COURSE DATA

DATA SUBJECT

Code: 34895
Name: Web applications development
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1403 - Degree in Telematics Engineering	Escola Tècnica Superior d'Enginyeria	3	Second quarter
1935 - Double Degree Program in Mathematics-Telematics Engineering	Facultat de Ciències Matemàtiques	4	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1403 - Degree in Telematics Engineering	Information systems	COMPULSORY
1935 - Double Degree Program in Mathematics-Telematics Engineering	Cuarto curso	COMPULSORY

COORDINATION

SAMPER ZAPATER JOSE JAVIER

SUMMARY

The course "**Development of Web Applications**" belongs to the third year of the Degree in Telematics Engineering, which covers part of the compulsory subject *Information Systems*.

This course constitutes the application of the knowledge and skills acquired in the course "*Informatics II*", concerning to the algorithms and data structures concepts, in complex systems related to distributed environments and the client-server architecture. The basic lines of the course is structured around hypermedia systems and programming of dynamic Web environments and a brief introduction to the SOA architecture. The aim is to provide a broad overview of the many development solutions for Web applications. Specifically, through this course we will address the programming languages used on both the client side (HTML5, CSS, Javascript) and server side (Servlets, JSP, PHP).

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

It is recommended to have studied all the previous subjects in the fields of computer science and Programming and the subject Data Base and Information Systems.

COMPETENCES / LEARNING OUTCOMES

1403 - Degree in Telematics Engineering

E3 - Ability to construct, operate and manage telematic services using analytical tools for planning, dimensioning and analysis.

E4 - Ability to describe, program, validate and optimize communication protocols and interfaces at different levels of a network architecture.

E6 - Ability to design networks and telematic services architectures.

E7 - Ability to programme networked and distributed telematic services and applications.

G4 - Ability to solve problems with initiative, decision-making and creativity, and to communicate and transmit knowledge, abilities and skills, understanding the ethical and professional responsibility of the activity of a telecommunications technical engineer.

DESCRIPTION OF CONTENTS

1. Fundamentals of Web

Web components: URI, HTML, HTTP.
Web Container vs Aplications Container
Web applications. N-tier models.
HTTP protocol

2. Programming Languages in the client side

HTML5

CSS: Cascading Style Sheets.
Javascript.

3. Programming Languages in the server side (I)

Introduction to distributed programming.
Differences regarding the desktop applications (sessions)
Models based on programming: CGIs and Servlets

4. Programming Languages in the server side (II)

Models based on templates: PHP and JSP.
Model View Controller (MVC). Frameworks.
Introduction to the SOA architecture

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	30,00
Laboratory	20,00
Classroom practices	10,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	20,00
Independent study and work	0,00
Preparation of lessons	55,00
Preparation for assessment activities	15,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

During the on-site basis theoretical activities, the main topics of the course will be shown by providing a global and inclusive vision, analyzing in detail the key and more complex issues, encouraging at all times the students participation. These activities are complemented by practical activities in order to apply the basic concepts and to expand the knowledge and experience that is acquired during the performance of

the proposed work. The on-site activities comprise the following:

• Problem-based lectures and questions in the classroom (Comp: G4,E4,E6,E7)

• Sessions devoted to moderated discussions, and the resolution of problems and exercises that the students have previously worked (Comp: G4, E4,E6,E7)

• Laboratory-based practical exercises (Comp: G4,E3, E4,E6,E7)

In addition to on-site activities, students must perform personal tasks (outside the classroom), including: monographs, guided literature research, questions and problems as well as the preparation of classes and exams (study). (Comp: G4,E3, E4,E6,E7). These tasks will be primarily conducted on an individual basis, thus enabling to enhance self-employment. Additionally, works requiring the participation of small groups of students (2-4) will be proposed to promote the students capacity for integration into working groups.

The University of Valencia e-learning platform (*Aula Virtual*) will be used to support the communication with students. Through this platform the studens will have access to course materials used in class as well as the problems and exercises to solve.

