



Master in Life Sciences

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

Module	Integrated Natural Resources Management
Code	MSLS_AF-03
Degree Program	Master of Science in Life Sciences (MSLS)
ECTS Credits	5
Workload	150 h: Contact 60 h; Group Exercise 25 h; Self-study 65 h
Module Coordinator	<p>Name Claude Garcia</p> <p>Phone +41 31 848 55 72</p> <p>Email claud.garcia@bfh.ch</p> <p>Address Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences, Laenggasse 85, 3052 Zollikofen</p>
Lecturers	<ul style="list-style-type: none"> • Claude Garcia • Patrick Waeber • Melnykovich Mariana • Boillat Sébastien-Pierre
Entry Requirements	Fluent English (B2 equivalent).
Learning Outcomes and Competences	<p>After completing the module students will be able to:</p> <ul style="list-style-type: none"> • understand the major challenges and underpinning concepts of managing landscape in a changing environment globally; • recognize the key issues and problems of natural resources management (incl. sustainable land and forest management, Land-use, Land Use change and Forests, and REDD+) from a disciplinary perspective and bring them in a wider interdisciplinary context; • develop and design scenarios and strategy games to elaborate sound recommendations for problem solving and/or decision making in natural resources management, using adequate methods and tools; • collaborate in a multi-disciplinary team and participate in the elaboration of recommendations for decision making from an interdisciplinary perspective (integrated assessment, “synthesis”) and reflect the disciplinary results from such broader perspective. <p>Students develop a mutual understanding across disciplines toward solving complex problems in natural resources and environmental management.</p>
Module Content	<p>Lecturers give an introduction of the selected topic and contributions from different disciplines to approach key issues related to that subject, including:</p> <ul style="list-style-type: none"> • Basic concept and approaches of integrated resources and environmental management and concepts in the various anthromes of the world • Introduction to design principles for complex system participatory modelling and multi-agent modelling. • Objectives of sustainable use and conservation of natural resources as well as fair and equitable sharing of benefits from ecosystem goods and services

	<ul style="list-style-type: none"> Integration of economic, ecological, societal, institutional, managerial and technical perspectives on a selected current topic of natural resources and environmental management in agricultural, forestry and agro-food systems.
Teaching	Students elaborate an assessment of policy and management recommendations from (i) different disciplinary perspectives and (ii) an integrated (cross-disciplinary) perspective in the context of sustainable development.
Learning Methods	<p>The module takes place during two weeks (calendar week 36 and 37).</p> <p>In calendar weeks 36 and 37, students are required to attend lessons on-site in Zollikofen.</p> <p>A combination of lectures, individual work and team work with disciplinary/topical subgroups, and seminars with individual presentations and interdisciplinary group work for synthesis report and final seminar; The students will develop a strategy game based on the topic they will have selected. These games will be demonstrated to the entire class.</p>
Assessment of Learning Outcome	<p>1) A game designed and presented, and an integrated assessment/synthesis (team work) in form of a report (60%)</p> <p>2) A oral exam (40%)</p>
Bibliography	<p>An updated list of selected references and readings will be made available at the start of the course; students are expected to complement these sources with their individual research of literature and other information. Essential reading:</p> <p>Carpenter SR et. al., (2009). Science for managing ecosystem services: beyond the millennium ecosystem assessment. (PNAS), 106 (5), 1305–1312.</p> <p>Holling, C. S., & Meffe, G. K. (1996). Command and control and the pathology of natural resource management. Conservation biology, 10(2), 328-337.</p> <p>Sayer, Jeffrey, et al. "Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses." PNAS 110.21 (2013): 8349-8356.</p> <p>Garcia, Claude A., et al. "Strategy games to improve environmental policymaking." Nature Sustainability (2022): 1-8.</p>
Language	English
Comments	<p>The module will be organized during two full weeks in the beginning of September. The exam will be organized later in September. The Thursday of the second week will be free to allow students to be part of the welcome day at BFH.</p> <p>The entire sequence is compulsory for students. For details please refer to the detailed schedule of the module, which will be uploaded on Moodle four weeks before the start of the module.</p>
Last Update	15.03.2023