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	**Bachelor**	
1.6 Study programme / Qualification	**Computer Science**	

2. Information regarding the discipline

2.1 Name of the discipline	**Integrated Information Systems**						
2.2 Course coordinator	**Lect. PhD. Eng. Grebla Horea Adrian**						
2.3 Seminar coordinator	**Lect. PhD. Eng. Grebla Horea Adrian**						
2.4. Year of study	**4**	2.5 Semester	**8**	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	4	Of which: 3.2 course	2	3.3 seminar/laboratory	2
3.4 Total hours in the curriculum	56	Of which: 3.5 course	28	3.6 seminar/laboratory	28
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					20
Additional documentation (in libraries, on electronic platforms, field documentation)					10
Preparation for seminars/labs, homework, papers, portfolios and essays					24
Tutorship					5
Evaluations					10
Other activities:					-

3.7 Total individual study hours	69
3.8 Total hours per semester	125
3.9 Number of ECTS credits	5

4. Prerequisites (if necessary)

4.1. curriculum	•
4.2. competencies	• Average programming skills

5. Conditions (if necessary)

5.1. for the course	•
5.2. for the seminar /lab activities	• Laboratory with computers; integration software (Microsoft BizTalk), ERP software (Adempiere)

6. Specific competencies acquired

Professional competencies	
Transversal competencies	Ability to use new tools for application integration Ability to understand business process modelling

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

7.1 General objective of the discipline	•
7.2 Specific objective of the discipline	• know the types of EAI applications • be able to work with existing middleware technologies • have good knowledge about existing EAI standards and be able to use them

8. Content

8.1 Course	Teaching methods	Remarks
1. The architecture of software systems and its evolution. EAI types	Exposure: description, explanation, examples, discussion of case studies	
2. Application-oriented integration. Business process-oriented integration	Exposure: description, explanation, examples, discussion of case studies	
3. Service-oriented integration. Portal-oriented integration	Exposure: description, explanation, examples, debate, dialogue, live demo	
4. Software integration technologies. Middleware types vs EAI types	Exposure: description, explanation, examples, discussion of case studies	

5. Connector-based architectures	Exposure: description, explanation, examples, proofs	
6. Sun Java-based middleware technologies	Exposure: description, explanation, examples, proofs, debate, dialogue	
7. Microsoft .NET-based middleware technologies	Exposure: description, explanation, examples, discussion of case studies	
8. OMG middleware specifications: CORBA. Application integration standards	Exposure: description, explanation, examples	
9. EbXML. Business Processes BPEL4WS. RossettaNET and UCCNET	Exposure: description, explanation, examples, discussion of case studies	
10. Standards for web services: SOAP, WSDL, UDDI	Exposure: description, explanation, examples, debate	
11. Introduction to ERP	Exposure: description, explanation, examples, discussion of case studies	
12. Enterprise Management	Exposure: description, explanation, examples, discussion of case studies	
13. Operations Management	Exposure: description, explanation, examples, discussion of case studies	
14. ERP Implementation Stages	Exposure: description, examples, discussion of case studies	

Bibliography

Chris Britton, Peter Bye, IT Architectures and Middleware: Strategies for Building Large, Integrated Systems, 2nd edition, Addison-Wesley, 2000

2. Fred A. Cummins, Enterprise Integration: An Architecture for Enterprise Application and Systems Integration, Wiley, 2002.

3. William Ruh, Francis R. Maginnis, William J. Brown, Enterprise Application Integration A Wiley Technical Brief,

Wiley, 2001.

4. David S. Linthicum, Next Generation Application Integration, Addison-Wesley, 2003.

5. S. Parthasarathi, ERP - A managerial and technical perspective, New Age, 2007

8.2 Seminar / laboratory	Teaching methods	Remarks
1. Task 1: Implement a customer orders management application	Explation, dialogue, case studies	The task splits during 3 labs
2. Task 1: Integrate lab 1 application at data level with an open source ERP (ex. Adempiere)	Explation, dialogue, case studies	The task splits during 3 labs
3. Task 1: Integrate lab 1 application at data level with an open source ERP (ex. Adempiere)	Explation, dialogue, case studies	The task splits during 3 labs
4. Task 1: Develop a BI module on top of the ERP used for the previous labs	Explanation, Testing data discussion, evaluation	The task splits during 3 labs

Bibliography

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 exists in the studying program of all major universities in Romania and abroad;
- The course respects the IEEE and ACM Curriculla Recommendations for Computer Science studies;

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	- know the basic principle of the domain; - apply the course concepts - problem solving	Written exam	50%
10.5 Seminar/lab activities	- be able to implement course concepts and techniques	-documentation -degree of implementation completion	50%

	- apply techniques for different types of application integration	-continuous observations	
10.6 Minimum performance standards			
➢ At least grade 5 (from a scale of 1 to 10) at both written exam and laboratory work.			

Date Signature of course coordinator Signature of seminar coordinator

..... Lect. PhD. Eng. Grebla Horea Adrian Lect. PhD. Eng. Grebla Horea Adrian

Date of approval Signature of the head of department

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