

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Environment		
ACADEMIC UNIT	Department of Environment		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	126KEY	SEMESTER	6
COURSE TITLE	Landscape ecology		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
Lectures		3	
Laboratory/Tutorial		3	
Total credits			5
COURSE TYPE		Skills development	
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:		Greek	
IS THE COURSE OFFERED TO ERASMUS STUDENTS		Yes	
COURSE WEBSITE (URL)		http://www.env.aegean.gr/studies/undergraduate-degree/curriculum/landscape-ecology/	

(2) LEARNING OUTCOMES

Learning outcomes
With the successful completion of the course students will be able to: • Understand the basic concepts of landscape ecology • Use theoretical tools such as Ramas GIS software for management and FRAGSTATS for spatial analysis
General Competences
The course provides an introduction to Landscape Ecology and its applications. The course objectives are: 1.Understanding and use of basic notions and terms in landscape ecology and the necessity of its use 2.Familiarizing with the basic methodology of spatial and landscape analysis and categorizing main spatial patterns 3.Getting to know the integrated process through presentation of complete case studies 4.Development from students of a complete decision making platform for managing ecological spatial problems through the synergies with socioeconomic factors

For the best use of theoretical tools examples with the use of software Ramas GIS for landscape analysis and management and FRAGSTATS for spatial analysis are given

(3) SYLLABUS

- Topics per week
- Landscape and landscape ecology; basic notions and definitions
- Spatial heterogeneity and ecological patterns
- The notions of hierarchy and scale in ecology
- Landscape Connectivity – the role of ecotones and corridors
- Introduction to modeling; models for dynamic landscapes
- Basic quantitative analysis of ecological disturbances
- Pattern analysis; methods and applications
- Interaction of urban and natural landscapes; applications
- Basic metrics in landscape analysis (examples with the use of NDVI))
- Biodiversity conservation and landscape management
- Introduction to FRAGSTATS
- Socioeconomic applications in spatial planning
- Applications to environmental planning
- Global change and landscapes; tools for prediction

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face to face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY		
TEACHING METHODS	Activity	Semester workload
	Lectures	39
	Laboratory assignments	39
	Project	13
	Study and analysis of bibliography	39
	Course total	130
STUDENT PERFORMANCE EVALUATION	Course evaluation through final exam (40%) laboratory assignments (30%) and project (30%)	

(4) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Bissonette, J. A. (ed). 1997. Wildlife and Landscape Ecology: Effects of Pattern and Scale. 1st edition. Springer, New York.
- Dramstad, W. E., J. D. Olson and R. T. T. Forman. 1996. Landscape Ecology Principles in Landscape Architecture and Land-Use Planning. Harvard University Graduate School of Design/Island Press, Cambridge.
- Forman, R. T. T. 1995. Land Mosaics: The Ecology of Landscapes and Regions. Cambridge University Press, Cambridge.
- Gutzwiller, K. J. (ed). 2002. Applying Landscape Ecology in Biological Conservation. Springer, New York.
- Naveh, Z. and A.S. Lieberman. 1984 (1994, 2nd ed). Landscape Ecology: Theory and Application. Springer, New York.
- Nassauer, J. I., editor. 1997. Placing Nature: Culture and Landscape Ecology. Island Press, Washington, D. C.
- Turner, M. G. and R. H. Gardner (eds). 1991. Quantitative Methods in Landscape Ecology. Springer-Verlag, New York.
- Wiens, J., and M. Moss (eds). 2005. Issues and Perspectives in Landscape Ecology. Cambridge University Press, Cambridge.