

REQUIREMENTS
2021/2022 academic year II. semester

Name and code of the subject: Agricultural and Environmental Policy MTMKG7022A

Name and title of the person responsible for the subject: Dr. Juhász Csaba, associate professor

Additional instructors involved in teaching the subject: Dr. Szöllősi Nikolett, assistant professor

Name and level of the program: Agricultural Environmental Management Engineering

Subject type: obligatory

Teaching timetable of the subject, type of examination: 2+1K

Credit value of the subject: 3

Purpose of teaching the subject: The general aim of the course is to increase the knowledge on rural development and agricultural policy in favour of environmentally responsible farming based on sustainable use of natural resources. Additionally, agricultural environmental management engineering students get information on agro- and environmental policies of the European Union and Hungary. Students understand the work of agricultural and environmental policy systems, and the connections among the different actions.

Content of the subject (9 weeks):

1. History and future of the Common Agricultural Policy.
2. History and future of the Environmental Policy
3. Common Agricultural Policy and rural development. SPS and SAPS systems, sectoral policies, organisation of agricultural market, cross-compliance.
4. Application of CAP at national level. Review of agricultural policy regulation for selected countries.
5. Agroecology
6. Organic Farming
7. Agriculture and Climate Change
8. Green Direct Payments
9. Water acquis
10. Environmental policy in the business sector, EP at company level.

Summary of content – practice (9 weeks):

1. Introduction into Agricultural Policy.
2. Formulating Agricultural Policy in EU.
3. Direct payment.
4. Cross compliance.
5. Agri-Environmental Scheme, measures.
6. Agriculture and climate change.
7. Organic Farming.
8. Organic livestock production.

9. Presentation

10. Report.

Type of mid-term examination:

Written and/or verbal colloquium.

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):

The implementation of the practices. Missing the practice in accordance with the University of Debrecen Study and Exam Regulations. Active participation in exercises. Completing exercises. Giving presentation

Teaching aids:

ppt presentations.

Recommended literature:

Tom Delreux, T.-Sander Happaerts, S.:(2016). Environmental Policy and Politics in the European Union. Palgrave. 320.p. ISBN: 9780230244269.

Jordan, A.-Adelle, C.:(2012). Environmental Policy in the EU: Actors, institutions and processes. Routledge, Abington. 392.p. ISBN: 978-1849714693

OECD (2016), Agricultural Policy Monitoring and Evaluation 2016 (Summary), OECD Publishing, Paris. 136.p. ISBN: 9789264253537 (PDF); 9789264259126 (EPUB); 9789264208933 (print).

Tangermann, S.-von Cramon-Taubadel, S.:(2013). Agricultural Policy in the European Union. Universität Göttingen. 75.p. ISSN 1865-2697.

Tropea, F.:(2016). Common Agricultural Policy 2014- 2020. European Parliamentary Research Service. 36.p. ISBN: 978-92-823-9357-4.

REQUIREMENTS

2021/22 academic year II. semester

Name and code of the subject: Natural sciences II - Nature conservation ecology MTMKG7008A

Name and title of the person responsible for the subject: László Kövér, Ph.D. senior lecturer

Additional instructors involved in teaching the subject: -

Name and level of the program: Agricultural Environmental Management Engineering, MA

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+2, written exam

Credit value of the subject: 4

Purpose of teaching the subject:

In this subject, there is a special focus on the development of students' general awareness and correct ecological approach. They will learn and be able to apply in practice the specific system of ecological organizational levels and the ecological relationships of living communities. The introduction of anthropogenic impacts on living communities based on the principle of "think globally, act locally" is particularly important.

The ecological concept of the biotic environment and the levels of ecological organization are also part of the curriculum. In addition to the above, they are familiar with the national system of nature conservation and its most important values.

