SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	**Babes-Bolyai University**
1.2 Faculty	**Faculty of Mathematics and Computer Science**
1.3 Department	**Department of Computer Science**
1.4 Field of study	**Computer Science**
1.5 Study cycle	**Bachelor**
1.6 Study programme / Qualification	**Artificial intelligence**

2. Information regarding the discipline

2.1 Name of the discipline (en) (ro)			**AI solutions-based Projects Development**				
2.2 Course coordinator			**PhD Associate Professor Vescan Andreea**				
2.3 Seminar coordinator			**PhD Associate Professor Vescan Andreea**				
2.4. Year of study	**3**	2.5 Semester	**5**	2.6. Type of evaluation	**C**	2.7 Type of discipline	**optional**
2.8 Code of the discipline	**MLE5211**						

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	1	Of which: 3.2 course	0	3.3 seminar/laboratory	1
3.4 Total hours in the curriculum	14	Of which: 3.5 course	0	3.6 seminar/laboratory	14

Time allotment:	hours
Learning using manual, course support, bibliography, course notes	3
Additional documentation (in libraries, on electronic platforms, field documentation)	20
Preparation for seminars/labs, homework, papers, portfolios and essays	9
Tutorship	2
Evaluations	2
Other activities:	0

3.7 Total individual study hours	36
3.8 Total hours per semester	50
3.9 Number of ECTS credits	2

4. Prerequisites (if necessary)

4.1. curriculum	• Research methodology in computer science
4.2. competencies	• Programming knowledge in at least one high-level

	programming language.

5. Conditions (if necessary)

5.1. for the course	•
5.2. for the seminar /lab activities	• None

6. Specific competencies acquired

Professional competencies	• Analysis and formalization of problems for which knowledge of artificial and computer intelligence is necessary. • Using artificial intelligence methods in solving problems. • Analysis, design and implementation of software systems for real problems. • Use of methodologies and tools specific to programming languages. • Integration and application of the knowledge obtained in order to implement and develop projects with artificial intelligence solutions.
Transversal competencies	• Professional communication skills; concise and precise description, both oral and written, of professional results

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	• This activity involves acquiring the knowledge and skills necessary for a process of managing a software application of medium complexity, which uses solutions from the field of artificial intelligence, including the research work that the student does with the aim of realizing the project and a related scientific report.

7.2 Specific objective of the discipline	• Upon completion of this course, the student must:
	  o To have documentation skills on a certain topic related to artificial intelligence.
	  o To identify the main elements that constitute success factors in a project with artificial intelligence solutions.
	  o To implement the proposed solution, using artificial intelligence techniques.
	  o To respect an Agile project development process.
	  o To be able to make a research report content.
	  o To know how to write a research report in several iterations.

8. Content

8.1 Course	Teaching methods	Remarks
8.2 Seminar / laboratory	Teaching methods	Remarks
Seminar 1. Establishing the theme of the project		
Seminar 2. Establishing the theme with the scientific coordinator	Conversation, debate, case studies	
Seminar 3. Bibliographic documentation	Conversation, debate,	

	case studies	
Seminar 4. Outline of the contents of the research report	Conversation, debate, case studies	
Seminar 5 Identification and study of the artificial intelligence models used	Conversation, debate, case studies	
Seminar 6. Methodologies for the development of IT projects. Software application design	Conversation, debate, case studies	
Seminar 7. Implementation of the software application	Conversation, debate, case studies	
Seminar 8. Software application documentation	Conversation, debate, case studies	
Seminar 9. Decision on experimental modeling	Conversation, debate, case studies	
Seminar 10. Integration of experiments in the software application	Conversation, debate, case studies	
Seminar 11. Documentation of experiments and tests	Conversation, debate, case studies	
Seminar 12. The first version of the research report	Conversation, debate, case studies	
Seminar 13. Preparing the handover of the application and the report	Conversation, debate, case studies	
Seminar 14. The final form of the software application and the research report	Conversation, debate, case studies	
Bibliography - to be decided by student based on his/her research topic - Internet resources on software projects and on the particular topics of the projects		

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- This course follows the IEEE and ACM curriculum recommendations for the study of computer science.
- • The completion of a study program implies the initiation of a research activity .

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.1 Course			
10.2 Seminar/lab activities	The ability to identify artificial intelligence solutions for a studied problem, to implement a software project using the proposed models, to write a research report and present the obtained results.	Each activity has a deadline and a corresponding grade (between 1 and 10). Delays are penalized with 1 point per week. Phase 1: Dock 1, 2, 3 Phase 2: Dock 4, 5, 6 Phase 3: Doc 7, 8 Phase 4: Doc 9, 10, 11 Phase 5: Doc 12, 13 Phase 6: Final presentation	10% 20% 20% 20% 20% 10%
Remarks.			
10.6 Minimum performance standards			
➢ A minimum grade of 5 is required for passing the discipline.			

Date	Signature of course coordinator	Signature of seminar coordinator
26 April 2023	Assoc. Prof. PhD. Andreea Vescan,	Assoc. Prof. PhD. Andreea Vescan

Date of approval

Signature of the head of department

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