COURSE DESCRIPTION

1. Information about the programme

1.1 Institution of higher education	**Alexandru Ioan Cuza University of Iasi**
1.2 Faculty	**Faculty of Economics and Business Administration**
1.3 Department	**Department of Accounting, Business Information Systems and Statistics (Departamentul de Contabilitate, Informatică economică şi Statistică)**
1.4 Field of study	**Business Information Systems (Informatică economică)**
1.5 Level	**Master**
1.6 Study programme/ Qualification	**Software Development and Business Information Systems/Master (Dezvoltare software şi sisteme informatice de afaceri/Master)**

2. Information about the course

2.1 Course name	**Business Intelligence**				
2.2 Course coordinator	**Associate Professor Daniel HOMOCIANU, PhD Habil.**				
2.3 Lab coordinator					
2.4 Year of study	I	2.5 Semester	I	2.6 Type of assessment	**Ongoing assessment + Exam**	2.7 Discipline status	**C**

* C – Compulsory / E - Elective

3. Total estimated time (hours alloted to didactic activity per semester)

3.1 Total number of hours per week	3	of which: 3.2 lecture	2	3.3 seminar/lab	1
3.4 Total number of hours in the curriculum	42	of which: 3.5 lecture	28	3.6 seminar/lab	14

Time distribution	hours
Study of the handbook, coursebook, bibliography and notes	35
Additional research in the library, online and on the field	15
Preparation of the practical project	35
Tutorials	15
Assessment	8
Other activities....................................	

3.7 Total number of self-study hours	108
3.9 Total number of hours per semester	150
3. 10 Number of credits	6

4. Prerequisites (if applicable)

4.1 curriculum-based	• Databases (or similar)
4.2 competence-based	• Not applicable

5. Conditions (if applicable)

5.1. Lectures	• Internet access , Video projector
5.2. Labs	• Physical attendance at least when presenting those three homework parts (see **8.2.3, 8.2.5** and **8.2.7**), Oracle Virtual Box & one of the virtual machines at: https://tinyurl.com/2s3rf6m9 or https://tinyurl.com/4sbdufyb

6. Assimilated specific competences

Professional competences	C2 Competence to model, manage and analyse high volumes of business data C2.1 Mastering theoretical and technological knowledge and tools concerning business data modeling, query, processing, administration and analysis, including Big Data (3 credits) C4 Competence to integrate data, components and services in business systems and applications C4.1 Gaining detailed knowledge on all aspects of methodological and technological regarding the representation and persistence of data formats, the protocols and means of communication and integration of applications and services within distributed business information systems (1 credit) C6 Competence to manage and develop business processes using IT C6.2 Identification and orchestration of information processes in business using BPM (Business Process Management) tools (1 credit)
Transversal competences	CT1 – The ability to communicate and collaborate in teams of different professionals (0.5 credits) CT3 – Continuous improvement of specific skills and knowledge towards approaching information systems, development of new software technologies and management of information systems. (0.5 credits)

7. Discipline objectives (provided by the assimilated specific competences grid)

7.1 The general objective of the discipline	• To provide the knowledge of decision making technologies in order to efficiently implement them in organizations
7.2 Specific objectives	• Knowledge of decision types and decisional models • Knowledge of the modules of a decision support application • Ability to use BI tools and design, maintain and develop decision support applications • Basic Knowledge of Data Warehouses and OLAP

8. Content

8. 1 **COURSE / LECTURE**	Teaching methods	Observations
Introduction to Business Intelligence, Analytics, and Decision Support	PPT presentation, explanation, conversation, questioning.	2 lectures (4 h)
Foundations for Decision Making	PPT presentation, explanation, conversation, questioning.	2 lectures (4 h)
Descriptive Analytics	PPT presentation, explanation, conversation, questioning.	2 lectures (4 h)
Predictive Analytics	PPT presentation,	3 lectures (6 h)

	code execution, explanation, conversation, questioning.	
Prescriptive Analytics	PPT presentation, query execution, explanation, conversation, questioning.	3 lectures (6 h)
BI - future directions	PPT presentation, explanation, conversation, questioning.	2 lectures (4 h)

Bibliography:
Airinei, D., Sisteme de asistare a deciziilor – note de curs, 2018
Airinei, D., Dospinescu, O., Huiban, A., Aplicatii practice cu sisteme OLAP si Depozite de date, Editura Sedcom Libris, Iaşi, 2008
Filip, F.,G., Zamfirescu, C., B., Ciurea, C., Computer-Supported Collaborative Decision-Making, Springer, 2017
Grossmann, W., Rinderle-Ma, S., Fundamentals of Business Intelligence, Springer, 2015
Sherman, R., Business Intelligence Guidebook. From Data Integration to Analytics, Elsevier, 2015
Nutt, P., C., Wilson, D., C., Handbook of Decision Making, Wiley, 2010
Loshin, D., Business Intelligence, The Savy Manager's Guide, Morgan Kaufmann, 2013
Sauter, V.L., Decision Support Systems for Business Intelligence (2nd Ed.), John Wiley & Sons, 2010
Power, D., J., DSS History
Sharda, R., Delen, D., Turban, E., BI and Analytics: Systems for Decision Support, Pearson, 2014
Homocianu, D., DSS in the context of knowledge society, UAIC Publishing, Iasi, 2009, ssrn.com/abstract=2384380
Homocianu, D., Habilitation thesys: Technologies for supporting decision making, Iasi, 2019, tinyurl.com/y2gsptt4
OTHER RESOURCES AT: https://tinyurl.com/5n7nuxye

