MSE | MASTER OF SCIENCE IN ENGINEERING

Zürcher Hochschule für Angewandte Wissenschaften
zh aw School of Engineering

Supplementary Course (EVA) at ZHAW School of Engineering

Title: HealthTech Summer School
Short Code: rEVA_HealthTech

ECTS Credits	6
Profile	Medical Engineering (Med)
Responsible Institute /Centre	Institute of Computational Physics (ICP)
Responsible lecturer and contact informtion	Mathias Bonmarin - bmat@zhaw.ch
Type and duration of examinations	Test on pre-reading (60 minutes), oral presentation 1 (15 minutes), oral presentation 2 (20 minutes)
Start date and duration	Semester: Spring Detail: block course in summer (summer school)
Location	Winterthur
Course type	Block Seminar • Contact hours: 80 (hrs) • Guided self-study: 20 (hrs) • Independent self-study: 80 (hrs)
Language of instruction	English
Short description (max. 300 characters)	The goal of this course is to learn the “Biodesign” approach developed at Stanford University to foster breakthrough innovation in medical technology and digital health.
Contents and Learning Objectives	Key book: “Biodesign - The Process of Innovating Medical Technologies” adapted to a European setting **Stage 1 Needs Finding** 1.1 Biodesign process and strategic focus 1.2 Observation and problem identification 1.3 Disease fundamentals 1.4 Clinical immersion 1.5 Need statement development **Stage 2 Needs Screening** 2.1 Treatment options 2.2 Market gap and stakeholder analysis 2.3 Needs filtering 2.4 Intellectual property basics **Stage 3 Concept Generation with Design thinking tools** 3.1 Ideation and brainstorming 3.2 Prototyping, concept screening, Minimum Viable Product (MVP) **Stage 4 Product Concept and Business Strategy** 4.2 Regulatory and clinical basics 4.3 Reimbursement basics 4.4 Research and development strategy for hard- and software 4.5 Business and fund-raising strategy

Knaa, 21.05.24

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Prerequisites	None			
Literature	Biodesign – The Process of Innovating Medical Technologies, Paul Yock, Stefanos Zenios, Josh Makower, Todd Brinton, Uday Kumar, Cambridge Academic (2015). ISBN 978-1-107-08735-4			
Special requirements	Number of places is limited - selection based on qualifications			
Offer for profiles	Aviation (Avi)	☐	Business Engineering (BE)	☐
	Computer Science (CS)	☒	Data Science (DS)	☒
	Electrical Engineering (ElE)	☒	Energy & Environment (EnEn)	☐
	Mechanical Engineering (ME)	☒	Mechatronics & Automation (MA)	☒
	Medical Engineering (Med)	☐	Photonics and Laser Engineerng (Pho)	☒
	Information and Cyber Security (ICS)	☐	Civil Engineering (CE)	☐

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