EVALUATION

The knowledge acquired by the student can be evaluated in the following two ways:

- Continuous evaluation system (First call)
- Single evaluation system (Second call)

Continuous evaluation system (First call):

The evaluation of the course will be carried out by:

- Continuous assessment (N_Continua), based on participation and degree of involvement in the teaching-learning process, taking into account regular attendance at planned face-to-face

activities and the resolution of questions, proposed problems and work. Completion of an exam or partial knowledge test that will consist of both practical questions and problems taught up to the moment of taking the exam.

- Evaluation of the practical activities (N_Practices) based on the achievement of objectives in the laboratory sessions and the preparation of work, reports and projects. The projects are individual and oral presentations will be held to defend and explain the projects carried out, evaluating the student's ability to transmit knowledge.

Final Score= 35% × N_Continuous + 65% × N_Practices

The continuous evaluation is distributed among the following items:

- Attendance: 5%
- Participation: 5%
- Activities throughout the course and exam (same weight both parts): 25%

It will be necessary to obtain a minimum grade of 5 in the sections of N_Continua and N_Practices in order to pass the course.

Attendance at laboratory sessions is mandatory. Those students who do not attend at least 80% of the laboratory sessions will have their practices suspended on first call. In addition, in the two calls, in each of the three practices, the minimum grade of 5 must be achieved in order to pass the laboratory part.

Those students who have a continuous grade from previous courses will be exempt from submitting tasks in the current course, although they may realize the partial exam of the subject. But in the case in which they make the exam or hand in any of the tasks, they will appear as presented with the corresponding grade.

Single Assessment System (Second call)

This method is applied to any student who has not passed the evaluation in the first call.
Those parts not passed must be evaluated, keeping those approved in the first call (continuous evaluation or laboratory). The continuous evaluation note will correspond to the one obtained throughout the course (first call).

- If the laboratory part was suspended in the first call, then there would be an evaluation of the practical activities (N_Practices) presenting the improved project individually or for the first time if it was not presented.

Final Score = 35% × N_Continua + 65% × N_Practices

- If it were the continuous evaluation part, then an individual objective test (N_Examen) will be carried out, consisting of an exam or knowledge test, which will consist of both theoretical-practical questions and problems of the contents taught throughout the course. grade.

Final Score = 10% × N_Continua + 40% × N_Practices x 50% N_Exam

It will be necessary to obtain a minimum grade of 5 in the sections N_Practices and N_Exam in order to pass the subject.

In both evaluation systems, the evaluation of the course will be done in accordance with the Regulation of evaluation and qualification of the University of Valencia for the undergraduate and master degrees approved by the Governing Council of May 30, 2017 (**ACGUV 108/2017**).

Copying or plagiarism of any activity that is part of the evaluation will result in the impossibility of passing the course, and the student will then be subject to the appropriate disciplinary procedures indicated in the ACTION PROTOCOL FOR FRAUDULENT PRACTICES AT THE UNIVERSITY OF VALENCIA. (ACGUV 123/2020).

REFERENCES

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- Budi Kurniawan, Servlet & JSP: A Tutorial. ISBN: 1-7719-7027-8, 978-1-7719-7027-3, 2015
- Carr, David, Beginning PHP. ISBN: 1-78953-590-5, 978-1-78953-590-7, 2018.
- HTML, CSS, Javascript recursos, https://www.w3schools.com/
- Javascript 1.2. http://www.programacion.net/html/tutorial/js/

- Servlets (Básico). http://www.programacion.net/java/tutorial/servlets_basico/
- Servlets y JSP. http://www.programacion.net/java/tutorial/servlets_jsp/
- Introducción a los Servicios Web en Java. http://www.programacion.net/java/tutorial/servic_web/
- HTML5 and JavaScript Projects, Meyer, Jeanine. ISBN: 1-4842-3863-X, 978-1-4842-3863-9, 2018
- Pro HTML5 Games, Shankar, Aditya Ravi, ISBN: 1-4842-2909-6, 978-1-4842-2909-5, 2017