8. 2 **LAB / SEMINAR**	Teaching methods	Observations
8.2.1.Basic applications (apps). to support decision making: functions, solvers, macros	demonstration, design, questions	2 h
8.2.2. BI app. Prototype - connecting to different data and model sources and designing a dynamic and interactive interface module	script/code execution, questions, discussion	2 h
8.2.3. Evaluation for homework 1(for 8.2.2.) – 13.33%	face-to-face presentation at lab.3. and evaluation feed-back	2 h
8.2.4. BI app. prototype: exports and report generation	script/code execution, questions, discussion	2 h
8.2.5. Evaluation for for homework 2 (for 8.2.4.) – 13.33%	face-to-face presentation at lab.5. and evaluation feed-back	2 h
8.2.6. Introduction to Microsoft Power Pivot and /or Microsoft Power BI	demonstration, design, questions	2 h
8.2.7. Evaluation for for homework 3 (for 8.2.6.) – 13.33%	face-to-face presentation at lab.7and evaluation feed-back	2 h

Bibliography:
Clark, D., Beginning Power BI with Excel 2013. Self-Service BI using Power Pivot, Power View, Power Query, and Power Map, Apress, 2014
Sheldon, B., et. al., Professional Visual Basic 2012 and .NET 4.5 Programming, Wiley & Sons, 2013
Sarka, D., et. al., Implementing a Data Warehouse with Microsoft SQL Server 2012.Training Kit, O'Reilly Media,2012

Powell, B., Mastering Microsoft Power BI, Expert techniques for effective data analytics and business intelligence, Packt, 2018
Mcpherson, B., Going GAS. From VBA to Google Apps Script, O'Reilly, 2016
Microsoft, Power BI MVP Book, 2019
OTHER RESOURCES AT: https://tinyurl.com/5n7nuxye

9. Corroboration of the discipline content with the expectations of epistemic community representatives, professional associations as well as of representative employers in the programme related field.

- The content of this discipline has been decided upon by taking into account both the curricula of some prestigious Western Universities and the demands of the economic environment provided by potential employers, either in the public or in the private IT companies.

10. Assessment

Type of activity	10.1 Assessment criteria	10.2 Assessment methods	10.3 Share of final grade
Practical (lab.) ongoing evaluation (3 project modules) regarding the development of components for a BI app.prototype	Real-world application, complexity, validity and originality	**Face-to-face presentations at labs. 3, 5 and 7** (both apps' sources and short presentations available - other details at **8.2.3, 8.2.5** and **8.2.7**)	40% (3 * 13.33%)
Theoretical evaluation of presentations / reports / essays / articles (during lecture classes)	Format, validity of sources, consistent pro-or-cons arguments, controversial theme and originality of comments and conclusions	Theoretical presentations (.ppt/.pptx/.pdf) anounced at least one day before, and delivered by master students in real-time (presented and debated *during lecture classes*). ***The archives should be electronically sent via https://wetransfer.com/ (NOT e-mail with attach) at least one hour before, at:*** *daniel.homocianu@uaic.ro*	20%
Theoretical exam based on answers to questions	Solid theoretical knowledge of BI applied in real-world scenarios and own application prototype / solution	Final theoretical evaluation starting from at least 25 questions (survey/quiz)	40%

10.6 Minimum performance standard

- Design and implement a BI application prototype and use of an existing solution, including:
  - documentation.
  - dynamic and interactive user interface at least with:
    > Charts and grids and other controls triggering events changing the content of the first 2 (charts, etc.).
    > At least 2 different data sources to rely on.
    > At least 2 decision models used and corresponding code sequences/functions/methods to implement them.
    > At least one component to dynamically generate BI-like reports and exports (spreadsheet / office document / portable document format / screen capture and carto-diagrams / representations on maps).

- **The average grade for those three modules of practical ongoing evaluation must be at least 5**.
  Each such individual score from those three above is:
   <=10 when presenting the homework in time (corresponding week / another week in advance);
   <=9 when exceeding the deadline (another week with delay – 1 point down for each week late).
- **The grade for the theoretical exam (survey/quiz) should be at least 5**.
- **The final grade must be at least 5**.

Date of completion
09/13/2023

Date of aproval within
the department
09/27/2023

Course and lab coordinator
Assoc. Prof. Daniel HOMOCIANU,
PhD Habil.

Head of the CIES Department
Prof. Mircea ASANDULUI, PhD