

Course Unit	Data Mining & Big Data	Field of study	Computer Sciences
	Post-Graduation in Digital Marketing	School	School of Public Management, Communication and Tourism
Academic Year	2022/2023	Year of study	1
Type	Semestral	Semester	1
Workload (hours)	27	Contact hours	T - TP - PL - TC - S - E - OT - O -
		Level	ECTS credits 1.0
		Code	5068-787-1106-00-22

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Arlindo Costa dos Santos

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Characterize the challenges of processing and analysing large volumes of data
2. Apply frameworks for data processing
3. Know and apply dimensionality reduction techniques in data sets
4. Know and apply sampling techniques
5. Know and apply techniques for data manipulation in streaming
6. Know and apply large-scale data mining algorithms
7. Assess the quality of the models produced and of the results obtained in the data mining tasks
8. Interpret existing solutions for data mining in different domains

Prerequisites

Not applicable

Course contents

Concept of big data
Challenges in data management.
Knowledge discovery process
Online and offline data mining software

Course contents (extended version)

1. Concept of big data
2. Challenges in data management.
3. Knowledge discovery process
4. Online and offline data mining software

Recommended reading

1. Handbook of Big Data Technologies, Albert Y. Zomaya, Sherif Sakr, Springer 2017, ISBN: 978-3319493398.
2. Mining of Massive Datasets, Jure Leskovec, Anand Rajaraman and Jeffrey D. Ullman, Cambridge Univ. Press 2014, 2nd edition, ISBN: 978-1107015357
3. Data Mining: Practical Machine Learning Tools and Techniques, Ian H. Witten, Eibe Frank, Mark A. Hall, Morgan Kaufmann Publishers 2016, 4th edition, ISBN: 978-0128042915

Teaching and learning methods

Assessment methods

- Final - (Regular, Student Worker) (Final, Supplementary, Special)
- Experimental Work - 100% (Exploration of a data mining tool)

Language of instruction

Portuguese

Electronic validation

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07-07-2023	10-07-2023	10-07-2023