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| **Module** | **Digital Transformation and Industry 4.0** |
| **Code** | MSLS_FS-03 |
| **Degree Program** | Master of Science in Life Sciences (MSLS) |
| **ECTS Credits** | 5 |
| **Workload** | 150 h: Contact 60 h including field excursions and field exercise; self-study 40 h, Project 50h |
| **Module Coordinator** | **Name** Martin Ziesak<br>**Phone**<br>**Email** Martin.ziesak@bfh.ch<br>**Address** Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences, Laenggasse 85, 3052 Zollikofen |
| **Lecturers** | • Martin Ziesak<br>• Michael Starke<br>• Patrick Dietsch<br>• External partners, in particular from MMI RWTH Aachen<br>• Contributions by companies (SDP, Xylene and others) |
| **Entry Requirements** | None. |
| **Learning Outcomes and Competences** | After completing the module students will be able to:<br>• understand the challenges in forestry supply chains (FSC)<br>• understand blockchain, problems and needs for CoC<br>• evaluate (digital) solutions for FSC<br>• understand LiDAR,<br>• to work with LiDAR data, can apply a (simple) data extraction from data point clouds<br>• work and understand with localization tools under forestry conditions<br>• understand principles of I4.0, including DT, CPS in forestry<br>• understand discrete event simulation, as applied to forest operations |
| **Module Content** | • Forestry supply chain (FSC)<br>• I4.0, including DT, forestry data standards<br>• LiDAR<br>• Discrete event simulation in forest operations<br>• From data to apps; overview on some trends, solutions and applications in the transformation of forest industry |

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| **Teaching / Learning Methods** | A combination of contact lectures, hands-on exercises, field trips |
| **Assessment of Learning Outcome** | 1) Written exam<br>2) [may be extended by additional seminar work, delivered by students as pdf] |
| **Bibliography** | |
| **Language** | English |
| **Comments** | |
| **Last Update** | 18.04.2021 / Martin Ziesak |