COURSE DESCRIPTION

Elaboration of the Dissertation Thesis

Academic year 2026/2027

1. Programme-related data

1.1. Higher Education Institution	**Babeş 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 studies**

2. Course-related data

2.1. Course title	**Elaboration of the Dissertation Thesis**			Course code	**MME3042**
2.2. Course coordinator	Prof. dr. Camelia Chira				
2.3. Seminar coordinator	Prof. dr. Camelia Chira				
2.4. Year of study	2	2.5. Semester	4	2.6. Type of assessment	Progress check
2.7. Course status	Compulsory			2.8. Course type	Specialisation subject

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

3.1. Number of hours per week	**5**	of which: 3.2. course	**0**	3.3. seminar/ laboratory/ project	**5**
3.4. Total of hours in the curriculum	60	of which: 3.5. course	0	3.6. seminar/ laboratory	**60**
Time allocation for individual study (IS) and self-taught activities (ST)					**hours**
Learning from textbooks, course materials, bibliography, and notes (IS)					10
Additional research in the library, on subject-specific electronic platforms, and on-site					10
Preparing seminars/ laboratories/ projects, assignments, reports, portfolios, and essays					10
Tutoring (professional guidance)					5
Examinations					5
Other activities					
3.7. Total hours of individual study (IS) and self-taught activities (ST)				**40**	
3.8. Total hours per semester				**100**	
3.9. Number of credits				**4**	

4. Prerequisites (where applicable)

4.1. curriculum-related	Computer Science Research Methodology
4.2 skills-related	

5. Specific conditions (where applicable)

5.1. course-related	-
5.2. seminar/laboratory-related	None

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

Professional competencies	
Competency code	**Competency**
PC11	Design information system
PC29	Develop data processing applications
PC31	Disseminate results to the scientific community
PC33	Innovate in ICT
PC35	Creatively use digital technologies
Transversal competencies	
Competency code	**Competency**
TC1	Think analytically
TC2	Apply knowledge of science, technology and engineering

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**
PC11	The graduate has the necessary knowledge to devise, model and design of complex software applications in the field of artificial intelligence for connected industries.	The graduate has the ability to perform educational activities in the domain of algorithmics and programming for schools and high schools.
PC29	The graduate can apply advanced knowledge in artificial intelligence, machine learning, robotics and networks, being able to offer implementation solutions for applications in connected industries.	The graduate has the ability to communicate and develop professional relations and partnerships with industrial partners and with all actors involved in the development process of software and solutions based on artificial intelligence, network architectures and IoT systems .
PC31	The graduate can apply advanced knowledge in artificial intelligence, machine learning, robotics and networks, being able to offer implementation solutions for applications in connected industries.	The graduate has the ability to communicate and develop professional relations and partnerships with industrial partners and with all actors involved in the development process of software and solutions based on artificial intelligence, network architectures and IoT systems .

[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.

PC33	The graduate proves advance programming skills which will allow learning, accumulating solid knowledge and rapid understanding of modern technologies.	
PC35	The graduate has the ability to identify and develop applications of artificial intelligence for connected industries and systems.	
TC1	The graduate has the necessary knowledge to devise, model and design of complex software applications in the field of artificial intelligence for connected industries.	The graduate has the ability to perform educational activities in the domain of algorithmics and programming for schools and high schools.
TC2	The graduate proves advance programming skills which will allow learning, accumulating solid knowledge and rapid understanding of modern technologies.	

7. Subject-specific learning outcomes

Knowledge and comprehension
The graduate has the necessary knowledge to conceive, model and design complex software systems in the field of artificial intelligence for connected industries.
The graduate possesses fundamental modeling knowledge through which he/she analyzes real-life problems, translates them into concrete requirements and develops an appropriate software model.
Specific academic skills
The graduate is able to use specialized language and terminology specific to the field of artificial intelligence, so that he or she can communicate and interact with members of work teams.
The graduate demonstrates the ability to reflect on their own learning sources and resources.
The graduate demonstrates that they possess knowledge related to the specific requirements of the research approach in the field of computer science in general and the field of artificial intelligence in particular and understands the role of research in promoting progress.
The graduate knows and respects ethical and legal principles and rules in scientific research.

8. Contents

8.1. Course	**Teaching and learning methods**	**Remarks[3]**
8.2. Seminar/ laboratory	**Teaching and learning methods**	**Remarks**
1. Establishing the thesis title/topic – up to week 2	Conversation, debate, case studies	
2. Bibliographical documentation – up to week 4	Conversation, debate, case studies	
3. Table of contents: version 1.0 – up to week 5	Conversation, debate, case studies	
4. Relevance of the bibliographical sources and their assignment to the designed structure – up to week 7	Conversation, debate, case studies	
5. Detecting possible original contribution; discussion and decision on experimental modelling – up to week 8	Conversation, debate, case studies	

[3] For example, organisational aspects, recommendations for students, specific aspects relating to the course/seminar, such as inviting experts in the field, etc.

6. Processing of selected documents and writing the first draft of the thesis – up to week 10	Conversation, debate, case studies	
7. Final form of the thesis – up to week 12	Conversation, debate, case studies	
Bibliography - to be decided by student based on his/her research topic - Internet resources on the particular topics of the project		

9. Evaluation

Type of activity	9.1 Evaluation criteria[4]	9.2 Evaluation methods[5]	9.3 Percentage in the final grade
9.4. Course			
9.5. Seminar/ laboratory	The ability to write a research report and present the obtained results. Each of the activities has a due date and a corresponding mark, on a 10-point scale. A penalty of 1pt per week is considered for delays.	Portfolio, research report	
		1. title and table of contents	10%
		2. bibliographical documentation, relevance, structure	20%
		3. original contributions, experiments	20%
		4. final version of thesis	50%
9.6 Minimum standard for passing			
At least grade 5 (from a scale of 1 to 10)			

10. SDG labels (Sustainable Development Goals)[6]

	○	Sustainable Development Generic Label

[4] The evaluation criteria must directly reflect the learning outcomes targeted at the level of the degree programme respectively at the level of the subject. More specifically, the learning outcomes set out in the expected learning outcomes are assessed.

[5] Both final evaluation methods and ongoing evaluation strategies should be established.

[6] 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:
12/05/2026

Signature of course coordinator

Prof. dr. Camelia Chira

Signature of seminar coordinator

Prof. dr. Camelia Chira

Date of approval in the department:
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Signature of the head of department

Conf. dr. Adrian STERCA