SYLLABUS

1. **Information regarding the programme**

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 of study	**Mathematics**
1.5 Study cycle	**Bachelor**
1.6 Study programme / Qualification	**Mathematics - Computer Science**

2. Information regarding the discipline

2.1 Name of the discipline				(ro) **Proiect colectiv** (en) **Team Project**			
2.2 Course coordinator				-			
2.3 Seminar coordinator				**Asist. Dr. Coroiu Adriana Mihaela**			
2.4. Year of study	**3**	2.5 Semester	**1**	2.6. Type of evaluation	**C**	2.7 Type of discipline	**Compulsory**

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

3.1 Hours per week	2	Of which: 3.2 course	-	3.3 seminar/laboratory	2
3.4 Total hours in the curriculum	28	Of which: 3.5 course	-	3.6 seminar/laboratory	28
Time allotment:			hours		
Learning using manual, course support, bibliography, course notes			9		
Additional documentation (in libraries, on electronic platforms, field documentation)			14		
Preparation for seminars/labs, homework, papers, portfolios and essays			16		
Tutorship			6		
Evaluations			2		
Other activities:			-		
3.7 Total individual study hours			47		
3.8 Total hours per semester			75		
3.9 Number of ECTS credits			3		

4. Prerequisites (if necessary)

4.1. curriculum	Advanced methods programmimg Database
4.2. competencies	Programming skills in a high level programming language

5. Conditions (if necessary)

5.1. for the course	-
5.2. for the seminar /lab activities	Computer/Laptop

6. Specific competencies acquired

6.1 Professional competencies	Use of methodologies, specification mechanisms, and development environments for applications realized in different teams

6.2 Transversal competencies	- Application of efficient and organized work rules, of responsible attitudes towards the didactic-scientific domain, to creatively value one's own potential, with the respect towards the principles and norms of professional etic. - Use of efficient methods and techniques to learn, inform, research and develop the abilities to value the knowledge, to adapt to requirements of a dynamic society and to communicate in different teams with the same purpose.

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

7.1 General objective of the discipline	Fixing the skills of implementing a software application by completing all the necessary steps (specification, design, implementation, activity verification, validation and documenting) and reflecting them through a complete software product.
7.2 Specific objective of the discipline	- Understand the requirements of a software product - Know the life cycle stages of a software product and put it into practice - Familiarize with traditional or agile development methodologies - Understanding the concepts of modeling an application - Knowledge and application of software development techniques based on models, as well as different testing methods

8. Content

8.1 Course		Teaching methods	Remarks
8.2 Seminar / laborator		Teaching methods	Remarks
1	Establishing working teams Defining the roles of team members Understanding and clarifying the application (software)	Explanation, examples	
2	Planning the development stages of the application using soft agile methodologies	Exposure: description, explanation, examples	
3	Realization of use case diagrams: concepts, relationships, representation, structure of the use descriptions document	Exposure: description, explanation, examples	
4	Realization of use case diagrams: concepts, relationships, representation, structure of the use descriptions document	Exposure: description, explanation, examples	
5	Description of Behavioral Models Using State Transition Diagrams Generate the code based on status transition diagrams	Exposure: description, explanation, examples	
6	Achieve the functional model of the application	Exposure: description, explanation, examples	
7	Achieving the conceptual model and the design model	Exposure: description, explanation, examples	
8	Implementing application functionalities (I)	Exposure: description, explanation, examples	
9	Implementing application functionalities (II)	Exposure: description, explanation, examples	
10	Implementing application functionalities (III)	Exposure: description, explanation, examples	
11	Testing the implemented application	Exposure: description, explanation, examples	
12	Initial presentation of realised application and possible imporvments of the application	explanation, examples	
13	Develop the application's user manual and deliver the application and related documentation	Exposure: description, explanation, examples	
14	Final Presenatation of the application	explanation, examples	

Bibliography:

- Bard J., Collaboration in Computer Science: Working Together, Rosen Publishing Group, 2019
- Bruegge, B., Dutoit, A., Object-Oriented Software Engineering Using UML, Patterns and Java - 3rd, Edition, Prentice Hall, 2009
- Frentiu M., Lazar I., Bazele Programarii: Proiectarea Algoritmilor, Ed. Univ. Petru Maior, 2000
- Pârv, B., Analiza si proiectarea sistemelor, Univ. Babeș-Bolyai, CFCID, Facultatea de Matematică și Informatică, Cluj-Napoca, 2004
- Pressman, R.S., Software Engineering - A Practitioners Approach - 6th ed., McGraw-Hill, 2005
- Schach, S.R., Object-Oriented and Classical Software Engineering - 6th ed., McGraw-Hill, 2005

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

Students will go through the stages of developing a software product and will develop skills in performing the activities related to each stage in the development cycle of an application.
These skills can later contribute to the way each student works in a company.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course			
10.5 Seminar/Lab activities	The quality of the implemented application and the presentation of the team members are evaluated	Oral examination	100 %
10.6 Minimum performance standards			
To promote discipline, the student must obtain at least the fifth grade at the final exam.			

Data completării _____ Titular de curs _____ Titular de seminar Asist. Dr. Coroiu Adriana Mihaela

Data avizării în departament _____ Director de departament Prof. Dr. Anca ANDREICA