

COURSE OUTLINE

(1)GENERAL

SCHOOL	School of Economics, Business and International Studies		
ACADEMIC UNIT	Department of Economics		
LEVEL OF STUDIES	Postgraduate		
COURSE CODE	ΕΔΟΠΣΕΜ01	SEMESTER	26
COURSE TITLE	INTRODUCTION TO DATA ANALYTICS FOR PUBLIC ORGANIZATIONS		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	CREDITS
		3	2
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	SPECIAL BACKGROUND		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/OEP533/		

(2)LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

Data Analytics is the field that provides the methods and tools for data analysis. Particularly in Public Administration, it is applied to simplify the processing and analysis of data, supporting any administrative and business decision-making. Data Analytics uses and combines data that can be collected from different sources and with the help of statistical computing methods and processing, creates graphs, extracts numerical results, data tables and dashboards, etc. which contribute to decision-making support.

This lesson unit has a practical orientation. Through exercises on real data sets obtained from public organizations, it aims to introduce students to the problems of Analytics and to provide basic skills in using the popular software Tableau (tableau.com).

After completing the course, students are expected to acquire knowledge and skills. They will be able to

- know the problems that Data Analytics solves
- know the methodology and stages of solving the problems that Data Analytics applies
- be able to operate and use the Tableau software in its basic functions
- be able to utilize the results of the analysis to reach conclusions that support administrative decisions

- solve data analysis problems by using data of the public sector.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Production of new research ideas</i>	<i>Others...</i>
	<i>.....</i>

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Decision-making
Adapting to new situations
Working independently
Team work

(3)SYLLABUS

The course is delivered in three weeks, as follows.

1st Week – INTRODUCTION TO BUSINESS DATA ANALYTICS, THE Tableau SOFTWARE

- *Introduction to Business Data Analytics and Big Data - necessity, purpose and the relevant software*
- *Presentation of the Tableau software, explanation of its operation*
- *Provision of instructions for obtaining access codes and using the software*
- *Familiarization, practical training in the basic functions of Tableau on a dataset of citizen applications for subsidy programs.*

2nd Week – DIAGNOSTIC ANALYTICS

- *Practical training in Tableau - Analysis of operating expenses of public organizations.*
- *Pivot tables, grouping of data*
- *Correlation of two variables, linear regression*

Week 3 – PREDICTIVE ANALYTICS

- *Practical training in Tableau – Analysis, trends and forecasting of prices of goods and public services*
- *Definition, characteristics (trend, seasonality, cyclicity) and visualization of historical data, examples*
- *Historical data regression models, trend line creation*
- *Forecast models application*

(4)TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Distance learning	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of Tableau Public (https://www.tableau.com/ , https://public.tableau.com/app/discover) as the basic software tool Use of the university's software (eclass.unipi.gr) for distributing class handouts, books etc and communication with students	
TEACHING METHODS The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc. The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS	Activity	Semester workload
	Classroom presentations	9
	Homework practise	9
	Homework study	9
	Case study preparation	15
	Course total	42
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other Specifically-defined evaluation criteria are given, and if and where they are accessible to students.	Students, organized in groups (two or three), are asked to carry out data analysis assignments. Both the description and the relevant data are provided through the course website. The final grade for each student derives exclusively (100%) from the submitted group assignment. All students in each group will receive the same grade. The evaluation criteria are announced to the students during the first lecture.	

(5)ATTACHED BIBLIOGRAPHY

- Suggested bibliography: - Visual Analytics with Tableau , Κωδικός Βιβλίου στον Εύδοξο: 91726016, Έκδοση: 1st ed./2019, Συγγραφείς: Loth, ISBN: 9781119561996, Διαθέτης (Εκδότης): HEAL-Link Wiley UBCM ebooks. Παρέχεται δωρεάν από το σύστημα ΕΥΔΟΞΟΣ, σύνδεσμος λήψης https://onlinelibrary.wiley.com/doi/book/10.1002/9781119561996 - Lecture handouts, presentations for each topic - Advancing Governance: Role of Data Analytics in Driving Evidence-Based Decision-Making in Public Administration. n book: Recent Advances in Public Sector Man-agement. January 2025, DOI: 10.5772/intechopen.114901 - The GOVERNMENT ANALYTICS Handbook, World Bank Group, https://www.worldbank.org/en/publication/government-analytics - The Power of Government Analytics to Improve Public Administration by Daniel Rogger and Christian Schuster, https://danrogger.com/files/handbook/MOTIVATION.pdf - Related academic journals: - Journal of Business Analytics, Taylor & Francis, https://www.tandfonline.com/journals/tjba20 - Public Administration, Wiley Online Library, https://onlinelibrary.wiley.com/page/journal/14679299/homepage/productinformation.html
