COURSE DESCRIPTION

1. GENERAL

SCHOOL	MUSIC AND AUDIOVISUAL ARTS		
DEPARTMENT	AUDIO AND VISUAL ARTS		
LEVEL	Undergraduate		
COURSE CODE	TEC411	**SEMESTER**	4th
COURSE TITLE	Introduction to Computer Programming II		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lecture, Lab Lecture		4	7
COURSE CATEGORY	General Background		
COURSE TYPE	Elective		
PREREQUISITES	TEC110, (TEC311)		
LANGUAGE OF TEACHING and EXAMINATIONS	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES (In English)		
URL	https://avarts.ionio.gr/en/studies/undergraduate/courses-descriptions/tec411/		
ECLASS			

2. TEACHING RESULTS

Teaching Results

To familiarise students with the Matlab and Processing high-level programming languages so that they become conversant with computational problem solving, data visualisation and creative coding.

General Skills

- Seek, analyze and synthesize data
- Autonomous work
- Team work
- Project design and management
- Freedom of thought

3. CONTENT

An introductory course on the Matlab and Processing programming languages

1st Week Matlab: fundamentals, the programming environment, types of windows and their usage. Seeking help: the commands help and lookfor.
2nd Week Variables, accuracy, the format command, the commands who and whos. Reserved variable names.
3rd Week Array handling tools, initialization, basic operations, inversion.
4th Week Functional, complex and statistical operators. Handling of character strings.
5th Week Programme flow control, relational and logical operators, priorities. The commands if, switch, for.
6th Week 2-D graphics. Menu-driven presentation control. Multiple-trace graphics. Other commands.
7th Week 3-D graphics and presentation control tools.
8th Week Multimedia. Handling images and moving image sequences.
9th Week Processing: fundamentals the programming environment, types of windows and their usage.
10th Week Drawing simple geometric shapes, presentation control.
11th Week Drawing complex geometric shapes. Programme flow control fundamentals.
12th Week Interaction programming and associated tools.
13th Week Elements of object-oriented programming. Classes and objects. Constructors. Arrays and their incorporation to classes.

4. TEACHING AND LEARNING METHODS - EVALUATION

TEACHING METHOD	Lectures
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Enhanced by multimedia content. The learning process is supported by the asyncrhonous e-learning platform e-class.
TEACHING STRUCTURE	Activity — Semester Workload Lectures — 26 Lab Lectures — 26 Literature Study and Analysis — 80 Practice and Preparation — 43 **Course Total** (ECTS: 7) — **175**
EVALUATION OF STUDENTS	Written examination paper.

5. BIBLIOGRAPHY

(in Greek)

D. Hanselman, B. Littlefield, Μάθετε το Matlab 7
STORMY ATTAWAY, MATLAB: ΜΙΑ ΠΡΑΚΤΙΚΗ ΕΙΣΑΓΩΓΗ ΣΤΟΝ ΠΡΟΓΡΑΜΜΑΤΙΣΜΟ ΚΑΙ ΤΗΝ ΕΠΙΛΥΣΗ ΠΡΟΒΛΗΜΑΤΩΝ