



MINISTERUL EDUCAȚIEI ȘI CERCETĂRII

UNIVERSITATEA DIN CRAIOVA

FACULTATEA DE AGRONOMIE



Str. Libertății, nr. 19 cod. 200583, Tel./Fax 0251/41 84 75

PACKAGE OF COURSES

Bachelor study program: MASTER'S PROGRAM: ENVIRONMENTAL PROTECTION IN AGRICULTURE (PMA)

This is the package of course of bachelor study Master's program of Environmental Protection in Agriculture from the University of Craiova/Faculty of Agronomy/The Department of Agricultural and Forestry Technologies.

1ST YEAR OF STUDY

MODERN SYSTEMS OF AGRICULTURE

CODE: D32PMAM101

CREDITS: 6

COURSE COORDINATOR: PhD Lecturer Marian DOBRE

YEAR/SEMESTER: Ist Year / Ist Semester

HOURS PER WEEK: 1 hour of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Familiarizing of students with the main farming systems; Development of skills in terms of sustainability of agricultural systems.

TOPICS: Introduction, definition and attributes of the agricultural system; Agriculture system with alternate rotation; Conventional culture system; No tillage farming system (not till); Sustainable farming system.

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: answers to exam 70%, final answers to Laboratory works 30%

ASSESSMENT TYPE: Verification

REFERENCES:

1. Arends M.J., 2000. Feasibility of fall zone tillage for maize production. Farming Press, Ipswich, UK.
2. Bonciarelli F. And Archetti R. 2000. Energy saving through reduction of soil tillage. 15 th Conference of ISTRO, Texas, USA.
3. Insam H., Ingrid Franke-Whittle, 2010. Microbes at work – from wastes to resources. Springer editure.
4. Lightfouse E., 2010. Organic farming, pest control and remediation of soil pollutants. Springer editure.

MACHINING SYSTEMS FOR MINIMAL WORK OF THE SOIL

CODE: D32PMAM102

CREDITS: 7

COURSE COORDINATOR: PhD Professor Tudor ALEXANDRU

YEAR/SEMESTER: Ist year/ Ist semester

HOURS PER WEEK: 2 hours course, 2 hour practical course

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Establishment of soil work systems according to the agro-technical requirements imposed on the works to be performed by the agricultural machines and equipment and on the diversity of the physical and mechanical properties of the materials.

TOPICS: Studying the trends in the construction of agricultural tractors and agricultural machinery, their control and regulation systems; Study of modern systems for tracking the working parameters used in the construction of sowing machines; Methods and means of exploiting agricultural aggregates with minimal noxes.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Final theoretical exam 40%, Reports during the semester 60%.

ASSESSMENT TYPE: Exam

REFERENCES:

1. T. Alexandru, - *Mașiniagricole*, Editura Universitaria, Craiova, 2013
2. T. Alexandru, M. Glodeanu - *Exploatarea mașinilor agricole*. Ed. Sitech, Craiova 2009.
3. T. Alexandru T. - *Mașini agricole și horticole*. Ed. Sitech, Craiova 2005.

BIOENGINEERING AND BIOTECHNOLOGIES APPLIED IN AGRICULTURE I

CODE: D32PMAM103

CREDITS: 7

COURSE COORDINATOR: PhD Lecturer, Elena BONCIU

YEAR/SEMESTER: 1st year/ 1st semester

HOURS PER WEEK: 2 hours course, 2 hours practical course

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Knowledge of processes of initiation of plant cultures in vitro; Knowledge of the processes of obtaining and using somaclonal variability as a new source of valuable characters for the modern improvement of agricultural plants; Acquiring knowledge about the main types of in vitro cultures and their practical applications in agriculture.

TOPICS : Recent Achievements and Prospects for Engaging Bioengineering and Biotechnologies in Agriculture; In vitro superior plant culture; Types of in vitro cultures; The culture of meristems. Classification and practical applications in agriculture.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Exam answers 50%, Reports during the semester 50%.

ASSESSMENT TYPE: Exam

REFERENCES:

1. BADEA MARCELA, SĂNDULESCU DANIELA, 2001 – *Biotehnologii vegetale*. Fundația Biotech, Timișoara.
2. BONCIU ELENA, 2014 – *Elemente de bioinginerie agricolă*. Editura Sitech, Craiova.
3. BONCIU ELENA, 2011 – *Noțiuni de bioinginerie și biotehnologii. Strategii și aplicații*. Editura Sitech, Craiova.

