Iök100 - Data Modelling

Module label: Data Modelling
Module code: Iök100
Credit points: 9.0 KP
Workload: 270 h

Used in course of study: Master's Programme Landscape Ecology > Basismodule
Contact person:

Module responsibility
- Vanessa Minden

Authorized examiners
- Vanessa Minden
- Cord Peppler-Lisbach

Module counselling
- Vanessa Minden

Entry requirements

Skills to be acquired in this module:
- Basic methods of explorative statistics and adequate application of statistical tests relevant to ecological data.
- To learn, interpret and apply methods of habitat modelling
- To understand the fundamentals of spatial explicit analysis of species-environment relationships as well as the fundamentals of spatial prediction of environmental requirements in species
- To adequately analyse measured and observed spatial data applying methods of spatial statistics and geostatistics, respectively
- To learn and to understand relevant methods of multivariate analysis of vegetation data
- To be able to interpret and to assess the results obtained as well as the relevant literature
- To be able to apply the treated methods independently
- To learn and to improve skills in using the statistics software R

Module contents

Part 1: Introduction to statistical analysis of ecological data NN (NN)
- Experimental design
- Explorative data analysis
- Distribution tests, data transformation
- Chi\(^2\) test
- Anova, Kruskal-Wallis test
- t & U test
- Multiple comparisons, post-hoc tests

Part 2: Habitat modelling and spatial statistics (Biedermann)
- Linear (OLS) regression
- GLM (logistic regression, Poisson regression)
- Spatial explicit modelling, GIS integration
- Spatial statistics

Part 3: Multivariate analysis of vegetation ecological data (Peppler-Lisbach)
Classification:
- Cluster analysis
- Statistical degrees of fidelity

Ordination:
- Indirect procedures: PCA, CA, DCA
- Canonical procedures: RDA, CCA
**Reader’s advisory**
Additional literature will be announced during the course.

**Links**
https://www.uni-oldenburg.de/en/landeco/

**Language of instruction**
German

**Duration (semesters)**
1 Semester

**Module frequency**
jährlich

**Module capacity**
unlimited

**Modullevel**
MM (Mastermodul / Master module)

**Modulart**
Wahlpflicht / Elective

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<tr>
<td>Final exam of module</td>
<td>Before the end of the course</td>
<td>Assignment</td>
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**Course type**
Exercises

**SWS**
6.00

**Frequency**
WiSe

**Workload attendance**
84 h