

- Faculté des sciences
- www.unine.ch/sciences

Methods in biodiversity and conservation (3BL2270)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en biologie	Cours: 28 pg	Voir ci-dessous	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante

Christophe Praz

Contenu

Students following this class will acquire the basic knowledge required to study and survey biodiversity: how can species be surveyed; what are red lists and how are they compiled; how are biodiversity databases created, managed and used; how can DNA techniques be implemented to survey biodiversity; what are the basic statistical methods used in biodiversity surveys.

The focus of this class is on the methods; practical aspects of animal conservation are covered in the class "Animal Conservation".

Specifically, the topics covered are the following:

- Faunistic databases, both at the Swiss and international level: How should biologists record faunistic data in the field? How are these observations validated? How do biologists access and use faunistic data?
- IUCN red lists: What are the IUCN criteria and how are red lists compiled?
- DNA barcoding, environmental barcoding and metabarcoding: What are these methods and what are the assets and limitations of each of them?
- Monitoring techniques and biodiversity indices using occupancy models
- Other genetic tools used in conservation biology: Which types of genetic markers are used? What is genetic fingerprinting and how can it be used to survey populations and answer pertinent questions related to gene flow and species conservation?
- Species-environmental matrices: How are they assembled and how may they be analyzed in a multivariate framework to examine questions in conservation biology, restoration ecology and habitat management?

Forme de l'évaluation

1h Written exam during exam session.

The evaluation will take the form of a written exam. No documentation is allowed (no computer/smartphone). The questions will be in English, answers may be given in English, French or German. An English/French (or English/German) dictionary is allowed. Questions will include short questions as well as essay-type questions. Each question will be assigned a certain number of points, indicated in parenthesis. The number of points obtained by the candidate will be divided by the total number of points; this number will be multiplied by five and one unit will be added; the final grade will be rounded up to the nearest half point. A candidate obtaining 18 points out of a maximum of 24 will have a final grade of 5.0 (rounded up from 4.75).

Reexamination at one other exam session

Documentation

The PDFs of the lectures will be made available each week. Further documentation will be provided by email or through Moodle.

Pré-requis

None

Forme de l'enseignement

The course will be given in lecture format, illustrated by real case studies in biodiversity conservation. Practical exercises will be conducted by the students and discussed together. Several external experts, mostly from Info Fauna in Neuchatel, will present applied projects illustrating the use of particular techniques.