COURSE OUTLINE

1. GENERAL

SCHOOL	APPLIED ECONOMIC AND SOCIAL SCIENCES		
ACADEMIC UNIT	AGRIBUSINESS AND SUPPLY CHAIN MANAGEMENT		
LEVEL OF STUDIES	*Undergraduate*		
COURSE CODE	**5805**	**SEMESTER**	8th
COURSE TITLE	BUSINESS INTELLIGENCE SYSTEMS (BI)		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	3	5
Laboratory exercises	2	

COURSE TYPE	Special Background
PREREQUISITE COURSES	NO
LANGUAGE OF INSTRUCTION and EXAMINATIONS	Greek
IS THE COURSE OFFERED for ERASMUS STUDENTS?	YES (in English)
COURSE WEBSITE (URL)	https://oeclass.aua.gr/eclass/

2. LEARNING OUTCOMES

Learning Outcomes

The aim of the course is:

The course aims to present the usefulness of business intelligence in modern enterprises to the students, and to familiarize them with the application of business intelligence methods and techniques that support problem solving.

Upon successful completion of the course, the student will be able to:

- explain the benefits from business intelligence systems utilization for the enterprise
- implement data warehouses and perform OLAP tasks
- apply methods and techniques of data visualization
- describe the intelligent decision support systems
- apply methods of data preprocessing and data mining
- explain the applications of recommendation systems and the categories of technologies that they use
- use specialized business intelligence software for problem solving

General Competences

Adapting to new situations

Decision-making

Working independently

Teamwork

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas Teamwork

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional, and ethical responsibility and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

3. SYLLABUS

1. Introduction to Business Intelligence: Business Intelligence definitions, architectures, benefits. Applications in Businesses
2. Business Intelligence and Data Warehouses: Procedures. Architectures. Data Integration.
3. Business Intelligence and Data Warehouses: Developing Data Warehouses. Data marts. OLAP and OLTP
4. Data visualization: Methods and techniques
5. Intelligent Decision Support Systems: Analytic Hierarchy Process (AHP). Fuzzy Analytic Hierarchy Process (FAHP). Expert systems. Neuronic Nets. Intelligent Agents. Genetic Algorithms
6. Data mining: Definition. Data mining in modern enterprises
7. Data mining: The procedure of extracting knowledge from data. Data preprocessing.
8. Methods of data mining: Classification. Clustering. Association rules
9. Recommendation systems
10. Data mining software (e.g. RapidMiner)
11. Business Intelligence Applications in supply chain (A)
12. Business Intelligence Applications in supply chain (B)
13. Business Intelligence project management

A combination of teaching and learning methods will be used, aiming at the active participation of the students and the practical application of the thematic units under examination; there will also be lectures using audiovisual media, discussions, and analyses of case studies on real business issues, experiential (group) activities, as well as projections of relevant videos. The students will also undertake an individual or group project. Furthermore, articles, audiovisual lecture materials, web links/addresses, useful information, case studies

and exercises for further practice are posted in digital form on the AUA Open e-Class platform.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY

Face -to-face, Distance learning

USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY

• Support of the learning process through the University's AUA Open eClass platform (integrated e-Course Management System)
• Support of lectures using presentation software
• Use of audiovisual material
• Use of web applications

Communication with students: face-to-face at office hours, email, eclass platform

TEACHING METHODS

Activity	*Workload*
Lectures (direct)	39
Laboratory Practice	26
Essay Writing	20
Autonomous study	36
Advisory Support	0,5
Examination	2
Laboratory Examination	2
Total (About 25 hours of study per ECTS)	***125,5***

STUDENT PERFORMANCE EVALUATION

The evaluation process is in the language that the course is taught (Greek or English) and consists of:

i. Compulsory written final examination at the end of the semester (weighting factor **70**% at least) which may includes:
   - Multiple choice questionnaires
   - Open-ended questions
   - Problem solving
   - Oral examination

   Evaluation criteria: correctness, completeness, clarity

ii. Optional written exam or essay during the semester (weighting factor 30%) which may includes:
   - Multiple choice questionnaires
   - Open-ended questions
   - Problem solving
   - Essay/report
   - Oral examination

   Evaluation criteria: correctness, completeness, clarity

Special learning difficulties:

	Students with **special learning difficulties** in writing and reading (as they are certified and characterized by a competent body) are examined based on the procedure provided by the Department. **Specifically-Defined Criteria:** The evaluation criteria are made known during the first lesson and are clearly stated on the course website and the AUA Open e-class platform. The answers to the exam questions are posted on the AUA Open e-Class platform after the exam. The students are allowed to see their exam paper after its grading (during the announced office hours) and receive explanations about the grade they received.

5. ATTACHED BIBLIOGRAPHY

Suggested Bibliography in Greek Language:

- Κύρκος, Ε. (2015). Επιχειρηματική Ευφυΐα & Εξόρυξη Δεδομένων, [ηλεκτρ. βιβλ.] Αθήνα: Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών. Διαθέσιμο στο:, http://www.kallipos.gr
- Μοχάμεντ, Ζ. Τζ. & Γουάγκνερ Μ. (2017). Εξόρυξη και Ανάλυση Δεδομένων, Βασικές Έννοιες και Αλγόριθμοι, Κλειδάριθμος
- Νανόπουλος, Α. & Μανωλόπουλος, Ι. (2010). Εισαγωγή στην Εξόρυξη και τις Αποθήκες Δεδομένων. Εκδόσεις Νέων Τεχνολογιών, Αθήνα.
- Σταλίδης, Γ. και Καρδαράς, Δ. (2015). Διαχείριση Δεδομένων και Επιχειρηματική Ευφυΐα, Θεωρία και εφαρμογές για Στελέχη επιχειρήσεων, [ηλεκτρ. βιβλ.] Αθήνα: Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών. Διαθέσιμο στο: http://hdl.handle.net/11419/1161
- Tan P. – N., Steinbach M., Kumar, V. (2010). Εισαγωγή στην εξόρυξη δεδομένων, Εκδόσεις Τζιόλα & Υιοί, Α.Ε.

Suggested Bibliography in English Language:

- Quaddus, M., & Woodside, A., (2015). Sustaining competitive advantage via Business Intelligence, Knowledge Management, and System Dynamics, Emerald Books, 1st edition
- Provost F. & Fowcett T. (2013). Data Science for Business, O' Reilly Media.
- Ramesh, S & Dursun, D., Turban, E. (2018). Business Intelligence, Analytics and Data Science A Managerial Perspective, 4rd edition, Pearson Education (US),

- Sabherwal, R., & Beccera – Fernandez, I. (2011). Business Intelligence Practices, Technologies and Management. John Wiley and Sons Inc.
- Vercellis, C. (2009). Business Intelligence: Data mining and optimization for decision making, John Wiley and sons

Related academic Journals:

- International Journal of Business Intelligence
- Business Intelligence Journal
- Data Mining and Knowledge Discovery
- Intelligent Data Analysis
- International Journal of Business Intelligence and Data Mining, Interscience Publishers
- International Journal of Data Warehousing and Mining

Instructor's Notes