ESZTERHÁZY KÁROLY UNIVERSITY COLLEGE

GEOGRAPHER MSC Programme

GEOGRAPHER MSC Programme

National Educational and Output Requirements

1. Name of the programme: geographer

2. The level of education and the name indicated in the diploma:

- Level of education: magister, master; MSc
- Qualification: Geographer
- Names of specializations: Resource and risk analyst, Regional manager

3. Branch of science: Natural sciences

4. Requirements of entrance to the programme – harmonizing in the national educational and output requirements:

4.1. Unconditionally accepted (basic) courses for the entrance: Geography BSc

4.2. Conditional accepted (basic) courses for the entrance and requirements of credit points harmonizing in the educational and output requirements or method and plan for the missing knowledge to be complemented in our University during the educational programme*.: Earth Sciences, Environmental Sciences, Surveyor, Engineer of Land Management, Engineer in Landscape Management and Garden Design, Environmental Engineer, Tourism BSc

*It is possible to get missing and determined condition credit points for the Environmental Sciences programme during first 2 terms, after students enter to the Eszterházy Károly University of Applied Sciences.

4.3. Different pre-qualifications can be accepted with the fulfilment of credit points defined in point 11. accepted by the Credit Transfer Committee of the Institution.

5. 8. Educational period: 4 semesters

6. Necessary credit points for getting Diploma: 120 credit points from which.

6.1. Credits of professional core knowledge: 30-36

6.2. Credits of differentiated professional knowledge: 35-50

6.3. Credits of optional subjects – a minimum value: 6

6.4. Credits of the thesis: 30

6.5. The ratio of practical knowledge according to education programme at least 30 %.

7. The aim of the programme, professional competences to be obtained:

The aim is to train geographers ready to understand geographical laws manifested in basic natural, environmental, technical and social phenomena. Based on their knowledge are able to develop and utilize professional solutions (including research), additionally they can present their results towards experts and the broad public. Having these competences they can continue their education in doctoral schools.

a) Students graduated in this MSc know:

- the Laws of geography,
- distribution patterns,
- the utilization of graphical and mapping methods.

b) they are capable:

- to understand profound geographical coherences,
- to work out alternative solutions in their profession,
- to integrate elements of space, place and region,
- to investigate challenges of the society-environment system, ,
- to evaluate landscapes, analyse landscape, environmental and spatial interconnections

In case of Resource and risk analyst specialization, they can:

- Control, methodize and process the collection of date on resources and risks,
- Utilize constructively scientific bases and social aspects in harmony,
- Get information in an international spectra and can adapt these on local conditions,
- Understand the division of labour of different authorities and organizations,
- Control in practice the harvest of resources and the mitigation of risks,

In case of Regional management specialization, they can:

- write exact reports of regional development including geology, soil, nature, society, economy and environment, to review the main development factors using thematic maps,
- create well-embedded operative and regional marketing strategies including financial planning and fund-rising chapters,
- realize settlement level and regional projects, integrate local actors, help them to solve professional and technical challenges (e.g. to create local clusters, develop local products, start up local product path management processes; manage interregional co-operations)
- organize and moderate workshops, retail forums, regional occasions (exhibitions, fairs, investors forums and conferences)
- mobilize local knowledge and to organize spatial researches into networks, co-operate with institutions of education and research institutes.

c) Personal skills and competences of the profession:

- creativity,
- flexibility,
- troubleshooting,
- intuition and methodical attitude,
- ability to learn and good memory,
- skill to process knowledge,
- sensitivity to environment,
- a positive attitude towards further professional trainings,
- initiator and decision making attitude,
- personal responsibility,
- ability to co-operate to join groups, and after a relevant period of practice to be a leader,
- genuine way of seeing and thinking, abstractive skills.

8. Decisive knowledge in the programme

8.1. Professional core knowledge: 30-36 credits

- theoretical knowledge of geography: modelling, simulation, research-methodology,

  environmental informatics, geo-mathematics, R&D and project management;

- special knowledge: environmental geography, landscape and environmental planning, landscape evaluation, landscape analysis

  regional and spatial development, political geography, space-society relationship.

8.2. Differentiated professional knowledge: 35-50 credits:

- ***Resource and risk analyst:*** geo-spheres (atmosphere, hydrosphere, lithosphere, soil, biosphere); chemical, physical and biological interconnections among different spheres from a resource and risk point of view; climate change, effects and response; society and economy as resource and risk; sustainability and vulnerability of society; sustainability and vulnerability of economy; principles and postulations of sustainable development; principles and postulations of the mitigation of environmental risks; national and international documents of sustainability and risk mitigation; learning sustainability and risks and the teaching of these information; catastrophe management and compensation in practice.
- ***Regional management:*** constructional and environmental geology, urban climate and air quality, settlement stress sources, sustainable environment and resource economy, waste

management, geographical bases of real-estate management, organization development and local management models, enterprise economy and finance, management of local products and resources, spatial and municipality management, local development concept creation, marketing-communication and PR tools.

Thesis: 30 credits.

9. Requirements of professional practice connected to the programme:

The duration of the professional practice is at least 4 weeks (min. 5 credits) determined by the study programme.

10. Requirements of foreign-language acquaintance:

For graduation state-admitted (at least) C-type intermediate language exam or an equivalent certificate of baccalaureate is needed from any foreign spoken language having available literature in this science.

11. Requirements of entrance to the programme:

At least 65 credits should be recognized from the following branches of subjects:

- knowledge in natural sciences (10 credits): Mathematics, Geo-mathematics, Physics, Chemistry, Biology (Ecology), Geodesy;
- Knowledge in economy and humanities (10 credits): Economy, Law, Sociology, Management, EU-related subjects;
- professional knowledge (45 credits): Geomorphology, Hydro-geography, Biogeography, Soil geography, Population and settlement geography, Economic geography, Regional geography, Geo-informatics.

The condition for students getting into the Environmental Sciences MSc educational programme is that students need to have at least 45 credit points from the groups of knowledge mentioned above. The missing credit point should additionally be obtained during first 2 terms parallel to the education.

I.2. DETAILED EDUCATIONAL PROGRAMME

Subjects – *lecturers*	**Semesters**				**credit points of subjects**	**exam mark / term marks other**
	1.	**2.**	**3.**	**4.**		
	number of subjects (weekly/full semester), type of subjects (lecture / seminar / practice / tutorial)					
Basic knowledge *(based on the national educational and output requirements, 8. point)*						
Professional core knowledge *(based on the national educational and output requirements, 8. point)*						
8.1. Professional core knowledge						
1. Modelling and simulation *Prof. Dr. János Mika*	*2/30 practice*				3	*term mark*
2. Contemporary methods of research in geography *Dr. Anna Dobos*	*2/30 practice*				2	*term mark*
3. Environmental informatics *Dr. Zoltán Utasi*	*2/30 practice*				3	*term mark*
4. Geo-mathematics *Dr. Miklós Hoffmann*	*2/30 practice*				2	*term mark*
5. R+D, innovation and project management *Dr György Kajati*		*2/30 practice*			3	*term mark*
6. Geographical analysis of environmental systems *Prof. Dr. Ádám Kertész*	*2/30 lecture*	*2/30 practice*			2+2	*exam mark, term mark*
7. Sustainable development and resource management *Prof. Dr. János Szlávik*		*2/30 practice*			2	*term mark*
8. Planning of landscape and environment *Prof. Dr. Ádám Kertész*		*2/30 practice*			2	*term mark*
9. Environmental qualification and landscape assessment *Prof. dr. Ádám Kertész*		*2/30 practice*			2	*term mark*
10. Regional and spatial development *Dr. Csaba Patkós*	*2/30 lecture*				3	*exam mark*
11. Political geography and world economy *Dr.Zsuzsa Piskóti-Kovács*	*2/30 lecture*				3	*exam mark*
12. Analysis of connections between space and society *Dr. Lóránt Dávid*		*2/30 practice*			3	*term mark*
Totally	***8/120 lecture 8/120 practice***	***- 10/150 practice***			***34***	***4 exam mark. 9 term mark.***
8.2. Professional knowledge *(based on the national educational and output requirements, 8. point)****: differentiated professional knowledge*** *(based on the national educational and output requirements, 8. point)*						

Resource and risk analyst specialization – responsible person: **Prof. Dr. János Mika, DSc.**

Subjects *lecturer*	**1. semester**	**2. semester**	**3. semester**	**4. semester**	credit number	exam mark / term marks /
1. Atmosphere as risk and resource *Prof. Dr. János Mika*			*2/30 lecture*	*2/30 practice*	2+2	*exam mark, term mark*
2. Water as risk and resource *Dr. László Ujfaludi*			*2/30 lecture*	*2/30 practice*	2+2	*exam mark, term mark*
3. Lithosphere as risk and resource *Dr. Árpád Dávid*		*2/30 lecture*	*2/30 practice*		2+2	*exam mark, term mark*
4. Vegetation as risk and resource *Prof. Dr. Sándor Orbán*		*2/30 lecture*	*2/30 practice*		2+2	*exam mark, term mark*
5. Society as risk and resource *Dr. Lóránt Dávid*			*2/30 lecture*	*2/30 practice*	3+2	*exam mark, term mark*
6. Sustainability and vulnerability of the economy *Dr. Hajnalka Csáfor*			*2/30 lecture*	*2/30 practice*	3+2	*exam mark, term mark*
7. Climate change, impacts and responses *Prof. Dr. János Mika*			*2/30 lecture*		2	*exam mark*
8. National and international documents of sustainability *Prof. Dr. Imre Kárász*				*2/30 lecture*	3	*exam mark*
9. National and international documents of environmental risk mitigation *Prof. Dr. János Mika*			*2/30 lecture*		3	*exam mark*
10. Catastrophe protection and damage recovery *Prof. Dr. János Mika*			*2/30 lecture*	*2/30 practice*	3+2	*exam mark, term mark*
11. Sustainability and risk awareness rising *Dr. Ilona Tari Pajtók*			*2/30 practice*		3	*term mark*
Differentiated professional knowledge		***4/60 lecture -***	***14/210 lecture 6/90 practice***	***2/30 lecture 10/150 practice***	***42***	***10 exam mark 8 term mark***
Professional core knowledge + differentiated professional knowledge totally	***8/120 lecture 8/120 practice***	***4/60 lecture 10/150gy***	***14/210 lecture 6/90 practice***	***2/30 lecture 10/150 practice***	***76***	***14 exam mark 17 term mark***
Optional subjects (minimum 6 credits are being compulsory from these subjects) *in Resource and risk analyst specialization*						
1. Physical and chemical interactions in the geo-sphere *Dr. József Vanyó*		*2/30 practice*			2	*term mark*

2. Soil science *Dr. Csaba Csuzdi*	*2/30 practice*				2	*term mark*
3. Waste management *Tamás Misik*		*2/30 lecture*			2	*exam mark*
4. Biological interactions in the geo-sphere *Dr. Erika Kónya Pénzes*			*2/30 practice*		2	*term mark*
5. Health geography *Dr. Zsuzsanna Emri*			*2/30 lecture*		2	*exam mark*
6. Herbs and weeds *Dr. Erika Kónya Pénzes*		*2/30 practice*			2	*term mark*
7. Procession of data remotely sensed from satellites *Prof. Dr. János Mika*		*2/30 lecture*			2	*exam mark*
8. Marketing communication and PR tools *Dr. Sándor Forgó / Csilla Pranter Kvaszinger*				*2/30 practice*	2	*term mark*

8.2. Professional knowledge *(based on the national educational and output requirements, 8. point)****: differentiated professional knowledge*** *(based on the national educational and output requirements, 8. point)*

Regional manager specialization – responsible person: **Prof. Dr. János Szlávik, DSc.**

	1. semester	**2. semester**	**3. semester**	**4. semester**	credit number	exam mark / term marks /
1. Analyses in construction and environmental geology *Dr. Árpád Dávid*		*2/30 practice*			3	*term mark*
2. Geographical aspects of real estate economy *Dr. Csaba Patkós*		*2/30 lecture* *2/30 practice*			3+2	*exam mark, term mark*
3. Sustainability in the local planning *Dr. Tibor Kovács*			*2/30 lecture* *2/30 practice*		2+2	*exam mark, term mark*
4. Organisation development and local governance models *Dr. Csaba Patkós*			*2/30 lecture* *2/30 practice*		2+2	*exam mark, term mark*
5. Economics of enterprises *Dr. Hajnalka Csáfor*			*2/30 lecture*		4	*exam mark*
6. Financing enterprises *Dr. Zsuzsa Piskóti-Kovács*				*2/30 lecture* *2/30 practice*	3+2	*exam mark, term mark*
7. Management of local product path and resources *Dr. Csaba Patkós*			*2/30 lecture* *2/30 practice*		2+2	*exam mark, term mark*
8. Management of regions and settlements *Dr. Csaba Patkós*			*2/30 lecture* *2/30 practice*		3+2	*exam mark, term mark*

9. Conceptions for local development *Dr. Tibor Kovács*			*2/30 lecture* *2/30 practice*		2+2	*exam mark, term mark*
10. Waste management *Tamás Misik*		*2/30 lecture*			2	*exam mark*
11. Marketing communication and PR tools *Dr. Sándor Forgó / Csilla Pranter Kvaszinger*				*2/30 practice*	2	*term mark*
Differentiated professional knowledge	-	***4/60 lecture*** ***4/60 practice***	***12/180 lecture*** ***10/150 practice***	***2/30 lecture*** ***4/60 practice***	***42***	***9 exam mark*** ***9 term mark***
Professional core knowledge + differentiated professional knowledge totally	***8/120 lecture*** ***8/120 practice***	***4/60 lecture*** ***14/210 practice***	***12/180 lecture*** ***10/150 practice***	***2/30 lecture*** ***4/60 practice***	***76***	***13 exam mark*** ***18 term mark***
Optional subjects (minimum 6 credits are being compulsory from these subjects) *in Regional manager specialization*						
1. Protection of ancient monuments *Dr. Árpád Dávid*			*2/30 lecture*		2	*exam mark*
2. Stress sources in a settlement *Dr. Tibor Kovács*		*2/30 practice*			3	*term mark*
3. Herbs and weeds *Dr. Erika Pénzesné Kónya*		*2/30 practice*			2	*term mark*
4. Urban climate and air quality *Prof. Dr. János Mika*				*2/30 practice*	2	*term mark*
5. Soil science *Dr. Csaba Csuzdi*	*2/30 practice*				2	*term mark*
6. Health geography *Dr. Zsuzsanna Emri*			*2/30 lecture*		2	*exam mark*
7. National features of transportation and telecommunication networks *Dr.Zoltán Utasi*				*2/30 practice*	2	*term mark*
8. Environmental economics *Prof. Dr. János Szlávik, Dr. Hajnalka Csáfor*		*2/30 lecture*			*3*	*exam mark*
Professional practice				6 hét	8	*e-portfolio* *term mark*
Thesis					30	defence
Totally					**120**	

Curricular programs, course descriptions *(of all modules listed in the curricular table)*

Course unit: Modelling and simulation	**Credit points: 3**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.):	
Course in the curriculum (which semester is the course taught in): 1st	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims: To show students the world of observation and the unique world of experimentation, where experiments are not carried out on the observed subject itself, but on a model which is an easily accessible, mostly simplified version of it

Content:

- Possible ways of acquiring knowledge, observations, experiments. From the question if there is a need for modeling to choosing the model. Types of models in general.
- Material models: geometrical, physical, mathematical and cybernetic models. Theoretical models: image- signal models and mixed models. Conceptual models.
- Analysis of the models and conclusions. From the independent monitoring of the model results to the possible revision of the theory. Examples for all these from the history of geography.
- Geometric and physical models: two- and three-dimensional maps. Distance and area calculations depending on scales and projection types, as the role of knowledge transfer.
- Physical modeling of moving systems. Criteria of similarity, possibilities and limits of their joint fulfillment. The modeling difficulties of the revolving Earth.
- Models in natural geography. Mathematical models based on the similarity of structure- (mathematical) and function (cybernetic). Stochastic models.
- Conditions for use of models (from accessing to adaptations through enforcing its own parameterizations) . The possible types and sources of parameterizations. Mathematical models in meteorology, hydrology and geomorphology. Famous simple models and models from these three areas that can be downloaded and tested.
- The mathematical models of the Earth, its crust and its inside.
- Models of social and political conflicts.