THE BASIS OF ORGANIC FARMING I

CODE: D32PMAM104

CREDITS: 5

COURSE COORDINATOR: PhD Lecturer, Elena BONCIU

YEAR/SEMESTER: 1st year/ 1st semester

HOURS PER WEEK: 1 hour course, 1 hour practical course

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Knowledge of the theoretical and practical peculiarities of ecological agriculture and the ecological methods of plant protection against weeds, diseases and pests; Radiography of organic farming worldwide, in European Union and Romania.

TOPICS : The scientific basis of organic farming; Theoretical and practical features; The advantages and disadvantages of organic farming; Organic production rules in the plant, livestock and beekeeping system; The basis of organic farming in different types of agroecosystems.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 50%, Reports during the semester 50%

ASSESSMENT TYPE: Verification

REFERENCES:

1. BONCIU ELENA, 2014 – *Elemente de bioinginerie agricolă*. Editura Sitech, Craiova.
 2. BONCIU ELENA, SOARE, M., 2013 – *Agricultura ecologică și protecția agroecosistemelor*. Editura Universitaria, Craiova.
 3. MUNTEAN L.S., ȘTIRBAN M., LUCA E., FIȚIU A., MUNTEAN L., MUNTEAN S., ALBERT I., 2005 – *Bazele agriculturii ecologice*. Ed. Risoprint, Cluj-Napoca.
 4. VOICA, N., SOARE M., IANCU PAULA, BONCIU ELENA, 2006 – *Agricultura ecologică*. Ed. Universitaria, Craiova.
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THE INTEGRATED CROP PROTECTION

CODE: D32 PMAM 105

CREDITS: 5

COURSE COORDINATOR: PhD Professor, Aurelian Marius PARASCHIVU

YEAR / SEMESTER: Ist Year / Ist Semester

HOURS PER WEEK: 1 hour of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Knowledge and study of pathogens and harmful species, monitoring the evolution of attack levels and damage rates, and the use of preventive and control methods to keep them under the PED, the use of forecast and warning and phytosanitary quarantine

TOPICS: Integrated control-definition, object, importance to the agricultural practice and Food Safety; Methods of combating diseases and pests and their interaction; Developmental equations of various pathogens and pests and their use in plant protection practice; General information about the epidemiology of plant parasitic diseases.

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: Answer to exam 80%, Final answers to Laboratory works 20%

ASSESSMENT TYPE: Exam

REFERENCES:

1. Paraschivu, A. M.-2018- *Combaterea integrată a patogenilor și dăunătorilor la principalele culturi de câmp*, Editura SITECH, CRAIOVA,
2. Paraschivu, A.M.-2011- *Bolile plantelor-simptomatologie, cauzalitate, prevenire și combatere*, EUC.
3. Paraschivu, A.M.-2010- *Bolile plantelor-simptomatologie, cauzalitate, prevenire și combatere*, EUC.
4. Paraschivu, A. M.- 2006- *Fitopatologie generală*, Editura SITECH, Craiova.

BIOENGINEERING AND BIOTECHNOLOGIES APPLIED IN AGRICULTURE II

CODE: D32PMAM206

CREDITS: 5

COURSE COORDINATOR: PhD Lecturer, Elena BONCIU

YEAR / SEMESTER: Ist Year / IIst Semester

HOURS PER WEEK: 1 hour of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Acquiring knowledge on the role of transgenesis in agriculture to ensure food security; Knowing the direct and indirect methods of gene transfer to plants and animals; Acquiring knowledge about the main transgenic plants and animals with improved agronomic qualities.

TOPICS: Implications of bioengineering and agricultural biotechnologies in ensuring food security. Perspectives; Molecular basis of transgenesis or recombinant DNA technology; Transgenic organisms and their role in ensuring sustainable food security.

