RESEARCH WORKSHOP LAB I (EMaCS-02-09)				
DEGREE PROGRAM:		Master in Computer Science for the Human-Centric and Sustainable Industry		
SEMESTER: Second	**TYPE:** Basic	**CREDITS:** 10 ECTS	**WORKLOAD:** 250 hours	**MENTORING:** Don't apply
LANGUAGE: English				

OBJECTIVES	
General	In order to later systematically develop, document, and present scientific results in their field of specialization during the Master projects and Master thesis, students will be able to: • Independently explore a scientific topic through appropriate literature research and establish their own perspective. • Document and present their findings in presentations and written documents following academic standards.
Specific	• Systematic scientific work and research methodology, organization, and processes. • Literature research techniques. • Presentation skills (lectures, posters). • Writing techniques (short articles, writing workshops, conference papers). • Proper citation practices. • Subject-specific presentations on selected topics in various formats to practice the learned fundamental techniques.

SUSTAINABILITY

Although the course "Research Workshop Lab I" does not have a direct focus on sustainability, it can contribute indirectly by fostering research practices that could address sustainable issues. Students, while exploring various scientific topics, may choose to research and develop solutions that tackle sustainability challenges in their respective fields. Furthermore, the promotion of ethical practices and consideration of the social contribution of research can influence the choice of topics that positively impact sustainability.

RESILIENCE AND HUMAN-CENTRIC DEVELOPMENT

The course "Research Workshop Lab I" significantly contributes to resilience and human-centric development. By encouraging students to conduct independent research and explore scientific perspectives, the course promotes critical and exploratory thinking skills. Students acquire the ability to address technical issues and develop effective solutions, supporting resilience in adapting to new challenges. Additionally, by focusing on effective communication and presentation techniques, the course facilitates the transmission of research findings in a understandable and accessible manner, promoting user-centred and community development. The emphasis on ethics and responsible research practices also supports human development by cultivating ethical attitudes and values in scientific research.

SUBJECT MATTER

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COMPETENCES

C6. USING MACHINE LEARNING AND A.I. TECHNIQUES
C10. EXPLORATORY AND CRITICAL THINKING
C14. SOLVING TECHNICAL PROBLEMS
C15. MANAGING SYSTEMS and/or PROJECTS
C16. WORKING WITH OTHERS
C17. COMMUNICATING EFFECTIVELY
C18. COLLABORATING THROUGH DIGITAL TECHNOLOGIES

LEARNING OUTCOMES

Knowledge	• Know about systematic scientific work and research methodology, understanding the essential principles and processes involved in conducting research. • Know about effective literature research techniques, enabling them to explore and understand scientific topics in their chosen field of specialization. • Know about proper citation practices, ensuring they can reference and acknowledge sources appropriately in their academic work.
Skills	• Develop the skills to independently conduct literature research to explore scientific topics and establish their own viewpoints, laying the foundation for future research projects and the Master thesis. • Acquire practical skills in writing academic documents, such as short articles, conference papers, and other research-related written works, adhering to academic standards and conventions. • Gain presentation skills, including oral presentation techniques (lectures) and visual presentation techniques (posters), allowing them to effectively communicate research findings to diverse audiences.
Attitudes/values	• Foster an attitude of academic integrity, recognizing the importance of proper citation and acknowledging the contributions of others in their research. • Value systematic and methodical approaches to research, appreciating the significance of research methodology in producing reliable and valid results. • Cultivate a confident and professional attitude towards subject-specific communication, recognizing the value of effective presentations in disseminating research findings and engaging with academic and professional communities.
TEACHING METHODS	
Workshops in small groups, presentations, and written assignments.	
EVALUATION	
Regular examination format: Project (Documentation and Colloquium).	
PRECONDITIONS	
None	
DEPARTMENT	Computer Science
LECTURERS	Martin Schultz Marina Tropmann-Frick Thomas Clemen Zhen Ru Dai Thomas C. Schmidt: https://inet.haw-hamburg.de/members/schmidt Thomas Lehmann: https://users.informatik.haw-hamburg.de/~infwse322/ Bettina Buth: https://www.researchgate.net/profile/Bettina-Buth Jan Sudeikat: https://www.researchgate.net/profile/Jan-Sudeikat Martin Hübner: https://users.informatik.haw-hamburg.de/~huebner/ Ulrike Steffens: https://www.researchgate.net/profile/Ulrike-Steffens/2 Michael Köhler-Bußmeier: https://orcid.org/0000-0002-3074-4145
LITERATURE	State of the art scientific papers