Content of the subject (14 weeks):

- 1 The system of biotic environmental factors. Population Ecology. The structure of populations, factors that regulate the population.
2. Regulatory mechanism of population numbers, r and K-type selection. Graduation.
3. Intra- and interspecific interactions.
4. Community Ecology. Structure and change of communities.
5. Food chains, food networks. Material and energy flow in biocenosis.
6. The habitat of living beings. Basics of biogeography. The Pannon biogeographical region.
7. Biodiversity. Types, measurement, protection of biodiversity. Concept of ecological footprint.
8. Concept, purpose, principles and system of symbols of nature protection. Green Days.
9. International regulation of nature conservation.
10. Nature conservation value groups. Geological, aquatic values and protection
11. Protection of their wild plant and animal associations.
12. Area-protected natural values
13. International Conservation Conventions
14. Nature Conservation Regulation in the European Union

Type of mid-term examination: no

Method of assessment (semester examination mark - report, practical grade, colloquium, examination): - Regular visits to lectures. Successful completion of the lectures, the practical examinations and the fulfilment of individual tasks.

Teaching aids:

Recommended literature:

Begon M. , Harper J.L., Townsend C.R. (1996): Ecology- Individuals, Populations and communities, Blackwell Science, ISBN: 0-632-03801-2

Otero C., Bailey C. (2003): Europe's Natural and Cultural Heritage, Friends of the countryside, ISBN: 84-607-9790-2

Voloscuk I. (ed). (1999): The National Parks and Biosphere Reserves in Carpathians-The last nature paradise, ACANAP, Tatranská Lomnica, Slovak Republic, ISBN: 80-88680-31-X

REQUIREMENTS

21/2022 academic year II. semester

Name and code of the subject: Environmental impact assessment and environmental modeling, MTMKG7009A

Name and title of the person responsible for the subject: János Tamás, professor

Additional instructors involved in teaching the subject:

Name and level of the program: Agricultural Environmental Management MSc

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+2 K

Credit value of the subject: 4

Purpose of teaching the subject: The aim of the subject is to have the basic concepts of environmental modeling acquainted with students, to give an inspection into the operation practice of models connected to soil-water-air-pollution. Students get acquainted with the major application possibilities regarding the environmental aspects of modeling systems. Students learn the human- and ecotoxicological risk assessment.

Content of the subject (14 weeks): theory/practice

1. Principles of modeling. / Surfer GUI.
2. Importance of environmental risk assessment. / Surfer colour management.
3. Characteristics of soil plant atmosphere system. / Surfer data management.

4. Modeling of the impacts on soil and groundwater effects. / Grid DEM.
5. Modeling of the impacts on surface water effects. / Data importing.
6. Modeling of the impacts on atmosphere effects. / Basic Data statistics.
7. Modeling of the impacts on biomass and landscape effects. / DAT data types.
8. Modeling of the impacts on the human health effects. / Gridding methods.
9. Socio-economic consequence of the impacts on the environmental effects. / Grid report evaluation.
10. Preparing of environmental impact studies. / Accurate interpolations.
11. Practical application of pollution transmission models, processing of remediation and monitoring. / IDW, TIN.
12. Remediation of soil, groundwater and surface water. / Global interpolations.
13. Cost-benefit analysis of remediation. / Kriging.
14. Development of simulation and modelling software. / Error propagations.

Type of mid-term examination: -

Active participation in lectures and exercises is a successful fulfillment of the tasks defined by the lecturer.

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
written exam.

Teaching aids: Presentations of lectures.

Recommended literature:

1. Adolf, E., Teimuraz, D. (2007): Air, Water and Soil Quality Modelling for Risk and Impact Assessment. Springer Verlag. 365 p.
2. Colombo, A. G. (2012): Environmental Impact Assessment. Springer Verlag. 334 p.
3. Bastmeijer, K., Koivurova, T. (2008): Theory and Practice of Transboundary Environmental Impact Assessment. Martinus Nijhoff Publishers. 397 p.
4. Wathern, P. (2013): Environmental Impact Assessment. Theory and Practice. Routledge (Taylor and Francis Group). 352 p.
5. GoldenSoftware(2018) Surfer Manual <https://www.goldensoftware.com/products/surfer>

REQUIREMENTS

2021/2022. academic year II. semester

Name and code of the subject: Élelmiszerlánc-biztonság (Food chain safety), MTMKG7010A

Name and title of the person responsible for the subject: Dr. Nikolett Czipa, associate professor

Additional instructors involved in teaching the subject: Loránd Alexa, assistant lecturer

Name and level of the program: Agricultural Environmental Management Engineering MSc

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+1, practical course mark

Credit value of the subject: 3

Purpose of teaching the subject: The main aim of the lectures is to know the physical, chemical and biological/microbiological hazards which have important effects on food safety and food quality. In this semester, students will know the methodology of risk analysis (mainly the risk assessment) and the methodology of the determination of tolerable intakes and other toxicological values. Student will know the methodology of hazard analysis relation to animal origin food production.

