COURSE OUTLINE

1. GENERAL

SCHOOL:	Engineering		
ACADEMIC UNIT:	Industrial Design and Production Engineering		
LEVEL OF STUDIES:	Undergraduate		
COURSE CODE:	**1003**	**SEMESTER**	**1**
COURSE TITLE:	Computer Programming		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS CREDITS**
Theory (Lectures)	3	3
Laboratory	1	2
	4	**5**

COURSE TYPE:	General knowledge
PREREQUISITES COURSES:	No
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	https://eclass.uniwa.gr/courses/IDPE101/

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the course students will have:

1. Knowledge of the basic principles and concepts of informatics
2. Basic programming knowledge in Python
3. Basic knowledge of software applications

In detail, students will be able to:

1. Understand problems related to computer science
2. Design and solve computer problems.
3. Implement algorithms in Python language

General Competences

1. Search, analysis and synthesis of data and information, using the necessary technologies
2. Adaptation to new situations
3. Decision making
4. Production of new research ideas
5. 5. Promoting free, creative and inductive thinking

3. SYLLABUS

The course aims to introduce the world of computers. Hardware and software issues are examined, specifically the course includes the following:

- System software: Operating system basics, information system functions, memory and file management
- Application software: introduction to numerical systems, software management, open source and commercial software, software distribution models, software licensing operation.
- Hardware evaluation: description of CPU operation, machine cycle, memory system evaluation.
- Networking: introduction to network architecture, network components, internet connection.
- Introduction to algorithms
- Introduction to databases: description, advantages of database implementation software
- Introduction to programming in Python: the concept of variable, basic data types, operators, control structures, functions, visibility and range of variables, parameter passing, retrospective, tables, complex data types, dynamic memory, pointers, dynamic data structures , data files, basic Python components, libraries.

4. TEACHING and LEARNING METHODS – EVALUATION

<table>
<tr><td>DELIVERY</td><td>In-class face-to-face
• Lectures
• Practice exercises
• Laboratories
• Assignments & Presentations</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</td><td>• Use of ICTs in theoretical teaching and use of ICTs in lecturing
• Use of ICTs in laboratory-based training
• Use of ICTs for the communication with students via the e-class platform
• Specialised software tools for experimentation
• Support of the educational process via the e-class platform</td></tr>
<tr><td>TEACHING METHODS</td><td>
<table>
<tr><th>Method description / Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>39</td></tr>
<tr><td>Laboratory work</td><td>36</td></tr>
<tr><td>Non-guided personal study</td><td>75</td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td>Course Total (30h/ECTS)</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION</td><td>Language of Assessment
Greek</td></tr>
</table>

	Description Written exams, laboratory evaluation and project evaluation **Student assessment methods** • Written examination with short answer questions (Concluding) • Written exams with multiple choice questions (Concluding) • Written assignment (Formative) • Laboratory/project work (Formative) The final grade of the course consists of: • Final written examination in the entire theoretical content (80%), • Elaboration of laboratory-based work (20%). The assessment criteria are announced to students at the beginning of the semester and are published on the course webpage in the e-Class platform.

5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- *Python's book ,Nikolaos Samaras, Tsiplidis Konstantinos, Publications: Kritiki*
- *Hardware, Software and Computer Communications – 4th Edition Ioannis Vogiatzis, Era Antonopoulou.*
- *introduction to information technology, Alan Evans, Kendall Martin, Mary Anne Poatsy, Publications: Kritiki*
- *Discovering Computers: Tools, Applications, Devices and the Implications of Technology Vermaat Misty, Sebok susan, Freund Steven, Campbell Jennifer, Frydenberg Mark BROKEN HILL PUBLISHERS LTD*
- *Basic Principles in Informatics O'Leary Timothy J., O'Leary Linda I., O'Leary Daniel A. BROKEN HILL PUBLISHERS LTD*