

COURSE DESCRIPTION

1. GENERAL

SCHOOL	MUSIC AND AUDIOVISUAL ARTS		
DEPARTMENT	AUDIO AND VISUAL ARTS		
LEVEL	Undergraduate		
COURSE CODE	TEC411	SEMESTER	4 th
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
<ul style="list-style-type: none"> • Seek, analyze and synthesize data • Autonomous work • Team work • Project design and management • Freedom of thought

3. CONTENT

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

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 asynchronous e-learning platform e-class.												
TEACHING STRUCTURE	<table> <tr> <td>Activity</td> <td>Semester Workload</td> </tr> <tr> <td>Lectures</td> <td>26</td> </tr> <tr> <td>Lab Lectures</td> <td>26</td> </tr> <tr> <td>Literature Study and Analysis</td> <td>80</td> </tr> <tr> <td>Practice and Preparation</td> <td>43</td> </tr> <tr> <td>Course Total (ECTS: 7)</td> <td>175</td> </tr> </table>	Activity	Semester Workload	Lectures	26	Lab Lectures	26	Literature Study and Analysis	80	Practice and Preparation	43	Course Total (ECTS: 7)	175
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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