Module Layout
COS624 / Topics in Data Science

Faculty	*ΣΘΕΕ*	*Faculty of Pure and Applied Science*		
Programme of Study	*COS*	*M.Sc. in Cognitive Systems*		
Module	*COS624*	*Topics in Data Science*		
Level of Study	**Undergraduate**	**Graduate**		
		Master	**Doctoral**	
		x		
Language of Instruction	English			
Mode of Delivery	Distance			
Module Type	**Required**	**Electives**		
		x		
Number of Group Consulting Meetings	***Total***	***Physical Presence***	***Online***	
	12 + 1 revision	-	12 + 1 revision	
Number of Assignments	1 Assignment / Project and 12 Interactive Activities			
Final Grade Calculation	**Interactive Activities**	**Assignment / Project**	**Final Exam**	
	24 **%**	*26* **%**	*50* **%**	
Number of European Credit Transfer System (ECTS)	*10*			

Module Description

The broad availability of data in every aspect of life has created an unprecedented interest in methods for extracting useful information and knowledge from data, which is the realm of Data Science. Data Science is a very hot and very active subject in the curricula of both graduate and undergraduate studies in Universities and Colleges throughout the world. Even though it is not a genuinely new domain of study per se, just recently acquired a new potential to rejuvenate and homogenize some more traditional domains of study with roots in intelligence, cognition and learning like Data Mining, Machine Learning, Knowledge Discovery in Databases, Pattern Recognition etc. In this course, we will delve into the foundations and principles that underlie the techniques for extracting useful knowledge from data and we will illustrate each of these concepts with one or more data mining techniques that embodies these principles. One of the primary goals of this module is to help the students view real life problems from a data perspective and learn to apply a data analytic way in solving these problems systematically. This data analytic thinking will enable prospective data science professionals to develop intuition as to how and where to apply creativity and domain knowledge to the analysis of relevant problems. Hands on knowledge and experience will be acquired in this course through the exposure to various programming assignments and projects.

Pre-requisite Modules

Co-requisite Modules

Grading Scheme

Assessment Method	***Percentage on Final Grade***	***Workload***	
		Hours	***ECTS***
Interactive Activities	*24* **%**	*25-30*	*1*
Assignment / Project	*26* **%**	*50-50*	*2*
Final/Repeat Examination	*50* **%**	*3*	-
Total	**100%**	***Total***	***Total***

Grading Rules and Assessment methods

- Passing rate
  - 50% of the Interactive Activities
  - 50% of the Assignment / Project
  - Students are allowed to participate in the final exam of a Module if they have overall earned the minimum grade (≥ 50 %) in both their Assignment / Project and Interactive Activities
  - 50% of the Final Exam

If a student earns a grade with decimal points, then it is rounded to the nearest half unit.