, tomato, bean, cucumber, melon, watermelon, squash, eggplant, sweet corn and sweet potato, to explain climate and soil characteristics and to give information about cultivation techniques.

Textbook:

- Günay A. 2006. Vegetable growing 1 and 2. 2.Vural et al.2000. Culture Vegetables. E.Ü.Z.F. Department of Horticulture-İZMİR

Auxiliary Textbooks:

- Lecture notes of the lecturer

GRAPE FRUITS

(2+2) 3AKTS

: 4

In this course, students will be informed about the cultivation of berry fruit species.

Textbook:

- Ağaoğlu, Y.S. 1986. Grape Fruits. A. U. Faculty of Agriculture. Publications. Textbook: 290, 377 s.

Auxiliary Textbooks:

- Lecture notes of the lecturer

PLANT ACAROLGY

(1+2) 2AKTS

: 4

Description, biology, damage and control of mites of economic importance in fruit, vineyard, grain, vegetable, forage and industrial crops.

Textbook:

- Marjorie, A., Hoy., 2011. Agricultural Acarology. Taylor and Francis 393p.

Auxiliary Textbooks:

- Lecture notes of the lecturer

PLANT BACTERIAL DISEASES

(2+2) 3AKTS

: 4

Plant pathogenic bacteria that cause economic losses in the world, the role of environmental factors in disease development, methods used in the isolation and diagnosis of plant pathogenic bacteria, disease management, disease mechanisms of pathogens and plant resistance mechanisms.

Textbook:

- Lecture notes of the lecturer

INSECT SYSTEMATICS**(2+2) 3AKTS****: 4**

Introduction of insects at the order and family level, biological characteristics, their role in ecosystems, beneficial and harmful insect groups.

Textbook:

- Lecture notes of the lecturer

**AGRICULTURAL FIGHTING METHODS and AGRICULTURAL Pesticides (2+0)
2AKTS****: 4**

Cultural, mechanical, physical, biological, biotechnical, chemical and integrated control methods used in the control of plant diseases, recommended drugs and doses against agricultural diseases in Turkey, cultural, mechanical, physical, biological, biotechnical, chemical and integrated control methods used in the control of pests are given. Biology of weeds, ecological requirements, economic values, herbicides, weeds in different crops and their control methods.

Textbook:

- Yıldırım, E., 2008. Agricultural Pest Control Methods and Drugs. 2nd Edition. Atatürk University Faculty of Agriculture Publications No: 219, Faculty of Agriculture Offset Facility, Erzurum, 350 pp.

Auxiliary Textbooks:

- Özer, Z., Kadioğlu, İ., Önen, H., and Tursun, N., 2001. Herbology (Weed Science) Gaziosmanpaşa University Faculty of Agriculture Publications No:20 Book Series No:10, 3rd Edition, Tokat
- Guncan, A., 2009. Weeds and Control Principles. Selcuk University, Agriculture Faculty, 4th Edition, Konya
- Zengin, H., Demirci, E., 2001. Plant Diseases and Weed Control Methods, Erzurum, 160 pp.

ANALYSIS and PLANNING OF AGRICULTURAL BUSINESSES**(2+2)3AKTS****: 4**

It is aimed to improve their knowledge and skills in the decision-making process, to understand the meaning and importance of planning in agricultural business, to learn planning methods and to establish models with the data they will obtain from agricultural enterprises, to develop guiding suggestions for agricultural enterprises by interpreting the solutions of the models.

Textbook:

- Agricultural Management, Analysis and Planning of Agricultural Enterprises, KARAGÖLGE, C., 2001.

Auxiliary Textbooks:

- Business Economics and Management, Muammer Doğan. Agricultural Economics and Management, İ. Hakkı İNAN, 2006.

AGRICULTURAL ACCOUNTING

(2+2) 3AKTS

: 4

Development of accounting, basic concepts, basic financial statements, uniform chart of accounts in accounting, single and double sided record keeping technique, bookkeeping on balance sheet and business account basis, accounting systems applied in agriculture, agricultural business records (physical and financial records, analysis of accounting records, some sample applications on computer

Textbook:

- Agriculture Accounting (Applied Examples), Prof.Dr. Bahattin CETIN and Assist.Assoc.Prof.Dr.Tolga TİPİ, Nobel Publications, Ankara, 2007.

Auxiliary Textbooks:

- Lecture notes of the lecturer

PRODUCTION ECONOMY

(2+2) 3AKTS

: 4

Definition of production economics, its objectives and its relation with other sciences, characteristics of agricultural production, production and cost functions (law of diminishing returns, basic concepts, classical production function, cost function), factor-product analysis (optimum level of input use), factor-factor analysis (relations between inputs, co-product curves, lowest cost input combination), product-product analysis (relations between products, production possibilities curve, optimum product combination), economics of scale, technical progress and agriculture.

Textbook:

- Lecture notes of the lecturer

9900001062 and 9900001154 Coded Elective Courses

SOCIAL COURSE GROUP

PHYSICAL EDUCATION**(3-0) 3**

ECTS: 4

Ability to make appropriate planning for physical education teaching. Ability to organize learning environments suitable for Physical Education teaching. To be able to use technological resources in the process of realizing the objectives of Physical Education teaching. To be able to use tools and resources suitable for Physical Education teaching process. To be able to plan school team work.

HALK GAMES**(3-0) 3**

ECTS: 4

Analysis of the basic steps on the figures of stage techniques suitable for development and Turkish folk dance competition rules

OCCUPATIONAL HEALTH AND SAFETY**(3-0) 3**

ECTS: 4

No. 6331 Occupational Health and Safety Law No. 6331 to provide information about the purpose and scope, Workplaces; basic information about the duties, powers and responsibilities for ensuring occupational health and safety

SIGN LANGUAGE**(3-0) 3**

ECTS: 4

By teaching the alphabet, basic vocabulary and grammar structures of Turkish Sign Language, students who take the course will be able to communicate with hearing impaired people through this language.

MUSIC**(3-0) 3**

ECTS: 4

Through scientific and artistic activities; Contributes to the transfer of local, national and universal values of music education to future generations by introducing and keeping alive. Uses information and communication technologies and at least one note writing and vocalization program. Gains choral and orchestra culture and repertoire and choral and orchestra management techniques. Contributes to the development of the existing accumulation in the region in terms of music education and culture.

PICTURE**(3-0) 3**

ECTS: 4

To define drawing and painting materials from classical to present day. To distinguish the usage techniques and differences of materials. To determine the materials for the purpose and to know the materials suitable for the technique. To use plastic values.

THEATER**(3-0) 3**

ECTS: 4

The use of theater in the acquisition of language skills in Turkish