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	**Computer Science**
1.5 Study cycle	**Master**
1.6 Study programme / Qualification	**Applied Computational Intelligence**

2. Information regarding the discipline

2.1 Name of the discipline	**Internship in Specialization**						
2.2 Course coordinator	**Prof. Dr. Horia F. Pop**						
2.3 Seminar coordinator	**Prof. Dr. Horia F. Pop**						
2.4. Year of study	**2**	2.5 Semester	**4**	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	16	Of which: 3.2 course	0	3.3 seminar/laboratory	16
3.4 Total hours in the curriculum	192	Of which: 3.5 course	0	3.6 seminar/laboratory	192

Time allotment:	hours
Learning using manual, course support, bibliography, course notes	76
Additional documentation (in libraries, on electronic platforms, field documentation)	76
Preparation for seminars/labs, homework, papers, portfolios and essays	60
Tutorship	76
Evaluations	20
Other activities:	

3.7 Total individual study hours	308
3.8 Total hours per semester	500
3.9 Number of ECTS credits	20

4. Prerequisites (if necessary)

4.1. curriculum	Computer Science Curriculum
4.2. competencies	Theoretical and experimental knowledge in the master specialization Knowledge of modelling of relevant applications Advanced software development knowledge and skills

5. Conditions (if necessary)

5.1. for the course	
5.2. for the seminar /lab activities	The hosting institutions should provide at least the following resources: • Scientific references for the scientific problem to be investigated • Relevant data to help in the validation of any software implementation • Fully licensed computer space • Fully licensed software development tools

6. Specific competencies acquired

Professional competencies	**C2.1** Identification of appropriate methodologies for software development **C2.3** Use of methodologies, specification mechanism and development frameworks for developing software applications **C2.5** Development of dedicated software projects
Transversal competencies	**CT1** Apply rules to: organized and efficient work, responsibilities of didactical and scientific activities and creative capitalization of own potential, while respecting principles and rules for professional ethics **CT2** Efficient progress of group activities and development of communications skills and collaboration **CT3** Use efficient methods and techniques for learning, knowledge gaining, and research and develop capabilities for capitalization of knowledge, accommodation to society requirements and communication in English

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

7.1 General objective of the discipline	Gaining abilities to execute a product/program in teams, writing project documentation, under the supervision of a specialized internship tutor and academic staff This internship project is associated to the research project: the research project is the scientific and experimental documentation, the internship activity is software development related
7.2 Specific objective of the discipline	Execute a product/program in teamwork Write necessary documentations Public project presentation

8. Content

8.1 Course	Teaching methods	Remarks
8.2 Seminar / laboratory	Teaching methods	Remarks
Phase 1. Establish the problem statement to be solved. Study the theoretical implications.	Exposure, description, explanation,	
Phase 2. Establish the scientific methods and models to pursue Scientific investigation on the methods and models and their suitability for the task	Dialog lecture, discussions, team debate	
Phase 3. Develop detailed specifications of the project Project analysis: entities and relations identification, use scenarios, data flow diagrams	Dialog lecture, discussions, team debate	
Phase 4. Design : conceptual data model, logical data model, computation design, physical data model, user interface, application architecture Implementation and testing.	Questioning, discovery	
Phase 5. Integration Testing Experiments, data collection, results evaluation	Case study, cooperation, questioning	
Phase 6. Project presentation and defense	Evaluation	

Bibliography
1. M. Frențiu, I. Lazăr, Bazele Programării: Proiectarea Algoritmilor, Ed. Univ. Petru Maior, Tg.Mureș, 2000.
2. M. Frențiu, I. Lazăr, S. Motogna, V. Prejmerean, Elaborarea algoritmilor, Ed. Presa Universitara, Clujeana, Cluj-Napoca, 1998.
3. M. Frențiu, I.A. Rus, Metodologia cercetării științifice de informatică, Presa universitară clujeană, 2014.
4. B. Pârv, Analiza si proiectarea sistemelor,Universitatea Babes-Bolyai, Centrul de Formare Continua si Învatamânt la Distanta, Facultatea de Matematica si Informatica, Cluj-Napoca, ed. a III-a, 2003.
5. L. Țâmbulea, Baze de date, Litografia UBB Cluj-Napoca 2001.
6. Electronic resources for the specific investigated research subject

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

- The course respects the IEEE and ACM Curricula Recommendations for Computer Science studies;
- Offers an overall perspective of Computer Science domain, and an general expertise for the student
- Offers basic knowledge about teamwork and integration in a software 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	Project evaluation	The institution tutor assesses the performance of the interns. The faculty mentor assesses the activities (based on the Activity Report).	80% 20%
10.6 Minimum performance standards			
➢ At least grade 5 (from a scale of 1 to 10)			

Date
27.04.2022

Signature of course coordinator
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Signature of seminar coordinator
Prof. Dr. Horia F. Pop

Date of approval
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Signature of the head of department
Prof. Dr. Anca Andreica