Content of the subject (14 weeks):

1. European food safety policy, ÉLBS, Regulation No. 178/2002/EC
2. Influencing factors of food safety
3. Introduction to toxicology, determination of safe human dose, human exposure assessment
4. Microbiological hazards, foodborne diseases, vulnerable groups
5. Chemical hazards

6. Risk management framework (RMF)
7. Hazards of genetically modified plants and foods
8. Labelling of food, geographical indicators and trade marks
9. Introduction to HACCP, HACCP handbook
10. Hazard analysis of plant origin foods
11. Hazard analysis of animal origin foods
12. Authorization of food business, penalties
13. Food trade in the EU, border control of food from third countries
14. Case studies

Type of mid-term examination: Attendance in the case of practical courses is compulsory. The acceptable extent of absences is 3 practical courses / semester. The Students have three tests in the session. At least 60% is required to satisfactory mark. If the Student fails to fulfil this we provide an occasion to repeat it in the educational period. Should the student fail this occasion as well, a new occasion must be offered until the end of the third week of the exam period to repeat the mid-term exam.

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
practical course mark

Teaching aids: Slides of lectures

Recommended literature:

IPCS (2010): WHO human health risk assessment toolkit: chemical hazards. ISBN: 978-92-4-154807-6
 2016/C 278/01 EU Commission notice on the implementation of food safety management systems covering prerequisite programs (PRPs) and procedures based on the HACCP principles, including the facilitation/flexibility of the implementation in certain food businesses
 Codex Alimentarius Commission: Food hygiene. Basic texts.
 (<http://www.fao.org/docrep/012/a1552e/a1552e00.pdf>)
 Regulations, directives, standards

REQUIREMENTS

21/2022 academic year II. semester

Name and code of the subject: Water management II, MTMKG7011A

Name and title of the person responsible for the subject: Attila Nagy, PhD, associate professor

Additional instructors involved in teaching the subject: Edit Gorliczay, assistant lecturer

Name and level of the program: Agricultural Engineer in Environmental Management MSc

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+1 K

Credit value of the subject: 3

Purpose of teaching the subject: Causes and conditions of forming of excess water. Excess water systems and water shed areas in plain lands. Controlled outlet of excess waters taking the changeable hydrological conditions for a longer term into consideration. Tools of implementation, technical, agrotechnical and agronomical measures aiming excess water management. Designing and setting of outlet systems. Setting and maintaining excess water outlet canals. Objects of excess water outlet canals, objects serving outlet water control. Preparation of water shed management plans. Retaining and fast outlet of excess waters in a particular area. Utilisation of excess waters for the decrease of water demand of irrigation. Reutilisation of waters, the quality of retained, stored water. Management focussing on retaining excess waters in order to mitigate the harmful effects of climate change and droughts. Review of technological practices, activities of irrigation management concerning agriculture and environmental management. Review of theoretical knowledge and exercises in practice. Basic knowledge of irrigation techniques, process of setting of an irrigation system, general information on automatic irrigation systems, main elements of irrigation systems, features, application of sprinklers, controlling automatics, controlling types, types and application of magnetic valves, types and application of sensors, other parts (filters, pipes, fittings), junction of pipes, preparation solutions for winter, pumps used in irrigation techniques, theory and practice of designing, theory of setting and installation, handing over of irrigation systems.