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 50%, Reports during the semester 50%

ASSESSMENT TYPE: Verification

REFERENCES:

1. BADEA ELENA, OTIMAN I., 2006 – *Plantemodificate genetic încultură. Impactul agronomic, ecologic și economic*. Editura Mirton.
2. BADEA MARCELA, SÂNDULESCU DANIELA, 2001 – *Biotehnologii vegetale*. Fundația Biotech, Timișoara.
3. BONCIU ELENA, 2014 – *Elemente de bioinginerie agricolă*. Editura Sitech, Craiova.
4. BONCIU ELENA, 2011 – *Noțiuni de bioinginerie și biotehnologii. Strategii și aplicații*. Editura Sitech, Craiova.

THE BASIS OF ORGANIC FARMING II

CODE: D32PMAM207

CREDITS: 7

COURSE COORDINATOR: PhD Assoc. Professor, Gheorghe MATEI

YEAR/SEMESTER: Ist Year / IIst Semester

HOURS PER WEEK : 2 hours course, 2 hours practical course

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Familiarization with specific national and European legislation; Conversion to organic farming: stages, Certification Organisms and specific requirements.

TOPICS: Conservation of water in the soil and its rational use in organic farming; National and international legislative framework; Standards and organisms in organic farming. IFOAM, NOP and JAS standards; Control and certification organisms. Certification of organic farms.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 50%, Reports during the semester 50%

ASSESSMENT TYPE: Exam

REFERENCES:

1. Negrea Gica, 2007, "Agricultura ecologică - șansa României în U.E.?", În : Euroconsultanță, nr. 5;
2. Toncea I., 2005, "Ghid practic de agricultură ecologică", Editura Academic Pres, Cluj-Napoca;
3. Toncea I., 2007 și 2008, "Agricultura ecologică - sursă sigură de hrană vie", Universitatea OVIDIUS Constanța, Asociația Bioterra, Academia de Științe Agricole și Silvicultură;
4. Voica, N șicolab., 2006 – *Agricultura ecologică*. Ed. Universitaria, Craiova.

ECOLOGICAL RECONSTRUCTION OF SOILS AND DEGRADED LANDS

CODE: D32PMAM208

CREDITS: 5

COURSE COORDINATOR: PhD Assoc. Professor, Cristian POPESCU

YEAR / SEMESTER: Ist Year / IIst Semester

HOURS PER WEEK: 1 hour of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: The importance of soil, a component of the ecological system, the living environment for plants, the main means of production in agriculture and the tasks of specialists, whose purpose is the soil; Identification and delimitation of sources of natural and anthropogenic pollution of soils and lands and measures to prevent, mitigate and eliminate the causes.

TOPICS: Concept of degradation and limiting factors of soil fertility; The concept of ecological reconstruction and ecological reconstruction of degraded soils and lands; Soil and land improvement where the fertility limiting factor is anthropogenic (secondary) compaction; Preserving and raising the humus content of soils.

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 70%, Reports during the semester 30%

ASSESSMENT TYPE: Verification

REFERENCES:

1. Popescu C., 2009, Ecopedologie, Editura Universitaria, Craiova.
2. Popescu C., 2011, Pedologie-aplicații practice, Editura Universitaria, Craiova.
3. Popescu C., 2017, Reconstructia ecologică și ameliorarea solurilor și terenurilor degradate, Editura Sitech, Craiova.

NUTRIENT MANAGEMENT AND ENVIRONMENTAL QUALITY

CODE: D32PMAM209

CREDITS: 4 (Course) and 3 (Project)

COURSE COORDINATOR: PhD Lecturer, Mihail SUSINSKI

YEAR / SEMESTER: Ist Year / IIst Semester

HOURS PER WEEK: 1 hour of course, 1 hour of project

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Students gain knowledge about the role of nutrients in plant life and nutrient needs, as well as optimizing and optimizing fertilization systems for the main plant species to obtain superior agricultural and horticultural production qualitatively and quantitatively while maintaining and increasing soil fertility; Students should know the main characteristics of natural organic and mineral agrochemical resources used in agricultural practice;

TOPICS: The role of nutrients in the process of growing and developing crop plants; Role of nitrogen, phosphorus, potassium, magnesium, calcium, iron, manganese, zinc, molybdenum; Principles, methods (techniques) for the rational use of fertilizers in agriculture.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Exam answers 100%

ASSESSMENT TYPE: Exam+Project

REFERENCES:

1. Velicica Davidescu, D. Davidescu, 2002, Compendiu agrochimic, Ed. Academiei, București ;
2. Marilena Mărghițaș, Mihai Rusu, 2003, Utilizarea îngrășămintelor și amendamentelor în agricultură, Ed. Academic Press, Cluj-Napoca.
3. Mocanu R., Dodocioiu Ana Maria, Susinski M., 2009. Agrochimie. Editura Sitech Craiova.

