BASIC MASTER PROJECT (EMaCS-04-03)				
DEGREE PROGRAM:	Master in Computer Science for the Human-Centric and Sustainable Industry			
SEMESTER: Fourth	**TYPE:** Basic	**CREDITS:** 10 ECTS	**WORKLOAD:** 250 hours	**MENTORING:** - hours/week
LANGUAGE: English				

OBJECTIVES	
General	The students will gain the ability to develop and solve research questions specific to the focus area, considering limited resources.
Specific	• Students will work on offered project tasks, which may be selected in collaboration with industry and business partners who accompany the project. • Specific knowledge required for the project, both in the applied and professional domain and in the informatics and mathematical areas, will be provided through block seminars if necessary. • Alongside the completion of development sub-tasks, the state of the art and science will be continuously researched and prepared. • Regular project meetings and a final presentation provide students with the opportunity to practice the skills mentioned in the learning objectives.

SUSTAINABILITY

The Basic Master Project underscores sustainability by immersing students in real-world scenarios where they must develop and solve research questions within the constraints of limited resources. By working on project tasks often in collaboration with industry and business partners, students learn to navigate challenges inherent in practical applications. The course integrates sustainability considerations by encouraging students to explore resource-efficient solutions, fostering a mindset that emphasizes ecological responsibility in the development process. Through seminars addressing applied, professional, mathematical, and informatics domains, students gain holistic knowledge to approach projects sustainably. As a result, graduates of the Basic Master Project are equipped not only with technical expertise but also with a deep understanding of the sustainable implications of their work, contributing to a future where technological advancements are aligned with environmental consciousness.

RESILIENCE AND HUMAN-CENTRIC DEVELOPMENT

In cultivating resilience and human-centric development, the Basic Master Project prepares students to tackle research questions in their focus area amidst real-world constraints. By collaborating with industry partners, students gain insights into the practical implications of their work, emphasizing the importance of technology in addressing societal needs. The course emphasizes the continuous exploration of the state of the art and science, promoting a resilient approach to stay abreast of evolving challenges and opportunities. Through project meetings and final presentations, students enhance their communication and teamwork skills, ensuring their ability to effectively convey the human-centric aspects of their projects. The Basic Master Project thus contributes to the development of professionals who not only address complex issues but also do so with a keen understanding of societal impact and human well-being.

SUBJECT MATTER

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COMPETENCES

C3. MANAGING AND EVALUATING DATA, INFORMATION AND DIGITAL CONTENT
C5. PROGRAMMING
C6. USING MACHINE LEARNING AND A.I. TECHNIQUES
C7. PROTECTING PERSONAL DATA AND PRIVACY
C9. REFLECTING ON ETHICAL OUTCOMES
C10. EXPLORATORY AND CRITICAL THINKING
C11. PROBLEM FRAMING

	C14. SOLVING TECHNICAL PROBLEMS C15. MANAGING SYSTEMS and/or PROJECTS C17. COMMUNICATING EFFECTIVELY
LEARNING OUTCOMES	
Knowledge	• Know about the specific research questions and topics related to their focus area in the project. • Know about the limited resources and constraints that need to be considered when developing and solving research questions in a real-world project setting. • Know about the techniques and methods learned in other modules and how to apply them effectively to address complex issues within the specialization.
Skills	• Be able to develop and execute a project, including project planning, task allocation, and resource management. • Acquire the ability to select appropriate methodologies and tools to address specific research questions and implement them in the project. • Strength the teamwork and collaboration skills, including effective communication, conflict resolution, and leading and moderating project meetings.
Attitudes/values	• Cultivate a proactive and innovative attitude towards solving research questions and addressing complex issues within their specialization, despite limited resources and constraints. • Value the importance of continuous learning and improvement, seeking to apply the knowledge and skills acquired in other modules to real-world projects effectively. • Foster a collaborative and open-minded approach to project work, acknowledging the significance of gathering and incorporating feedback from team members and stakeholders. • Recognize the value of documentation and justification in project outcomes, understanding the importance of clear and well-documented results for successful project execution and communication.
TEACHING METHODS	
Workshops in small groups, presentations, and written assignments.	
EVALUATION	
Regular examination format: Project (Documentation and Colloquium).	
PRECONDITIONS	
None	
DEPARTMENT	Computer Science
LECTURERS	Any of the professors involved in teaching the master's degree.
LITERATURE	State of the art scientific papers