- Mathematical models of the cyclical economic development. World models.
- Processing the model tasks of students in 5 minutes per student. Students will learn about each other's models and the teacher will help the finalization of a written task.

Competence: Completing the course promotes the development of precise conceptual thinking, and enhances the ability to understand and see the essence of things. The autonomous work helps strengthen ICT competence and contributes to deepening the knowledge of the special field of geography chosen. Getting familiar with types and examples of modeling other than geographic modeling expands ones' horizons and increases the competence of its interdisciplinary use.

The model which is likely to be described in a foreign language helps the competence of working in a foreign language.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

COX D. R. – DONELLY C. A. (2011): *Principles of Applied Statistics*, Imperial College London, ISBN: 9781107644458

DIGGEL, P.J-RIBERIO, P.J. (2007): *Model based geostatistics*, Springer,p.230

KERSBAUM, K.C. et al. (eds.) (2007): *Modelling water and nutrient dyínamics in soil-crop systems*. Springer, Dordrecht,Holland. 271 pp. ISBN 978-1-4020-4478-6

Recommended reading:

CAMARA, A. S. DA (2002): *Environmental systems: a multidimensional approach*. Oxford University Press, Oxford.

HUDDART, D. – STOTT, T. (2010): *Earth Environments*. Past , Present, Future. Wiley-Blackwell, John Wiley & Sons, London.

LUI, J.G., MASON, PH J. (2009): *Essential Image Processing and GIS for Remote Sensing.* Wiley Blackwell, 443 pp., ISBN 978-0-470-51031-5

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. János Mika**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Contemporary methods of research in geography	**Credit points: 2**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 1st	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims: To introduce and teach students modern research methods in geography with the help of which, they will be able to plan and carry out high level geographical research on their own as well as summarize and present their research results.

Content:

- Research principles
- Research scenarios
- Gathering and processing information : I. statistical databases, statistical publications
- Gathering and processing information: II. geographic, and other related scientific journals
- Gathering and processing information: III. methods of representation
- Modern natural geography research- field studies
- Modern natural geography research-laboratory tests
- Modern natural geography research-regional analysis methods
- Modern natural geography research- empirical data collection
- Devising a research report
- Making a presentation

Competence:

The course encourages students' self-education, strengthens their commitment to professional development, and inspires them towards lifelong learning. The gathering and

processing information individually increases students' geographical awareness, develops their visual intelligence and it also enables them to use and integrate the new results and materials of geographical sciences and related disciplines.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

BURT, J. E. – BARBER, G.M. (2009): *Elementary Statistics for Geographers*, Guilford Press, 653 p.

CLOKE, P. J. ET AL. 2004: *Practising Human Geography.* SAGE, London, 416 p. ISBN 0 7619 7300 1

HAMMOND, M. – WELLINGTON, J. (2012): *Research Methods: The Key Concepts*, Routledge Key Guides, 180 p.

SMITH, M. J. – PALON, P. – GRIFFITHS, J.G. (2011): *Geomorphological mapping, Volume 15: Methods and Applications* (Developments in Earth Surface Processes), Elsevier. ISBN 978-0444534460)

Recommended Reading:

HARRIS, R. – JARVIS, C. (2010): *Statistics for Geography and Environmental Science*, Routlege Mental Health, Taylor and Francis Group, 280 p.

KNIGHT, P. (2014): *Practical Techniques in Physical Geography: Field and Laboratory Methods in Studing the Physical Environment*, ISBN978-0415545587, Routlege Mental Health, Taylor and Francis Group, 324 p.

PARSONS, T. – KNIGHT P.G. (2015): *How to do your Dissertation in Geography and Related Disciplines*, (3rd editions), Routlege Mental Health, Taylor and Francis Group, 190 p.

ROBINSON, G. M. (1998): *Methods and Techniques in Human Geography.* JohnWiley and Sons, London, 556 p. ISBN: 0471962317

ELSEVIER Journals – *Geomorphology, Catena, Geoderma, Geoforum, Geography and Natural Reseources, Geographical Abstracts: Human Geography, Geographical Abstracts: Physical Geography*, etc. (http://www.elsevier.com/journals)

Lecturer responsible for the course *(name, title, academic degree.)*: **Dr. Anna Dobos**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Environmental informatics	**Credit points: 3**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 1 st	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims:

Within the framework of the course, students will learn about the methods of creating digital elevation models as well as the possibilities of applying them .They will also be introduced to raster-based database operations (sorting, SQL, etc.)

Content:

- The comparative analyses of vector and raster files. Hybrid systems. The possibilities and challenges of vector conversion, examining methods of digitalization (vectoring).
- The problems and solutions of georeferencing.
- The pre-processing of vector files (file format, drawing layers, object types). The overview of attribute data.
- To create a GIS related database: Importing vector database and linking it with attribute data. The options of displaying data on maps.
- Working with a vector database: classification of data, manual and automatic reclassification, query operations (SQL).
- Creating, and the possibilities of using, digital elevation models (DEM)
- Creating and pre-processing raster files using traditional data medium (paper)
- The parameters of satellite images and their visualization. Creating composite images.
- Evaluation of composite images.
- Automatic reclassification of satellite images.
- Coverage operations (SQL)

- Editing thematic maps. The possibilities of 3-D

Competence:

Studying the background of GIS will enable students to deal with challenges of practical life and formulate them in the logic system of computers. It develops innovative and combinatory skills. It provides students with a wide range of GIS software, as a result of which students can learn to choose the most appropriate one for a given purpose.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

LONGLEY, PAUL A. ET AL. (2011): *Geographic Information Systems and Science* 3e. – WILEY, ISBN : 978-0-470-94809-5

KELLER, RANDY G. (2011): *Geoinformatics.* – CAMBRIDGE U.P. ISBN 9780521897150

AWANGE, J. – KYALO, K. (2013): *Environmental Geoinformatics.* – SPRINGER ISBN 978-3-642-34085-7

Recommended Reading:

BERNHARDSEN, T. (1999): Geographic Information System. John Wiley & Sons Inc., New York. P. 407, ISBN 0471321923

JÁNOS, T. – FÓRIÁN, T. (2008): Geoinformatics. - http://www.tankonyvtar.hu/en/tartalom/tamop425/0032_terinformatika/ch07s02.html

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Zoltán Utasi**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Geo-mathematics	**Credit points: 2**

The type (lecture/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 1 st

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: The students are given an introduction to chapters of mathematics related to earth sciences. This will complement the materials students learned during their BSc studies. Students are getting ready to be able to make use of the rapid development of data processing and monitoring technology especially in the field of monitoring and remote sensing technology by mastering the necessary basics of mathematics needed.

Content:

- The revision of some concepts from secondary school: power, root, logarithm. The basics of trigonometry. Elementary combinatorics and probability theory.
- The revision of basic undergraduate mathematics, (a revision to bring all students to the same level) (A set of functions, limit, continuity, differential and integral calculus.)
- Formulas to calculate the area of plain figures and formulas for the surface and area of bodies. The application of formulas through examples.
- Trigonometric identities shown through geographic examples. The identities of angle functions. Computing applications with examples.
- Spherical trigonometry with geographic examples. Spherical distance and area calculations. Geographical exercises and their calculations.
- Simple differentiable functions. Examples on the geographical applications of these functions. The possibilities of numerical differentiation in the absence of analytical solutions.
- Simple indefinite integrals and the connection between integration and differentiation. Examples on geographic applications and on applications of the above in the solar system.
- Simple definite integration. Examples of their use. The possibilities of numerical integration regarding the lack of analytical answers.
- Correlation and regression analysis. Examples of application in social geography.
- Classification using cluster- and factor analysis while emphasizing their main characteristics. Applications in social geography and geography.
- Units. International System of Units (SI). Rate multiplier prefixes.
- Vectors, vector calculations. Applications in calculating the parameters of the Earth's rotation. The trigonometry identity, geographic examples. Angle Functions. Computing applications examples.

Competence:

Developing and revising students' knowledge, which will eventually contribute to reaching an acceptable level of mathematical competence. Calculation tests help ICT

competence to a lesser extent. The fear of presenting and explaining any exact formula will diminish. Students will be more confident in processing the results of experimental data collection. The (reinforced and) effective knowledge students acquire will be highly useful in building new competencies in their further studies.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

BARNETT, R.A., ZIEGLER, M. R. (2002): *Applied Mathematics for Business, Economics, Life Sciences and Social Sciences.* – Edition 8, Pearson, ISBN-13: 9780130655806

I.N. BRONSHTEIN, K.A. SEMENDYAYEV, GERHARD MUSIOL, HEINER MÜHLIG (2007): *Handbook of Mathematics*. – Springer, ISBN-13: 978-3540721215, ISBN-10: 3540721215

Recommended Reading:

FREEDEN, W. – NASHED, M. Z. – SONAR, TH. (eds.) (2010): *Handbook of Geomathematics*, Springer-Verlag Berlin Heidelberg, ISBN: 978-3-642-01545-8

WALTHAM, D.(2000): *Mathematics: A Simple Tool for Geologists*, 2nd Edition, Wiley-Blackwell, ISBN: 978-0-632-05345-2

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Miklós Hoffmann**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: R+D, innovation and project management	**Credit points: 3**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to present R+D activities in the complex system of the geographical environment as well as the processes of spatial and temporal changes of innovations, their characteristics and laws from a theoretical and practical aspect. The course aims to introduce the basic tools needed for successful project management and how to apply them.

Content:

- The definition of R+D and its' characteristics. The Frascati Manual.
- The concept of innovation, types and features.
- Spatial spreading of innovations. The tools of territorial distribution of innovations. Territorial innovation models.
- Innovation performances and policies in the European Union and Hungary.
- Traditional regional policy. Innovation-oriented regional policy.
- The observations of working out and evaluating regional innovation strategies.
- The role of regional innovation in the development of a knowledge-based economy.
- Presentation of national and international case studies. The role of innovation in the development of the most disadvantaged small regions (LHH).
- The location, role and process of project management. Defining the content and scope of the project outcome .
- Planning the costs, length and resources of projects. Assessing and dealing with project risks.
- Project organizations and project control.
- Project accomplishment strategy (types of contracts, methods of financial settlement, decision making methods). Preassessing and competition.

Competence:

- Acquisition of interdisciplinary knowledge that helps to understand the interaction between processes and phenomena.
- Theoretical and practical research, doing innovative development projects.
- Implication of theory to practice on a professional level.

Dealing with new phenomena and problems.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

AUDRETSCH, D. B. – FELDMAN, M. P. (2003): *Knowledge Spillovers and the Geography of Innovation.* Prepared for the Handbook of Urban and Regional Economics, Volume 4., 40 p.

KAJATI, GY. (2012): *R+D, Innovation and Projectmanagement.* http://p2014-1.palyazat.ektf.hu/public/uploads/kajati-r-d-innovation-and-projectmanagement_532c31f07b941.pdf

KERZNER, H. R. (2013): *Project management: a systems approach to planning, scheduling, and controlling.* John Wiley & Sons. 89 p. (ISBN 978-1-118-02227-6)

MEREDITH, J. R. - MANTEL JR, S. J. (2011): *Project management: a managerial approach*. John Wiley & Sons. 97 p. (ISBN-13 9780470533024)

POLENSKE, K. R. (ed.) (2007): *The Economic Geography of Innovation.* Cambridge University Press. 384 p. (ISBN-13: 9780521865289)

Recommended Reading:

FELDMANN, M. P. (1994): *The Geography of Innovation.* Economics of Science, Technology and Innovation, Vol. 2. 172 p. (ISBN: 978-0-7923-2698-4)

KOSCHATZKY, K. – STERNBERG, R. (2000): *R&D Cooperation in Innovation systems – Some Lessons from the European regional Innovation Survey (ERIS).* European Planning Studies, 8, 4, pp. 486-501..

LAGENDIJK, A. (1999): *Good practices in Cluster initiatives. Lessons from the 'Core' regions and beyond.* Centre for Urban and Regional Development Studies, University of Newcastle Upon Tyne,

PORTER, M. E. (2001): *Clusters of Innovation: Regional Foundations of U.S. Competitiveness*. Council of Competitiveness, Washington.

RAAGMAA, G. (2002): Regional identity in Regional Development and Planning. European Planning Studies. 1. 55-76. o.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Ibolya Szilágyi Prokaj**
Other lecturers involved if any *(name, title, academic degree*): **Dr. György Kajati**

Course unit: Geographical analysis of environmental systems	**Credit points: 2+2**
The type (**lecture**/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester / 2/30 weekly/full semester**	

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/**end of course mark**/other assessment.):

Course in the curriculum (which semester is the course taught in): 1st and 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to introduce the students to how the environmental systems of the Earth function. As an apriori. these systems prior to mankind were considered as solely natural, while afterwards they came under the influence of human society and urbanization.

Content:

- Characteristics and modeling of environmental systems
- Ecosystem of the Earth and the Gaia theory
- Introduction of the living and not-living systems
- The past present and future of global environmental changes
- Capacity of the Earth to sustain life
- Environmental systems and human society
- Interference with the functioning of environmental systems and its effects
- Introduction of different system indicators
- System oriented explanation and assessment of different environmental crises
- Assessment of environmental systems using geoinformatics and remote sensing

Competence: Students will become familiar with the so-called system oriented assessment and with the analysis and evaluation of large geographical processes. After successfully finishing the course, the students will be able to analyze and model natural and anthropogenic environmental systems along with completing the needed calculations. As an additional aim: hopefully, by the end of the semester, students will realize that geoinformatics is a perfect tool to model and describe such systems.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

HUDDART D- SCOTT T. (2010): *Earth Environments*, Wiley-Blackwell, Chichester, 896. p.

MARSH M.W.-GROSSA J. (2005): *Environmental geography: Science, Land Use and Earth systems*, 3rd editon, John Wiley &Sons Inc.,Hoboken, ISBN: 0-471-48280-3 p.450

Recommended Reading:

CÂMARA A.S.(2004): *Environmental systems: a multidisciplinary approach*, Oxford University Press, New york 305. p.

HARRIS, F (2004): *Global Environmental issues*, Wiley and Sons, Chichester, 308.p ISBN:0-470-84560-0

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. Ádám Kertész**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Sustainable development and resource management	**Credit points: 4**

The type (**lecture/seminar/**fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam**/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

This course describes the relationship of economy, society and biosphere in the view of sustainable development. Students will become familiar with the different methods of stock analysis, environmental indicators and the levels of sustainability.

