COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Environment		
ACADEMIC UNIT	Department of Environment		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	**121KEY**	**SEMESTER**	**6**
COURSE TITLE	Quantitative Analysis of Ecological Data		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	3	4
Laboratory exercises	1	2
Total credits		**6**

COURSE TYPE	Skills development
PREREQUISITE COURSES:	-
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (tutorials)
COURSE WEBSITE (URL)	http://www.env.aegean.gr/studies/undergraduate-degree/curriculum/quantitative-analysis-of-ecological-data/

(2) LEARNING OUTCOMES

Learning outcomes
Students will be able to: (A) Describe and adequately explain basic statistical methods (B) Design an appropriate experiment or sampling campaign to answer ecological questions (C) Evaluate the methods of data analysis to choose the optimal one (D) Develop an appropriate method for analysing of ecological data (E) Compile the results of different methods of analysis to draw conclusions (a) To understand the basic principles of experimental design and methods of analysis and interpretation of ecological data. (b) To select the appropriate method of ecological data analysis
General Competences
Search for, analysis and synthesis of data and information, with the use of the necessary technology Decision-making

Working independently
Production of free, creative and inductive thinking

(3) SYLLABUS

Lectures:

1. Experimental design
2. Estimation of species population size
3. Spatial pattern of plant and animals (distribution methods, quandrat-variance methods, distance methods)
4. Biological and environmental indices
5. Niche overlap indices
6. Resemblance functions
7. Association analysis
8. Cluster analysis
9. Principal component analysis
10. One-way Analysis of variance
11. Two – and three-way Analysis of variance
12. Correlation and Regression

Laboratory exercises:

1. Resemblance functions
2. Cluster analysis
3. Regression
4. Anova
5. Niche breadth and overlap indices

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Use of Moodle (Modular Object Oriented Developmental Learning Environment)
TEACHING METHODS	

Activity	***Semester workload***
Lectures	36
Exercises	15
Study	80
Essay writing	20
Exams	3
Course total	***154***

STUDENT PERFORMANCE EVALUATION	Language of evaluation: Greek methods of evaluation problem solving: 70% essay/report: 30%

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

Στάμου ΓΠ. 2009. Οικολογία: Μέθοδοι ανάλυσης και σύνθεσης δεδομένων. Εκδόσεις Ζήτη, Θεσσαλονίκη.
Καρανδεινός Μ. 2007. Ποσοτικές οικολογικές μέθοδοι. Πανεπιστημιακές Εκδόσεις Κρήτης.

- Related academic journals:

Ecological Indicators, Methods in Ecology and Evolution