DIGITAL TRANSFORMATION (EMaCS-02-03)

DEGREE PROGRAM:	Master in Computer Science for the Human-Centric and Sustainable Industry			
SEMESTER: Second	**TYPE:** Elective	**CREDITS:** 5 ECTS	**WORKLOAD:** 125 hours	**MENTORING:** 1 hours/week
LANGUAGE: English				

OBJECTIVES	
General	The students understand the challenges and opportunities of digital transformation on organizations and society and are capable of discussing new developments on a well-founded knowledge level. They are familiar with models and approaches related to digital transformation from various academic disciplines.
Specific	• New technologies in digital transformation • Digital business models • Platform economy • Digital leadership • Agile companies • Innovation management • Social media • Data literacy • Future of work

SUSTAINABILITY

The Digital Transformation course significantly contributes to sustainability by equipping students with an understanding of the challenges and opportunities posed by digital transformation on organizations and society. Through exploring new technologies, digital business models, and the platform economy, students gain insights into innovative approaches that can contribute to sustainable practices. The course's focus on ethical outcomes and societal impacts ensures that students develop a well-rounded perspective, considering the environmental and social implications of digital transformations. By fostering an open and curious attitude towards new technologies, students are encouraged to explore sustainable solutions and contribute to ethical practices within the digital landscape. The emphasis on continuous learning and responsibility underscores the importance of sustainability in the ever-evolving digital realm.

RESILIENCE AND HUMAN-CENTRIC DEVELOPMENT

The Digital Transformation course plays a pivotal role in fostering resilience and human-centric development by providing students with the skills and knowledge to actively engage in digital transformation processes. Through topics such as digital leadership, agile companies, and innovation management, students develop the skills necessary to lead and navigate organizations through transformative changes. The emphasis on reflective and critical thinking, as well as working with others and collaborating through digital technologies, promotes a human-centric approach to digital transformation. Students learn to recognize the societal impacts of digital transformation, fostering a sense of responsibility and ethical awareness. By cultivating a proactive and innovative mindset, students are prepared to contribute to resilient, human-centred, and ethically sound digital development.

SUBJECT MATTER

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COMPETENCES

C1. AQUIRING DATA, INFORMATION AND DIGITAL CONTENT

C3. MANAGING AND EVALUATING DATA, INFORMATION AND DIGITAL CONTENT

C4. INTEGRATING AND RE-ELABORATING INFORMATION and DIGITAL CONTENT

C6. USING MACHINE LEARNING AND A.I. TECHNIQUES

C9. REFLECTING ON ETHICAL OUTCOMES

C10. EXPLORATORY AND CRITICAL THINKING

	C11. PROBLEM FRAMING C15. MANAGING SYSTEMS and/or PROJECTS C16. WORKING WITH OTHERS C18. COLLABORATING THROUGH DIGITAL TECHNOLOGIES

LEARNING OUTCOMES

Knowledge	• Know about new digital technologies and their relevant characteristics, as well as the potential implications of their implementation. • Know about various strategies to effectively support and guide digital transformation processes. • Know about different business models and be able to assess and formulate change strategies in the context of digital transformation. • Know about modern innovation methods and techniques and the ability to facilitate their application. • Know about the organizational changes required during the transformation process. • Know about the social and societal impacts of digital transformation, and how these relate to technological advancements.
Skills	• Develop the skills to engage in informed discussions about new digital technologies and their potential implications. • Acquire the ability to proactively and constructively contribute to digital transformation processes. • Develop skills in evaluating and formulating change strategies for existing business models in the context of digital transformation. • Gain proficiency in moderating and facilitating the application of modern innovation methods. • Acquire the skills to identify and implement necessary organizational changes during the transformation process. • Develop analytical skills to understand and articulate the social and societal impacts of digital transformation.
Attitudes/values	• Cultivate an open and curious attitude towards new digital technologies and their potential benefits. • Value the importance of actively supporting and guiding digital transformation processes to drive positive change. • Adopt a proactive and innovative mindset when evaluating and formulating change strategies for business models. • Recognize the importance of continuous learning and staying updated with modern innovation methods and trends. • Develop a sense of responsibility and ethical awareness regarding the organizational and societal impacts of digital transformation.

TEACHING METHODS

- Seminar-style teaching methods: Work in small groups, board work, multimedia presentations, voluntary exercise tasks, academic work with publications, application-oriented work using online materials and current tools.
- Practical work: Task processing in small groups with a concluding acceptance discussion, presentations, and written assignments.

EVALUATION

- Regular examination format: Graded oral examination.
- Alternative examination formats: Graded written exam or graded presentation.

In cases where multiple examination formats are possible for the module, the responsible lecturer will announce the required format at the beginning of the course.

PRECONDITIONS

None

DEPARTMENT	Computer Science
LECTURERS	Martin Schultz Thomas Lehmann: https://users.informatik.haw-hamburg.de/~infwse322/

	Ulrike Steffens: https://www.researchgate.net/profile/Ulrike-Steffens/2 Bettina Buth: https://www.researchgate.net/profile/Bettina-Buth
LITERATURE	• Venkatraman V.: The Digital Matrix: New Rules for Business Transformation through Technology, LifeTree Media • Rogers, D.: Digital Transformation Playbook • State of the art scientific papers