COURSE OUTLINE

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY
LEVEL OF STUDY	UNDERGRADUATE
COURSE UNIT CODE	ΤΕΜΑΘ06 **SEMESTER OF STUDY** 1st
COURSE TITLE	MATHEMATICS I

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**
Lecture and Laboratory Exercises		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*	General background
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT187/

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*

The main objective of the course is to familiarize students with the basic concepts of mathematics used in the other courses of the curriculum.

Upon successful completion of the course, the students will be able to:
- Solve algebra problems (tables, linear systems-defining, vectors, eigenvalues / eigenvectors)
- Solve probability problems (combinatorial, reserved probability, independent events)
- Demonstrate the skills necessary to attend other courses of the curriculum with a computing part
- Formulate and solve computing problems using the mathematical tools taught in the course

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Independent work
- Social, professional and ethical responsibility and sensitivity to gender issues

2. COURSE CONTENT

The course will cover the following topics:
- Linear algebra: Linear systems and matrices, Matrix algebra, Determinants, Vector geometry, Eigenvalues and eigenvectors
- Probability - Combinatorics: Introduction to Probability, Counting Rules, Conditional Probability, Independent Events

Students also attend a laboratory training program in the Laboratory of Production Management Information Systems in order to develop an intuitive and hands-on understanding of the concepts presented in the lectures. The software used is MS EXCEL or equivalent (Open Office, etc.).

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and software 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 / Laboratory teaching
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform **Laboratory Education:** Use of open access software for laboratory exercises **Communication with students:** face-to-face 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.*	**Activity / Method**	**Semester Workload**
	Lectures	52
	Laboratory exercises	26
	Self-study of lecture and lab material	57
	Counselling	0.5
	Exams (written)	2
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	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 the written exams (100%) taken in the examination period of the winter semester and, in case of failure, in the September resits. The written examination includes problem solving / exercises. It is conducted with closed books. 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

-Suggested Bibliography :
- Book [59387029]: Mathematics in Economics and Administrative Sciences [in Greek], E.C. Fountas
- Book [68395356]: Mathematical Models and Applications [in Greek], E.C. Fountas

-Scientific Journals: not applicable
-Lecture Notes