

Master in Life Sciences

A cooperation between
BFH, FHNW, HES-SO, ZHAW

Module title	Biodiversity
Code	E5
Degree Programme	Master of Science in Life Sciences
Group	Environment
Workload	3 ECTS (90 student working hours: 42 lessons contact = 32 h; 58 h self-study)
Module Coordinator	Name: Dr. Alessandra Giuliani (BFH) Phone: +41 (0)31 848 51 45 Email: alessandra.giuliani@bfh.ch Address: Berner Fachhochschule, HAFL, Länggasse 85, 3052 Zollikofen
Lecturers	• Dominik Füglistaller, BFH • Dr. Thibault Lachat, BFH • Dr. Heidi Signer-Hasler, BFH • Dr. Silvia Zingg, BFH • Dr. Fabio Mascher • Guest lecturers from BLW, BAFU and international organisations
Entry requirements	Basic knowledge on: • basic concepts related to biodiversity (diversity within and between species and of ecosystems) • have experience or interest in concrete measures to preserve biodiversity or to make use of it in production systems be familiarity with the drivers of biodiversity loss Documents covering these aspects will be made available on Moodle
Learning outcomes and competences	After completing the module, students will be able to: • identify and relate issues of biodiversity to their specific fields of expertise and interest • assess the impact of interventions in natural resource management on biodiversity • design effective measures for maintaining and enhancing biodiversity in their specific field of expertise and interest • apply methods of biodiversity assessment
Module contents	Starting with concepts and a theoretical ecological framework related to biodiversity, the module will illustrate biodiversity maintenance and ecological applications using selected cases from both human-influenced and natural ecosystems. • Global change, species loss, rise of the concept, status and trends of biodiversity • Biodiversity and the functioning of ecosystems • Ecological infrastructure • Biodiversity benefits and products for people and ecosystems services • International conventions and policies aiming at sustainable management of biodiversity and their impact • Land use and biological conservation • Examples for biodiversity maintenance in forest, grassland and soil ecosystems • Genetic resources for food and agriculture, their use and conservation strategies, including animal breeds and pollinators • Species diversity in production: intercropping, permaculture, agroecology

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	• Linking ecological principles and sustainable resource use • Student-led workshop: cases of biodiversity maintenance and use
Teaching / learning methods	Contact teaching: • Lectures • Input from professionals in the field (researchers, policy makers, etc.) • Field excursion and practical exercises • Presentation and discussion of case studies in groups • Seminar-style student-led workshop Self-study: • Pre-course reading • Analyzing case studies during the module • Researching on a chosen biodiversity topic and preparing for the workshop
Assessment of learning outcome	1. Preparation and Presentation of a case study during the student-led workshop, in pairs (50%) 2. Exam (50%)
Format	7-weeks
Timing of the module	Spring semester, CW 8-15
Venue	Blended learning format: online and onsite (Zollikofen) lectures Field visit in Zollikofen.
Bibliography	IUCN (2026) International Union for Conservation of Nature 2025 annual report, Gland, Switzerland. Forum Biodiversité Suisse (éd.) (2026) Comprendre et agir pour la biodiversité en Suisse. État, évolution et orientations – les résultats de la recherche et du monitoring. Swiss Academies Reports 21 WWF (2024) Living Planet Report 2024 – A System in Peril. WWF, Gland, Switzerland. FOEN (2017) Biodiversity in Switzerland: Status and Trends. Federal Office for the Environment, Bern. During the course, selected references and an extensive list of papers for the workshop and for further reading will be available on Moodle
Language	English
Links to other modules	Link to specialisation modules dealing with production systems (agro-biodiversity, diversity in forests) and with management of natural areas. Coordination with the CS-module E4 "Ecological Infrastructure in Landscapes". Both modules are designed to be complementary.
Comments	To prepare and present in the student-led workshop, in pairs, students will select a topic of their choice for their case study from a provided list. The proposed topics encompass a wide range of biodiversity studies, allowing students to explore their specific interests and learn from carefully selected scientific papers relevant to their case. During the student-led workshops, students will learn from other groups' topics and generate a discussion. This will foster research in the field of biodiversity, critical thinking, collaboration and communication skills.
Last Update	18.09.2026