Content:

- Environmental resources and environmental factors/elements
- Economy of environmental pollution
- Externalities and their effects
- Sustainable economical approach to study of the relationship between nature-market-economy
- The basic principles of sustainability and the factors obstructing its feasibility
- The role of society in spreading environmental consciousness
- Main rules of environmental regulating
- The notion of ecological footprint
- Feasibility studies of sustainable economical projects and the techniques of how to prepare these
- Sustainability policy of the EU
- Regional and local levels of sustainability
- Feasibility and monitoring

Competence:

After completing the semester the students will learn (i) how to create a sustainable economy, (ii) where to turn with their projects/ideas for financing and (iii) how to write those proposals. It is important to make them realize that sustainability lies with and depends on forming a long-term strategy, which may be the basis of the development of certain regions. The course will draw their attention to the fact that already running projects require continuous monitoring, thus they will learn its main factors and steps.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

CHRISTY R. D. (ed.)(2004): *Achieving Sustainable Communities in a Global Economy: Alternative Private Strategies and Public Policies***,** World Scientific Publishing, ISBN10: 9812388095

EU Sustainable Development Strategy

http://register.consilium.europa.eu/pdf/en/06/st10/st10917.en06.pdf (2010-09-15)

Recommended Reading::

ROBERTSON, J. (1999): *The new economics of sustainable development*, Kogan Page,p.114 ISBN: 0749430931

LANG, T. – HEASMAN, M. (2004): Food Wars - the global battle for mouths, minds and markets, Earthscan, p 268, ISBN 9781853837029

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. János Szlávik**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Environmental qualification and landscape assessment	**Credit points: 2**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 2nd	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims: to show through direct examples the methods of environmental assessment and landscape assessment. Although these topics are not quite similar, still there are numerous common factors to deal with. Before the methodology is presented the theoretical basis is discussed.

Content: The notion of the landscape and environment and their characteristics

- Methods of qualifying and evaluating the environment
- Methods and prospects of evaluating the landscape
- Landscape evaluation and land evaluation
- Tasks and examples on qualification of the environment
- Presenting environmental assessment and methods used during evaluating whether giving out a land/environment usage permit is possible or not.
- Tasks and examples on landscape evaluation
- Vulnerability and sensitivity
- Evaluation and qualification using GIS methods
- Preparing one's own landscape evaluation

Competence:

Students will be able to recognize environmental processes; they will be competent in using different environmental qualification methods. By becoming familiar with evaluation of landscape and environment, students will be able to work on their own and to participate

in the work of local governments when it comes to optimizing land-use, especially when marking or selecting and qualifying vulnerable areas is needed. The students will learn how to work with and implement the gained knowledge when it comes to solving tasks in small workgroups. In addition they will have the opportunity to get hands on experience.

The subject is perfect for brushing up and developing their knowledge of informatics and on GIS based software.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading::

BUREL F.-BAUDRY J. (2003): Landscape Ecology, Science Publishers, New Hampshire, 359.p.ISBN:1-57808-214-5

BAUDRY, J. – MERRIAM, H. G. (1988): *Connectivity and Connectedness: Functional versus Structural Patterns in Landscapes*. – In: Schreiber, K. F. (Hg.): Connectivity in Landscape Ecology. Münstersche Geographische Arbeiten 29. pp 23-29.

Recommended Reading:

ALMO F. (2000): *Landscape ecology in action,* Kluwer Academic publisher, Dordecht, 308 p.ISBN:0-7923-6165-2

PACIONE M.(1999): *Applied geography*, 634.p. ISBN: 978-0-415-21419-3

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. Ádám Kertész**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Planning of landscape and environment	**Credit points: 2**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to present the tools and theoretical notions of environmental planning. One of the main tasks of present day science is to answer the question: How can appropriate, environment-friendly and sustainable landscape/land use be achieved using landscape planning. Planning besides aiding the user has to facilitate environmental protection and nature preservation. This is an aim hard to achieve and the 'road towards it is paved' with numerous conflicts. It is important for the students to become familiar with national and international (EU) programs and planning strategies (e.g. NKP, NKAP etc.).

Content:

- Aim and tasks of landscape and environmental planning
- Theoretical basis of landscape planning
- Planning of environmental concepts and programs.
- Legal basis of environmental planning
- Landscape planning and land-use planning
- Conflicts in land-use
- In service of landscape planning and landscaping
- Landscape and environmental planning in Hungary
- Practical questions of sustainable landscape planning
- Ecological networks and corridors (Natura 2000)
- Presentation of the environmental aspects of the National Areal-development Concept
- Landscape protection and rehabilitation
- Examples of planning and case studies
- Presenting the European Landscape Convention

Competence:

This subject increases the environmental competence of the students and helps them to (i) gain a better recognition of the connection between the elements of the environment, (ii) increase their awareness of environmental hazards, and (iii) better notice the connections between land-use and sustainability.

Students will learn to notice the long term effects induced by changes in the certain factors forming the landscape. Thus, they will become competent in making the required decisions regarding landscape planning at their workplaces and local communities. With the help of direct examples, students will learn the correct application of a complex

system approach and synthesis in the planning of geographical functions in landscape planning. During the practical course they will deepen their knowledge on using GIS for planning along with their precise application.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

KERÉNYI A.-SZABÓ GY. (2001):*Landscape loadability and landscape protection in Hungary*. Acta Pericemonologica rerum ambientum Debrecina, Tom. I. pp.36-42.

MAKHZOUMI J.-PUNGETTI G. (2003): *Ecological design and planning*, E&FN SPON, London, 328o. ISBN: 978-0-419-23250-6

Recommended Reading:

TURNER T (1998): *Landscape planning and environmental impact design*, Routeledge, Abingdon, 420 o.

Marsh, William M. (2005):Landscape Planning: Environmental Applications. – Wiley, ISBN 0471485837

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. Ádám Kertész**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Regional and spatial development	**Credit points: 3**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 1st

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: This subject summarizes the basic elements of regional and local development, extending it with the aspects of rural development. The possible economical and sociological bases of regional development policies is discussed with a couple of case studies concerning the topic.

Content:

- Regional development strategies in relation to the different spheres (society, economy, environments, culture, politics)
- Basic rules in the EU and their technical consequences
- Stepping stones and eras of Hungarian regional development
- The role of the EU and the national level
- The role of regional, county and small regional levels in regional development
- Institutes in the last one and a half decade of regional development
- Critical evaluation of national development programs: from before the EU up to the Széchenyi Plan
- The National Development Program
- The New Hungary Development Plan and the elements of the system planned after 2010
- Elements of rural development
- The „players" in economy and regional development
- NGOs in regional development

Competence:

The students will obtain knowledge of the results of the concerning field of science and development capability

Students will become able to critically assess and solve professional problems

Students will become able to communicate the problems towards the different partners in the most appropriate and efficient way possible.

Students will grow through participation in decision making.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

PIKE, ANDY – RODRIGUEZ-POSE, ANDRES – TOMANEY, JOHN (2006): *Local and Regional Development*. – Routledge, London 328 p. ISBN-13: 978-0415357180

SZIRMAI, ADAM (2015): *Socio-Economic Development.* – Cambridge University Press SBN: 9781107624498

Recommended Reading:

CAPELLO, ROBERTA (2006): *Regional Economics*. – Routledge, p 322. ISBN: 978-0-415-39521-2

STIMSON, ROBERT J. ET AL (2006): Regional Economic Development. – Springer, ISBN 978-3-540-34829-0

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Tibor Kovács**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Csaba Patkós**

Course unit: Political geography and world economy	**Credit points: 3**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 1st

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to present the spatial connections - to be thoroughly revaluated - between politics and economic processes. The focus is shifted from national economies towards a globalized one creating a whole new situation where the global market plays the most important role. This phenomenon determines the new directions of political geography changing the basic paradigms.

Content:

- Formation of the global economy and its characterization
- The importance of transnational companies in world economy
- Economical and geopolitical centers of the world, now and then.
- Hegemonious cycles
- The political and geographical side of globalization
- Critical geopolitics and geoeconomy (base-role: without global economical processes the geopolitical relationships of today cannot be evaluated)
- The theory of Huntington on the "Clash of civilizations"
- The geographical interpretation of the state. Are the nations still sovereign?
- A core area, and the political and geographical interpretation of capitals
- International political and economical organizations in the globalized world
- Energy sources (water etc.) as geopolitical factors
- Electoral geography

Competence:

The interdisciplinary approach when discussing the political and geographical question of the globalized world will help students to form a complex and modern geographical view regarding local, regional and global problems. The subject, besides themes from geography, contains material of related subjects as well (politics, economics, history etc.), thus helps to integrate knowledge gained from these throughout a new perspective.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required Reading:

FLINT, C. - TAYLOR, P. J. (2007): *Political geography: world-economy, nation-state and locality.* Pearson Education Limited, Harlow, 368 p. ISBN 0131960121

JONES, M. – JONES, R. (2004): An Introduction to Political Geography: Space, Place and Politics: Textbook, Routledge, ISBN 978-0415250771

Recommended Reading:

AGNEW, J. (1987): *Place and Politics: the geographical mediation of state and society.* London, Allen & Unwin ISBN978-1138798656

MUIR, R. (1997): *Political geography: a new introduction.* Macmillan, London, 316 p. ISBN: 0 333 64189 2

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Antal Tóth**

Other lecturers involved if any *(name, title, academic degree)*: . **Dr.Zsuzsa Piskóti-Kovács**

Course unit: Analysis of connections between space and society	**Credit points: 3**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 2nd	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims:

The aim of the course is to familiarise students with the system of the regional scientific approach, concepts and methods of social space. As we live our everyday life in a real physical space and other, closely related relations (human, social, economic, etc.) simultaneously, the research and understanding of spatial aspects are becoming more and more significant.

Content:

- Scientific theory problems of space researches.
- Space classification.
- Vertices and hierarchical systems, specific social level-systems.
- Characteristic features of horizontal space divisions and space standardisation.
- Centres and peripheries.
- Specifications of spatial orderliness.
- Forms of spatial connections.
- Spatial movements: factors of migration and population movements, innovation and innovation chains, general models of temporal and spatial extensions.
- Social appearance of the most important space categories.
- Spatial view of economic analyses.
- Types of statistics data concerning spatial aspects.
- One-region and multi-region, individual and comparative analyses.

Competences:

- Ability of recognising and system-like interpreting the operational rules of the society.
- Willingness to reveal the causes of unfavourable social situations.

Ability of creating contacts, creativity and co-operation when handling problems.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

GILL VALENTINE: *Social Geographies: Space and Society.* Pearson Education Limited. 300 p. ISBN: 100582357772

JONES, M. – JONES, R. (2004): An Introduction to Political Geography: Space, Place and Politics: Textbook, Routledge, ISBN 978-0415250771

Recommended reading:

GILBERT, D. et al (2003): *Geographies of British Modernity: Space and Society in the Twentieth Century.* Blackwell Publishing. 280 p. ISBN: 978-0-631-23501-9

BLIJ, H. DE – NASH, C.J. (2002): Human Geography: Culture, Society, and Space, Wiley, ISBN-978-0471441076

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Lóránt Dávid**

Other lecturers involved if any *(name, title, academic degree*): .....

Differenciált szakmai ismeretek

Erőforrás- és kockázatelemző szakirány

Course unit: Atmosphere as risk and resource	**Credit points: 2+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd and 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: To intensify the knowledge and skills acquired in Meteorology and climatology, help to acquire the materials of other courses, with similar names and characteristic features, by introducing resources and risks originated in the atmosphere.

Content:

- Weather and climate. Resources and risks. Spatial and temporal characteristics of atmospheric motion systems. Main circulatory objects of the atmosphere.
- Key process of dangerous weather phenomena: convection (vertical updraft). Role of convection in particular atmospheric objects.
- Characteristics of temperate zone: planetary waves, cyclones, anticyclones. Role of mesoscale formations in the intensity of weather fronts.
- Tropical cyclones (hurricanes), tornados, other mesoscale or convective systems.
- *Atmosphere as a resource* for water supplies, natural and cultivated vegetation cover, transport, construction and human life.
- Atmosphere as the transmitter of the majority of renewable sources of energy: solar energy, wind power. Estimation of the supplies of renewable sources of energy. Effects on hydro power and biomass.
- General features of the atmosphere as a resource in Hungary and in major climatic districts. Comparison with spatial and temporal density of other energy forms.
- *Atmosphere* as a *risk*-factor. Risks related to the physical state of the atmosphere in the decreasing order of space-time scale. The most important effects of these formations on animate and inanimate nature, on man itself and on the elements of our man-made environment.
- Droughts, severe frosts, heat waves, late spring frosts, huge convective increase of wind, constant and heavy rainfalls, sudden melt, floods, hails etc.
- Tools of scientific forecast of dangerous weather phenomena, their possibilities and constraints. Theoretical fundamentals and prospects of averting hails, dissolving clouds and gaining precipitation.
- Characteristics of chemical components of air. Global, continental, regional, local and town-scales. Air quality monitoring networks.

- Air quality problems of modern age in Hungary, in the developed world and in districts with backward technologies. Harmful chemical effects of polluted air.

Methods: Lectures, online illustrations, presentations.

Competences:

Recognising the internal regularities of geographical space, remembering the division patterns related to particular topics. Understanding deeper correlations of geography, integrating elements of space, place and region. Preparation for working out alternative solutions, to examine and solve problems of the interaction of human society and geographical environment. Strengthening taking personal responsibility, examples for co-operation, solutions in group work. Commitment to future, responsibility for sustainable development.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BURT, C.C. (2007): Extreme Weather. W.W. Norton and Company, New York, N.Y., 304 p.

FOKEN, T. (2008): Micrometeorology. Springer Berlinm, Heidelberg, 308 pp.

MIKA, J., (2014): Atmosphere as risk and resource. Lecture notes for Geography MSc students. 140 pages, 291,8 KiloN http://p2014-1.palyazat.ektf.hu/tananyagok

Recommended reading:

HENSON R. (2002): *Rough Guide on Weather*. Rough Guides Ltd.. 416 pp.

OLIVER J.E. (ed.) (2005): *Encyclopedia o World Climatology.* Encyclopedia of Earth Sciences Series. Springer, 854 pp. .

POTTER TH. D. – COLMAN B. R. (eds) (2003): *Handbook of Weather, Climate and Water. Dynamics, Climate, I. Physical Meteorology, Weather Systems and Measurements*. 973 pp., II. Atmospheric Chemistry, Hydrology, and Societal Impacts. 966 pp.

Lecturer responsible for the course *(name, title, academic degree.)*: **Prof. Dr. János Mika**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Water as risk and resource	**Credit points: 2+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd and 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

To outline the measures necessary for the natural water retention, modifying effects of human activities and sustainable development.

Content:

- Hydrologic cycle. Precipitation, evaporation, runoff.
- Balance equations.
- Factors influencing runoff.
- Rivers and man (contamination, flood control, water storage, hydroelectric power plants, inland water transport)
- Lakes and man (recreation, pollution, eutrophication)
- Groundwater: soil water, aquifer, karst water, thermal and mineral water.
- Groundwater flow and contaminate-transport phenomena.
- Water supplies of the Earth, Europe and Hungary.
- Water management policy of the European Union.
- Domestic and international case studies: Lake Balaton, Rhine-Maine-Danube Waterway.
- Lake Aral, Lake Baikal, Great Lakes of North America.
- Love Canal (USA), Aswan dam, etc.

Competences:

Students have a complex vision including natural, social-cultural and economic environment, a way of thinking locally, regionally and globally concerning geography and

environment. During the course students acquire environment intelligence, they can recognise and categorise environment elements, their relationships. They also become committed to their future and sustainable development.

They have practical knowledge in the field of hydrology for their everyday lives as well.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

SERRANO, S.E. (1997): *Hydrology* (An integrated treatment of surface, subsurface and contaminant hydrology). Hydroscience Inc. Lexington, USA.

ZSEMBELI J. – JUHÁSZ CS. (2011): *Water management.* http://www.tankonyvtar.hu/en/tartalom/tamop425/0032_vizgazdalkodas/ch07s03.html

Recommended reading:

FETTER, C.W. (2000): *Applied Hydrogeology*. – Prentice Hall, ISBN-13: 978-0130882394 598 p.

