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 (in german)**

2. Information regarding the discipline

2.1 Name of the discipline			**Business Intelligence**			
2.2 Course coordinator			**Prof. Dr. Anca Andreica**			
2.3 Seminar coordinator			**Prof. 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		3	Of which: 3.2 course	2	3.3 seminar/laboratory	1 lab
3.4 Total hours in the curriculum		36	Of which: 3.5 course	24	3.6 seminar/laboratory	12

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	20
Tutorship	4
Evaluations	10
Other activities:	

3.7 Total individual study hours	64
3.8 Total hours per semester	100
3.9 Number of ECTS credits	4

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; SQL Server 2012 Business Intelligence

activities	

6. Specific competencies acquired

Professional competencies	C3.1 Description of concepts, theories and models used in the application domain C3.3 Use of mathematical and computer science models and tools for solving problems in the application domain C3.4 Data and models analysis C3.5 Development of computer components for interdisciplinary projects
Transversal competencies	CT1 Application of organized and efficient work rules, of responsible attitudes towards the didactic and scientific domain, for the creative exploitation of their own potential according to the principles and rules of professional ethics CT2 Efficient conduct of activities organized in an interdisciplinary group and development of empathic capacity of interpersonal communication, networking and collaboration with diverse groups CT3 Use of effective methods and techniques of learning, information, research and development of the capacity to exploit knowledge, to adapt to the requirements of a dynamic society and communication in Romanian language and in a foreign language

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

7.1 General objective of the discipline	• The student will get familiar with Business Intelligence concepts and applications
7.2 Specific objective of the discipline	• 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

Ralph Kimball, Margy Ross, The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, Wiley Computer Publishing, 2013.

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

Randal Root, Caryn Mason, Pro SQL Server 2012 BI Solutions, APRESS 2012

Brian Knight, Devin Knight, Mike Davis, Wayne Snyder, Microsoft SQL Server 2012 Integration Services, 2012

Francis Rodrigues, Michael Coles, Davd Dye, Pro SQL Server 2012 Integration Services, APRESS 2012

Brian Knight, Erik Veerman, Jessica M. Moss, Mike Davis, Chris Rock, PROFESSIONAL Microsoft SQL Server 2012 Integration Services, Wiley 2012

Brian McDonald, Shawn McGehee, Rodney Landrum, Pro SQL Server 2012 Reporting Services, APRESS 2012

Paul Turley, Robert Bruckner, Thiago Silva, Ken Withee, Grant Paisley, PROFESSIONAL Microsoft SQL Server 2012 Reporting Services, Wiley 2012.

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

Ralph Kimball, Margy Ross, The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, Wiley Computer Publishing, 2013.

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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 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   Signature of course coordinator   Signature of seminar coordinator

....   Prof. Dr. Anca Andreica   Prof. Dr. Anca Andreica

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Date of approval   Signature of the head of department

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