



Master in Life Sciences

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

Module	Grapevine Environment - Sustainable Viticulture
Code	MSLS_S12
Degree Program	Master of Science in Life Sciences (MSLS)
Cluster	Food
Specialization	Viticulture and Enology
ECTS Credits	4
Workload	120 h: Contact & Field work 75 lessons = 56 h; Self-study 64 h
Module Coordinator	<p>Name Dr. Thierry Heger</p> <p>Phone +41 22 363 40 73</p> <p>Email thierry.heger@changins.ch</p> <p>Address CHANGINS, Viticulture and Enology, Route de Duillier 50, CH-1260 Nyon 1</p>
Lecturers	<ul style="list-style-type: none"> • Thierry Heger, Soil Science and Environment Group, CHANGINS, Viticulture and Enology • Dorothea Noll, Soil Science and Environment Group, CHANGINS, Viticulture and Enology • David Singer, Soil Science and Environment Group, CHANGINS, Viticulture and Enology <p>+ Guest lecturers</p>
Entry Requirements	Equivalent of a Bachelor of Science in Viticulture, Enology, Soil Sciences, or Agronomy
Learning Outcomes and Competences	<p>After completing the module students will be able to:</p> <ul style="list-style-type: none"> • Understand and characterize the different living components of a vineyard • Understand the ecosystem services provided by these different components and develop management practices preserving and/or improving such services • Assess environmental risks linked to the grapevine production and develop strategies to minimize them • Using a geographic information system to characterize the environmental risk associated with pesticide transfer • Design and carry out a case study comparing different vine production systems • Interpret, evaluate and communicate the results obtained

Module Content	<ul style="list-style-type: none"> • Description of the components of the living vineyard (flora, fauna, mesofauna and microorganisms), their roles and their interrelations • Assessment of the impact of a vineyard management on the environment (e.g. erosion, compaction, pesticide transfers and effects and how to avoid them) • Ecotoxicology and bioindication in vineyard and other agricultural ecosystems • Case study: assessing the <u>environmental</u> sustainability of a vineyard • How to critically evaluate and appropriately communicate scientific content
Teaching / Learning Methods	<ul style="list-style-type: none"> • Lectures • Individual and group exercises • Laboratory experiments • Field trips • Literature study • Writing scientific reports
Assessment of Learning Outcome	<p>Practical work, reports and presentations : 40 % of the final mark</p> <p>Final examination (written): 60 % of the final mark</p>
Bibliography	<ul style="list-style-type: none"> • Ohmart CP (2011) View from the Vineyard: A Practical Guide to Sustainable Winegrape Growing, San Francisco. 240 p. • Retallack M (2012) Enhancing biodiversity in the vineyard – Workshop notes Government of South Australia.66 p. • Trivellone V, Schoenenberger N, Bellosi B, et al. (2014) Indicators for taxonomic and functional aspects of biodiversity in the vineyard agroecosystem of Southern Switzerland. Biological Conservation, 103–109. • Viret, Olivier, et al. "Past and future of sustainable viticulture in Switzerland." BIO Web of Conferences. Vol. 15. EDP Sciences, 2019, https://doi.org/10.1051/bioconf/20191501013 • Zahm, Frederic, et al. "Sustainable viticulture: how to evaluate and record it on a wine estate: This is a translation of an article originally written in French." <i>IVES Technical Reviews, vine and wine</i> (2021).
Language	English
Comments	Lectures will be completed with the study of scientific articles required for completion of the module
Last Update	12.09.2024 / TH