

SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	Babe 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	Business Intelligence						
2.2 Course coordinator	Lect. Dr. Anca Andreica						
2.3 Seminar coordinator	Lect. Dr. Anca Andreica						
2.4. Year of study	3	2.5 Semester	6	2.6. Type of evaluation	C	2.7 Type of discipline	Optional

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	1 lab+ 1 project
3.4 Total hours in the curriculum	48	Of which: 3.5 course	24	3.6 seminar/laboratory	24
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					24
Additional documentation (in libraries, on electronic platforms, field documentation)					10
Preparation for seminars/labs, homework, papers, portfolios and essays					24
Tutorship					5
Evaluations					14
Other activities:					
3.7 Total individual study hours	77				
3.8 Total hours per semester	125				
3.9 Number of ECTS credits	5				

4. Prerequisites (if necessary)

4.1. curriculum	•
4.2. competencies	•

5. Conditions (if necessary)

5.1. for the course	•
5.2. for the seminar /lab	• Laboratory with computers; .NET environment; SQL Server 2012

activities	
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6. Specific competencies acquired

Professional competencies	<ul style="list-style-type: none"> • Knowledge, understanding and use of basic concepts of theoretical Computer Science • Ability to permanently learn, understand and apply the most recent scientific results in the field of Computer Science • Ability to work independently and/or in a team in order to solve problems in defined professional contexts.
Transversal competencies	<ul style="list-style-type: none"> • The student will know what makes Business Intelligence (BI) systems different from transaction systems, how to integrate data into Data Warehouses, how to build and load information into an OLAP database, dimensional modelling concepts, querying OLAP cubes, data mining concepts and BI application development steps.

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

7.1 General objective of the discipline	<ul style="list-style-type: none"> • The student will get familiar with Business Intelligence concepts and applications
7.2 Specific objective of the discipline	<ul style="list-style-type: none"> • The student will know what makes Business Intelligence systems different from transaction systems, how to integrate data into Data Warehouses, how to build and load information into an OLAP database, dimensional modelling concepts, querying OLAP cubes, data mining concepts and BI application development steps.

8. Content

8.1 Course	Teaching methods	Remarks
1. Business Intelligence components, architecture, classification	Exposure, description, explanation, examples, discussion of case studies	
2. SQL Server BI Platform	Exposure, description, explanation, examples, discussion of case studies	
3-4. Data Staging Area and ETL (Extract/Transform/Load), Data Presentation Area	Exposure, description, explanation, examples, discussion of case studies	
5-6. Dimensional Modeling and Data Warehouse/Data Mart (Kimball/Inmon concepts, introduction to SQLBI methodology)	Exposure, description, explanation, examples, discussion of case studies	

7-8. Data Vault (hub, link, satellite)	Exposure, description, explanation, examples, discussion of case studies	
9-10. BI development steps (justification, planning, business analysis, design, construction, deployment)	Exposure, description, explanation, examples, discussion of case studies	
11. Managing changing data	Exposure, description, explanation, examples, discussion of case studies	
12. BI case studies	Discussions on case studies	
13-14. Student presentations		

Bibliography

Dan Linstedt, Super Charge Your Data Warehouse: Invaluable Data Modeling Rules to Implement Your Data Vault, 2011.

Erik Veerman, Teo Lachev, Dejan Sarka, Microsoft SQL Server 2008, Business Intelligence Development and Maintenance, Microsoft Press, 2009.

Alberto Ferrari, Marco Russo, Introduction to the SQLBI Methodology (www.sqlbi.com) 2008.

Jay Liebowitz, Strategic Intelligence. Business Intelligence, Competitive Intelligence, and Knowledge Management, Auerbach Publications, 2006.

John C. Hancock, Roger Toren, Practical Business Intelligence with SQL Server 2005, Addison Wesley Professional, 2006.

Brian Knight et al., Professional SQL Server 2005 Integration Services, Wrox Press 2006.

Larissa T. Moss, Shaku Atre, Business Intelligence Roadmap: The Complete Project Lifecycle for Decision-Support Applications, Addison Wesley Professional, 2003.

Ralph Kimball, Margy Ross, The Data Warehouse Toolkit. The Complete Guide to Dimensional Modeling, Wiley Computer Publishing, 2002.

8.2 Laboratory	Teaching methods	Remarks
1. SQL Server 2012 BI Platform	Practical projects	
2-3. SQL Server Integration Services		
4-5. SQL Server Analysis Services		
6. SQL Server Reporting Services		
7. Student presentations		

Bibliography

Dan Linstedt, Super Charge Your Data Warehouse: Invaluable Data Modeling Rules to Implement Your Data Vault, 2011.

Erik Veerman, Teo Lachev, Dejan Sarka, Microsoft SQL Server 2008, Business Intelligence Development and Maintenance, Microsoft Press, 2009.

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John C. Hancock, Roger Toren, Practical Business Intelligence with SQL Server 2005, Addison Wesley Professional, 2006.

Brian Knight et al., Professional SQL Server 2005 Integration Services, Wrox Press 2006.

Larissa T. Moss, Shaku Atre, Business Intelligence Roadmap: The Complete Project Lifecycle for Decision-Support Applications, Addison Wesley Professional, 2003.

Ralph Kimball, Margy Ross, The Data Warehouse Toolkit. The Complete Guide to Dimensional Modeling, Wiley Computer Publishing, 2002.

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 content of the course is considered the software companies as important for average programming skills

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;	Written exam	50%
10.5 Lab activities	- Business Intelligence applications	Laboratory work	50%
10.6 Minimum performance standards			
➤ At least grade 5 at both written exam and laboratory work.			

Date

18.03.2013

Signature of course coordinator

Lect. Dr. Anca Andreica

Signature of seminar coordinator

Lect. Dr. Anca Andreica

Date of approval

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Signature of the head of department

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