INSTITUTION	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS					
SCHOOL	SCHOOL OF SCIENCE					
DEPARTMENT	INFORMATICS AND TELECOMMUNICATIONS					
COURSE LEVEL	GRADUATE					
COURSE TITLE	**Big Data Management**					
COURSE CODE	**C24**		**Semester**	**SPRING**	**ECTS**	6
TEACHING HOURS per week	**THEORY**	4	**SEMINAR.**		**LABORATORY**	
URL	https://eclass.uoa.gr/courses/DI508/					

COURSE CONTENT
This class is looking into recent topics around the principles and systems of Big Data Management and Data Science. We will be discussing topics such as: the Map-Reduce programming models and systems such as Hadoop, HBase using Hive/Pig. The HDFS storage file system. The Spark and Tensorflow platforms. Message-passing and stream processing systems (e.g., Kafka and Samza). Key value stores. Similar object detection (similarity search, locality sensitive hashing). Large-scale link analysis techniques (PageRank, Hubs & Authorities). Clustering. Recommender Systems. Computational Advertising. The class is structured around the presentation of recent research topics in these areas as well as practical implementation of several of the topics in the class. Students will be gaining hands-on experience on real Big Data systems, services, and applications through a set of exercises and labs.

STUDENT LEARNING OBJECTIVES
Teaching-Learning Goals-Expected Learning Outcomes Upon successful completion of the course the student will be able to: • Use different tools and technologies for Big Data Management • Define, distinguish, and develop efficient algorithms for managing large amounts of data • Design, develop and evaluate big data management systems • Design and develop big data applications

TEACHING AND LEARNING METHODS - ASSESSMENT	
TEACHING METHOD	In Class (Face to Face)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process supported by the e-class platform (Discussions, Announcements, Task assignments, Student groups) Email communication Utilization of Specialized Software
TEACHING ORGANIZATION *Describe in detail the way and methods of teaching:* *Enhanced Lectures,* *Online Lectures,* *Seminars,* *Tutorial,* *Laboratory,*	Lectures are delivered through slide presentations. Projects are being discussed through Piazza and/or eClass. **Activity** | ***Student Workload*** *(hours)*

Laboratory Exercise,
Study & analysis of literature,
Practice (Positioning),
Interactive teaching,
Developing a project,
Individual / group work
Telework (reference to tools) etc.

Details of the student's study hours for each learning activity and hours of non-guided study are shown to ensure that the total workload at the semester corresponds to the ECTS

Lectures	52
Projects (3-4)	86
Independent Study	12
Total Course	***150***

ASSESSMENT OF STUDENTS

Description of the assessment process

Assessment Methods, Formative or Concluding, Multiple Choice Test, Quick Response Questions, Test Development Questions, Problem Solving, Written Work, Report / Report, Oral Examination, Public Presentation, Laboratory Work, Other / Other

Fully defined evaluation criteria are mentioned and if and where they are accessible to students.

Students are being evaluated through a written exam and projects. The written exam covers the theoretical part of the delivered material, while the projects cover the programming part of the class. The projects are evaluated through an oral exam/presentation.

Assessment methods	***Number***	***Percentage***
Written examination	1	50%
Projects	3-4	50%

LITERATURE AND STUDY MATERIALS / READING LIST

Class material is based upon latest research papers in Big Data Management.