Course Title	**Discrete Mathematics**				
Course Code	**CSM104**				
Course Type	**Compulsory**				
Level	BSc/1st Cycle				
Year / Semester	1st /1st				
Teacher's Name	Pavlos Evangelides				
ECTS	5	**Lectures / week**	3 hours	**Laboratories / week**	-
Course Purpose and Objectives	This lesson provides a good knowledge of the basic principles of mathematical calculus, which is a powerful mathematical tool in engineering and science.				
Learning Outcomes	This course aims to introduce students to graph theory and computational theory. They also learn basic computer models (finite automata and Turing machines), what is an algorithm, and how the complexity of an algorithm that solves a problem is calculated. Finally, students are introduced into categorizing problems based on their solvability and the complexity of the algorithm that solves them.				
Prerequisites	-	**Required**		-	
Course Content	Definitions of various graph models. Set top, edge, and path in a graph. Graph consistency and permeability, capable of having Hamiltonian circuits, the problem of the traveling vendor. Find the shortest path. Trees. Kuratowski's theorem and applications. Coloring graph Defining a computational problem. Decision problems. Standard languages and methods of matching a decision problem to a one-language string. Basic computer models: Finite automatic and Turing machines. Complexity of algorithms. Problem categorization (solution and complexity of algorithms).				
Teaching Methodology	Lectures 42 hours				

Bibliography	Elements of Discrete Mathematics, C. L. Liu, McGraw Hill Computer Science Series. Introduction to the theory of computation, Michael Sipser, Cengage Learning.
Assessment	Final Exam 100%
Language	English