ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Α . Δ Ι . Π .
ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ & ΠΙΣΤΟΠΟΙΗΣΗΣ
ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΣΤΗΝ ΑΝΩΤΑΤΗ
ΕΚΠΑΙΔΕΥΣΗ

HELLENIC REPUBLIC
H .Q .A .
HELLENIC QUALITY ASSURANCE
AND ACCREDITATION AGENCY

ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ
ΜΟΝΑΔΑ ΔΙΑΣΦΑΛΙΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΕΙ ΑΜΘ

Quality Assurance in Higher Education
Course Data Collection Form

ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ
ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ & ΘΡΑΚΗΣ
ΑΓΙΟΣ ΛΟΥΚΑΣ,
65404 ΚΑΒΑΛΑ

EASTERN MACEDONIA AND THRACE
INSTITUTE OF TECHNOLOGY
AGIOS LOUKAS
65404 KAVALA

COURSE OUTLINE

1. GENERAL

SCHOOL	School of Technological Applications		
ACADEMIC UNIT	Department of Electrical Engineering		
DEGREE LEVEL	Undergraduate		
COURSE CODE	AN1	**SEMESTER**	1st
COURSE TITLE	MATHEMATICS I		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	6	9
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Base
Required passed courses:	-
TEACHING AND EXAMS LANGUAGE:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS:	No
COURSE WEBPAGE (URL)	http://eclass.teikav.edu.gr/ED188/

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*

The objective of the course is to teach students to define functions of one or more independent variables as well as define multiplex function and calculate its limit, define its continuity, calculate its derivative or partial derivative, study it and draw its graph. In addition, calculate indefinite, definite, improper and double integrals. Learn the basic concepts of imaginary numbers, gradual and vector fields. Furthermore, understand the basic concepts of tables and determinant as well as solve linear systems based on them. Finally, solve differential equations.

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

- Solve mathematic problems with limits, transforming the function so that the l' Hospital law can be applied.
- Calculate derivatives and integrals of various function forms.
- Compose the necessary equation and solve mathematic problems of Maximum – Minimum with the help of derivatives.
- Plot various graphs.
- Understand the concepts of imaginary numbers, gradual and vector.
- Know the basic concepts of tables and determinants so as to solve linear systems based on them.
- Solve differential equations.

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?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*

Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*......*
Production of new research ideas	*Others...*
	....

- Research, analysis and synthesis of data and information with the usage of the necessary technology.
- Autonomous work.
- Teamwork.
- Work in a scientific environment.
- Apply critisicm and self-critisicm.
- Promote of free, creative and inductive thinking.

3. COURSE CONTENT

I. Study of basic functions (rational, exponential, logarithmic, trigonometric etc.) and algebric applications of them.
II. Derivatives - Integrals.
III. Imaginary numbers functions.
IV. Three dimensions space (basics of surfaces, curves, etc.).
V. Partial derivatives. Multiple integrals.
VI. Matrices. Linear transformations.
VII. Functional sequences, series. Not original integrals.
VIII. Differential functions (Introductory – linear differential functions).
IX. Theory of gradual and vector fields.

4. TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING METHOD *Face-to-face, Distance learning, etc.*	Room Lecture
UTILISATIONS OF INFORMATION AND COMMUNICATION TECNOLOGIES *Use of ICT in teaching, laboratory education, communication with students*	Syllabus organization in PPT slides. Learning process support through e-class electronic Contact via email.

The manner and methods of teaching are described in detail.	*Acivity*	*Semester workload*
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.	Lectures	78
	Writing of small courseworks	
		28
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		
	Self-contained coursework	119
	Course Summary ***(25 workload per credit)***	225

STUDENT ASSESSMENT *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.*	Writing of small courseworks (10%). Exams (90%) consisting of mathematic problems from various units of the course (Note usage is not allowed).

5. RECCOMENDED READING

- Suggested bibliography:

- Related academic journals:

- Murray R. Spiegel, "Higher Mathematics" ESPI PUBLISHING Limited Liability Company, 1st edition 1982, ISBN: 978-960-7610-20-1
- Kartsaklis Anastasios "General Mathematics" publishing Dermentzis Pantelis, 1st edition 2005, ISBN: 960-91034-3-X
- Saltas Basilios, "Mathematics I theory and practice", publishing Kostogiannos Efthimios, 2nd edition 2012, ISBN: 978-960-543-190-4
- Bradley Teresa, «Mathematics for Economics and Management", edited by John Gerontidis, translation Gerontidis John, Karafilis Iason, Kritiki Publications, 1st edition 2014, ISBN: 978-960-218-933-7