**Methods in Biodiversity Analysis**

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| Vakbeschrijving Methods in Biodiversity Analysis | |
| **Collegejaar:** | **2017-2018** |
| **Studiegidsnummer:** | 4313MBA13 |
| **Docent(en):** | Dr. R. A. Vos |
| **Voertaal:** | Engels |
| **Blackboard:** | Ja |
| **EC:** | 6 |
| **Niveau:** | 500 |
| **Periode:** | [Semester 1](https://studiegids.leidenuniv.nl/courses/show/42600/Orientation-on-Animal-Biology-and-Disease-Models#part-of) |

* **Geen** Keuzevak
* **Geen** Contractonderwijs
* **Wel** Exchange
* **Wel** Study Abroad
* **Geen** Avondonderwijs
* **Geen** A-la-Carte en Aanschuifonderwijs
* **Geen** Honours Class

h3. Admission requirements

This course is for MSc students in Biology.

h3. Contact

Coordinator: Dr. R.A. Vos

Email: "rutger.vos@naturalis.nl":mailto: rutger.vos@naturalis.nl

h3. Description

The aim of this course is to introduce methods and techniques that are applied to the large-scale analysis of biodiversity data. Common threads are the management and analysis of large volumes of biodiversity data and the challenges posed by this in terms reproducibility and scalability, but these are applied to cases of different dimensionality, namely:

* sequential (1D) data, e.g. DNA sequence data sets for assessing species diversity in samples
* grid and pixel (2D) data, e.g. images for assessing phenotypic diversity
* physical (3D) objects, e.g. from scanning, to study functional adaptation and evolution
* the physical through time (4D), e.g. geospatial time series to study species distributions

h3. Learning goals

\_Course objectives:\_

To provide practical experience in handling and analyzing data in ways that meet the requirements of modern, open, scientific research. This means to be able to manage the provenance of data from the point of acquisition, to be able to analyze data in a reproducible manner, and to be able to share data, analysis workflows, and analytical environments with other researchers.

\_Final qualifications:\_

Theoretical understanding and hands-on experience in managing and analyzing biodiversity data, including DNA sequences, images, 3D objects, and geospatial data. Hands-on experience will include computational skills such as basic scripting, using HPC-like architectures, and rationally managing project inputs, processes, and outputs.

h3. Timetable

From 27 November 2017 to 22 December 2017. Programme details will be announced via Blackboard.

h3. Mode of instruction

Lectures, computer exercises, literature study, demonstrations.

h3. Assessment method

Written reports, oral presentation, and examination.

h3. Blackboard

All information of lectures and papers will be available on Blackboard.

h3. Reading list

Relevant literature will be made available on Blackboard.

h3. Registration

Via USIS and enroll in Blackboard

Exchange and Study Abroad students, please see the "Prospective students website":http://www.prospectivestudents.leiden.edu/programmes/study-abroad/ for more information on how to apply.

h3. Remarks