

Module title	Data and Ethics
Code	D4
Degree Programme	Master of Science in Life Sciences
Workload	3 ECTS (90 student working hours: 42 lessons contact = 28 lessons online, 14 lessons on-site)
Module Coordinator	Name: Dr. Pascal Moriggl Phone: +41 61 279 18 16 Email: pascal.moriggl@fhnw.ch Address: FHNW, HSW, Peter Merian-Strasse 86, 4052 Basel
Lecturers	Prof. Dr. Petra Maria Asprion (PMA) Dr. Pascal Moriggl (PM)
Entry requirements	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.
Learning outcomes and competences	After completing the module, students will be able to ... <ul style="list-style-type: none"> • understand the essentials of information and cybersecurity and its relevance to the personal, corporate, and research domain • 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 • understand the risks to prioritize information/cybersecurity by learning about the malicious actor perspective (motivation and attack vectors) • secure their individual, digital footprint on a smartphone or personal computer (end user level) • understand and apply a data stewardship approach for research data • understand data ethics considerations, its implications for society design an ethics policy for a workplace in life sciences.
Module contents	<p>Theme 1 – Personal Security (PMA/PM, 2 lessons)</p> <ul style="list-style-type: none"> • Overall relevance of the topic • General threat situation • Securing personal environments (e.g., PC, Smartphone, Networks) <p>Theme 2 –Information Security & Cybersecurity (PM/PMA, 4 lessons)</p> <ul style="list-style-type: none"> • Information-/Cybersecurity risks in Organizations focused on Life Science • Compliance, governance and management perspectives • Encryption/decryption strategies • Best practices, frameworks, and policies <p>Theme 3 – Data Stewardship (PM/PMA, 4 lessons)</p> <ul style="list-style-type: none"> • Data governance • Roles and responsibilities • Implementation, Documentation, Standardization • FAIR guiding principles <p>Theme 4 –Data Ethics (PM, 2 lessons))</p>

	<ul style="list-style-type: none"> • Data ethics in clinical research and drug development • Research Requirements • Data Ethics Canvas <p>Theme 5 –Privacy (PM, 2 lessons))</p> <ul style="list-style-type: none"> • Regulatory considerations • Anonymization vs. pseudonymization • Licensing: Open Source, Creative Commons, etc.
Teaching / learning methods	lecture, literature seminar and practical exercises
Assessment of learning outcome	<ul style="list-style-type: none"> • Moodle entry exam to be done after the first two module weeks, on-site during the coaching session in 3rd coaching session (20%) • 60-Minute Exam at the module end (80%), containing the following tested elements: <ul style="list-style-type: none"> ○ Data and Ethics Relevance ○ Personal Security ○ Information Security ○ Data Stewardship ○ Data Ethics ○ Privacy
Format	7-weeks
Timing of the module	For ZHAW and FHNW: Autumn semester, CW 38-44 For BFH and HES-SO: Spring semester, CW 8-14
Venue	online / decentralized teaching at respective school
Bibliography	<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>
Language	English
Links to other modules	This module is indirectly linked to the other data modules.
Comments	The entry test is optional and accounts for 20% of the final grade. Not taking the test results in a maximum possible grade of 80% for the course.
Last Update	03.04.2025