SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	**Babeş-Bolyai University of Cluj-Napoca**
1.2 Faculty	**Faculty of Mathematics and Computer Science**
1.3 Department	**Departament of Computer Science**
1.4 Field of study	**Computer Science**
1.5 Study cycle	**Master**
1.6 Study programme / Qualification	**Software Engineering**

2. Information regarding the discipline

2.1 Name of the discipline	**Methodology of Scientific Research in Computer Science**						
2.2 Course coordinator	**Prof.Dr. Militon Frenţiu**						
2.3 Seminar coordinator	**Prof.Dr. Militon Frenţiu**						
2.4. Year of study	**2**	2.5 Semester	**3**	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	3	Of which: 3.2 course	2	3.3 seminar/laboratory	1 sem
3.4 Total hours in the curriculum	42	Of which: 3.5 course	28	3.6 seminar/laboratory	14
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					35
Additional documentation (in libraries, on electronic platforms, field documentation)					45
Preparation for seminars/labs, homework, papers, portfolios and essays					28
Tutorship					15
Evaluations					16
Other activities:					-

3.7 Total individual study hours	129
3.8 Total hours per semester	171
3.9 Number of ECTS credits	8

4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	

5. Conditions (if necessary)

5.1. for the course	• Students will attend the course with their mobile phones shut down
5.2. for the seminar /lab activities	• Students will attend the seminar with their mobile phones shut down • Room with computers as needed;

6. Specific competencies acquired

Professional competencies	• Understanding the concepts, methods and models used in research activities. • Understanding the principles, design and implementation of various research methods • Learning to conduct incipient original research in computer science
Transversal competencies	• The ability to review a scientific paper. • Application of efficient and rigorous working rules. • Manifest responsible attitudes toward the scientific research. • Respecting the professional and ethical principles.

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

7.1 General objective of the discipline	• To introduce the student in research methods
7.2 Specific objective of the discipline	• To present the existing results in a given computer science field • To write reports on a given subject • To accustom the students the with doing research and writing a scientific paper

8. Content

8.1 Course	Teaching methods	Remarks
• Week 1: The fields of computer science. ACM classification • Reference: [fre14, cap.1]	• Interactive exposure • Explanation • Conversation	
• Week 2: Theoretical, experimental, and applied research in computer science • Reference: [Fre14, sec.2.2, Hol06; Hus]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 3: Organizing the research activity. • Reference: [Buc01; Kit05; Nie04]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 4: The content of a scientific paper • Reference: [Fre14, sec.2.3; Ler96]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 5: Writing a research paper. • Reference: [Fre14, sec.2.4; Kit05; scitext]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 6: Speaking at conferences and other presentations • Reference: [CSL; Fre14, sec.2.5; Rad; Sp00]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 7: People and research article evaluation. • Reference: [Fre14, sec.3.1; Hir05; Moe05]	• Interactive exposure • Explanation • Conversation	

	• Didactical demonstration	
• Week 8: Evaluation of Journals and publishers • Reference: [Fre14, sec.3.2; ISI11]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 9: Ranking Research centers, and Universities. • Reference: [Fre14, sec.3.3; IPK07, QSmet; Wik01]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 10: Research Ethics • Reference: [ACM; Con06; Fre14, sec.4.1; lege04; ***cluj]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 11: Financing the research activity. Grants • Reference: [Fre14, sec.4.2;	• Interactive exposure • Explanation • Conversation • Didactical demonstration	
• Week 12: Romanian school of computer science • Reference: [Fre14, sec.3.3 şi anexe]	• Interactive exposure • Explanation • Conversation • Didactical demonstration	

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[***Cluj] http://www.ubb.ro/ro/regulamente/Codul_Etic_al_UBB.pdf

[***ie3] IEEE Citation Reference

8.2 Seminar / laboratory	Teaching methods	Remarks
1. Administration. Survey of the sources of information available on Internet and Intranet. Chosing the paper topics and scheduling the presentations.	• Interactive exposure • Explanation • Conversation	
2. Delivery of a review of a scientific paper	• Interactive exposure • Explanation • Conversation	
3. Delivery of scientist presentation	• Interactive exposure • Explanation • Conversation	
4. Delivery of a subject of an important research subject	• Interactive exposure • Explanation • Conversation	
5. Delivery of a scientific paper in the field of the student's dissertation	• Interactive exposure • Explanation • Conversation	
6. Evaluation of student's reports	• Interactive exposure • Explanation • Conversation	

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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 content of the discipline is consistent with the similar disciplines from other romanian universities and universities from abroad, as well as with the requirements that potential employers would have in the intelligent data analysis field.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	• The correctness and completeness of the accumulated knowledge.	Oral exam (in the regular session)	50%
10.5 Seminar/lab activities	• A review of a scientific paper	Evaluation of the review	10%
	• A presentation of a scientist in the field of student's research	Evaluation of the presentation	10%
	• A writen scientific paper in the field of student's dissertation	Evaluation of the research paper	30%
10.6 Minimum performance standards			
• Each student has to prove that (s)he acquired an acceptable level of knowledge and understanding of the research methods and activities in computer science • Each student has to prove that he knows the content of acientific paper and is able to write such a paper in the field of his dissertation • Penalty points are awarded for delays in submission of proposed topic choices and submission of final reports.			

Date	Signature of course coordinator	Signature of seminar coordinator
30.09.2012	Prof. dr. Militon Frenţiu	Prof. dr. Militon Frenţiu
Date of approval		Signature of the head of department
		Prof. dr. Bazil Pârv