COURSE DESCRIPTION

AI4CI Activities: from research to business

Academic year 2026-2027

1. Programme-related data

1.1. Higher Education Institution	Babeș Bolyai University
1.2. Faculty	Faculty of Mathematics and Computer Science
1.3. Department	Department of Computer Science
1.4. Field	Computer Science
1.5. Level of study	Master
1.6. Degree programme / Qualification	Artificial Intelligence for Connected Industries
1.7. Form of education	Full time

2. Course-related data

2.1. Course title	AI4CI Activities: from research to business			Course code	MME8242
2.2. Course coordinator	Lect. dr. Mihoc Tudor Dan				
2.3. Seminar coordinator	Lect. dr. Mihoc Tudor Dan				
2.4. Year of study	2	2.5. Semester	3	2.6. Type of assessment	Colloquium
2.7. Course status	Optional			2.8. Course type	Specialisation subject

3. Total estimated time (hours per semester of teaching activities)

3.1. Number of hours per week	2	of which: 3.2. course	1	3.3. seminar/ laboratory/ project	0/0/1
3.4. Total of hours in the curriculum	28	of which: 3.5. course	14	3.6. seminar/ laboratory	0/0/14

Time allocation for individual study (IS) and self-taught activities (ST)	**hours**
Learning from textbooks, course materials, bibliography, and notes (IS)	12
Additional research in the library, on subject-specific electronic platforms, and on-site	12
Preparing seminars/ laboratories/ projects, assignments, reports, portfolios, and essays	16
Tutoring (professional guidance)	5
Examinations	2
Other activities	0
3.7. Total hours of individual study (IS) and self-taught activities (ST)	47
3.8. Total hours per semester	75
3.9. Number of credits	3

4. Prerequisites (where applicable)

4.1. curriculum-related	Master programme AI4CI first semester courses
4.2 skills-related	Not applicable

5. Specific conditions (where applicable)

5.1. course-related	Projector
5.2. seminar/laboratory-related	Computers

6.1. Competencies resulting from the completion of the degree programme *(as referred to in the curriculum)*[1]

Professional competencies	
Competency code	**Competency**
CP7	Develop software
CP24	Perform scientific research
CP35	Utilizare creativa a tehnologiilor digitale
Transversal competencies	
Competency code	**Competency**
CT1	Think analytically
CT2	Apply knowledge of science, technology and engineering
CT4	Solve problems

6.2. Learning outcomes relevant to the degree programme (as referred to in the curriculum)[2]

Learning outcomes targeted by the subject		
Competency code	**Knowledge and comprehension**	**Specific academic skills**
CP20 CP21 CP22 CP23	The graduate possesses the fundamental knowledge in automatics and robotics, advanced networks architectures and IoT systems, being able to use and apply this knowledge to produce new relevant solutions.	The graduate knows and respects the ethical and legal principles and rules in scientific research.

7. Subject-specific learning outcomes

Knowledge and comprehension
1. Understand the concepts of innovation, entrepreneurship, and intrapreneurship in the context of AI for connected industries.
2. Understand the process of transforming research findings into viable business ideas.
3. Understand methods for identifying market opportunities, analysing customer needs, and studying market trends.
4. Understand product development, prototyping, lean startup methodology, and distribution models.
5. Understand business model innovation, value proposition design, Business Model Canvas, and validation techniques.
6. Understand the basic principles of intellectual property rights, technology transfer, licensing, regulation, and compliance.
Specific academic skills

[1] The professional and/or transversal skills targeted by the subject for which the course description is prepared will be copied from the curriculum of the degree programme. For each competency, the complete entry, including the competency code, will be copied with the exact wording that appears in the curriculum, without any changes. If no competency is copied from either of the two categories, the row corresponding to that category is deleted from the table.

[2] The learning outcomes relevant for the degree programme and targeted by the subject for which the course description is prepared will be listed. The entries, copied without any changes from the Curriculum by subject type (Core Subject/Specialisation Subject/Complementary Subject), are listed under the corresponding competency.

1. Identify and assess market opportunities for AI and connected-industry technologies.
2. Develop product concepts and basic prototypes based on research outcomes and technical expertise.
3. Design and validate business models using value proposition and Business Model Canvas tools.
4. Prepare a business plan for a technology-based innovation and present it to relevant stakeholders.
5. Work collaboratively in interdisciplinary teams and use peer and instructor feedback to improve project outcomes.

8. Contents

8.1. Course	**Teaching and learning methods**	**Remarks**
1. Introduction to Innovation and Entrepreneurship. Overview of the innovation process; understanding the entrepreneurial mindset; case studies of successful technology innovations turned into businesses.	Interactive exposition; presentation; explanation; practical examples.	Course sessions with case studies and applied examples.
2. Opportunity Identification and Market Analysis. Techniques for identifying market opportunities; market research methods and tools; analysing market trends and customer needs.		
3. Product Development and Prototyping. Conceptualising and defining product ideas; lean startup methodology; prototyping techniques and tools; the strategic role of distribution models.		
4. Business Model Innovation. Business models; value proposition design; Business Model Canvas and validation techniques; regulatory bodies and compliance aspects.		
5. Intellectual Property Rights and Technology Transfer. Patents, copyrights, trademarks, technology transfer, licensing agreements, and intellectual property protection in a business context.		
Bibliography		
Slides will be distributed.		
8.2. Seminar/ laboratory	**Teaching and learning methods**	**Remarks**

Project Group Work. Students will work in diverse teams to develop a business plan for a technology-based innovation. The project will involve identifying a market opportunity, developing a product concept, designing a business model, and presenting the business plan to the class for feedback from peers and instructors.	Interactive exposition; explanation; conversation; didactical demonstration.	Team-based project work and presentation.
Bibliography		
Slides will be distributed.		

9. Evaluation

Type of activity	9.1 Evaluation criteria	9.2 Evaluation methods	9.3 Percentage in the final grade
9.4. Course	How well the students understand the main elements of AI4CI activities from research to business, including innovation, market analysis, product development, and business model creation.	Continuous monitoring and project-based assessment.	100%
	Ability to develop, document, and present a technology-based innovation project.	Project assignment and presentation.	included
9.5. Seminar/ laboratory	Ability to work in teams and contribute to the development of a business plan.	Team project work, presentation, and feedback.	included
9.6 Minimum standard for passing			
Each student should obtain a minimum grade of 5 for the final grade.			

10. SDG labels (Sustainable Development Goals)[3]

	○	Sustainable Development Generic Label

[3] Select a single label which, according to the *Implementation of SDG labels in the academic process*, best matches the subject. If the subject addresses sustainable development in a generic manner (i.e. by presenting/introducing the general framework of sustainable development, etc.), then the Sustainable Development generic label may be applied. If none of the labels describe the subject, select the last option: *"No label applies."*

								●
								No label applies

Date of entry:
20.05.2026

Signature of course coordinator
Lect. dr. Mihoc Tudor Dan

Signature of seminar coordinator
Lect. dr. Mihoc Tudor Dan

Date of approval in the department:
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Signature of the head of department
Assoc. Prof. dr. Adrian Sterca