Content of the subject (14 weeks):

1. Basic definitions of excess water management
2. Causes and conditions of forming of excess water
3. Technical, agrotechnical and agronomical measures of excess water management
4. Setting, maintaining and objects of excess water outlet canals
5. Preparation of water shed management plans
6. Utilisation of excess waters for the decrease of water demand of irrigation
7. Reutilisation of waters, the quality of retained, stored water
8. Fundamentals and basic definitions of irrigation technology
9. Elements and techniques of surface irrigation
10. Elements and techniques of sprinkler irrigation
11. Elements and techniques of micro-irrigation
12. Pumps applied in irrigation
13. Theory and practice of irrigation design
14. Irrigation systems in the XXI century

Type of mid-term examination: -

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
written exam at the end of the semester

Teaching aids: -

Recommended literature:

1. Larry W. Mays (2011): Water resources engineering. ISBN-13: 978-0470460641, ISBN-10: 0470460644
2. Nakagami, Ken'ichi, Kubota, Jumpei, Setiawan, Budi Indra (Eds.) (2016): Sustainable water Management. Springer. ISBN: 9789811012044 9811012040 9811012024 9789811012020
3. Larry Keesen; Cindy Code (1995): The Complete Irrigation Workbook: Design, Installation, Maintenance & Water Management. GIE Media, Inc., Richfield OH.
4. Stephen W. Smith (1997): Landscape Irrigation: Design and Management. John Wiley & Sons, Inc., Hoboken, New Jersey

REQUIREMENTS

2021/2022. academic year 2. semester

Name and code of the subject: Sustainable Agricultural Systems and Technologies II. – Animal Production MTMKG7012A

Name and title of the person responsible for the subject: Dr. Czeglédi Levente professor

Additional instructors involved in teaching the subject:

Name and level of the program: Agricultural Environmental Management Engineering MSc.

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+1 K

Credit value of the subject: 3

Purpose of teaching the subject: The general aim of the subject is to inform students about the modern animal housing systems and the extensive animal production as well. During the lectures student will study the requirements of sustainable animal production, the effect on environment and the possibilities to alter the effect of animal production on grassland, environment and climate change.

Content of the subject (14 weeks):

1. Aim of animal production and animal products and performance
2. Production traits, requirements to environment
3. Housing and feeding of livestock species: cattle
4. Housing and feeding of livestock species: sheep
5. Housing and feeding of livestock species: swine
6. Housing and feeding of livestock species: poultry
7. Animal nutrition, genetics, selection for breeding can contribute to a sustainable animal production

8. The role of gene reserve stocks on sustainable animal production, environmental protection, and ecological production
9. Environmental issues of animal nutrition. Possibilities to decrease environmental load of nitrogen, phosphorous, potassium, methane.
10. The effect of domestic animals on environment. Technologies to decrease ecological footprint.
11. Feed processing, compound feed production and environment.
12. Animal grazing
13. Animal grazing technologies. Grazing on vulnerable land.
14. Ecological animal production with different livestock and poultry species

Type of mid-term examination: -

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
written exam

Teaching aids: ppt files

Recommended literature:

Henning Steinfeld, Pierre Gerber, Tom Wassenaar, Vincent Castel, Mauricio Rosales, Cees de Haan (2006): Livestock's Long Shadow: Environmental Issues and Options. Food and Agriculture Organization of the United Nations. 1-390.

Henning Steinfeld et al., eds. (2010): Livestock in a changing landscape. Volume 1. Island Press. 1-396.

Pierre Gerber et al., eds. (2010): Livestock in a changing landscape. Volume 2. Island Press. 1-189.

Flanders F. – Gillespie J. R. (2015): Modern Livestock & Poultry Production. Cengage Learning; 9th edition. 1-1152.

REQUIREMENTS

21/2022 academic year II. semester

Name and code of the subject: Environmental technologies I - Soil remediation, soil protection, biotechnology in agriculture, MTMKG7013A

Name and title of the person responsible for the subject: Dr. habil. Attila Nagy, associate professor

Additional instructors involved in teaching the subject:

Name and level of the program: Agricultural Water Management Engineering MSc

Subject type: optional

Teaching timetable of the subject, type of examination: 2+1 K

Credit value of the subject: 3

Purpose of teaching the subject: This course reviews the basic knowledge of soil pollution, characterization methods of polluted sites, regulations of remediation in Hungary, contamination transport processes in soils, and biological, chemical, physical, phytoremediation (clean-up) technologies in details. Introduction of the reasons and consequences of the main soil degradation processes. Introduction of the technical, agronomical, soil protection, chemical, mechanical, complex amelioration and recultivation methods suitable for the moderation of the unfavourable effects.

