ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

103000854 - Cloud Computing And Big Data Ecosystems Design

DEGREE PROGRAMME

10AZ - Master Universitario En Innovación Digital

ACADEMIC YEAR & SEMESTER

2021/22 - Semester 1

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Learning guide

1. Description

1.1. Subject details

Name of the subject	103000854 - Cloud Computing And Big Data Ecosystems Design
No of credits	4.5 ECTS
Type	Optional
Academic year ot the programme	First year
Semester of tuition	Semester 1
Tuition period	September-January
Tuition languages	English
Degree programme	10AZ - Master Universitario en Innovación Digital
Centre	10 - Escuela Tecnica Superior De Ingenieros Informaticos
Academic year	2021-22

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Ainhoa Azqueta Alzuaz		ainhoa.azqueta@upm.es	Sin horario. Please, send an email to set the date and time
Tonghong Li	2312	tonghong.li@upm.es	M - 14:00 - 16:00 W - 14:00 - 16:00 Th - 14:00 - 16:00 Please, send an email to set the date and time

Marta Patiño Martinez (Subject coordinator)	2313	marta.patino@upm.es	Tu - 12:00 - 14:00 Th - 10:00 - 12:00 Th - 14:00 - 15:00 Please, send an email to set the date and time

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

3. Prior knowledge recommended to take the subject

3.1. Recommended (passed) subjects

The subject - recommended (passed), are not defined.

3.2. Other recommended learning outcomes

- Java programming, concurrent programming, databases

4. Skills and learning outcomes *

4.1. Skills to be learned

CE-CD05 - Capacidad para usar herramientas de procesamiento de big data tanto en online como en modo batch

CE-CD06 - Capacidad para extraer, integrar y consultar datos heterogéneos en diferentes escenarios

CG06 - Capacidad para gestionar la información.

4.2. Learning outcomes

RA35 - Ser capaz de procesar datos masivos.

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

5. Brief description of the subject and syllabus

5.1. Brief description of the subject

This course presents the trade-offs of traditiional data managemen systems their main properties and architectures for scalable distributed systems and data management systems: bigtable, data streaming, persistent queues

5.2. Syllabus

1. Introduction
2. Data management technologies
3. Data Streaming
4. HBase
5. Big Table. Dynamo

6. Schedule

6.1. Subject schedule*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Distant / On-line	Assessment activities
1	**Introducción** Duration: 02:00		**Introducción** Duration: 02:00	
2	**Tema 1** Duration: 02:00		**Introducción** Duration: 02:00	
3	**Tema 1** Duration: 02:00		**Introducción** Duration: 02:00	
4	**Tema 1** Duration: 02:00		**Introducción** Duration: 02:00	
5	**Tema 2** Duration: 02:00		**Introducción** Duration: 02:00	
6	**Tema 2** Duration: 02:00		**Introducción** Duration: 02:00	
7	**Tema 3** Duration: 02:00		**Introducción** Duration: 02:00	
8	**Tema 3** Duration: 02:00		**Introducción** Duration: 02:00	
9	**Tema 4** Duration: 02:00		**Introducción** Duration: 02:00	
10	**Tema 4** Duration: 02:00		**Introducción** Duration: 02:00	
11	**Tema 5** Duration: 02:00		**Introducción** Duration: 02:00	
12	**Tema 5** Duration: 02:00		**Introducción** Duration: 02:00	
13	**Tema 6** Duration: 02:00		**Introducción** Duration: 02:00	
14	**Tema 6** Duration: 02:00		**Introducción** Duration: 02:00	

15				**Practical assignament** Final examination Presential Duration: 15:00 **Practical assignment** Continuous assessment Presential Duration: 10:00
16				
17				**Exam** Continuous assessment and final examination Presential Duration: 03:00

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

* The schedule is based on an a priori planning of the subject; it might be modified during the academic year, especially considering the COVID19 evolution.

7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Continuous assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
15	Practical assignment		Face-to-face	10:00	40%	5 / 10	CG06 CE-CD05 CE-CD06
17	Exam		Face-to-face	03:00	60%	4 / 10	CG06 CE-CD05 CE-CD06

7.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
15	Practical assignament		Face-to-face	15:00	40%	5 / 10	CE-CD06 CG06 CE-CD05
17	Exam		Face-to-face	03:00	60%	4 / 10	CG06 CE-CD05 CE-CD06

7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Assignament		Face-to-face	10:00	40%	5 / 10	
Exam		Face-to-face	03:00	60%	4 / 10	

7.2. Assessment criteria

Assignments 40%

Exam 60%

8. Teaching resources

8.1. Teaching resources for the subject

Name	Type	Notes
Bibliografía	Bibliography	NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence. P. Sadalage, M. Fowler. 2012.
Libro	Bibliography	Big Data Now: Current Perspectives from O'Reilly Radar. O?Reilly. 2011
libro2	Bibliography	Graph Databases. I. Robinson, J. Webber, E. Eifrem. O?Really. 2013
Presentations	Bibliography	Presentations
Papers	Bibliography	List of papers to be provided