CECH, T.V. (2009): *Principles of Water Resources: History, Development, Management, and Policy*. Wiley, ISBN 978-0470136317

Lecturer responsible for the course *(name, title, academic degree.)*: **Dr. Zoltán Utasi**

Other lecturers involved if any *(name, title, academic degree)*: **Prof. Dr. László Ujfaludi**

Course unit: Lithosphere as risk and resource	**Credit points: 2+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd and 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

Students have to know how lithospheric processes influence soil formation. They should give examples to demonstrate the beneficial and harmful effects of natural and anthropogenic factors impacting different soil types.

Content:

- Formation and structure of the Earth.
- Lithosphere materials.
- Different-scale movement processes in lithosphere.
- Beneficial and harmful effects of lithosphere movements concerning humanity. Case studies.
- Basics of soil science.
- Basic concepts of soil geography.
- Factors of soil formation. Soil functions.
- Soil analysis methods I.
- Soil analysis methods II.
- Soils and environment.
- Natural processes influencing soil quality from the Equator to the Poles. Case studies.

Competences:

In general: Students have to understand and interpret the geographical regularities involved in basic natural, environmental, technical and social phenomena. Based on it, they should be able to develop and apply authentic professional solutions, demonstrating results.

Having the acquired knowledge, the best students should continue their studies in the doctoral programme, obtaining their PhD degree.

Personal skills and abilities: Analytic and synthesising individual problem-solving ability (creativity). Critical and self-critical approach. Ability to use the acquired skills in practice. Commitment to quality. High-quality information management. Ability and willingness to participate in the work of an interdisciplinary research and development group.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

GOLDEN M.L. (2003): *Keys to Soil Taxonomy*. - United States Department of Agriculture Natural Resources Conservation Service, 332 p.

JEFFERY S., GARDI C., JONES A., MONTANARELLA L., MARMO L., MIKO L., RITZ K., PERES G., J.RÖMBKE AND VAN DER PUTTEN W.H. (eds.) (2010): *European Atlas of Soil Biodiversity European Commission*, Publications Office of the European Union, Luxembourg, 128 p. ISBN 978-92-79-15806-3

LAVELLE P., SPAIN A.V. (2001): Soil Ecology. - Kluwer Academic Publishers, Dordrecht, 654 p.ISBN: 0-7923-7123-2

MARGESIN R., SCHINNER F. (eds.) (2005): *Manual for Soil Analysis – Monitoring and Assessing Soil Bioremediation* Springer Berlin, 993 p. ISBN-10 3-540-25346-7

PANSU M., GAUTHEYROU J. (2006): *Handbook of Soil Analysis*. Mineralogical, Organic and Inorganic Methods Springer Berlin, 993 p. ISBN-10 3-540-31210-2

Recommended reading:

TAN, K.H. (2000): *Environmental Soil Science*, CPL Press, London 480 p. ISBN 9781420072808

HEFFERAN, KEVIN - JOHN O'BRIEN (2010): *Earth materials*. - John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK, 550 p. ISBN 978-1-4051-4433-9

CLOETINGH, SIERD - JÖRG NEGENDANK (2010): New Frontiers in Integrated Solid Earth Sciences Springer Dordrecht Heidelberg London New York, 414 p.

ISBN 978-90-481-2736-8 e-ISBN 978-90-481-2737-5 DOI 10.1007/978-90-481-2737-5

Lecturer responsible for the course *(name, title, academic degree.)*: **Dr. Árpád Dávid**

Other lecturers involved if any *(name, title, academic degree)*: .....

Course unit: Vegetation as risk and resource	**Credit points: 2+2**

The type (lecture/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd and 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

Introduction of vegetation resources and their efficient usage, through case studies and illustrating procedures and phenomena happening in nature.

Content:

- Vegetation as a part of natural resources.
- Concept of vegetation-based natural capital, its role in ecologic operation of different fields.
- Structure of the vegetation resources in Hungary and worldwide, their division of habitat types.
- Natural and planted vegetation capital and its structure.
- Characterising the 20 most important Hungarian habitat types, their division ratio.
- Risk factors of vegetation resources: conversion, habitat fragmentation, overpopulated game, mining, industrial forest management, overgrazing.
- Difference between non-indigenous and indigenous species, alien species as vegetation risk factors.
- Relationship of climate change, salinization, desertification, eutrophication and vegetation resources.
- Mapping and monitoring vegetation as a resource: Natura 2000, NÖVMON, Land Parcel Identification, MÉTA database of Hungarian habitats.
- Habitat mapping. National Biodiversity Monitoring System and the possibilities and methods of the vegetation resources register.
- Basic concepts of biological productivity for area calculations: woody vegetation, wetland habitats, meadows, pastures.

Competences:

Students should be able to asses land analyse land, environment and spatial interactions in a complex way.

They should comprehend the interaction of man and environment in the geographical area.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BARTHLOTT, W. ET AL (editors) (2006): *Encyclopedia of Natural Resources Policy and Management* in: Life Support Systems EOLSS. Unesco, 2006. *ISBN* UNESCO 93-3-103999-7.

ORBÁN S. (2012): *Exotic Spices and Herbs.* http://p2014-1.palyazat.ektf.hu/public/uploads/orban-exotic-spices_532c3a684cb63.pdf

Recommended reading:

RADOSEVICH, S.R. (2007): *Ecology of Weeds and Invasive Plants: Relationship to Agriculture and Natural Resource Management.* Wiley, ISBN: 978-0-471-76779-4

RESURRECCION, B. P. – ELMHIRST, R. (2008): *Gender and Natural Resource Management Livelihoods, Mobility and Interventions*. ISBN-13: 978-1-84407-580-5 London, Sterling.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Sándor Orbán**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Erika Kónya Pénzes**

Course unit: Society as risk and resource	**Credit points: 3+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd and 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to familiarize students with social phenomena and processes which may represent a developmental resource or risk factor.

Content:

- societal and social progress as the main pillars of sustainable development
- global demographic processes and issues (the demographic boom ↔ demographic decline, ageing society)
- the global food crisis (starvation ↔ over-consumption)
- global economic inequality (poverty ↔ wealth)
- international migration
- the problems of urbanisation (segregation, ghettos, slums etc.)
- human resources, the development of human resources, the role of the human factor in socio-economic development
- labour market processes, the geographical characteristics of labour supply and demand, international labour flow
- social and territorial differences in schooling and the cultural and educational polarization of the population
- global religious diversity, a survey of the human ecologic relations between religions and the socio-economic and geographical enviroment
- the geographical dimensions of population health status and health care, global epidemics
- social problems, issues related to failing social integration, deviance (crime, terrorism, substance and alcohol abuse, suicide)
- a case study: a comparative social study of the most prosperous and the most disadvantaged subregions of Hungary

Competences:

Students will be able to understand and interpret the way society works and will be able to analyse regional problems related to the social and geographical enviroment. Knowledge acquired during the course will help students to become more open and understanding towards social issues. Students will be able to integrate their geographical knowlegde and the knowledge gained from other related sciences during the course.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

FOUBERG, E. H. - MURPHY, A. B. - DE BLIJ, H. J. 2009: *Human Geography: People, Place, and Culture.* John Wiley & Sons, Hoboken, 544 p. ISBN: 0-470-38258-9

TÓTH, A. (2014): *Society as risk and resource*. – an electric textbook, EKF,Eger Hungary

Recommended reading:

BECK, U. (1992): *Risk Society: Towards a New Modernity.* SAGE, ISBN 978-0803983465

DANIELS, P. - BRADSHAW, M. - SHAW, D. - SIDAWAY, J. 2004: *An Introduction to Human Geography: issues for the 21st century.* Prentice Hall, New Yersey, 552 p. ISBN10: 0131217666

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Antal Tóth PhD, college associate professor**

Other lecturers involved if any *(name, title, academic degree*): **Dr Lóránt Dávid**

Course unit: Sustainability and vulnerability of the economy	**Credit points: 3+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd and 4 th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to present the principles of sustainability in terms of three dimensions: ecology, economy and equity. A further aim is to familiarize students with strategies which reduce

economic vulnerability and its consequences and which help to prepare for unforeseen events.

Content:

- Society embedded in the economy (from the Industrial Revolution to the present day)
- The theoretical questions of sustainable development
- Sustainable development and how it can be applied to human settlements
- How are economic systems related to the biosphere
- Sustainable economy (sustainable agricultural systems)
- Sustainable economy (sustainable industrial systems)
- Sustainable economy (sustainable service systems)
- Economic indicators of sustainability (economic achievement, trade, financial situation, consumption patterns in the areas of material, energy, waste and transport)
- Economic vulnerability (natural hazards, social and infrastructural impact)
- Sustainable economy, vulnerability (case studies from around the world)
- Economic sustainability and vulnerability (case studies from Hungary)
- Economic sustainability and vulnerability in the development of the most disadvantaged subregions

Competences:

To master interdisciplinary knowledge which helps one to understand the mutual effects of processes and phenomena. To be able to recognise factors which influence the economic decision makers.

To be aware of models and methods which can be applied to analyse the economy, to process new phenomena and new problems.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BARBIER, E. B. (2007): Frontiers and sustainable economic development. Environmental and Resource Economics, 37(1), 271-295.

CASTELLS, M. – HIMANEN, P. (2002): *The Information Society and the Welfare State – The Finnish Model* Oxford University Press, Sitra's Publication Series, No. 250

DEMPSEY, N., BRAMLEY, G., POWER, S., & BROWN, C. (2011): *The social dimension of sustainable development: Defining urban social sustainability.* Sustainable Development, 19(5), pp. 289-300.

MORSE, S. (2008): *Post-sustainable development.* Sustainable development, 16(5), pp. 341-352.

PORTNEY, K. E. (2003): *Taking sustainable cities seriously: Economic development, the environment, and quality of life in American cities* (Vol. 67). Cambridge, MA: MIT Press

Recommended reading:

BRIGUGLIO, M. – GALEA, V. (2003): *Updating and Augmenting the Economic Vulnerability Index, Islands and Small States Institute.* Malta, University of Malta

GRYNBERG, R., - REMY, J. Y. (2004): *Small vulnerable economy issues and the WTO*. Cambridge University Press, Cambridge. pp. 281-308.

GYLFASON, T. (2001): *Natural resources, education, and economic development*. European economic review, 45(4), 847-859.

LICHTFOUSE, E., NAVARRETE, M., DEBAEKE, P., SOUCHÈRE, V., ALBEROLA, C., & MÉNASSIEU, J. (2009): *Agronomy for sustainable agriculture: a review.* In Sustainable Agriculture (pp. 1-7). Springer Netherlands. (ISBN 978-90-481-2665-1)

SHIVA, V., & BEDI, G. (2002): *Sustainable agriculture and food security: the impact of globalisation*. Sage Publications India Pvt Ltd. 513 p. (ISBN81-7829-022-7)

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Ferenc Mező PhD**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Hajnalka Csáfor**

Course unit: Climate change, impacts and responses	**Credit points: 2**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to familiarize students with the following three aspects: the scientific causes and regional characteristics of the climate changes caused by human beings, expected climate change impacts, the climate sensitive sectors, the scientific and technical measures for the reduction of emissions.

Content:

- *Science.* Climate fluctuation in time and space. The changing composition of the atmosphere: greenhouse gases, aerosol particles, ozone. Further anthropogenic constraints
- Natural climate constraints. Climate system elements, climate changeability. The means of weather forecasting and the sources of uncertainty in forecast models.
- Greenhouse gas emissions. Global climate models. Empirical evidence of the human contribution to climate change. Components of climate change scepticism.
- Global temperature projection: ice age or global warming? Climate averages, extremes and the forecast of regional extremes.
- Expected climate changes in our country and other parts of the world.
- *Impacts and coping with them.* Sensibility and vulnerability. Consequences of global warming on sea levels and in the cryospheric elements
  The impact of climate change on water resources. How have ecosystems changed?
  Climate change impacts on food and forestry.

- Climate impacts on industry, on settlements and on cities. Climate impacts on human health.
- Impacts and vulnerability in our country, in Europe, on the four other continents, in the polar regions and on seashores.

- *Reducing emissions.* Greenhouse gas emission statistics – the main components according to sectors and countries. Energy management – the scope for reducing energy production in the long term.
- Transport, housing, public buildings and industrial plants – the scope for reducing emissions. Reduction in energy use in agriculture, forestry and waste management.
- Geopolitical implications and limits. Geoengineering. Climate change and Hungarian legislation. Adapt and reduce! The role of individual in climate protection.

Competences:

The course will help students to develop their general knowledge of the world along with their skills and abilities and become lifelong learners. The course will also enable students to acquire a wide geographical and enviromental knowledge which they can use in other areas of everyday life as well. They will also develop problem-solving skills and critical thinking which will help them to tackle problems on a daily basis. Students will be able to think about geographical and enviromental issues on a local, regional and global level. The course will help students to develop a strong commitment to sustainability and will demonstrate ways of how to be more responsible in regard to enviromental issues. The course plays a crucial role in raising awareness of enviromental challanges and shaping the attitudes and behaviour that can make a difference.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

MIKA, J. (2011): Climate change, impacts and responses. Lecture Notes for geograpphical master students *http://www.tankonyvtar.hu/hu/tartalom/tamop425/0038_foldrajz_MikaJanos-eghajlat-EN/adatok.html* 162 p.

IPCC (2013): *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.

HENSON, R. (2006): *The Rough Guide on Climate Change*. Rough Guides Ltd., London.

Recommended reading:

CLIMATE SENSE (2009): *WCC3 – Climate Sense*, World Meteorological Organisation, Publ. by Tudor Rose 288 pp. ISBN 978-92-63-11043-5

SCHELLNHUBER H-J. – CRAMER W. – NAKICENOVIC N. – WIGLEY T. – YOHE G. (2006): *Avoiding Dangerous Climate Change.* Cambridge University Press, 392 p. ISBN 978-0521864718

STERN N., 2006: The Economics of Climate Change. The Stern Review. ISBN: 9780521700801 (*http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf*

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. János Mika**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: National and international documents of sustainability	**Credit points: 3**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to familiarize students with the history and main principles of enviroment consciousness, the theory of sustainability and different related global models.

Content:

- The evolution of enviromentally conscious thinking
- The terms sustainable development and sustainability and their indicators
- The ethical and operating principles of sustainable development
- Some examples of completed Hungarian and EU enviromental projects, EU strategies for sustainable development

- Negative and positive impacts (case studies)
- Developmental models
- Non-linear systems, society as a non-linear system
- Ecological crises of the 21st century
- The crises of the market economy and western European civilization (unlimited growth?)
- Our National Sustainable Development Strategy
- International Enviromental Agreements
- Education for sustainability and its tasks

Competences:

the course focuses on social and economic tension and at the same time it helps students to identify similar sustainability-related problems in their own enviroment. During the course students can demonstrate and develop their problem-solving skills.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BARTHLOTT, W. et al. (editors) (2006): *Encyclopedia of Natural Resources Policy and Management in: Life Support Systems EOLSS*. UNESCO, ISBN UNESCO 93-3-103999-7.

Global Biodiversity Outlook (2010): *Secretariat of the Convention on Biological Diversity*, Montreal, 94 p. (http://www.cbd.int/doc/publications/gbo/gbo3-final-en.pdf)

Global Environmental Outlook (GEO-4) (2007): *Environment for Development. United Nations Environment Programme*. (http://www.eoearth.org/view/article/153004/) 530 p.

