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:

- 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
- Chi² 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

Module level
MM (Mastermodul)

Module type
Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

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<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
<th>Assignment</th>
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<tr>
<td>Final exam of module</td>
<td>Before the end of the course</td>
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Course type
Exercises

SWS
6.00

Frequency
WiSe

Workload attendance
84 h