



Master in Life Sciences

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

Module title	Innovation and Project Management																																																		
Code	B3																																																		
Degree Programme	Master of Science in Life Sciences																																																		
Workload	3 ECTS (90 student working hours) <ul style="list-style-type: none"> - Lessons contact (total 42 of which 28 central teaching): 32 h - Self-study: 58 h 																																																		
Module Coordinator	Name: Dr. Robert Vorburger Phone: +41 58 934 54 72 Email: robert.vorburger@zhaw.ch Address: ZHAW Life Sciences und Facility Management, Einsiedlerstrasse 31a, 8820 Wädenswil																																																		
Lecturers	Dr. Robert Vorburger, ZHAW																																																		
Entry requirements	Module B1 "Business Administration for Life Sciences" recommended Module B2 "Business Management and Leadership for Life Sciences" recommended																																																		
Learning outcomes and competences	After completing the module, students will be able to: <ul style="list-style-type: none"> • differentiate between innovation and creativity • understand the role of innovation management within a company • apply internationally approved project management methodologies • apply internationally approved requirements engineering techniques • differentiate between quality management and risk management • see the whole picture by understanding the concepts of product lifecycle management • include patent law and intellectual property rules in new business opportunities. 																																																		
Module contents	<ul style="list-style-type: none"> • <i>Creativity Techniques:</i> Different methods to encourage creativity, including techniques for idea generation and divergent thinking • <i>Innovation Management:</i> How to shape a creative idea into a product or business model. The role of innovation management within a company • <i>Requirements Engineering:</i> Identify and specify the needs as soon and as exact as possible. General techniques of requirement engineering such as phrasing, categorising, and tracing of requirements • <i>Project Management:</i> Internationally approved sequential as well as agile project management methodologies, e.g. waterfall model and SCRUM, respectively. • <i>Quality Management:</i> International standards (e.g. ISO), validation and verification, common ground with risk management • <i>Product Lifecycle Management:</i> Development of a product is only the first step followed by Introduction, Growth, Maturity/Stabilization, and Decline 																																																		
Teaching / learning methods	This module has the following structure: <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Week</th> <th><1</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>>7</th> </tr> </thead> <tbody> <tr> <td>Central</td> <td></td> <td>4L</td> <td>8L</td> <td></td> <td>8L</td> <td></td> <td>8L</td> <td></td> <td></td> </tr> <tr> <td>Local</td> <td></td> <td>2L</td> <td></td> <td>4L</td> <td></td> <td>4L</td> <td></td> <td>4L</td> <td></td> </tr> <tr> <td>Self-study</td> <td>20h</td> <td colspan="7">18h</td> <td></td> <td>20h</td> </tr> </tbody> </table> <p>A systems-engineering project builds the core of the module. The mission is to develop and manage a product.</p> <p>During the central teaching lessons, techniques, methods, and concepts are presented and</p>										Week	<1	1	2	3	4	5	6	7	>7	Central		4L	8L		8L		8L			Local		2L		4L		4L		4L		Self-study	20h	18h								20h
Week	<1	1	2	3	4	5	6	7	>7																																										
Central		4L	8L		8L		8L																																												
Local		2L		4L		4L		4L																																											
Self-study	20h	18h								20h																																									

	<p>discussed. Additional material for self-study will be provided to build a deeper understanding of the topics.</p> <p>In line with the topics covered in the central lessons, a systems-engineering project is implemented in the decentral lessons. The students work together in small groups. In a first phase, the students will apply innovation techniques to come up with a product idea and will compile a business model canvas around the product. In the second phase, PM techniques will be applied to plan the development and production of the product.</p> <p>The systems-engineering project consists of milestones. Simulating a peer-reviewed process, each group reviews and discusses the progress of two other groups. The review is part of the self-study and further strengthens the understanding by offering a different point of view.</p> <p>The role of the teacher shifts in the decentral lessons from a lecturer to a coach.</p>
Assessment of learning outcome	<ol style="list-style-type: none"> 1. Final written exam, open book (on methodologies) (70%) 2. Assessment of the systems-engineering project outcomes to be handed in 3 weeks after the end of the module (30%)
Format	7-weeks
Timing of the module	For ZHAW and FHNW: Spring semester, CW 15-21 For BFH and HES-SO: Autumn semester, CW 45-51
Venue	For ZHAW and FHNW: Olten For BFH and HES-SO: Fribourg
Bibliography	<p>Project Management Handbook Kuster, J., Huber, E., Lippmann, R., Schmid, A., Schneider, E., Witschi, U., Wüst, R Springer-Verlag, 2015</p> <p>The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm Kelly Tom Crown Publishing Group, 2007</p>
Language	English
Links to other modules	<p>The product lifecycle management topic offers a connection to <i>objectives and strategy</i> as well as <i>marketing</i> covered in module B1.</p> <p>Quality management is related to a company's <i>organisation</i> and, in particular, to <i>controlling and reporting</i> which is part of module B2.</p>
Comments	Material treated during local teaching is relevant for the exam.
Last Update	23.02.2018