

# Master in Life Sciences

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

<b>Module title</b>	<b>Data and Ethics</b>
<b>Code</b>	D4
<b>Degree Programme</b>	Master of Science in Life Sciences
<b>Workload</b>	3 ECTS (90 student working hours: 42 lessons contact = 28 lessons online, 14 lessons on-site)
<b>Module Coordinator</b>	<b>Name:</b> Dr. Pascal Moriggl <b>Phone:</b> +41 61 279 18 16 <b>Email:</b> <a href="mailto:pascal.moriggl@fhnw.ch">pascal.moriggl@fhnw.ch</a> <b>Address:</b> FHNW, HSW, Peter Merian-Strasse 86, 4052 Basel
<b>Lecturers</b>	Prof. Dr. Petra Maria Asprion (PMA) Dr. Pascal Moriggl (PM)
<b>Entry requirements</b>	Each participant has a general understanding of cybersecurity and awareness of cyber-risks, including basic terms and knowledge about risks.  A self-study must be completed no later than two weeks after the start of the course and must be evidenced by a multiple-choice test on Moodle.
<b>Learning outcomes and competences</b>	After completing the module, students will be able to ... <ul style="list-style-type: none"> <li>• understand the essentials of information and cybersecurity and its relevance to the personal, corporate, and research domain</li> <li>• understand the legal background that drives information/cybersecurity and data privacy. The latter from two perspectives as a duty to adhere to by a legal entity and as a right to be claimed by an individual</li> <li>• understand the risks to prioritize information/cybersecurity by learning about the malicious actor perspective (motivation and attack vectors)</li> <li>• secure their individual, digital footprint on a smartphone or personal computer (end user level)</li> <li>• understand and apply a data stewardship approach for research data</li> <li>• understand data ethics considerations, its implications for society design an ethics policy for a workplace in life sciences.</li> </ul>
<b>Module contents</b>	<p><b>Theme 1 – Personal Security (PMA/PM, 2 lessons)</b></p> <ul style="list-style-type: none"> <li>• Overall relevance of the topic</li> <li>• General threat situation</li> <li>• Securing personal environments (e.g., PC, Smartphone, Networks)</li> </ul> <p><b>Theme 2 – Information Security &amp; Cybersecurity (PM/PMA, 4 lessons)</b></p> <ul style="list-style-type: none"> <li>• Information-/Cybersecurity risks in Organizations focused on Life Science</li> <li>• Compliance, governance and management perspectives</li> <li>• Encryption/decryption strategies</li> <li>• Best practices, frameworks, and policies</li> </ul> <p><b>Theme 3 – Data Stewardship (PM/PMA, 4 lessons)</b></p> <ul style="list-style-type: none"> <li>• Data governance</li> <li>• Roles and responsibilities</li> <li>• Implementation, Documentation, Standardization</li> </ul>

# Master in Life Sciences

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

	<ul style="list-style-type: none"> <li>• FAIR guiding principles</li> </ul> <p><b>Theme 4 –Data Ethics (PM, 2 lessons))</b></p> <ul style="list-style-type: none"> <li>• Data ethics in clinical research and drug development</li> <li>• Research Requirements</li> <li>• Data Ethics Canvas</li> </ul> <p><b>Theme 5 –Privacy (PM, 2 lessons))</b></p> <ul style="list-style-type: none"> <li>• Regulatory considerations</li> <li>• Anonymization vs. pseudonymization</li> <li>• Licensing: Open Source, Creative Commons, etc.</li> </ul>
<b>Teaching / learning methods</b>	lecture, literature seminar and practical exercises
<b>Assessment of learning outcome</b>	<ul style="list-style-type: none"> <li>• Moodle entry exam to be done after the first two module weeks, on-site during the coaching session in 3<sup>rd</sup> coaching session (20%)</li> <li>• 60-Minute Exam at the module end (80%), containing the following tested elements: <ul style="list-style-type: none"> <li>○ Data and Ethics Relevance</li> <li>○ Personal Security</li> <li>○ Information Security</li> <li>○ Data Stewardship</li> <li>○ Data Ethics</li> <li>○ Privacy</li> </ul> </li> </ul>
<b>Format</b>	7-weeks
<b>Timing of the module</b>	For ZHAW and FHNW: Autumn semester, CW 38-44 For BFH and HES-SO: Spring semester, CW 8-14
<b>Venue</b>	online / decentralized teaching at respective school
<b>Bibliography</b>	<p><u>Entry Level Preparation</u> Before the module starts, access to the Digital Escape Room and its documentation is provided.</p> <p><u>Course Materials</u> All required material is provided in time through Moodle and in a digital form.</p>
<b>Language</b>	English
<b>Links to other modules</b>	This module is indirectly linked to the other data modules.
<b>Comments</b>	
<b>Last Update</b>	13.09.2024