SPECIAL TECHNOLOGY FOR OBTAINING AGRICULTURAL PRODUCTS

CODE: D32 PMAM 310

CREDITS: 6

COURSE COORDINATOR: PhD Assoc. Professor , Emilia CONSTANTINESCU

YEAR / SEMESTER: Ist Year / IIst Semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: The quality of the products is appreciated taking into account more characteristics: physical, chemical and technological. Emphasis is on hygienic, ecological and biological quality. Production systems are optimized in such a way that they are viable from the point of view economical, reproducible, capable of ensuring use of the territory with a minimum of consumption.

TOPICS: The main biological, ecological and technological factors that make organic farming more productive; Organic farming framework technology: cropping, fertilization, soil work, seed and sowing, care, harvesting, conditioning, certification, storage of cereal crops.

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 70%, Final answers to works and homework 30%

ASSESSMENT TYPE: Exam

REFERENCES.

1. Bonciu Elena, M. Soare, 2013, Agricultura ecologică și protecția agroecosistemelor. Editura Universitaria Craiova.
2. Istudor Viorica, 1998, 2001, 2005, Farmacognozie, Fitochimie și Fitoterapie. Vol. I (1998), Vol. II (2001), Vol. III (2005), Ed. Medicală, București.
3. Mănescu B., Marcela Ștefan, 2005, Ingineria ecosistemelor agricole. Editura ASE București.
4. Muntean , S., L., Șicolab., 2005, Bazele agriculturii ecologice. Editura Risoprint, Cluj - Napoca.

2ST YEAR OF STUDY

SPECIAL TECHNOLOGY FOR OBTAINING ECOLOGICAL HORTICULTURAL PRODUCTS

CODE: D32PMAM311

CREDITS: 6

COURSE COORDINATOR: PhD Assoc. Professor, Rodica SOARE

YEAR/SEMESTER: 1Ist year/ IIIst semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Assimilating the most appropriate methods to minimize pollutants; Development of differentiated technologies for ecological vegetables.

TOPICS: Ecotechnologies of vegetable species; Description and knowledge of organic cultivation of certified vegetable crops; Organic production of vegetable seedlings: preparation of the substrate; methods of sowing.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 50%, Reports during the semester 50%

ASSESSMENT TYPE: Exam

REFERENCES:

1. Soare, Rodica, Duță, Adriana – *Tehnologiile legumicole alternative*. Editura Universitaria, Craiova, 2011.
2. Maria Dinu, Soare Rodica – *Notiuni teoretice și practice de legumicultură ecologică*. Editura Universitaria, Craiova, 2015.
3. Duță, Adriana, 2007 - *Ingineria sistemului legumicol*, vol. III. Tehnologii ecologice. Editura Universitaria, Craiova.

THE INTEGRATED CONTROL OF ENVIRONMENTAL POLLUTION IN AGRICULTURE

CODE: D32 PMAM 312

CREDITS: 6

COURSE COORDINATOR: PhD Professor, AurelianMarius PARASCHIVU

YEAR/SEMESTER: IIst year/ IIIst semester

HOURS PER WEEK: 2 hours of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Identifying of measures and methods to reduce the pollution of the environment with nitrates and pesticides and maintaining a cleaner environment; Use of modern methods of scientific investigation in the field of environmental protection

TOPICS: Water pollution, wastewater; Classification of water pollution; Waste water and their components. Biological wastewater treatment; Physical and chemical treatment of waste water; Sediment treatment; Waste management resulting from agricultural activities. Recycling. Recycling of organic waste and fractions. Recycling of plastics.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 60%, Final answers to works and homework 40%

ASSESSMENT TYPE: Exam

REFERENCES:

1. Paraschivu, A. M.-2018- Combatere reintegrată a patogenilor și dăunătorilor la principalele culturi de câmp, Editura SITECH, CRAIOVA,
2. Paraschivu, A.M.-2011-Bolile plantelor-simptomatologie, cauzalitate, prevenire și combatere, EUC.
3. Paraschivu, A.M.-2010-Bolile plantelor-simptomatologie, cauzalitate, prevenire și combatere, EUC.
4. Paraschivu, A. M.- 2006-Fitopatologie generală, Editura SITECH, Craiova.