Content of the subject (14 weeks):

1. Definition of remediation, national and international background and main steps of remediation plans and environmental status assessment

2. Requirements of site characterization, regulation for underground water and geological medium in EU
3. Sampling methods, impoundment methods for contaminated sites
4. Pollution transport in soil and pollution distribution and transformation in soil
5. Aspects of appropriate remediation technologies
6. In-situ and ex-situ physical remediation methods
7. In-situ and ex-situ chemical remediation methods
8. In-situ and ex-situ biological remediation methods, Phytoremediation methods
9. The soil conservation, land reclamation, environmental and soil acidification, salinization, secondary salinization, soil structure degradation, soil compaction.
10. Improving acidic and saline soils.
11. Improve sandy soils, improving soil physical properties of deep ploughing.
12. Water erosion. Technical and agronomic possibilities of protection against erosion.
13. Wind Erosion. Protection against deflation agronomic possibilities.
14. Complex amelioration (soil improvement, drainage, surface drainage and subsurface drainage).

Type of mid-term examination:

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
written exam

Teaching aids:

Recommended literature:

1. Prasad, MNV. 2005. Trace Elements in the Environment: Biogeochemistry, Biotechnology, and Bioremediation CRC Press/Taylor & Francis Group Boca Raton FL 33487 USA 744 ISBN 978-1-56670-685-8
2. P Lens, T Grotenhuis, G Malina, H Tabak 2005. Soil and Sediment Remediation. IWA Publishing London SW1H 0QS United Kingdom 544 ISBN 9781843391005
3. Neilson, Alasdair H. 2007. Environmental Degradation and Transformation of Organic Chemicals. Taylor & Francis (USA) Philadelphia, PA 19106 USA ISBN 9780849372414
4. Mirsal I.A. 2004. Soil pollution: Origin, Monitoring and Remediation Springer 312. ISBN: 978-3-540-70775-5
5. Saligram Bhatt (2004): Environment Protection and Sustainable Development. APH Publishing. 241. p. ISBN 9788176485128

REQUIREMENTS
2021/22 academic year 2 semester

Name and code of the subject: Agricultural forestry, MTMKG 7016A

Name and title of the person responsible for the subject: Dr. Rédei Károly egyetemi tanár, DSc

Additional instructors involved in teaching the subject: Dr. Keserű Zsolt c. egyetemi docens, PhD

Name and level of the program: Agricultural Environmental Management Engineering MA

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+1 C

Credit value of the subject: 3

Purpose of teaching the subject: The main aim of the subject's teaching is to provide basic knowledge on the priorities and tasks of the Hungarian forest management as well as the main management directions and forest administration. Within this frame the students are to acquire the following factual knowledge: tangible and intangible assets providing by the forest management; criteria of forest site classification; silvicultural characteristics of the main stand-forming tree species; nature-like forest management; plantation forestry; forest mensuration; structure and tasks of forest administration; forest plans and other technical documentations.

Content of the subject (14 weeks):

1. Priorities and characteristics of the Hungarian forest management.
2. Criteria of forest site classification (I).
3. Criteria of forest site classification (II)

4. Silvicultural characteristics of the main stand-forming tree species (I).
5. Silvicultural characteristics of the main stand-forming tree species (II).
6. Stand establishment (afforestation and artificial regeneration) techniques (II).
7. Plantation forestry
8. Agro-forestry systems.
9. Nature-like forest management.
10. Introduction to Forest Mensuration .
11. Forest subsidiary use.
12. Structure and tasks of forest administration.
13. Basic documents for forest management planning.

Type of mid-term examination:

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
colloquium

Teaching aids:

Recommended literature:

Hibberd, B. G. ed. 1986: Forestry Practice. Forestry Commission Bulletin. 14. London, pp. 104. (ISBN 0 11 710156 7).