Recommended reading:

Guidelines and Recommendations for Reorienting Teacher Education to Adress Sustanability. UNESCO, Paris, 2005. pp 1-74

GEA (2012): *Global Energy Assessment - Toward a Sustainable Future*, Cambridge University Press, Cambridge, UK and New York, NY, USA and the International Institute for Applied system Analysis, Laxenburg, Austria.

MILLER G.T., 2000: *Living in the Environment*. Brooks/Cole Publ. Comp., Pacific Groove, Albany etc. 815 + 150 pp.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. habil. Imre Kárász**
Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: National and international documents of environmental risk mitigation	**Credit points: 3**
The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (**exam**/end of course mark/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 4th	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims: to familiarize students with the management of extremity traumas and increase public awareness of disasters and catastrophes and to identify related legal resources.

Content:

- Global (UN) disaster risk reduction and related legislation
- An example: United Nations Economic Commission for Europe (Beyond the Border) has concentrated its efforts on preventing industrial accidents and their transboundary effects
- Act **LXXIV** of 1999 on the prevention of natural and civilization disasters, the Hungarian disaster management system, governing and executive organizations, avoiding / response to accidents involving hazardous materials
- Hungarian legislation pertaining to chemical safety: Act XXV of 2000
- Act XXXI.of 1996 on fire protection, disaster recovery and the fire-service, Act XXXVII of 1996 on civil protection
- Act LXIII. of 1992 on the protection of personal data and public access to data of public interest and amendments
- Climate refugees - legal and policy responses to enviromentally induced migration, loopholes in the regulations (who is responsible for what?), lack of executive action (case-by-case decisions)

- Protecting, alerting and informing the population. The basic documents of home education (e.g. the National Curriculum), risk assessment, mitigation of damage
- EU risk assessment regulations related to environmental or other e.g. data protection issues
- EU principles on risk assessment and on disaster risk reduction. A comparison of the EU directives and Hungarian regulations
- Significant disasters in Hungary in the recent past, rescue operations and the mitigation of damage
- Major disasters abroad in the near past, rescue operations, the mitigation of their effects

Competences:

to be able to identify problems in connection with the interaction of society and geography, to understand the legislation system, to be able to interpret legal language and to contrast it with everyday use, to understand the interaction between humans and their environment. The course will encourage students to work independently carrying out research and processing the results.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

FIIS RH (2007): *Essentials of Environmental Health*. Jones & Bartlett Learning, London. 390. p (ISBN: 978 07637 4762 6)

EUROPEAN ENVIRONMENTAL AGENCY 2010: *Mapping the impacts of natural hazards and technological accidents in Europe. An overview of the last decade.* EEA Technical Report, No 13/2010.

Sustainable Develepment Strategy of the European Union
http://register.consilium.europa.eu/pdf/en/06/st10/st10917.en06.pdf (2010-09-15)

Recommended reading:

BURT, C.C. (2007): *Extreme Weather.* W.W. Norton and Company, New York, N.Y., 304 p.

GOUDIE, A. S. (2013): *The Human Impact on the Natural Environment. Past, Present and Future*. Wiley-Blackwell, 7th Ed., 410 p.

WORLD HEALTH REPORT (2007): *A safer future. Global public health security in the 21st century*. – WHO, Geneva

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Géza Zólyomi PhD**
Other lecturers involved if any *(name, title, academic degree*): **Prof. Dr. János Mika**

Course unit: Catastrophe protection and damage recovery	**Credit points: 3+2**
The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (**exam/end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 3rd and 4th	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims: to familiarize students with phenomena related to legislation and action plans in connection with risk assessment and risk mitigation. During the course we will present and study disaster management and the mitigation of its effects on the spot.

Content:

- Basic concepts of environmental risk, hazardous materials, situations, establishments and zones. Disasters and disasterous situations. An area hit by disaster. Disaster-prone activities. Diasaster recovery plans
- Compensation, reimbursement, mitigation of damage. Disaster victim benefit. Prevention. International help.
- Geo-environmental risk management, hydrography, water courses and lakes, groundwater quality, water transportation, drinking water supply
- Air traffic, airports, landing sites, storing hazardous substances
- Industrial establishments and public utilities. Road and rail systems. Rail transport. Tunnels. Road traffic
- Energy supply, electricity networks, power plants, gas supply, district heating, mains drainage, sewage treatment, solid waste collection
- Assessing risk possibility (measuring the likelihood that the risk will maternalise)

- Tasks of government in case of disaster. National Coordination Committee. The tasks of Committees of Defence (Committee of Emergency Situations and Civil Defence) at a local, municipal, county and capital city level. The tasks of a mayor.
- Organizations involved in disaster management. The executive authority of organisations at various levels (national, county and municipal). Visits to the various organisations of diaster management and learning about emergency activities (civil defence, fire services, recovery rescue tasks).
- Investigation of the disaster area, first-aid, disinfection, temporary recovery, identification of victims, etc.
- Alerting the population to the need to protect cultural heritage. Water damage defence. Defence of material resources (water, food, fodder, medical stores and livestock).
- The role of insurance in damage reduction. The necessity for environmental risks products and risk assessment systems.
- Recommended behaviour in times of disaster, in case of floods, inactment of immediate evacuation, extreme winter weather, ice collapse, wind storm, lightning
- Environmentally dangerous substances (explosives, oxidizants, corrosive and flammable materials, poisons). Chemical agents inducing allergy and irritation. Carcinogenic and mutagenic substances and their effects on human reproduction.
- Reporting obligation in case of toxic materials, requirements for their handling, storage, marketing, packaging, transporting and advertising.

Competences:

To identify problems related to interaction with the societal and geographical enviroment. A new approach to applying natural, societal and geographical knowledge related to Hungary. Man environment interaction from a geographical perspective. To be able to identify problems relating to the interaction of society and the geographical environment. To better understand the inner logic of a paramilitary organisation, to acquire new forms of immediate assistence. To develop an open-minded attitude towards new environmental hazards.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

ALBEVERIO S. – JENTSCH V. – KANTZ H. (eds.), (2006): Extreme events in nature and society. Springer Verlag, Heidelberg. 348 o.

NOTT, J. (2006): *Extreme Events. A physical reconstruction and risk assessment.* Cambridge University Press, 297 pp.

R. H. SCHMIDT, G. E. RODRICK (2003): Food Safety Handbook John Wiley & Sons, 799 p. ISBN: 0-471-21064-1

Recommended reading:

BURT, C.C., 2007: Extreme Weather. W.W. Norton and Company, New York, N.Y., 304 p.

IPCC, SREX, 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (Eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

WWF, 2010: Living Planet Report 2010. Geneva, 114 o.
http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Géza Zólyomi PhD**

Other lecturers involved if any *(name, title, academic degree*): **Prof. Dr. János Mika**

Course unit: Sustainability and risk awareness rising	**Credit points: 3**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to master the ethical and moral principles and operative skills relating to disaster risk reduction bearing in mind cultural identity, democratic decision-making processes, natural values and the proper use of natural resources.

Content: Learning and teaching in relation to environmental and sustainability issues.

- Sustainable development and the characteristics of raising awareness related to the topic. I. An integrated approach, developing special programs, new teaching methods.

- Sustainable development and the characteristics of raising awareness related to the topic II. Integrate the values inherent in sustainable development, respect for others including those of present and future genrations, promote critical and problem-solving thinking.

- Sustainable development and the characteristics of raising awareness related to the topic III. It covers all layers of society, practical uses in everyday life, an active process of learner involvement, dealing with local and global issues.

- Sustainable development conditions
  I. Government and its educational policy committed to sustainable development. Science and scientific knowledge related to sustainable development.

- Sustainable development conditions
  II. Pedagogical knowledge and methods related to sustainable development. A society sharing common values of sustainable development. Modern mass media becoming a powerful tool for disseminating information related to sustainability.

- Creating environmental awareness and its methods: a holistic, an interdisciplinary approach, skill development (critical and creative thinking, civil engagement, cooperation, conflict management). Competence development, to improve the quality of basic education, to improve institutional policy as well as other forms of education.
- Timing raising awareness for sustainability. In the short term to launch a process to make members of society be aware of sustainability, to increase sustainability in everyday life, work on sustainabilty indicators. In the medium term the majority of society should understand the meaning of sustainability and should develop a need for it. In the long term to create the cultural and structural framework of a sustainable society, to meet sustainability requirements.

Competences:

To encourage students to develop skills to understand the complexities of issues threatening sustainability and access their own values and those of the society in which they live in the context of sustainability. To engage students in negotiating a sustainable future, making decisions and acting on them. To examine economic, enviromental, social and cultural structures in the context of sustainable development. To acknowledge complexities and looking for links and synergies when trying to find solutions to problems. Therefore ESD (Education for Sustainable Development) is essential at all levels of education.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

MCKEOWN, R. – HOPKINS, C.: (2005): *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustanability.* UNESCO, Paris.

MCKEOWN, R. (2006): *Education for Sustanable Development Toolkit.* UNESCO, Paris. pp.1-131.

TARI PAJTÓK, I. –MIKA, J. 2014: Rising consciousness on sustainability and risks. Lecture Notes for Geográphy MSc students, 140 pages, 324,1 KiloN, http://p2014-1.palyazat.ektf.hu/tananyagok

Recommended reading:

Palmer, C. (ed.) (2006): *Teaching Environmental Ethics*. – Brill, Boston 240 p. ISBN978-9004150058

PALMER, J.-NEAL, PH. (1994): The Handbook of Environmental Education, Routledge, New York and London, p. 267.

BYRON, T. (2010)*: Do we have safer children in a digital world?A review of progress since the 2008 Byron Review.*DCSF Publications PO Box 5050 Sherwood Park Annesley Nottingham NG15 ODJ http://www.dcsf.gov.uk/publications

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Ilona Tari Pajtók,**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Physical and chemical interactions in the geo-sphere	**Credit points: 2**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: to familiarize students with the way physical interactions in the geosphere determine natural resources and hazards. Apart from this the course aims at providing students with chemistry knowledge at an interdisciplinary level which helps them to understand what chemical processes may have lead to the origins of life on the earth.

Content:

- The most important physical processes in the geosphere. Interactions among and within the components of the climate system (hydrosphere, atmosphere, lithosphere and biosphere)
- Gravitation (fundamental force of attraction) Newton's law of universal attraction, planet paths, Kepler's Laws, galaxies, black holes, star fog structure, Einstein's Theory of General Relativity, the expanding universe
- Electromagnetism: electric charge, the electric force between charges, the complex impact of electricity and magnetism between electrically charged bodies, physics of everyday phenomena: bulbs, laser beams, telecommunications etc. Maxwell's equations
- Weak interaction, basic particle physics, free neutrons, neutrons within an atom, the decomposition of protons, beta decomposition, neutrinos, electroweak interactions, standard model
- Strong interaction, Core, gluons, quarks, antiquarks, baryons, mezons, quantum color dynamics, unified theories
- Geosphere where many natural resources come from - examples for the natural resources and for the related physical interactions
- The most important chemical processes within the geosphere. Interactions among and within the components of the climate system (hydrosphere, atmosphere, lithosphere and biosphere)
- The principles of the formation of matter, from molecular to macroscopic, interaction between structure and characteristics
- Types of chemical reactions, speed of chemical reactions, catalysis, equilibrium and change in chemical systems
- Formation, physical properties, groups of elements, periodic tables. Groups of compounds.
- Chemical thermodynamics. The interaction between matter and energy

Competences:

to be able to identify problems, to develop problem-solving skills, intuition, to help improve memory and study skills, to focus on the important, to learn how to be creative and to learn the art of critical thinking, to be able to look at questions from a scientific perspective. The course requires a hands-on attitude from students during the laboratory practices.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BOEKER, E.-VAN GRONDELLE, R. (2001): *Environmental Science. Physical Principles and Applications.* John Wiley & Sons

ANDREWS, J.E. et al. (2003): *An Introduction to Environmental Chemistry*, 2nd Edition. Wiley-Blackwell, 318 p. ISBN: 978-0-632-05905-8

WEINBERG, S. (1993). *The First Three Minutes: A Modern View of the Origin of the Universe.* Basic Books. ISBN 0-465-02437-8

Recommended reading:

PADMANABHAN, T. (1998). *After The First Three Minutes: The Story of Our Universe.* Cambridge University Press. ISBN 0-521-62972-1

CHIRAS, D. (2001): *Environmental Science. Action for a sustainable future.* Benjamin-Cummings, New York,Amsterdam.

BAILEY R. (2002): *Chemistry of the Environment*, Academic Press. 835 p. ISBN-13: 978-0120734610 (www.epa.gov/owow/monitoring/wsa/WRS_lab_manual.pdf);

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. József Vida PhD**

Other lecturers involved if any *(name, title, academic degree*): **Dr. József Vanyó**

Course unit: Soil science	**Credit points: 2**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 1st

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

The aim of the course is that students learn the construction, structure, the most important physical, chemical and biological features of soils.

Content:

- Composition of soils, soil profile, the most important minerals and rocks to form soil.
- Physical features of soils. Classification of soil by its granulometric composition.
- Structure of soil. Porosity of soil
- Water management and water balance of soils
- Air- and heat management of soil. Plant nutrients in the soil.
- Theoretical bases of soil classification, concept of soil type.
- Soil degradation: erosion, deflation. Protection of soil. Soil pollution.
- Soil information systems, bases of soil mapping.
- Methods of soil improvement. Improvement of acidic, non- salinic soils.
- Classification of salinic soils from improvement aspects.
- Improvement of sandy soils. Soil science aspects of irrigation and fertilization.

Competence:

When acquiring the subject students learn examination methods of terrains. They learn to distinguish basic types of soil, thus recognize processes in the soil and with right sythesis they can depict damaging processes. They will be able to suggest the right soil improvement methods, land utilization ways and can incorporate them in their region development plans.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BRADY, N.C. – WEIL, R.R. (2007): *The Nature and Properties of Soils*. Prentice Hall ISBN 978-0132279383

DÁVID, Á. (2012): *The lithosphere and the soil as power equipment and hazard.* http://p2014-1.palyazat.ektf.hu/public/uploads/david-en-lithosphere-and-the-soil_532c05d013116.pdf

Recommended reading:

WHITE, C. –POLLAN GRASS, M. (2014): Soil, Hope: A Journey Through Carbon Country. Chelsea Green Publishing, ISBN 978-1603585453

WHITE, R.E. (2015):Understanding Vineyard Soils. Oxford U.P. ISBN 978-0199342068

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Csaba Csuzdi**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Waste management	**Credit points: 2**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: The aim is that students know basic tasks of waste management, types of waste, their environmental effects, the basic related regulations of the European Union and Hungary. The are expected to acquire chemical, microbiological and geographical aspects of presently known waste management technologies.

Content:

- Concepts, legal background of waste management, EU outlook.
- Types, creation of waste. Connection of quality and quantity of waste.
- Technology system of waste management: collection, transport of waste, and utilization, various possibilities for disposal and their technical solutions

- Life cycle analysis.
- Possibilities to decrease quantity of waste, the most important examples of recycling.
- Waste related data provision.

Competence: On completion the subject students are able to realize waste related problems. They can recognize logistic problems arising at waste management, can give suggestions to solve regional problems. The are able to obtain permits, list, data related to waste, to use experts.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BEGIN WITH THE BIN, 2014: Begin with the bin. Public Educational Resource, National Waste & Recycling Association, http://beginwiththebin.org/resources/for-education,

STEWART, S. (2008): Recycling. Oxford University Press, Oxford, New York.

