COURSE OUTLINE

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE UNIT CODE	ΤΕΕΠΑ01	**SEMESTER OF STUDY**	7th
COURSE TITLE	BUSINESS ANALYTICS		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures			5.5
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Special background		
PREREQUISITE COURSES:	None		
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

LEARNING OUTCOMES

The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:

APPENDIX A

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

Every product and service, but also every project, production process, business operation, consumer behavior, etc. generates an abundance of data. This data is a wealth of knowledge that is often completely untapped. Modern companies, having fully understood the value that this knowledge can give to an organization, are increasingly turning in the direction of collecting and exploiting the data they have at their disposal. This course provides through practical training (using MS Excel) the fundamental tools, methodologies and techniques for the preparation, enrichment, analysis and investigation of data, but also for predicting the future course of critical quantities. In this way, business analytics allows the timely diagnosis of trends and the recognition of opportunities, thus supporting project management as well as in general the making of operational and strategic decisions.

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

- Understand the potential of data analytics in business applications.
- Know the fundamentals of statistics and data analytics required for business analytics
- Use different data sources, including data sources for big data

- Create dynamic data analysis and presentation of results tools using MS Excel
- Familiarize with searching "open" datasets

General Competences

Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

- Search, analysis and synthesis of data and information, using the necessary technologies
- Adaptation to new situations
- Decision making
- Autonomous work
- Teamwork
- Work in an international environment (ERASMUS)
- Work in an interdisciplinary environment (ERASMUS)
- Generation of new research ideas
- Exercise criticism and self-criticism
- Demonstrate social, professional and ethical responsibility and sensitivity to gender issues
- Promotion of free, creative and inductive thinking

2. COURSE CONTENT

The course covers the following topics:

Week	Περιεχόμενα Μαθήματος
1	Introduction to Business Analytics
2	Basics - Data types, Tables and Formulas
3	Data analysis and report creation through Pivot Tables
4	Big Data and Data Source Management
5	Data Model Design, Power Query and Power Pivot
6	Descriptive Statistics, Quantitative and Categorical Datasets
7	Statistics of Location
8	Sampling
9	Covariance, Correlation and Linear Regression
10	Timeseries and Forecasting
11	Monte Carlo Simulation
12	Statistical Process Control via Control Charts
13	Revision

In addition, articles, audiovisual lecture material, web addresses, useful information and exercises are posted at eclass.

3. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing / Lab practice
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform

Use of ICT in Teaching, Laboratory Education, Communication with students	**Laboratory Education:** Use of open access software for laboratory exercises **Communication with students:** face-to-face or remote meetings at office hours, email, eclass
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	

Activity / Method	*Semester Workload*
Lectures	26
Laboratory	26
Project	35
Self-study of lecture material and exercises	48
Counselling	0.5
Exams (written)	2
Course Total	***137.5***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek **Assessment Methods:** After the last lecture, the exam material is posted at eclass. The final course grade is formed by: • By the project (30%) • By the written exams (20%) (multiple choice) taken in the examination period of the winter semester and, in case of failure, in the September resits • By the laboratory exams (50%) taken in the examination period of the winter semester and, in case of failure, in the September resits The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and e-class. The answers to the exam questions are posted at eclass after the exam date. Students have the opportunity to discuss their exam paper with the course instructor (at the posted office hours) after the announcement of the course grades.

4. SUGGESTED BIBLIOGRAPHY

-Lecture Notes
-Laboratory Notes