Savill, P. et al. 1997. Plantation Silviculture in Europe. Oxford University Press. pp 297. (ISBN 0 19 854909 1).

REQUIREMENTS

Academic year 2021/2022, semester 2

Name and code of the subject: Agro-environmental management II: Ecotoxicology, environmental risk assessment MTMKG7020A

Name and title of the person responsible for the subject: Dr. Elza Kovács, associate professor

Additional instructors involved in teaching the subject:

Name and level of the program: agricultural environmental management engineering MSc

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+2 practice

Credit value of the subject: 4

Purpose of teaching the subject:

Fulfilling the course, students will know the potential sources of environmental risks, factors determining and controlling the exposition and transport processes within the ecological systems, and the methodology of environmental risk analysis, assessment and management. The students will be familiar with the EU legislation related to use of environment, and risk assessment for the sectors of agriculture and food industry, and the relevant best available techniques. As a result of completing practical tasks, they will have the skills to identify the relations between ecotoxicology and environmental risk assessment and management, to measure and interpret proper data and information, as well as to carry out scenario analyses using selected software, required to the ERA. Study trips will also serve to understand the link between theory and practice. Practical tasks serve to apply the theoretical knowledge on ecotoxicology and ERA, as well as to improve skills on software use and reporting, including the followings, mass and energy balances for the agricultural and food sectors; transport modelling and scenario analyses; chemical analyses for selected pollutants in environmental samples, data interpretation linked to ERA, visualization by GIS tools; study trip to natural and agricultural sites where activities posing potential environmental risk are carried out; study trip to sites after clean-up and rehabilitation. Students will practice the implementation of principles, and application of procedures as well as interpretation methods in the field of environmental risk assessment and ecotoxicology in form of individual case studies using data measured in laboratory and modeling in IT environment.

Content of the subject (14 weeks/9 weeks in semester 4):

1. Ecotoxicology – potential pollutants in the environment, fate and transport of pollutants in the ecological systems, expositions

2. Ecotoxicological tests
3. Licencing of new chemicals
4. Environmental risk assessment methodology
5. Transport processes and their modelling in in soil and ground water
6. EU legislation for environmental risk assessment (ERA), reduction and management
7. Best available – environmentally responsible – techniques in the agriculture and food industry
8. Planning and designing clean-up technologies based on ERA
9. Latest scientific results in the area of ecotoxicology

Type of mid-term examination: Completing assignments / exercises listed in Exercise book: Practical exercises for the course of Agro-environmental management II - ecotoxicology, environmental management; Being active in group works; Completing lab works; Taking part in field visits

Method of assessment (semester examination mark - report, practical grade, colloquium, examination): Essay type written exam is taken in the examination period of the semester focusing on the knowledge gained. Submitting reports in due time, taking part actively in the practices and field trips and completing home work individually are compulsory. Student may skip class maximum 3 times during the semester.

Teaching aids: ppt presentations, online websites

Recommended literature:

Whitacre, David M. (2015): Reviews of Environmental Contamination and Toxicology. Reviews of Environmental Contamination and Toxicology; 225. Springer Verlag. 144 p. ISBN-13: 9781489988201

Newman, Michael C. (2014): Fundamentals of Ecotoxicology. The Science of Pollution, Fourth Edition. CRC Press. 680 p. ISBN-13: 9781466582293

Áine Gormley, Simon Pollard, Sophie Rocks: Guidelines for Environmental Risk Assessment and Management. Cranfield University, 2011:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69450/pb13670-green-leaves-iii-1111071.pdf

Best available techniques – guidelines: <http://eippcb.jrc.ec.europa.eu/reference/>

http://eippcb.jrc.ec.europa.eu/reference/BREF/IRPP_Final_Draft_082015_bw.pdf

Exercise book: Practical exercises for the course of agro-environmental management II - ecotoxicology, environmental management

REQUIREMENTS

21/2022 academic year II. semester

Name and code of the subject: Environmental planning, land consolidation, landscape conservation, MTMKG7021A

