

## SYLLABUS

### 1. Information regarding the programme

1.1 Higher education institution	<b>Babeş Bolyai University</b>
1.2 Faculty	<b>Faculty of Mathematics and Computer Science</b>
1.3 Department	<b>Department of Computer Science</b>
1.4 Field of study	<b>Computer Science</b>
1.5 Study cycle	<b>Master</b>
1.6 Study programme / Qualification	<b>Software Engineering</b>

### 2. Information regarding the discipline

2.1 Name of the discipline	<b>Internship in Specialization</b>						
2.2 Course coordinator	<b>Assoc. Prof. PhD. Simona Motogna</b>						
2.3 Seminar coordinator	<b>Assoc. Prof. PhD. Simona Motogna</b>						
2.4. Year of study	<b>2</b>	2.5 Semester	<b>4</b>	2.6. Type of evaluation	<b>C</b>	2.7 Type of discipline	<b>Compulsory</b>

### 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 institution should provide at least the following resources: <ul style="list-style-type: none"> <li>• Scientific references for the scientific problem to be investigated</li> <li>• Relevant data to help in the validation of any software implementation</li> <li>• Fully licensed computer space</li> <li>• Fully licensed software development tools</li> </ul>

## 6. Specific competencies acquired

<b>Professional competencies</b>	<b>C2.1</b> Identification of appropriate methodologies for software development <b>C2.3</b> Use of methodologies, specification mechanism and development frameworks for developing software applications <b>C2.5</b> Development of dedicated software projects
<b>Transversal competencies</b>	<b>CT1</b> 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 <b>CT2</b> Efficient progress of group activities and development of communications skills and collaboration <b>CT3</b> 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  <b>This internship project is associated to the research project:</b> <b>- the research project is the scientific and experimental documentation</b> <b>- the internship report is the software project documentation</b>
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
Week 1-2. Establish the problem statement to be solved. Study the theoretical implications.	Exposure, description, explanation,	
Week 3-4. 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	
Week 5-6. Develop detailed specifications of the project Project analysis: entities and relations identification, use scenarios, data flow diagrams	Dialog lecture, discussions, team debate	
Week 7-9. Design : conceptual data model, logical data model, computation design, physical data model, user interface, application architecture Implementation and testing.	Questioning, discovery	
Week 10-11. Integration Testing Experiments, data collection, results evaluation	Case study, cooperation, questioning	
Week 12. Project presentation and defense	Evaluation	

## Bibliography

1. M. Frentiu, I. Lazăr, Bazele Programării: Proiectarea Algoritmilor, 2000, Ed. Univ. Petru Maior, Tg.Mureș
2. M. Frentiu, I. Lazăr, S. Motogna, V. Prejmerean, Elaborarea algoritmilor, Ed. Presa Universitara, Clujeana, Cluj-Napoca, 1998,
3. B. Parv, 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.
4. Tambulea, L., Baze de date, Litografiat Cluj-Napoca 2001
5. M. Frențiu, I.A. Rus, Metodologia cercetării științifice de informatică, Presa universitară clujeană, 2014.
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 project

## 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 instituion tutor assesses the performance of the interns.	100%
10.6 Minimum performance standards			
At least grade 5 (from a scale of 1 to 10)			

Date

20.04.2017

Signature of course coordinator

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Signature of seminar coordinator

Assoc. Prof. PhD. Simona Motogna

Date of approval

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Signature of the head of department

Prof. PhD. Anca Andreica