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| Module | Sustainable use of the natural resources in agroecosystems |
| Code | MLS_S21 |
| Degree Program | Master of Science in Life Sciences (MSLS) |
| Cluster | Environment |
| Specialization | Natural Resource Management |
| ECTS Credits | 4 |
| Workload | 120 h: Contact & Field work 56 h; Self-study 64 h |
| Module Coordinator | Name Emmanuel Lierdeman Phone +41 22 546 68 17 Email emmanuel.lierdeman@hesge.ch Address HEPIA-Lullier, 150 route de Presinge, 1254 Jussy |
| Lecturers | Emmanuel Lierdeman (HEPIA) |
| Entry Requirements | Bachelor in LS, Agronomy or Natural resource management, or equivalent |
| Learning Outcomes and Competences | After completing the module students will be able to: <ul style="list-style-type: none"> - Identify the strengths and weaknesses of agricultural practices with respect to natural resources - Balance the relative impact of mechanical and chemical inputs on soil resources - Evaluate the potential for improving the ecoservices of cropping systems at farm and regional levels - Negotiate with farmers in the frame of agri-environmental management schemes |
| Module Content | <ul style="list-style-type: none"> - Biodiversity in land management: integrated vision - Soil quality in land management - Ecosystem services of cropping systems: goals and issues, an overview - Sustainable agriculture: contribution of agro ecological cropping systems - Actors, their interests, motivations and strategies in land use planning - Conservation agriculture: methods, potential, trends and issues |
| Teaching / Learning Methods | <ul style="list-style-type: none"> - Lectures - Individual and group exercises - Case-studies / projects - Field trips (mandatory) - Active participation in the module is requested |

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| Assessment of Learning Outcome | Examination: Report(s) produced during the S-module, 100% of grade Reassessment: oral/written exam within four weeks after the publication of the grades. |
| Bibliography | <ul style="list-style-type: none"> - Barbault R., J. Weber (2010). La Vie, quelle entreprise! Seuil. - Blandin P. (2009). De la protection de la nature au pilotage de la biodiversité. Quae, Paris. - Brahic E., Terreau, J. –P. (2009), Evaluation économique de la biodiversité. Editions Quae. Paris. - Gaston K. J., Spicer J. I. (2004). Biodiversity: An Introduction. Blackwell. 208 pp. - Gobat J.-M., Aragno, M., Matthey, W. (2004). The Living Soil. Fundamentals of Soil Science and Soil Biology. Science Publishers, Enfield (NH), USA. 602 pp. - Lévêque, C. (2008). La biodiversité au quotidien. Quae, Paris. - Redford K. H., Adams W. M. (2009). Payment for ecosystem services and the challenge of saving nature. Conservation Biology, 23:785-787. - Sumner M. E. (2000). Handbook of Soil Science. CRC Press. 2148 pp. - Wratten S., Sandhu H., Cullen R., Costanza R. (2013). Ecosystem Services in Agricultural and Urban Landscapes. Wiley-Blackwell. 218 pp. <p>Documentation: http://cyberlearn.hes-so.ch (requires a login)</p> |
| Language | English |
| Comments | |
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