Faculty of Civil and Environmental Engeneering					
Study programme:	**Environmental Protection**	Degree level: full-time/part-time programme:	**Master's degree**		
Specialization	**Environmental Management**	Diploma path:	**-**		
Module name:	**Landscape ecology**				
Module type:	**obligatory**	Semester: **3**	ECTS **2**	Module ID:	**OK3030**
No. of hrs in semester:	L - 15 C - 0 LC- 0 P- 30 SW- 0 S- 0				
Prerequisites:	*Ecology, Nature protection,Geobotany in environmental protection, Functions of geosystems*				
Teaching methods:	*lecture, project*	*Assessment:*	*Evaluation must be relevant to the intended learning outcomes*		
		lecture - colloquium; project - completion and evaluation of projects			
Aims and objectives:	*Knowledge on the relationships between the different components of the landscape. Knowledge on the functions, structure and evolution of the landscape and its impact on populations of living organisms. Ability to analyze diversity, structure and landscape linkages. Skills of evaluation of impact of landscape structure on species populations and valuable natural elements. Ability to identify the needs of management and the protection of the landscape.*				
Module content:	*Elements of the landscape, geo-components, geo-complexes, natural spatial units and its mutual relationships. Model of patches, corridors and landscape backgrounds (matrixes). The functioning of ecological corridors. Biogeographic theory of islands, habitat islands, the concept of metapopulation. The functioning of the habitat patches of different size and shape. Boundaries and barriers in the landscape. Influence of the spatial structure of the landscape on the functioning of plant and animal populations. Transformation and evolution of the landscape. Methods of the analysis of the spatial pattern of the landscape.*				
Learning outcomes	*Write min. 4, max. 8 learning outcomes in the following order: knowledge - skills - competences. Each learning outcome must be verifiable.*		*Relevance to the programme learning outcomes*		
LO1	Student identifies and defines the relationships and dependencies between the different components of the landscape		K_W04, K_W14, K_W16		
LO2	Student knows and characterizes the functions, structure and processes of landscape evolution and their impact on populations of living organisms		K_W04, K_W14, K_W16		
LO3	Student analyzes the diversity, structure and landscape linkages		K_U01, K_U03, K_U22		
LO4	Student evaluates the influence of landscape structure on populations of species of special interest		K_U01, K_U03, K_U22		
LO5	Student evaluates the protection capacity of the populations in the landscape of complex structure		K_U01, K_U03, K_U22		
LO6	Student evaluates the protection needs of the landscape		K_U01, K_U03, K_U22		
LO7					
LO8					
	lecture attendance		15 x 1h	15	
	participation in project classes		15 x 2h	30	
	preparation and work on projects, reports, etc.		10 x 2h	20	

student workload	participation in student-teacher sessions related to the projects	5 x 1h	5
		TOTAL:	70
quantitative indicators	Student workload - activities that require direct teacher participation: 15h+30h+5h	50	ECTS 2
	Student workload - practical skills activities: 30h+20h	50	2
basic references:	*Forman T.T. Land Mosaics. The ecology of landscapes and regions. Cambridge Univ. Press, 1999*		
supplementary references:	*1.Turner M.G., Gardner R.H., O'Neill R.V. Landscape Ecology in Theory and Practice: Pattern and Process. Springer, 2001. 2. Gutzwiller K.J. Applying Landscape Ecology in Biological Conservation. Springer, 2002.*		

learning outcomes	*methods of assessing learning outcomes*	type of class (if more than one) where the outcomes are assessed
LO1	evaluating the results of colloquium as well as the student's projects and reports	L, P
LO2	evaluating the results of colloquium as well as the student's projects and reports	L, P
LO3	evaluating the student's projects and reports	P
LO4	evaluating the student's projects and reports	P
LO5	evaluating the student's projects and reports	P
LO6	evaluating the student's projects and reports	P
LO7		
LO8		

Department:	Department of Environmental Protection and Management	Group instructors:	Dan Wołkowycki, Aleksander Kołos, Beata Matowicka
Date:	07.02.2012	Coordinator:	Dr Dan Wołkowycki