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LEARNING GUIDE

DATA-DRIVEN SERVICES

MÁSTER EN INGENIERÍA DE TELECOMUNICACIÓN

ACADEMIC YEAR	CODE	COURSE	CREDITS	TYPE	SEMESTER
2026-27	93001374	1	5 ECTS	COMPULSORY	FIRST SEMESTER
LANGUAGE	ASSIGNED CENTER				
ENGLISH, SPANISH	E.T.S. DE INGENIEROS DE TELECOMUNICACION				
ASSIGNED DEPARTMENT					
INGENIERÍA DE SISTEMAS TELEMÁTICOS					

COORDINATOR
JUAN CARLOS DUEÑAS LÓPEZ - juancarlos.duenas@upm.es

REQUIRED PREREQUISITES

REQUIRED COURSES

RECOMMENDED PRIOR KNOWLEDGE

RECOMMENDED COURSES

OTHER RECOMMENDATIONS

RESULTS

RD-822/2021

Skills

HE8 Capacidad de comprender y saber aplicar el funcionamiento y organización de Internet, las tecnologías y protocolos de Internet de nueva generación, los modelos de componentes, software intermediario y servicios

Competences

CE7 Capacidad para realizar la planificación, toma de decisiones y empaquetamiento de redes, servicios y aplicaciones considerando la calidad de servicio, los costes directos y de operación, el plan de implantación, supervisión, los procedimientos de seguridad, el escalado y el mantenimiento, así como gestionar y asegurar la calidad en el proceso de desarrollo

CE6 Capacidad para modelar, diseñar, implantar, gestionar, operar, administrar y mantener redes, servicios y contenidos

CT1 Capacidad para comprender los contenidos de documentación en lengua inglesa

DESCRIPTION

The subject aims to teach students the main types of techniques related to the development and operation of data-based services, and their context of use in the business field, which includes economic, strategic, technical and technological elements, presented throughout the subject through a single case study.

TOPICS

1. Services and data management
2. Services development methods
3. Systems and services architectures
4. Information and data management systems
5. Services engineering and operation



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6. Data explotation -operations intelligence

ACTIVITIES

Assessment activity Learning activity

 Lectures			WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E														
FORMAT	TOTAL DURATION	LOCATION	GROUP														
In-person	24h 00m	Classroom (scheduled)	Normal														
TOPICS																	
T1 T2 T3 T4 T5 T6																	
METHODOLOGY																	
Project-based learning Laboratory assignments Lecture																	

 Practical training 1-6			WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E														
FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE												
In-person	24h 00m	Laboratory	Progressive	10%	0 Non-rec.												
RECOVERABLE		JUSTIFICATION															
No		Additional points to the final mark.															
TOPICS																	
T1 T2 T3 T4 T5 T6																	
METHODOLOGY																	
Work in group																	
ASSESSED OUTCOMES																	
CE6 CT1 HE8 CE7																	

	First part exam		WEEKS														
	123456789101112131415E																
FORMAT In-person		TOTAL DURATION 02h 00m	LOCATION Exam Classroom	ASSESSMENT Progressive	WEIGHT 50%	MINIMUM GRADE 4											
TOPICS T1T2T3																	
METHODOLOGY Written exam																	
ASSESSED OUTCOMES CE7HE8CT1CE6																	

	Second part exam		WEEKS														
	123456789101112131415E																
FORMAT In-person		TOTAL DURATION 02h 00m	LOCATION Exam Classroom	ASSESSMENT Progressive	WEIGHT 50%	MINIMUM GRADE 4											
TOPICS T4T5T6																	
METHODOLOGY Written exam																	
ASSESSED OUTCOMES CE7HE8CT1CE6																	

	Final exam		WEEKS														
	123456789101112131415E																
FORMAT In-person		TOTAL DURATION 04h 00m	LOCATION Exam Classroom	ASSESSMENT Global	WEIGHT 100%	MINIMUM GRADE 5											
TOPICS T1T2T3T4T5T6																	
METHODOLOGY Written exam																	
ASSESSED OUTCOMES CE7HE8CT1CE6																	



Extra final exam

WEEKS
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 **E**

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In-person	04h 00m	Exam Classroom	Retake (Extraordinary)	100%	5

TOPICS

T1 T2 T3 T4 T5 T6

METHODOLOGY

Written exam

ASSESSED OUTCOMES

CE7 HE8 CT1 CE6

WEEKLY SCHEDULE

 Assessment activity
  Learning activity
  Week with activity
 E Exam period

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	E
 Lectures	•	•	•	•	•	•	•		•	•	•	•	•			
 Practical training 1-6	•	•	•	•	•	•	•		•	•	•	•	•			
 First part exam								•								
 Second part exam														•		
 Final exam																•
 Extra final exam																•

ASSESSMENT CRITERIA

General criteria

The assessment will measure the degree of achievement of the competencies.

Assessment criteria for the regular exam period. Progressive assessment

Assessment criteria

Additional graded activities will only be added to your corresponding exam grade if you achieve or exceed 4.0/10.0 on that exam.

Activities

- Practical training 1-6 (10%)
- First part exam (50%)
- Second part exam (50%)

Assessment criteria for the regular exam period. Global assessment

Assessment criteria

Single test by written exam.

Activities

- Final exam (100%)

Assessment criteria for the retake (extraordinary) exam period

Assessment criteria

Single test by written exam.

Activities

- Extra final exam (100%)

RESOURCES

Web

Moodle de la asignatura en la parte de titulaciones oficiales UPM.

SUSTAINABLE DEVELOPMENT GOALS



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Quality Education



Industry, Innovation and
Infrastructure