Name and title of the person responsible for the subject: Bernadett Farkas-Gálya, assistant professor

Additional instructors involved in teaching the subject: Erika Buday-Bódi, assistant lecturer

Name and level of the program: Agricultural Engineer in Environmental Management MSc

Subject type: compulsory

Teaching timetable of the subject, type of examination: 2+2 K

Credit value of the subject: 4

Purpose of teaching the subject:

The general aim of the subject is to present the purposes and the practice of landscape conservation and planning for the students. The role and position of the subject in environmental management, the technologies and methodologies of land consolidation and landscape conservation will be presented during the course. Students will learn the national and international land use systems. This knowledge provides land consolidation, land registration and land evaluation skills in the practice.

Content of the subject (9 weeks):

1. Basics of environmental planning (definitions, stakeholders, structure)
2. National and international projects, information systems on the Internet, data warehouses and metadata.
3. Planning strategies, the aim of planning process: protection, rehabilitation, development
4. Landscape level planning – ecological networks, water network, green areas, artificial surfaces

5. Land use categories in the EU (CLC-100)
6. Land registration and land evaluation
7. Agricultural land use, land consolidation
8. Land use modeling: site-optimization, multi-purpose land allocation
9. Land change evaluation

Type of mid-term examination: -

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
written exam at the end of the semester

Teaching aids: -

Recommended literature:

1. Bishop, D., Lange, E. (2005): Visualization in landscape and environmental planning. Taylor and Francis. 320 p. (ISBN: 978-041-530-510-5)
2. Magueire, D. J., Goodchild, M. F., Batty, M. (2005): GIS, Spatial Analysis and Modeling. Esri Press. 480 p. (ISBN: 975-158-948-130-5)10: 0-615-22838-0.
3. Charles H. Eccleston (2008): NEPA and Environmental Planning: Tools, Techniques, and Approaches for Practitioners. CRC Press, 448 p. (ISBN: 0849375592,9780849375590,9781420007817)
4. Demetriou D. (2014): The Development of an Integrated Planning and Decision Support System (IPDSS) for Land Consolidation. Springer International Publishing, 340 p. (ISBN: 978-3-319-02346-5,978-3-319-02347-2)

REQUIREMENTS

Academic year 2021/2022, semester 2

Name and code of the subject: Management Systems (EMS, QMS, FSMS), MTMKG7023A

Name and title of the person responsible for the subject: Dr. Nikolett Szöllősi,
assistant professor

Additional instructors involved in teaching the subject: -

Name and level of the program: Agricultural Environmental Management Engineering MSc

Subject type: compulsory

Teaching timetable of the subject, type of examination: 1+2, G

Credit value of the subject: 3

Purpose of teaching the subject: Students get acquainted with the management approach of companies and the tasks of management, the tasks and skills of managers, which improvable. In addition, they learn about the relationship between the company and the environment. We focus on the possibilities of end-of-pipe environmental protection, above all the possibilities of cleaner production and the spread of voluntary environmental management tools (ISO 14000, EMAS) in the globalizing economy. More and more large companies place great emphasis on the professional implementation of energy management in all their activities. The role of companies in social responsibility is also becoming more and more important. The precondition for competitive corporate operation is, among other things, the provision of workplace environmental, health and safety conditions.

Content of the subject (14 weeks):

1. Introduction to Principles of Management
2. Personality, Attitudes, and Work Behaviours, leading people and organization
3. Organization structure and changes, organization culture, managing groups and teams
4. Decision making, communication, motivating employees
5. The essential of Control, Strategic Human Resource Management
6. History of Environmental Management, standardisation, ECS 7750; EMAS; ISO 14001.
7. Implementation of Environmental Management System, documentation, operating. Continual development. Audit, audit types, audit process, documentation, integrated auditing, ISO 19011.
8. Environmental regulations, tools of environmental business management. Evaluation of environmental effects: indicators. Cleaner production. Life cycle analysis Analysis.
9. History of quality management, development of Quality Management Systems, Total Quality Management (TQM).