VAUGHN, J. (2009): Waste Management: A Reference Handbook, ABC-CLIO, Santa Barbara p.312 (http://books.google.hu/books?id=9LZE-ny9hUAC&printsec=frontcover&hl=hu&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false)

Recommended reading:

GOUDIE A., 2013: The Human Impact ont he Natural environment. Past, present and future. Wiley_Blackwell, 7th Edition, 410 p.

MACZULAK, A.E. (2009): *Waste treatment (Green Technology),* Facts On File Inc,p.198 ISBN-13: 978-0816072040

WHAT A WASTE, 2012: What a Waste, A Global Review of Solid Waste Management. World Bank, Washington, (Daniel Hoornweg and Perinaz Bhada-Tata, ed.) 98 pp.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Zoltán Murányi**

Other lecturers involved if any *(name, title, academic degree*): **Tamás Misik**

Course unit: Biological interactions in the geo-sphere	**Credit points: 2**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: For systematic understanding of processes in nature it is indispensible to understand biological interactions to be systematically surveyed from connections between populations to connections of living organisms and their inorganic environment.

A természetben lejátszódó folyamatok rendszerszemléletű megértéséhez elengedhetetlen a biológiai kölcsönhatások megértése, melyeket a populációk közötti kapcsolatoktól az élőlények és élettelen környezetük közötti kapcsolatokig rendre áttekintünk.

Content:

- System of factors affecting organisms. Concept of ecosystem. Abiotic and biotic affecting factors.
- Abiotic factors and response of organisms: forms of biological indication
- Effects of water, light and heat on certain groups of organisms. Stress tolerance, concept of tolerance spectrum.
- Connections between populations: commensalism, parasitism, kompetition, simbiosm, allelopathy.
- Role of human effects in ecosystems: Disturbance, disturbance tolerance.
- Biological invasions, their causes, cases of big effect.
- Food chain, energy cycle in ecosystems.
- Production, fitomass, biomass, their calculation division.
- Biocenoses, time changes in biocenoses: succession, aspect.
- Types of adaptation, role of life strategies in survival of organisms. Life style systems.

Competence:

Seeing problems coming from the interaction of society and geographic environment,

Competence on evaluating landscapes, analysing comprehensively natural-, environmental and spacial correlations.

Understanding correlation of man and is environment in geographic space.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BEGON, M. - C. TOWNSEND, J.HARPER (2006): *Ecology: From Individuals to Ecosystems.* p.758. Blacwell Publishing. *ISBN*-13: 978-0632038015

PÉNZES-KÓNYA, E. – VARGA, J. (2012): *Ecology.* http://p2014-1.palyazat.ektf.hu/public/uploads/penzesne-ecology_532c3af447cf2.pdf

Recommended reading:

BALUSKA, F. 2009: Plant Environment Interactions 308p. Springer. ISBN: 978-3-540-89229-8.

TOWNSEND, C.R., BEGON, M., HARPER, J.L. 2003: Essentials of Ecology. 2nd ed. Blackwell Science, Oxfrod.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Levente Fűköh**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Erika Kónya Pénzes**

Course unit: Health geography	**Credit points: 2**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims: To acquaint students with characteristic health geography processes of the world and Hungary. To introduce changes of health concept, influence of the state of the health of the society on economics and on every-day life. To acquaint students with different health

geography characteristics of the population of the world, regional differences and their causes in Hungary. The aim of the course is to create sensitivity in students towards healthcare as social-economic issue, encourage demand towards health-consciuos behaviour.

Thematic focuses of the subject:

- Concept of health geography
- Concept of health
- Differences in the world in the state of health
- International comparison of the state of health
- Changes in and present state of health in Hungary
- Regional differences in the state of health in Hungary
- Regional differences of healthcare infrastructure
- Role of health-conscious behaviour
- International characteristics of health tourism
- National characteristics of health tourism
- Health and education

Teaching the subject plays important role in developing many-sided geographic competence of students. The course contributes to creating historic approach of seeing and evaluating processes in their development. It also helps recognise correlations, connections between various healthcare- social-cultural- and economic processes. It contributes to developing problemsolving thinking, analysing and strategic skills.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

ALMA-ATA CHARTA. – *International conference on primary health care.* Alma-Ata, USSR September 6-12th, 1978. (http://www.phmovement.org/charter/almaata.html)

UN MILLENNIUM PROJECT 2005: *Halving hunger – It can be done*. 44 p. – http://www.unmillenniumproject.org/documents/HTF-SumVers_FINAL.pdf)

VISI, ÜTŐ JUDIT (2014): *Geography of Health.* – electronic textbook, EKC

Recommended reading:

WORLD HEALTH REPORT 2007 – *A safer future. Global public health security in the 21st century*. – WHO, Geneva

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Judit Visi Ütő**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Zsuzsanna Emri**

Course unit: Herbs and weeds	**Credit points: 2**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 2nd	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

Aims: Knowing medicinal- and weed species is important to systematic understanding of processes taking place in the nature, to assessing flora resources and risks. The subjects deals with both the most frequent cultivated- and wild plant species.

Content:

- Definition, classification of medicinal plants.
- Basics of plant taxonomy, categories below and above species.
- The most important herbal species, their characteristics, appearance.
- Active agents, importance of described species.
- Cultivated, collectable and protected medicinal plants.
- Rules of collection, nature protection-, legal- and quality regulation.
- Native weed species in Hungary.
- Alien weed species
- Lifestyle types of plants through examples of taught species
- Spread of weeds in Hungary, endangered, infected areas.

Competence:

Seeing problems coming from the interaction of society and geographic environment,

Competence on evaluating landscapes, analysing comprehensively natural-, environmental and spacial correlations.

Understanding correlation of man and is environment in geographic space.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

B.E. VAN WYJK, M. WINK: Medicinal Plants of the World. Timber press, 480 pp. U.K.ISBN 0881926027

ORBÁN, S. (2012): *Exotic Spices and Herbs.* http://p2014-1.palyazat.ektf.hu/public/uploads/orban-exotic-spices_532c3a684cb63.pdf

Recommended reading:

BALUSKA, F. 2009: Plant Environment Interactions 308p. Springer. ISBN: 978-3-540-89229-8.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Erika Kónya Pénzes**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Procession of data remotely sensed from satellites	**Credit points: 2**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

The aim of the course is to provide relevant knowledge related to the technology mentioned in the title to both later specializations.

Content::

- Satellites around the Earth. Quasi polar (sun synchronous) and geostationary (geosynchronous) satellite systems.
- Physics of remote sensing. Active and passive probe. Optical ans microwave probing. Radio occulation. (GPS in remote sensing)
- Informatics tools of signal communications. Tasks of data storage and retrieval.
- Lesson in the satellite receiver laboratory of the Faculty of Natural Sciences – beginning of picture developing.
- Atmospheric applications. Weather observations.
- Climate and air-chemistry observations.
- Meteorology utilization of satellites in relation to observations and modells.
- Observation of lifeless surface: Surface- and under-surface geomorfology
- Surface- and under-surface hydrology
- Geomorphology utilization of satellites in relation to observations and modells.
- ,Living natural applications. Advancement of vegetation.
- Zoology, inspection of pests
- Biology utilization of satellites in relation to observations and modells.
- Lesson in the satellite receiver laboratory of the Faculty of Natural Sciences – applications seen on the spot.

Competence:

Competence to appreciate landscapes, analysing comprehensively natural-, environmental and spacial correlations.

Understanding correlation of man and is environment in geographic space. Correlations of technical development and environment protection.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BARRETT, E.C.,CURTIS, L.F., 1982: Introductuion to environmental remote sensing, 2nd ed., Chapman and Hall, London, New York, 352 pp. ISBN 0 412 23090 9,

LILLESAND TH. M., KIEFER, R.W., CHIPMAN, J.W., 2008: Remote Sensing and Image Interpretation. John. Wiley and Sons Inc., 756 pp., ISBN 978-0-470-05245-7

LIOU K. N., 2002: An Intriduction to Atmospheric Radiation. 2nd. Edition, Int. Geophys. Ser., v. 84, Academic Press, Amsterdam, 583 pp.

Recommended reading:

KING, M. D. – PARKINSON, C.L. – PARTINGTON, K.C. – WILLIAMS, R.G. (2007): *Our Changing Planet. The View from Space.* Cambridge Univ. Press 400 o. *http://www.cambridge.org/us/catalogue/catalogue.asp?isbn=9780521828703&ss=res*

MARTIN, S., 2004: An Introduction to Ocean Remote Sensing. Cambridge Univ. Press, 426 pp.Rees, G., 2006: Remote Sensing of snow and ice. CRC Press, 285 pp.

COTTON W.R. and Pielke R.A., sen., 2007: Human impacts on Weather and Climate. Cambridge IUniv. Press, Cambridge, UK. 316 pp.

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. János Mika**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Marketing communication and PR tools	**Credit points: 2**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims are, that students acquire up-to-date theoretical and practical knowledge of connection.management when learning the subjects and they are able to plan, implement and control organisational institutional PR tasks.

Content:

- Concept of marketingcommunication.
- Concept of PR, history of its development. Objectives, content, requirements of PR activity, its organisational and personal conditions
- Concept of image. Personal – group-communicational tools and methods of PR.
- Mass-communication and publicity.
- Printed mass-communication tools and methods.

- Media-connections. Electronic mass-communication tools and methods.
- General and practical planning of PR activity.

Competence:

Students acquire skills in applying modern media-communication technologies, participating in PR productions. Students get skills in organising PR campaigns and events, shaping internal and external image. They are able to find the right tools in their marketing and PR activity which transmit unified image, economic profile of a given settlement or micro-region to the target markets.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

DE PELSMACKER, P. – GEUENS, M. – VAN DEN BERGH, J. (2010): MARKETING COMMUNICATIONS: A EUROPEAN PERSPECTIVE, FOURTH EDITION, FT PRENTICE HALL, P. 658, ISBN - 978-0-273-72138-3

MEERMAN SCOTT, D., (2007): THE NEW RULES OF MARKETING AND PR: HOW TO USE SOCIAL MEDIA, BLOGS, NEWS RELEASES, ONLINE VIDEO, AND VIRAL MARKETING TO REACH BUYERS DIRECTLY, JONH WILEY & SONS INC., P. 320 - ISBN: 978-0-470-54781-6

Recommended reading:

BELCH, G., - BELCH, M. (2014): Advertising and promotion: An integrated marketing communications perspective (10th ed.). New York: McGraw-Hill. ISBN 978-0078028977

MCDANIEL, C., - GATES, R. (2010): Marketing research essentials (8th ed.). New York: Wiley & Sons. ISBN 9781118249321

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Sándor Forgó**

Other lecturers involved if any *(name, title, academic degree*): **Csilla Pranter Kvaszinger**

Course unit: Professional practice (Specialization of resource and risk analyst)	**Credit points: 8**

The type (lecture/seminar/**fieldwork**/consultation hours) and number of lessons: ... in the given semester, **at least 4 weeks**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/end of course mark/other assessment.): **course diary**

Course in the curriculum (which semester is the course taught in): -

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim of the placement is, that skills and abilities acquired in the theoretical training are reinforced. During the placement students get to know structure, working system of the relevant institutions. Length of placement is 3x2 weeks at the beginning of the 4th semester paralelly with contact lessons partially done in blocks.

Content

1. (min. 2 weeks) Technical process and legal and economic tasks of exploration and utilization of resources. Practice at local governments and belonging to it mining authority where new resource was surveyed in the given period or recently. Documentation of the placement is done with supervision of the given institute assuring secrecy.

2. (min. 2 weeks) Survey of environmental (natural and industrial) risks, tracing implementation of related regulations at local governments and disaster management offices where in the past years risk of a possible catastrophy is recognised or consequences have been drawn from such an event. Documentation of the placement is done with supervision of the given institute assuring secrecy.

3. (1-1 week in two groups, in turns) a.) Getting acquainted with potential (free of charge and paid) weather and climate data resources, types of expert's reports and forecasts provided by Hungarian Meteorological Service. Space- and time punctuality, barriers of possibilities. Documentation of possibilities. b.) Learning real environmental problems, conflicts and their solutions, getting an insight in the work of the chosen environmental inspectorates or NGO or non-profit organizations exploring local problems of the environment. Documentation of the experience with respect to publicity of the environmental data and personal rights of the players of conflicts.

Competence: Intensification of all the key-competences appearing in the course. Ability to collect, systematize and process resource- and risk data, orientate in the distribution of work of the different levels of authorities and organizations, to utilize resources and minimize risks.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Ilona Tari Pajtók**
Other lecturers involved if any *(name, title, academic degree*): .....

Differentiated professional subjects
Regional manager specialization

Course unit: Analyses in construction and environmental geology	**Credit points: 3**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 2nd	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	
Aim: Students learn possibilities of the protection of geological environment, its ways and role of these applied sciences in the protection of natural and artificial (built) environment. **Content:** • Geology – basic studies I. (Litosphere) • Geology – basic studies II. (reconstruction of former environments) • Basics of engineering geology • Concept of environmental geology, examination methods • Construction of professional management of geology (environmental geology), its legal beckground • Investigation of the effects of human activity on geological environment, mining.	

- Investigation of the effects of human activity on geological environment, energy production.
- Investigation of the effects of human activity on geological environment, waste production.
- Environmental geology aspects of industrial activity
- Environmental geology aspects agriculture
- Geological preconditions of establishing various types of community-, industrial-, dangerous-, and radioactive waste storages.
- Environmental geological features of Hungary, sensitivity, load of is regions.

Competence

General: Students must understand geographical laws manifested in basic natural-, environmental-, technical and social phenomena. Based on it they must develop and apply genuine professional solutions and demonstrate the results. Based on the acquired knowledge the most outstanding students are able to continue their studies at a doctor course and get a PhD degree.

Personal skills and abilities: Analytic, synthetising and independent problem solving ability (creativity). Critic and self-critic attitude. Readiness to apply the acquired knowledge in practice. Commitment to quality. High level of information managing ability. Readiness to work in a comprehensive, interdisciplinary research and development team.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

KELLER, EDWARD A. (2011) : Environmental geology

Pearson Education, Inc. Upper Saddle River, New Jersey 07458 801 p.

ISBN-13: 978-0-321-64375-9

KELLER, EDWARD A., (2012): Introduction to environmental geology/

Pearson Education, Inc. Upper Saddle River, New Jersey 07458 596 p.

ISBN-13: 978-0-321-72751-0

LIANYANG ZHANG (Ed.) (2006): Engineering Properties of Rocks

Elsevier, Amsterdam, Geo-Engineering Book Series Volume 4, 290 p.

ISBN: 978-0-08-044672-1

KNÖDEL K., LANGE G., VOIGT H.J. (2007):Environmental Geology

Handbook of Field Methods and Case Studies Springer-Verlag Berlin Heidelberg, 1357 p.

ISBN: 978-3-540-74669-0 (Print) 978-3-540-74671-3 (Online) DOI 10.1007/978-3-540-74671-3

DUNCAN FOLEY, GARRY MCKENZIE, RUSSELL UTGARD (2009): Investigations in Environmental Geology Pearson Education, Inc. Upper Saddle River, New Jersey 07458 320 p. ISBN: 9780131420649

Recommended reading:

BLATT, H. (1997): Laboratory Exercises In Environmental Geology, McGraw-Hill, 192 p.

MONTGOMERY, C. W. - REICHARD, J. S. (2007) Environmental Geology, McGraw-Hill, 576 p.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Árpád Dávid**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Geographical aspects of real estate economy	**Credit points: 3+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim is for students to know the most frequent aspects of real estate market, this way they are able to make valid decisions or give advice in such situations.

