

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 ... • understand the essentials of information and cybersecurity and its relevance to the personal, corporate, and research domains. • 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	Theme 1 – Personal Security (PMA/PM, 2 lessons) • Overall relevance of the topic • General threat situation • Securing personal environments (e.g., PC, Smartphone, Networks) Theme 2 –Information Security & Cybersecurity (PM/PMA, 4 lessons) • Information-/Cybersecurity risks in Organizations focused on Life Science • Compliance, governance, and management perspectives • Encryption/decryption strategies • Best practices, frameworks, and policies Theme 3 – Data Stewardship (PM/PMA, 4 lessons) • Data governance • Roles and responsibilities • Implementation, Documentation, Standardization • FAIR guiding principles Theme 4 –Data Ethics (PM, 2 lessons))

	• Data ethics in clinical research and drug development • Research Requirements • Data Ethics Canvas Theme 5 –Privacy (PM, 2 lessons)) • Regulatory considerations • Anonymization vs. pseudonymization • Licensing: Open Source, Creative Commons, etc.
Teaching / learning methods	lecture, literature seminar, and practical exercises
Assessment of learning outcome	• Individual assessments after each respective coaching session (20%) • 60-Minute Exam at the module end (80%), containing the following tested elements: ○ 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 the respective school
Bibliography	<u>Entry Level Preparation</u> Before the module starts, access to the Digital Escape Room and its documentation is provided. <u>Course Materials</u> All required material is provided in time through Moodle and in a digital form.
Language	English
Links to other modules	This module is indirectly linked to the other data modules.
Comments	The coaching assessments are optional and account for 20% of the final grade. Not taking the test results to a maximum possible grade of 80% for the course.
Last Update	25.09.2025