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| **ModuleTitle** | **Applied Research in Natural and Social Sciences** |
| **Module Code** | MCLs235 |
| **Module** | AF-01 |
| **Degree Programme** | Master of Science in Life Sciences (MSLS) |
| **ECTS Credits** | 5 |
| **Workload** | 150 h: Contact 50 - 70 h; Exercises 20 h; Self-study 60-80 h |
| **Module Coordinator** | **Name** Dr. Lindsey Norgrove<br>**Phone** +41 31 910 21 94<br>**Email** lindsey.norgrove@bfh.ch<br>**Address** Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences, Laenggasse 85, 3052 Zollikofen |
| **Lecturers** | • Dr. Christine Jurt<br>• Dr. Lindsey Norgrove<br>• Dr. Beat Reidy<br>• Noëlle Schenk |
| **Entry Requirements** | None |
| **Learning Outcomes and Competencies** | After completing the module, students will be able to:<br>• design, implement and analyse results from observational studies;<br>• select and use a wide range of qualitative and quantitative research methods;<br>• reflect on methodologies and data-generation to a) evaluate the quality of the research findings, b) exchange experiences and c) understand and integrate other practices;<br>• apply practical skills of doing field research (meadow, pasture, arable and/or forest) |
| **Module Content** | The module focuses on approaches and methods for systems research, building on students' prior knowledge . It consists of three main parts:<br>a) Research process, research strategies and problem solving (2 days): Introduction to the research process, discussion of different rationales of research (observational studies, on-farm trials, surveys), and examples for combining natural and social science methods.<br>b) Research methods in theory and practice: examples, rationale, reflections (8 days): Applying different methods from natural and social science in the field (data generation and data analysis), exchange of experience and assessment of methods for different research questions.<br>*c)* Example of a research project (3 days): With experience in a field (meadow, pasture, arable and/or forest), we will come back to research strategies and problem solving referring to either an actual applied research project or to the own thesis research; we will discuss methods, alternatives and their trade-offs as well as the scientific soundness of the research design. |
| **Teaching and Learning Methods** | Lectures will help to structure the vast field of research approaches and methods, introducing the steps of the research process.<br>During seminar and exercise lessons, different methods and techniques from social and natural science are presented, applied and critically discussed.<br>Self-study and coaching mainly focus on field studies.<br>In skills labs, students present, test and improve research instruments. |

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| **Assessment of Learning Outcome** | 1) Presentation of a field research method with results and discussion (introduction, hypotheses, methods, results, discussion) (30%)<br>2) Short paper on the research design in a specific research project with reflection / justification of the methods, discussion of alternatives, trade-offs and soundness (40%)<br>3) Presentation of results based on social science methods in a specific research project, including justification of methods, and a critical analysis of the process of application reflecting on challenges and highlights (30%) |
| **Bibliography** | Fink A, 2003. The Survey Handbook (2nd edition). SAGE Publications, 167 p.<br>Gomm R, 2008. Social research methodology: a critical introduction. Palgrave Macmillan, New York, 400 p. (chapters for self-study)<br>Loydi A, Lohse K, Otte A, Donath TW, Eckstein RL. 2013. Distribution and effects of tree leaf litter on vegetation composition and biomass in a forest–grassland ecotone. *Journal of Plant Ecology*, *7*(3), 264-275.<br>Marsland N, Wilson I, Abeyasekera S, Kleih U, 2001. Socio-economic methodologies for natural resources research. Best Practice Guidelines. Natural Resource Institute, Greenwich, 18 p. (on moodle)<br>Mukherjee N, Jena B, 2001. Learning to share: experiences and reflections on PRA and other participatory approaches. Concept Publishing Company, New Delhi, 175 p. |
| **Language** | English |
| **Comments** | The following sequences are compulsory for students: workshops and discussion of results in social science, data collection in the field and presentation of results. For details on compulsory sequences, please refer to the detailed schedule of the module, which will be uploaded on Moodle four weeks before the start of the module.<br>It is recommended to take this module early in the MSc course. |
| **Last Update** | 25.01.25 / Lindsey Norgrove |