Content:

- Basic questions of land use
- Basics of settlement-management
- Revenues and expenditure of settlements
- Possibilities of IT applications in real estate management
- GIS and real estate management

- Application of project management methods in real estate
- Application possibilities for real estate development
- Methods of property- valuation and management
- Features of real estate market, with special focus on marketing possibilities and financial options
- Technical bases related to real estate
- Legal bases of real estate management
- PPP constructions in asset management of settlements

Competence:

Ability to reasonable real estate utilization. Real estate- register and development. Preparation for the utilization of local resources. Giving advice to local and regional decisionmakers.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

GLAESER, E. L. – QUIGLEY, J. M. 2009: *Housing Markets and the Economy: Risk, Regulation, and Policy.* – Lincoln Institute of Land Policy, 432 p. ISBN-13: 978-1558441842

JOWSEY, E. 2011: *Real Estate Economics.* – Palgrave Macmillan, 496 p. ISBN-13: 978-0230233201

MCKENZIE, D. J. – BETTS, R. M. – JENSEN, C. A. 2010: *Essentials of Real Estate Economics.* – Oncourse Learning, 576 p. ISBN-13: 978-0538739696

Recommended reading:

DIPASQUALE, D. – WHEATON, W. C. 1995: *Urban Economics and Real Estate Markets*. – Prentice Hall, 378 p. ISBN-13: 978-0132252447

GOODMAN, A. – MUTH, R. 2014: *The Economics of Housing Markets.* – Taylor & Francis, 160 p. ISBN-13: 978-1138008526

SCARRETT, D. 2008: *Property Valuation: The Five Methods*. – Routledge, 216 p. ISBN-13: 978-0415423267

Lecturer responsible for the course *(name, title, academic degree.)*: **Dr. Antal Tóth**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Csaba Patkós**

Course unit: Sustainability in the local planning	**Credit points: 2+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Course description:

The course deals with the theory and practical examples of local and regional programs for the sustainable development of small regions.

Students carry out individually an arbitrarily selected city or area development plan adopting the viewpoints of sustainability.

Content:

- the content and importance of the Local Agenda 21 program in the regional development

- regional levels interpretation of sustainability based on Agenda 21, international experience

- the EU and the Local Agenda 21, in particular the Community Initiatives and Rural Development axes

- The basics of sustainable development in the domestic regional and local development documents, assesment of good and bad examples

- the importance of NGOs in sustainable development in Hungary

- the NATURA 2000 program in the local planning, opportunities and threats

- Assesment of territorial conflicts in renewable energy in our country

- Local development strategy and planning according to the requirements of Local Agenda

Competence:

Students will be able to create the local development plans based on the Local Agenda 21 conditions considering sustainability in mind.

Acquired skills enable them to carry out the analysis and evaluation of a certain region according to its resources, to review the sustainability of the local development plan.

They will be able to give technical assistance and advice on the initiatives of regional governments, businesses and civil sector.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

LOW, N. – GLEESON, B. – ELANDER, I. – LIDSKOG, R. (2000): *Consuming Cities – The Urban Environment in the Global Economy after the Rio Declaration,* Routledge, p. 323 ISBN 978-0-415-18769-5

WHEELER, S. M. (2013): Planning for Sustainability: Creating Livable, Equitable and Ecological Communities. Routledge. ISBN 978-0415809894

Recommended reading:

BUCKINGHAM, S. - THEOBALD, K. edt.(2003): *Local environmental sustainability*, Woodhead Publishing Limited p.254 ISBN 1855736853

REIMER, M. et al (2014): *Spatial Planning Systems and Practices in Europe: A Comparative Perspective on Continuity and Changes*. – Routledge 336 p. ISBN 978-0415727235

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. habil Tibor Kovács**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Organisation development and local governance models	**Credit points: 2+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.):

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim:

The course is designed for student awareness of the region's development, organizational forms at domestic and international (English, German) level and the small region organization development tasks. Be able to evaluate the operation of local management models and structure.

Content:

- Organizational forms of businesses, associations and public institutions
- Forms of co-operation between the different parties of the society
- The local (small regional) cooperation characteristics, management structure
- Rules and principles of operation
- Small regional self-government and regional management: methodologies and influencing factors, borders
- Institutionalization or network
- The conditions and regulations of cross- border interregional cooperation according to LEADER and INTERREG
- Highlighted examples of regional cooperation forms
- Forms and activities of national and German regional development associations
- The most important projects of regional development associations

Competence:

Familiar with organizational forms of businesses, associations and public institutions

Familiar with the regional cooperation characteristics and operational mechanisms

Aware of management opportunities of small region government

Familiar with the methods of institutionalization or networking/clustering

Familiar with the running of regional and cross- border development programs in practice (LEADER, INTERREG)

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

LEIBENATH, MARKUS; KORCELLI-OLEJNICZAK, EWA; KNIPPSCHILD, ROBERT, Cross-border Governance and Sustainable Spatial Development, Springer Verlag 2008, p. 194, ISBN: 978-3-540-79243-7

PATKÓS, CS. (2012): *Spatial- and Settlement Management.* http://p2014-1.palyazat.ektf.hu/public/uploads/patkos-spatial-and-settlement-management_532c3ab854be8.pdf

Recommended reading:

JOSÉ M. MAGONE, Regional Institutions and Governance in the European Union, Praeger Publishers 2003, p. 264, ISBN: 0-275-97617-3

M. S. SZCZEPANSKI, M. THOMAS, Regional Actors and Regional Contexts of Action, The Cases of Upper Silesia and Lower Lusatia Slaskie Wydawnictwa Naukowe, Tychy, Springer Verlag 2004, p. 310, DOI: 10.1007/s10708-006-0034-9

MARIO TELÒ, European Union and New Regionalism - Regional Actors and Global Governance in a Post-Hegemonic Era, Ashgate 2007, p.428, ISBN 978-0-7546-4991-5

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Csaba Patkós**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Economics of enterprises	**Credit points: 4**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim:

The course aims to familiarize students with the place and role of modern enterprises of today's market economy, and give an overview of their operational characteristics.

Content:

- The issues of business economics, the stakeholders of corporate management, the company's goals.
- The business process from concept to creation. Entrepreneurial skills and abilities. Brainstorming of the business establishment.
- The organizational forms of businesses, enterprise theories. The social role of enterprise.
- The similarities and differences of the foundation of joint corporations.
- Corporate contracts, founding documents, the content and form of incorporation documentation requirements in the foundation.
- The concept of responsiblecorporation. The market and the market conditions. The competition and co-operation in the market
- The economic role of the state, other stakeholders.
- The system of business activities: marketing, innovation, human resources, information as a resource
- Logistics system. Manufacturing and service.
- Corporate finance, financial systems. Cost management. Investing and financing.
- The basics of strategic business operations. Strategic management, types and features of strategies. Alternative strategies.

Competence:

Familiar with the organizations, decision- making structure of businesses and operation processes of enterprises.Familiar with adequate knowledge for creation of a business, the promotion of becoming an entrepreneur. Able to assess the needs of the particular area to create a business, to determine the most appropriate form of organization. Able to define the small region's best and most effective business strategies, will help to attract new investors to the development of an optimal business environment. Able to plan the conditions of optimal logistics, production and sales, for the local products and services in the region.Familiar with the most appropriate investment and company financing opportunities in the region.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

COOPER, RUSSEL; DONAGHY, KIERAN; HEWINGS, GEOFFREY (EDS.) (2007): Globalization and Regional Economic Modeling, Springer Verlag, 2007, p. 475 ISBN: 978-3-540-72443-8

Recommended reading:

JIM CURRAN, ROBERT BLACKBURN (2001): Researching the Small Enterprise, SAGE Publications Ltd, 2001, p. 192 ISBN: 9780761952954

FINKEL, R. – GREISING, D. (2009): The Masters of Private Equity and Venture Capital. McGraw-Hill. ISBN 9780071624602

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Hajnalka Csáfor**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Financing enterprises	**Credit points: 3+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim:

The course aims to provide students with economics-based knowledge of - theory and methods of financial decisions-, the emphasis on financing decisions. Familiar with the possible ways of financing the business, project financing and business tasks and techniques through practical examples.

Content:

- Types of corporate financial decisions, investment and financing decisions, differences.
- The information system of financial decisions. Importance and basic elements of the financing activities of enterprises.
- Elements of the capital structure of companies. Structure of financing alternatives. Features of internal and external financing sources.
- External debt-institutional sources of financing (credit). The types of corporate loans. External debt-institutional sources of financing (loan guarantees, corporate bonds, leasing, factoring).
- External equity-type financing funds: venture capital. Private equity types.The characteristics of venture capital, typical venture financing operations.
- Venture capital - domestic regulation of the sector, the most common exit routes from venture capital investment
- Issue of a private equity, IPO. Preparation of issue, the procedure of a typical equity sales
- Working capital management. The concept and basic issues of working capital management, the factors influencing the amount of working capital
- Financial ratios: profitability, efficiency, capital structure and indebtedness and liquidity ratios.
- Financing difficulties, problemsof small and medium enterprises
- The reasons and ways of the state participation. Community and government sponsored programs.

Competence:

Familiar with the types of financial decisions of businesses and financing activities.

Able to follow the debt-type funding option. Familiar with the characteristics of venture capital, the typical operations of venture financing. Aware of the process of share issue.

Able to prepare various financial indicators,give advice for the small and medium –size enterprises in the region. Aware of the financing difficulties of local businesses and familiar with a variety of national and community support facility solutions.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

MUNRO, D. (2013): A Guide to SME Financing. – Palgrave Pivot 112 p. ISBN 978-1137375759

OECD (1999): Financing Newly Emerging Private Enterprises in Transition Economies, OECD Publishing, p. 288 ISBN**:** 9789264161405

Recommended reading:

OECD (2006): The SME Financing Gap (Vol. I) - Theory and Evidence, OECD. Published by : OECD Publishing 2006, p. 136 ISBN: 9789264029408

JIM CURRAN, ROBERT BLACKBURN (2001): Researching the Small Enterprise, SAGE Publications Ltd, 2001, p. 192 ISBN: 9780761952954

FINKEL, R. – GREISING, D. (2009): The Masters of Private Equity and Venture Capital. McGraw-Hill. ISBN 9780071624602

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. György Kajati**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Zsuzsa Piskóti-Kovács**

Course unit: Management of local product path and resources	**Credit points: 2+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim: The course aims to present the local resources available in a given geographical area through the development plan of national and other EU countries small regions, LEADER groups which are essential for the area and urban development. In addition project examples are analyzed in connection with the local products' development and their entering the market.

Content:

- Analysis, estimate of local natural and social resources in a selected sample region.
- Analysis of local resource strategy using, the terms of involvement of stakeholders, forms
- The importance of micro and small enterprises in rural areas
- Cooperation for launch of local product line according to the LEADER, the Regionen Aktiv and the Dorf Vital programs in Germany
- Samples of the small regional domestic product line management
- Planning, operation and logistics of the cooperation
- The management and marketing of entering the market
- Quality systems of the local products, certificates of origin

Competence:

Realise the importance of local environmental resources, settle in to development strategy. Carry out the product line strategy of various forestry and agricultural products.

Manage the introduction of local products on the market, be familiar with the rules and regulations for organic production, carry out local marketing strategy.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

MOSELEY, M. (2003): Rural Development Principles and Practice, *SAGE Publications Ltd* 2003, p. 240, ISBN 9780761947660

HUGOS, M.H. (2011): Essentials of Supply Chain Management. Wiley. ISBN 978-0470942185

Recommended reading:

TADLOCK C. (2003): Value-Added Agricultural Enterprises in Rural Development Strategies, Nova Science Publisher Inc. 2003, p. 59, ISBN 1-59033-819-7

PATKÓS, CS. (2012): *Spatial- and Settlement Management.* http://p2014-1.palyazat.ektf.hu/public/uploads/patkos-spatial-and-settlement-management_532c3ab854be8.pdf

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Csaba Patkós**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Management of regions and settlements	**Credit points: 3+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim: The course aims to provide students with awareness of the management tasks of the areas and essential regional levels and small regions. The course consists of an introductory lecture and exercises, where students carry out a case study starting with the position of their own region.

Content:

- The settlement and regional management responsibilities and scope of activity
- Municipal models
- Management models
- The technocratic and bureaucratic management features
- New public management and the private sector
- Public administration and public relations, public servants and public service
- The municipal management and local government operations factor system
- The differences in strategic and operational management, decentralized management of public duties
- Co-operative city management?
- Special tasks of small region management
- Tourism destination management - a special field
- Management of value added chains and local development

Competence:

Mediation between different social stakeholders, reconciliation of interests. Understanding problems resulting from the interaction of social and geographical environment.

Competence for a comprehensive analysis of evaluating landscapes, landscape, environmental and spatial interactions.

Understanding of the interaction in geographical space of human and its environment

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

HOCH, CHARLES –DALTON, LINDA C. –SO, FRANK S. (1979) : *The Parctice of Local Government Planning*. – American Planning Association, the International City Management Association p 676. ISBN: 0873261712

PATKÓS, CS. (2012): *Spatial- and Settlement Management.* http://p2014-1.palyazat.ektf.hu/public/uploads/patkos-spatial-and-settlement-management_532c3ab854be8.pdf

Recommended reading:

AMBOS, BJORN – SCHLEGELMILCH, BODO B. (2010) *New Role of Regional Management. – Palgrave Macmillan,* h.n. 300 p. ISBN: 0230538754

PIKE, A. – RODRÍGUEZ-POSE, A. – TOMANEY, J. (2007): *Local and Regional Development*. – *Routledge* 328 p. ISBN 978-0415357180

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Csaba Patkós**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Conceptions for local development	**Credit points: 2+2**

The type (**lecture/seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester and 2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam/end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 3rd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aim: The students be familiar with the theoretical part of the subject of European local (small municipalities, small area) concept creation methods of literature, and the successful solutions of the region EU member states. Be familiar with specific strategic and project examples of the successful concept creation criteria.

Content:

• The concept of regional development, the domestic laws regulatation, its literature

• Regional concept creation methodology based on German literature

• Regional concept works in the United States

• The domestic examples of small region concept creation(sub-regional concepts, LEADER groups)

• Introduction of the local resource exposition according to the natural geographical factors

• The role of the urban-rural relationship based on the concept creation

• Thematic map compilation based on the key factors

• The importance of the regional key institutions and persons in the concept creation

• Defining a small region development needs, organizing them in strategy

• Defining the projects fit for strategy

• Create scenarios of development, defining indicators

Competence:

Familiar with the methodology of local development plan,

The student is able to prepare and develop the local (small regional) development plan,

recognizing the role of the regional key people in the preparatory phase.

Improving teamwork in a common setting up development concept of a given region.
List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)
Required reading: WIGGERING, H.; Ende, H.-P.; Knierim, A.; Pintar, M, Innovations in European Rural Landscapes, Springer Verlag 2010, p.156 ISBN 978-3-642-04171-6 MICHAEL WOODS, RURAL GEOGRAPHY: Processes, Responses and Experiences in Rural Restructuring, SAGE Publications Ltd 2005, p. 352, ISBN 9780761947608 **Recommended reading :** JEREMY ALDEN, PHILIP BOLAND, Regional Development Strategies A European Perspective, Published May 1st 1996 by Routledge, p.325, ISBN 0-117-02366-3 PIKE, A. – RODRÍGUEZ-POSE, A. – TOMANEY, J. (2007): *Local and Regional Development*. – *Routledge* 328 p. ISBN 978-0415357180
Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Csaba Patkós**
Other lecturers involved if any *(name, title, academic degree*): .....

Optional subjects in the Regional manager specialization

Course unit: Protection of ancient monuments	**Credit points: 2**
The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (**exam**/end of course mark/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 3rd	

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

Students are introduced into the theoretical and practical aspects of the protection of historic monuments mainly through Hungarian examples.