10. Quality management systems. Requirements (ISO 9001:2000)
11. Occupational health and safety management systems. Requirements (BS OHSAS 18001), ISO 28001.
12. History of HACCP, System of HACCP (Hazard Analysis Critical Control Points), documentation, operating. Food Safety Management System ISO 22000.
13. Possibilities given by integrated systems, collective establishment.
14. Management Information Systems, ERP Systems

Type of mid-term examination: Completing assignments / exercises listed in Exercise book: Practical exercises for the course of Management Systems

Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
practical grade

Teaching aids: ppt presentations, online websites

Recommended literature:

1. Management Principles 2012. This book is licensed under a Creative Commons by-nc-sa 3.0 (<http://creativecommons.org/licenses/by-nc-sa/3.0/>) license. p. 714
<http://2012books.lardbucket.org/pdfs/management-principles-v1.0.pdf>
2. Juhász, C., Szöllősi, N. 2009. Environmental management. Jegyzet. Debreceni Egyetem, Debrecen. http://www.tankonyvtar.hu/hu/tartalom/tamop425/0032_kornyezeti_ranyitas_es_minosegbiztositas/adatok.html
3. James Reinhard, Brad Ames, Andrew Robertson, Rita Thakkar, Ryon Pulsipher, David Bentley 2012. Integrated Auditing Practice Guide. The Institute of Internal Auditors.
4. United States Department of Agriculture, Food Safety and Inspection Service 1997. Guidebook For The Preparation Of HACCP Plans. p. 67.
5. Implementation Guidance for ISO 9001:2015. International Organization for Standardization. p. 7.

REQUIREMENTS
2021/22 academic year 2. semester

Name and code of the subject: MTMKG7024A Agricultural and Environmental Economics

Name and title of the person responsible for the subject: Dombi Mihály PhD, associate professor

Additional instructors involved in teaching the subject: -

Name and level of the program: Agricultural Environmental Management Engineering, master

Subject type: lecture and practice (2+1)

Teaching timetable of the subject, type of examination: written exam

Credit value of the subject: 3

Purpose of teaching the subject:

This course provides an introduction to economic perspectives on contemporary environmental issues. We will study economic theories related to natural resources and the environment, and their application to environmental policy. The first part of the course will focus on concepts and theory, and the second part will deal with applications including population and food supply, renewable and non-renewable resources, pollution control policy, global climate change, international trade, and environmental politics.

Content of the subject (14 weeks):

Week	Topics
8 February 2022	Introduction to Environmental Economics LO: Recognition of ecological crisis
15 February 2022	Economic Growth and the Environment LO: To connect economic and ecological concerns of the world development

22 February 2022	Sustainable Development LO: Knowledge on wide range of sustainability concepts
1 March 2022	The Theory of Externalities LO: Examples of externalities
8 March 2022	Common Property Resources and Public goods LO: An example – the tragedy of commons; Knowledge on environmental management of public goods
22 March 2022	Resources Allocation over Time LO: Knowledge on role of time in management of resources
29 March 2022	Valuing the Environment LO: Tools and examples of monetary valuation
5 April 2022	Ecological Economics: Basic Concepts LO: Knowledge on ecological economics
12 April 2022	National Income and Environmental Accounting LO: Information of environmental performance of states

Type of mid-term examination: -

**Method of assessment (semester examination mark - report, practical grade, colloquium, examination):
written exam**

Teaching aids: -

Recommended literature:

Compulsory readings: Harris, Jonathan M. – Roach, Brian: Environmental and Natural Resources Economics: A Contemporary Approach (4rd Edition), Routledge, 2017, 667 p.

Recommended readings: Costanza, R., Norgaard, R., Daly, H., Goodland, R., & Cumberland, J. (2007). *An Introduction to Ecological Economics (e-book)*. Available at:
<http://www.eoearth.org/view/article/150045>

Brown, Lester R.: *Plan B 4.0: Mobilizing to Save Civilization*. W.W. Norton & Company, 2009 – Earth Policy Institute, <http://www.earthpolicy.org/index.php?/books/pb4>

Available at: http://www.earthpolicy.org/images/uploads/book_files/pb4book.pdf