THE USE OF AGROFORESTRY PRACTICES FOR THE PROTECTION OF AGRICULTURAL ECOSYSTEMS

CODE: D32PMAM313

CREDITS: 6

COURSE COORDINATOR: PhD Assoc. Professor, Constantin NEȚOIU

YEAR/SEMESTER: IIst year/ IIIst semester

HOURS PER WEEK: 1 hour of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Student's knowledge of the biological, ecological, technical and economic bases of agro-forestry systems; Design and management of agro-forestry systems.

TOPICS: The biological, ecological, technical and economical bases of agro-forestry systems; The management of agro-forestry systems; Economic efficiency of agro-forestry systems; Elaborate a feasibility study to establish an agro-forestry system

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 60%, Presentation feasibility study report 40%

ASSESSMENT TYPE: Exam

REFERENCES:

1. Netoiu C. 2017, Utilizarea practicilor agroforestiere pentru protecția ecosistemelor agricole, note de curs.
2. Mihaila Elena, Constandache C., Dănescu F., Dragoi Simona, 2010, Sisteme agrosilvice. Ed Silvica, Seria II-a Lucrări de cercetare, București.
3. Ianculescu M., 2008, Perdelele forestiere de protecție în contextul schimbărilor climatice/ În: Giurgiu (ed) Padurile și modificările de mediu, vol IV, Editura Academiei Române .

THE NON-POLLUTION EXPLOATATION OF AGROTURISTICS RESOURCES

CODE: D32PMAM314

CREDITS: 6

COURSE COORDINATOR: PhD Professor, Aurel CĂLINA

YEAR/SEMESTER: 1st year/ IIIst semester

HOURS PER WEEK: 1 hour of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Identify the tourist potential of a hillside / mountain area and develop a database to design a farm / agro-tourism enterprise that complies with all environmental protection standards; Acquiring European concepts: agrotourism, ecotourism, rural tourism.

TOPICS: Agrotourism and rural tourism in Romania; Legislation, tourist application in the rural area; Actions and measures improved for the development of rural tourism; The village and real opportunities in the field of agriculture and rural tourism.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 50%, Final answers to works and homework 50%

ASSESSMENT TYPE: Verification

REFERENCES:

1. Călina Aurel (2007), Agroturism și C.G.A.T., Editura SITECH, Craiova.
2. Călina Jenica (2008), Agroturism; Editura Sitech, Craiova.
3. Cîndea, M., Erdeli. G., Simino, T., (2000), România - potențial turistic și turism, Editura Universității din București.
4. François Moinet (2006), Le tourisme rural, Editions France Agricole, Paris.

AGROECOLOGY

CODE: D32PMAM315

CREDITS: 6

COURSE COORDINATOR: PhD Professor, Constantin COTIGĂ

YEAR / SEMESTER: IIst Year / IIIst Semester

HOURS PER WEEK: 1 hour of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: OB

COURSE OBJECTIVES: Acquiring knowledge about the main types of agroecosystems and their productivity; Knowledge of the particularities and ecological principles used in the management of natural resources and the preservation of the environment.

TOPICS: Agricultural Ecosystem (Agroecosystem); The concept of agroecosystem. Origin and evolution of agroecosystems; Environmental concepts and principles in managing natural resources and preserving the environment; Ecodevelopment (Sustainable Development - Sustainable Development).

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: Answers to exam 50%, Reports during the semester 50%

ASSESSMENT TYPE: Verification

REFERENCES:

1. COTIGA C. 2012 - Protecția naturii. Editura Sitech Craiova.
2. COTIGĂ, C., 2004 – Ecologie și protecția mediului. Editura Sitech, Craiova.
3. ȘCHIOPU D., 2002 – Ecologie și protecția mediului. Editura Ion Ionescu de la Brad, Iași.

PRACTICE FOR THE PREPARATION OF DISSERTATION PROJECT

CODE: D32PMAM310

CREDITS: 30

YEAR / SEMESTER: IIth Year / IVth Semester