Content:

- The theory of the protection of historic monuments.
- The principles and methods of the protection of historic monuments.
- The history of the protection of historic monuments.
- Exploring, drawing up inventories and keeping a record of historic monuments.
- Restoring historic monuments.
- The preservation and utilisation of historic monuments.
- The legal and economic issues of the protection of monuments.
- Monuments in Hungary I (Castles, fortified castles)
- Monuments in Hungary II. (Public buildings, statues)
- Monuments in Hungary III. (Historic gardens)
- Monuments in Hungary IV. (Special areas of historic and/or architectural interest)
- Monuments abroad.

Competence:

General: Students should understand the basic geographical regularities that materialise in natural, environmental, technical and social phenomena. Based on them, students should be able to develop and apply unique professional solutions, and to present results. With the acquired knowledge the best students should be suitable to continue their studies on a doctoral programme, and attain a Ph.D.

Individual qualities and abilities: Analytical and synthesising and independent problem solving ability (creativity). Critical and self-critical approach. Ability to build upon the acquired knowledge in practice. Committed to quality. Skilled in information management. Capable of a comprehensive, interdisciplinary work in a research-development group.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

CSIMA, P. (2007): Principles and options for the protection of historical landscapes in Hungary. Cultural Landscape - Historical landscape - Monument Protection., Keszthely, 12-24 pp.

DERCSÉNYI, D. (1984): Historical monuments and their protection in Hungary. - Corvina Kiadó, Budapest, 55 p. ISBN-10: 9631318168 ISBN-13: 978-9631318166

RAMPLEY, M. (2012): Heritage, Ideology, and Identity in Central and Eastern Europe

Contested Pasts, Contested Presents Boydell Press, 216 p. ISBN: 9781843837060

Managing Cultural World Heritage Published in 2013 by the United Nations Educational, Scientific and Cultural Organization, 7, place de Fontenoy, 75352 Paris 07 SP, France © UNESCO / ICCROM / ICOMOS / IUCN, 2013 ISBN 978-92-3-001223-6

Recommended reading:

THOMAS, L. - MIDDLETON, J. 2003. Guidelines for Management Planning of Protected Areas. Gland, Switzerland, IUCN and Cambridge, UK. http://data.iucn.org/dbtw-wpd/edocs/PAG-010.pdf

International Scientific Committee. HISTORIC GARDENS AND SITES. Colombo: ICOMOS, 1993. 224 p.

INTERNATIONAL CHARTER FOR THE CONSERVATION AND RESTORATION OF MONUMENTS AND SITES (THE VENICE CHARTER 1964)

IInd International Congress of Architects and Technicians of Historic Monuments, Venice, 1964www.icomos.org

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Árpád Dávid**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Stress sources in a settlement	**Credit points: 3**
The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/**end of course mark**/other assessment.): ...	
Course in the curriculum (which semester is the course taught in): 2nd	

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

During the course students are introduced into settlement ecology, its history and various approaches. The course depicts settlements as eco-social systems, and points out the features of these artificial systems (e.g. flow of materials and energy).

Content:

- The relations of the various types of settlements and their environments: rural and urban ecology.
- The effect of settlements on the geospheres.
- Urban climate.
- The adjustment of settlement infrastructure to the geographical environment.
- Effects that modify natural environment, and their reaction.
- Effects on man, as a biological and social being.
- Urban air pollution and urban climate.
- The extreme features of urban land usage.
- Public hygiene.
- Noise and vibration.
- Sustainable settlement development and its international documents.

Competence:

Students understand the problems arising from the interaction of society and the geographical environment. They are competent in evaluating areas, and analysing areal, environmental, spatial interactions.

Analysis of the geospatial interaction of man and its environment.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

ALBERTI, MARINA (2008)*: Advances in Urban Ecology: Integrating Humans and Ecological Processes in Urban Ecosystems.* – Springer p 366. ISBN-10: 0387922911

Related international documents Athens Charta, Delosz Manifesto, Nairobi Manifesto, New Athens Chart, Aallborg Chart

Recommended reading:

HAWKEN, PAUL (1993**)**: *The Ecology of Commerce*. – Harper Business, New York, 250 p., ISBN 0-88730-655-1

STEINER, F.R. (2002): *Human Ecology: Following Nature's Lead*. – Island Press, 256 p. ISBN 978-1559639958

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. habil Tibor Kovács**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: Urban climate and air quality	**Credit points: 2**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

The aim of the course, is to introduce students committed to land management into towns' role (settlements with a densely build-up centre) in changing climate and air. They are able to measure the extent and nature of these effects, as well as their general seasonal distribution, and the risk of possible damage-like accumulation.

Content:

- Geographical factors influencing urban climate. The extent to which a town is built up, as a feature affecting energy- and water balance. The degree of this effect.
- Urban factors affecting the sources and circulation of air pollution. The extent to which a town is built up, as a factor affecting the circulation of harmful chemical substances.
- The observed features of the surface and air in big towns. The urban heat-island effect. Urban morphology features determining the urban heat-island effect.

- The so-called kinetic temperature of the irradiating surface, and its satellite observation. The differences between the urban heat-island effect levels based on kinetic temperature and air temperature.
- Horizontal motion of air in towns. The contribution of the urban heat-island effect to upwelling and heat-island circulation.
- Drainage and surface water budget. The features of the urban gradient of atmospheric humidity. The decline of liability to fog in clean air.
- The particular distribution of precipitation in the vicinity of typical lowland cities. The role of upwelling and evaporation in distribution. The role of urban topography in influencing distribution.
- The urban features of gaseous pollutants. Sulphur dioxide, carbon monoxide, nitrogen oxide, ozone, fluorides. The development of 'summer' smog.
- The urban features of solid pollutants. Factors affecting the amount of diposing and particular matter (TSP, PMx). The development of 'winter' smog.
- Urban development and ventilation. The effect of urban heat-island circulation on average and episodic air pollution.
- The microclimatic features of air pollution in case of narrow streets and building complexes of different height. Canyon-effect, *chimney-effect,* etc.
- The continuously observed data and their accessibility of the settlement air quality national surveillance network. Visit to the air quality sampling station in Eger.

Competence:

The accomplishment of the course builds upon the majority of the environmental problems dealt with in the first year and gives emphasis to them in relation to urban settlements. The practice of sampling enhances students' skills in using instruments, as well as their ability to persuade local governments and civil protection authorities about the innocuity of sampling, etc. By the end of the course students acquire a comprehensive understanding of the complexity of phenomena and their continuous interaction with the social-economic conditions.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

OKE TR (1979) Boundary Layer Climates. John Wiley and Sons, New York City

M. PACIONE (2009): *Urban Geography: A Global Perspective*. London, Routledge, 3rd ed, ISBN 978-0-415-46202-0 , pp.68-94; 189-202; 396-418.

JACOBSON, M.Z., 2002: Atmospheric Pollution. History, Scioence, and Regulation. Cambridge Univ. Pess., UK, 399 pp.

Recommended reading:

KAHN, M.E. (2006) *Green cities: Urban growth and the environment*. Brookings Institution Press, Washington, 160 p. ISBN 0-8157-4815-9;

NIEMELA, J. (2013) *Urban ecology: patterns, processes amd applications*. Oxford Univ. Press, 374 p., ISBN: 978-0-19-956356-2.

World Urbanization Prospects – The 2014 Revision. – United Nations, New York, 32 p. – http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf ISBN: 978-92-1-151517-6

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. János Mika**

Other lecturers involved if any *(name, title, academic degree*): .....

Course unit: National features of transportation and telecommunication networks	**Credit points: 2**

The type (lecture/**seminar**/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (exam/**end of course mark**/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 4th

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

Aims:

Presentation of the general features of the development of transport in Hungary, the main trends with special respect to the period from the changing of the political system on. The course points out the increasing role of telecommunication, info-communication and mass communication in socioeconomic development.

Content:

- General features of the development of transport

- Subsectors of transport, features of the development of subsectors
- Road transportation: network of roads, car fleet, clearways, regional features of vehicular traffic
- Water transportation: fluvial transport, inland navigation
- General and regional features of air transport in Hungary
- Configuration of the transport network of Hungary, regional logistics centres, combined transport
- The role Budapest plays in national and regional transport geography
- Our place and role in the international transportation networks, tasks arising from our EU membership
- The development of telecommunication, its increasing socioeconomic role
- Regional features of info-communication and mass communication

Competence:

The course develops students' geography skills in multiple ways. It contributes to the development of a historical approach, the ability to understand and evaluate the development of processes. Getting familiar with the history of networks develops students' spatial approach, cognitive and problem solving skills, analytical and synthetic abilities, which aneble them to develop decision making competences based on strategic approach.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

HALL, D. (2010): *Transport geography and new European realities: a critique*. Journal of Transport Geography, 18(1), pp. 1-13.

RODRIGUE, JP, COMTOIS, C, SLACK, B (2013): *The geography of transport systems.* Routledge, 91 p. ISBN: 978-0-203-37118-3

SHAW, JON - DOCHERTY, IAIN (2014): *"Geography and transport."* The Routledge Handbook of Mobilities. London and New York: Routledge pp. 25-35.

TAKAHASHI, T. (2006): *Economic geography and endogenous determination of transport technology.* Journal of Urban Economics, 60(3), pp. 498-518.

TOLLEY, R. S.; TURTON, B. J. (1995): *Transport systems, policy and planning: a* geographical *approach.* 402 p. ISBN: 0-582-00562-0

Recommended reading:

CANTWELL, J., - SANTANGELO, G. D. (2003): *The new geography of corporate research in information and communications technology (ICT).* In Change, Transformation and Development (pp. 343-377). Physica-Verlag HD.

GREIG, J. M. (2002): *The end of geography? Globalization, communications, and culture in the international system.* Journal of Conflict Resolution, 46(2), pp. 225-243.

HOYLE, B. S., & KNOWLES, R. D. (1992): *Modern transport geography*. Belhaven Press. 276 p. ISBN 1-85293-157-4

MCCANN, P. (2005): *Transport costs and new economic geography.* Journal of Economic Geography, 5(3), pp. 305-318.

MORLEY, D. - ROBINS, K. (2002): *Spaces of identity: Global media, electronic landscapes and cultural boundaries.* Routledge. 49 p.

Lecturer responsible for the course *(name, title, academic degree.*): **Dr. Judit Visi Ütő**

Other lecturers involved if any *(name, title, academic degree*): **Dr. Zoltán Utasi**

Course unit: Environmental economics	**Credit points: 3**

The type (**lecture**/seminar/fieldwork/consultation hours) and number of lessons: ... in the given semester, **2/30 weekly/full semester**

if the subject is not taught in English, the language of teaching: .....

The method of assessment (**exam**/end of course mark/other assessment.): ...

Course in the curriculum (which semester is the course taught in): 2nd

Entry requirements(if any): ...

Course description: Information outlining the course requirements in a concise yet descriptive manner.

The aim of the course is to teach the major themes of environmental economics, and then to show their applications in environmental control.

Content:

- The socio-economic causes of environmental problems.
- Economic expansion and or development and environmental problems.
- The evaluation of the public opportunities and means of sustainable development.
- The micro- and macro indicators of sustainable development.
- Costs and damage relating environmental protection.
- Environmental regulations.
- Corporations and environmental protection.
- Standardised environment-based corporate management systems.
- Effective methods of corporate environmental management.
- Environmental protection regulations in Hungary.
- Sustainable development in the regional development plans, settlement strategies, and their prime examples.

Results, competences:

The course introduces students into the processes entailing the pollution of environmental spheres, and the opportunities for preventing environmental damage. Students become capable of considering scarce environmental resources in making local and regional economic decisions. On planning an investment they can consider environmental regulations, as well as the sanctions or costs they may face on infringing them. They will have a comprehensive understanding why it is necessary to economise in the use of scarce resources. They will acquire how to draw up the chapter on sustainable development of a regional or settlement development concept. The course also enables them to implement an educational or pilot project on the protection of local environment and resources.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Required reading:

BATEMAN, I.J. – LOVETT, A. A. – BRAINARD, J.S. (2003): *Applied Environmental Economics - A GIS Approach to Cost-Benefit Analysis*. – Cambridge, p. 358 ISBN: 9780521809566

KOLSTAD, C. (2010): *Environmental Economics*. – Oxford: Oxford University Press 496 p. ISBN 978-0199732647

Recommended reading:

MATHER, A. S. - CHAPMAN, K. (1996): *Environmental Resources*, Prentice Hall, 288 p. ISBN 0582101689

TIETENBERG, T. (1998): *Environmental Economics and Policy*. – Prentice Hall, 560 p. ISBN 978-0321599490

Lecturer responsible for the course *(name, title, academic degree.*): **Prof. Dr. habil János Szlávik**
Other lecturers involved if any *(name, title, academic degree*): **Dr. Hajnalka Csáfor**

Course unit: Professional practice (Regional manager specialization)	**Credit points: 8**
The type (lecture/seminar/**fieldwork**/consultation hours) and number of lessons: ... in the given semester, **at least 4 weeks** if the subject is not taught in English, the language of teaching:	
The method of assessment (exam/end of course mark/other assessment.): **course diary**	
Course in the curriculum (which semester is the course taught in): -	
Entry requirements(if any): ...	
Course description: Information outlining the course requirements in a concise yet descriptive manner.	

The aim of the course is to reinforce the skills and abilities acquired by theoretical training. Students get to know the organisations and their activities having a major role in regional management in their everyday operation. By learning about the internal structure and working systems during their practice, students will be able to fit in and enhance the work of the organisations.

Concerning its programme, the practice can be divided into three main parts, out of which the first two are compulsory, while the content of the third one is optional, i.e. it depends on the interests of the students. The practice is divided into 3×4 weeks, in accordance with the three practice modules.

Content

1. Portfolios to choose form in case of regional and local planning, tender writing, product development: apprenticeship at regional and county-level development agencies, at companies dealing with local planning and tender writing, as well as at the tender offices of local governments and sub-regional labour organisations. In case of TDM organisations and in connection with the LEADER programme the apprenticeship is at organisations dealing with local product development.

2. Enterprise development and counselling, as well as financing issues: practice at chambers of commerce and industry, organisations dealing with the incubation of SMEs (Small and Medium-

sized Enterprises), or organisations operating industrial parks, as well as financial institutions interested in financing corporations.

3. The content of the facultative training period: apprenticeship at environmental protection authorities, water authorities, and disaster management organisations. Getting to know the units dealing with evaluating and monitoring tenders at organisations participating in tenders (ROP tender units, VÁTI (Hungarian Nonprofit Limited Liability Company of Regional Development and Town Planning), etc.); and apprenticeship at organisations dealing with regional marketing. Other options are civil organisations the activities of which cover the recommendations of three points mentioned above.

Results, competences:

Deepening the key competencies in accordance with the threefold division of the professional practice. Concerning the first point, besides professional competencies the focus is on teamwork, individual organising and problem solving abilities, and creativity, i.e. drawing up complex regional assessments and development strategies, implementing and following up projects. Concerning the second point, the focus is on competencies necessary for providing professional and technical help, as well as for developing a local network of relationships and clusters. Concerning the third point, the focus is on developing individual qualities, in accordance with the chosen practice place primarily involving competencies that are necessary for project monitoring, regional marketing, environmental protection, and providing help at civil organisations.

List the **3-5** most important required or recommended reading materials (notes, textbook), with bibliographic information (author, title, publishing data (or pages), ISBN)

Lecturer responsible for the course *(name, title, academic degree.)*: **Dr. Ilona Tari Pajtók**

Other lecturers involved if any *(name, title, academic degree)*: .....