MAJOR MASTER PROJECT (EMaCS-04-04)				
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	• Research questions, project objectives, and tasks are further developed from the topics covered in the Basic Project module. These may be selected in collaboration with industry and business partners who accompany the project. • If necessary, 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. • Alongside the completion of development sub-tasks, the state of the art and science will be continuously researched and prepared. • Regular project meetings and the final presentation provide students with the opportunity to practice the skills mentioned in the learning objectives.

SUSTAINABILITY

The Major Master Project advances sustainability by extending the foundational principles established in the Basic Project module. With an emphasis on developing and solving research questions specific to the focus area, students actively engage in real-world challenges while considering the importance of limited resources. By collaborating with industry and business partners, the course integrates sustainability into project tasks, fostering an understanding of how technological advancements can align with ecological responsibility. Block seminars further equip students with the applied, professional, and technical knowledge necessary for projects, ensuring a holistic approach that prioritizes sustainable practices. The Major Master Project thus contributes to the cultivation of professionals who not only possess specialized technical skills but also approach their work with a keen awareness of sustainability implications, thereby shaping the future of technology with environmental consciousness.

RESILIENCE AND HUMAN-CENTRIC DEVELOPMENT

In its pursuit of resilience and human-centric development, the Major Master Project builds upon the foundations laid in the Basic Project module. Research questions, project objectives, and tasks are refined, often in collaboration with industry partners, emphasizing the practical implications of the students' work. The course promotes continuous exploration of the state of the art and science, fostering a resilient mindset to navigate evolving challenges. Through regular project meetings and a final presentation, students refine their communication and teamwork skills, ensuring that they effectively convey the human-centric aspects of their projects. The Major Master Project not only prepares students to address complex issues within their specialization but also instills a deep understanding of societal impact and human well-being, contributing to the development of professionals who are resilient, adaptable, and human-centred in their approach.

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