

# ANX-PR/CL/001-01

## LEARNING GUIDE

### SUBJECT

**103000832 - Cloud Computing And Big Data Ecosystems Design**

### DEGREE PROGRAMME

10AX - Master Universitario Innovación Digital Ciencia de Datos Itinerario Health

### ACADEMIC YEAR & SEMESTER

2020/21 - Semester 1

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## 1. Description

### 1.1. Subject details

<b>Name of the subject</b>	103000832 - Cloud Computing And Big Data Ecosystems Design
<b>No of credits</b>	4.5 ECTS
<b>Type</b>	Optional
<b>Academic year of the programme</b>	First year
<b>Semester of tuition</b>	Semester 1
<b>Tuition period</b>	September-January
<b>Tuition languages</b>	English
<b>Degree programme</b>	10AX - Master Universitario Innovación Digital Ciencia de Datos Itinerario Health
<b>Centre</b>	10 - Escuela Tecnica Superior de Ingenieros Informaticos
<b>Academic year</b>	2020-21

## 2. Faculty

### 2.1. Faculty members with subject teaching role

<b>Name and surname</b>	<b>Office/Room</b>	<b>Email</b>	<b>Tutoring hours *</b>
Tonghong Li	2312	tonghong.li@upm.es	M - 14:00 - 16:00 W - 14:00 - 16:00 Th - 14:00 - 16:00
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 in order to minimize waiting time

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

## 2.2. Research assistants

Name and surname	Email	Faculty member in charge
Azqueta Alzúaz, Ainhoa	ainhoa.azqueta@upm.es	Patiño Martinez, Marta

## 3. Prior knowledge recommended to take the subject

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### 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 \*

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### 4.1. Skills to be learned

CB07 - Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio

## 4.2. Learning outcomes

RA4 - 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

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### 5.1. Brief description of the subject

This course presents architectures for scalable distributed systems and data management systems: map-reduce, 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	<b>Introducción</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
2	<b>Tema 1</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
3	<b>Tema 1</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
4	<b>Tema 1</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
5	<b>Tema 2</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
6	<b>Tema 2</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
7	<b>Tema 3</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
8	<b>Tema 3</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
9	<b>Tema 4</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
10	<b>Tema 4</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
11	<b>Tema 5</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
12	<b>Tema 5</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
13	<b>Tema 6</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	
14	<b>Tema 6</b> Duration: 02:00		<b>Introducción</b> Duration: 02:00	

15				<b>Practical assignment</b>  Final examination Presential Duration: 15:00  <b>Practical assignment</b>  Continuous assessment Presential Duration: 10:00
16				
17				<b>Exam</b>  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	CB07
17	Exam		Face-to-face	03:00	60%	4 / 10	CB07

#### 7.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
15	Practical assignment		Face-to-face	15:00	40%	5 / 10	CB07
17	Exam		Face-to-face	03:00	60%	4 / 10	CB07

#### 7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Assignment		Face-to-face	10:00	40%	5 / 10	CB07
Exam		Face-to-face	03:00	60%	4 / 10	CB07

### 7.2. Assessment criteria

Assignments 40%

Exam 60%



## 8. Teaching resources

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### 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'Reilly. 2013
Presentations	Bibliography	Presentations
Papers	Bibliography	List of papers to be provided