- Faculté des sciences
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Biodiversity (3BL2218)

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

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

Période d'enseignement:

- Semestre Printemps

Equipe enseignante:

Dr. Christophe PRAZ, Dr. Sylvain Dubey

Objectifs:

This course covers theoretical and practical aspects related to the conservation, survey and monitoring of biodiversity. The overall goal of the theoretical part of the lecture is to understand DNA-based methods for species identification (for native and invasive taxa), detection and monitoring, including DNA barcoding techniques and metabarcoding approaches, as well as the use of environmental DNA. In addition, the excursions will show how nature reserves are managed to maintain high levels of biodiversity, and how these management practices can be evaluated using indicator species and various sampling techniques.

Contenu:

The theoretical part of the course covers important topics such as applied conservation of biodiversity and its monitoring through standard methods and more modern ones, including DNA barcoding. Indeed, DNA sequences are routinely used in the study of biological diversity. For this latter, the following questions will be addressed: What are the basic principles of DNA barcoding? What are the potential and limitations of DNA-based techniques for species detection or delineation? What is metabarcoding and how can it be implemented in monitoring programs. Students will perform small projects related to DNA barcoding. In addition, one or more field excursions will be organized; we will visit nature reserves, discuss the main threats to biodiversity, and the conservation measures that can be implemented. The conservation of reptiles and amphibians will be the major topic of the excursion.

Forme de l'évaluation:

Students perform small projects in groups of 2 (one group of 3 in case of odd numbers of students) during the lab part of the course. They then write a report (3 pages two-sided, ca. 3000 words excluding tables and figures) which will contain the main results, an analysis and interpretation of the data following the guidelines provided during the course.

Evaluation criteria:

The reports will be evaluated based on the following criteria:

Quality of the presentation, readability of the text and illustrations, legends of graphs and tables, etc.
Scientific content, pertinence of numerical analyses and interpretation of results, discussion of results, limitations of the methods, perspectives.

Deadline: The reports are due one week after the last course.

Second attempt:

If the results of the first attempt is below 4 and not compensated in the module, students have to contact the responsible of the evaluation at the end of the session in order to be evaluated in a the second attempt.
The second attempt consists in a revision of the previous report based on the feedback of the professors and on a revised oral presentation. The revised version of the report should be submitted at latest one week before the beginning of the following exam session. The oral presentation would be organized with the responsible of the evaluation.

Evaluation criteria for the second attempt will be the same as for the first.

Documentation:

Scientific publications; lecture hand-outs.

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