



## *Module syllabus: Ordination methods in vegetation science with CANOCO package*

### 1. Overall information

Module coordinator	Dr hab. Anna Orczewska PhD
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ECTS	2
Method for the verification of learning outcomes	<p>The final grade for the module is weighted on the average of the following student activities:</p> <ul style="list-style-type: none"><li>- Active participation in seminars (0.2)</li><li>- Reports (Power Point presentation files) from the realised laboratory tasks (0.8)</li></ul> <p>To be awarded a final grade, the student must have passed each activity of the module.</p> <p>Grades: below 51% – fail (F); 52-60% – with minimum academic criteria (E); 61-65% – satisfactory (D); 66-75% – good (C); 76-85% – very good (B), ≥ 85% – excellent (A)</p>

### 2. Description of student activity and work

Laboratory	
Responsible instructor	Dr hab. Anna Orczewska PhD
Content	<p>A short theoretical presentation of multivariate ordination techniques, including indirect (CA, PCA, DCA) and direct methods (RDA, CCA) and their application in vegetation science and community ecology. The module will consist of a set of practical classes (laboratories) whose aim is to familiarise students with the data analysis procedures available in the CANOCO for Windows package. Analyses of vegetation/plant ecology case studies (based on scientific papers) with a focus on the practical implementation of the above-mentioned ordination techniques and the interpretation of the obtained results will also be undertaken. Additionally, one laboratory that will be devoted to the analysis of the students' own datasets, under the supervision and advice of the instructor is also planned.</p>
Methodology of laboratory classes	<p>Short introduction of each ordination technique plus computer presentations of the selected theoretical problems (case studies described in the selected scientific papers), followed by guided practical exercises, which will allow participants to become familiar with the methods of analyses that are available in the CANOCO for Windows package. Self-study of a student's own dataset at the end of the laboratory series.</p> <p>(Print Screens of the analytical procedures and their interpretation should be recorded as a Power Point presentation file)</p>
Number of didactic hours	30





(contact hours)	
Literature	<p>Lepš J., Šmilauer P. 2003. Multivariate Analysis of Ecological Data Using CANOCO. Cambridge University Press.</p> <p>Kent M., Coker P. 1995. Vegetation description and analysis. A practical approach. Wiley &amp; Sons. pp. 363</p>

### 3. Forms of verification

<b>Continuous evaluation of knowledge and activity</b>	
Grades	<p>Grades are awarded on a scale of A-F, where A is the best and F is a fail.</p> <p><u>An excellent performance (A)</u> – the student actively participates in the laboratories, demonstrates an excellent understanding of the discussed problems, is engaged and creative in solving the analysed problems.</p> <p><u>A good performance (C)</u> – the student actively participates in the laboratories, demonstrates a good understanding of the discussed problems, is engaged and creative in solving the analysed problems.</p> <p><u>A satisfactory performance (E)</u> – the student participates in the laboratories with some engagement, demonstrates a proper understanding of the discussed problems, is sufficiently engaged and creative in solving the analysed problems.</p> <p><u>A performance that does not meet the minimum academic criteria (F)</u> – the student does not participate in some laboratories, does not demonstrate a proper understanding of the discussed problems, is not engaged and creative in solving the analysed problems.</p>

<b>Reports from realised laboratory tasks</b>	
Evaluation	<p>Evaluation comprises judgement and knowledge related to the tasks that are solved, engagement in realisation, quality of the presentation of the final results, use of reference materials.</p> <p>Grades for reports are awarded on a scale of A-F, where A is the best and F is a fail.</p> <p>An excellent report (A) – without any essential errors</p> <p>Fail (F) – no report</p> <p>Excellent (A) – the student presents fluent knowledge of the ordination techniques and their application in vegetation science, makes minimal errors that do not affect the quality of the presentation.</p> <p>Good (C) – the student presents good knowledge of the ordination techniques and their application in vegetation science, makes rare but subtle errors.</p> <p>Satisfactory (E) – the student exhibits a satisfactory knowledge of the ordination techniques and their application in vegetation science, but with a poor understanding of some discussed problems and makes subtle errors.</p> <p>Fail (F) – the student does not present satisfactory knowledge of the ordination techniques and their application in vegetation science and makes many substantial errors, which disqualify their presentation.</p>

