Master in Life Sciences

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

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 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	***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	• Entry exam to be done within the first two module weeks (20%)
	• Learning journal, to be submitted one week after module end (80%), containing the following applied elements:
	    o Introduction in the Topic and Relevance
	    o Information Security Policy
	    o Data Management Plan
	    o FAIR Guiding Principles Template
	    o Data Ethics Canvas
	    o Reflection

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	Entry Level Preparation Before the module starts, a script will be provided in the company with the technical environment setup required for the personal security theme. Course Materials Data Ethics Canvas https://theodi.org/wp-content/uploads/2021/07/Data-Ethics-Canvas-English-Colour.pdf Data Stewardship https://www.elsevier.com/books/data-stewardship/plotkin/978-0-12-822132-7 Information Security Policy https://www.routledge.com/Information-Security-Policies-Procedures-and-Standards-A-Practitioners/Landoll/p/book/9780367669966#
Language	English
Links to other modules	This module is indirectly linked to the other data modules.
Comments	If a student fails the entry test, the preconditions for handing in the learning journal will not be met, and the journal will not be graded. There is no limit to how often the test is being taken.
Last Update	26.09.2022