



POLITÉCNICA

INTERNATIONAL
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COORDINATION PROCESS OF
LEARNING ACTIVITIES
PR/CL/001



E.T.S. de Ingenieros
Informáticos

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

2020/21 - Semester 1

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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 of 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	2020-21

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Tonghong Li	2312	tonghong.li@upm.es	M - 14:00 - 16:00 W - 14:00 - 16:00 Th - 14:00 - 16:00
Marta Patiño Martínez (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

* 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

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

CB08 - Que los estudiantes sean capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios

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 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	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	Tema 6 Duration: 02:00		Introducción Duration: 02:00	Practical assignment 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	CB08
17	Exam		Face-to-face	03:00	60%	4 / 10	CB08

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	CB08
17	Exam		Face-to-face	03:00	60%	4 / 10	CB08

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	CB08
Exam		Face-to-face	03:00	60%	4 / 10	CB08

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