COURSE DATA

DATA SUBJECT

Code: 44825
Name: Server-Side Programming
Cycle: Master's Degree
ECTS Credits: 4
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
2234 - Master's Degree in Web Technology, Cloud Computing and Mobile Applications	Escola Tècnica Superior d'Enginyeria	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2234 - Master's Degree in Web Technology, Cloud Computing and Mobile Applications	Server-Side Development	COMPULSORY

COORDINATION

PEÑA ORTIZ RAÚL

SUMMARY

This subject explores two major frameworks for web development: JavaEE and Django. It begins with JavaEE enterprise application development, covering foundational concepts like servlets, modern APIs, scalability through messaging (e.g., RabbitMQ), and real-time communication via WebSockets. It then shifts to Django, focusing on building monolithic web apps, unit testing, RESTful API development, secure authentication (token-based), and real-time features with
WebSockets. These topics cover the evolution of web technologies, emphasizing scalability, security, and real-time capabilities in both ecosystems.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

COMPETENCES / LEARNING OUTCOMES

2234 - Master's Degree in Web Technology, Cloud Computing and Mobile Applications

Ability to apply acquired knowledge and solve problems in new or little-known environments within broader and multidisciplinary contexts, being able to integrate this knowledge.

Ability to design, develop and maintain Web applications using technologies and frameworks both in the client and in the server sides.

Ability to design and evaluate servers, applications and systems based on distributed computing.

Ability to model, design, define the architecture, implement, manage, operate, and maintain applications, systems, services, networks and content in the field of Web technologies, cloud computing and mobile applications.

Ability to understand and apply the operation and organization of component models, intermediary software and services.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

To foster, in academic and professional contexts, technological, social or cultural advancement within a society based on In knowledge and respect for: a) fundamental rights and equal opportunities between men and women; b) principles of equal opportunities and universal accessibility of persons with disabilities; and, c) the values of a culture of peace and democratic values.

DESCRIPTION OF CONTENTS

1. **Enterprise application development with JavaEE**
    1. Introduction to Web applications.
    2. The Web container: Servlets.
    3. From servlets to current APIs.

4. Scaling up with messaging: RabbitMQ.
5. WebSockets

2. **Web development with Django**
    1. Developing monolithic web applications with Django.
    2. Unit testing in Django.
    3. API REST development with Django.
    4. Token-based authentication in Django.
    5. WebSockets with Django

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	28,90
Laboratory	11,10
Total hours	**40,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	6,00
Independent study and work	35,00
Preparation of lessons	16,00
Preparation for assessment activities	3,00
Resolution of case studies	0,00
Total hours	**60,00**

TEACHING METHODOLOGY

- Theory class
- Problem resolution
- Project-oriented learning

EVALUATION

The assesment modalities used in this subject are:

SE1: Online assessment and/or degree of participation
SE2: Assessment of problems, works, reports and/or memories
SE4: Exam or face-to-face assessment

SE6: Assessment of laboratory

- First call:
In the first call the note will be obtained as follows:

SE1*0.1+SE2*0.3+SE6*0.3+SE4*0.3

- Second call:

The works/reports/memories/code not passed in the first call can be presented.

The weights will be:

SE2*0.3+SE6*0.3+SE4*0.4

The grading system is specified at the following link:

http://www.uv.es/uvweb/universidad/es/estudios-postgrado/informacion-administrativa-postgrado/permanencia-calificaciones/calificaciones-1285897761928.html

The applicable regulations can be found at the following link:

http://www.uv.es/uvweb/universidad/es/estudios-grado/informacion-academica-administrativa/normativas/normativas-universidad-valencia-1285850677111.html

REFERENCES

- https://javaee.github.io/tutorial/toc.html
- Learning RabbitMQ; Martin Toshev (trobes.uv.es)
- Servlet and JSP : a beginner's tutorial; Budi Kurniawan (disponible en trobes.uv.es)
- Tutoriales J2SE http://docs.oracle.com/javase/tutorial/
- Django Project: https://www.djangoproject.com