COURSE OUTLINE

(1) GENERAL

SCHOOL	SOCIAL SCIENCES				
ACADEMIC UNIT	CULTURAL TECHNOLOGY AND COMMUNICATION				
LEVEL OF STUDIES	UNDERGRADUATE				
COURSE CODE	PLR 132	SEMESTER 2			
COURSE TITLE	ALGORITHMS AND DATA STRUCTURES				
INDEPENDENT TEACHING ACTIVITIES			WEEKLY TEACHING HOURS		CREDITS
Lectures			2		
Laboratory			2		
			4		6
COURSE TYPE	Core Course				
PREREQUISITE COURSES:	None				
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek				
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No				
COURSE WEBSITE (URL)	https://eclass.aegean.gr/courses/131367/				

(2) LEARNING OUTCOMES

Learning outcomes

After completing the courses, students will be able to:

- Develop an analytical and structured way of thinking necessary for programming in C.
 - Write programs in the C language.
 - Understand memory management mechanisms.
 - Recognize the necessity of segmenting a program into smaller parts, each of which performs a specific function.
 - Understand how a computer communicates with its peripheral devices, reads, and stores information.
 - Acquire the appropriate background to easily follow subsequent programming courses in languages such as C++ and Java.

General Competences

- Search, analysis, and synthesis of data and information, utilizing necessary technologies.
- Adaptation to new situations.
- Autonomous work.
- Teamwork.
- Promotion of free, creative, and inductive thinking.

(3) SYLLABUS

This course focuses on developing algorithms using the principles of structured procedural programming. The C language was chosen as the most characteristic language for teaching both structured programming and basic data structures. C also serves as the foundation for more modern object-oriented programming languages such as C++, Java, and C#. The course covers the C programming language, including its syntax: variables, constants, expressions, basic data types, statements, operators. Input/output operations. Control flow statements. Loops, Functions, Pointers, Arrays, Structures, Communication channels, and file management.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face			
USE OF INFORMATION AND	Use of ICT in Teaching, in Communication with Students.			
COMMUNICATIONS TECHNOLOGY	Utilization of LMS E-Class & Moodle.			
TEACHING METHODS	Activity	Semester workload		
	Lectured 13 *2 H=26 H			
	Lecture study 13*5 H = 65 H			
	Laboratory Exercises 13*2 = 26 H			
	Preparation of laboratory 33 H			
	exercises and delivery tasks			
	during the semester.			
	Total	150 H		
STUDENT PERFORMANCE EVALUATION	The final exam includes problem-solving and short-answer questions. It contributes 70% to the final grade of the course.			
	Mid-semester progress assessment contributes 30% to the final grade of the course.			
	Additionally, several optional assignments are given during the semester, which are based on both the theoretical and laboratory parts of the course and are counted positively towards the student's final grade.			
	Evaluation criteria are communicated during the first class and are clearly stated in the material provided on the course's e-class platform.			

(5) ATTACHED BIBLIOGRAPHY

- CHATZIGIANNAKIS M. NIKOS, "C in depth" 5th edition, KLEIDARITHMOS, 2017, Greek
- ERIC S. ROBERTS, "The Art and Science of C " Addison-Wesley, KLEIDARITHMOS 2004, (Greek translation)