COURSE DATA

DATA SUBJECT

Code: 34677
Name: Web applications developement
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1400 - Degree in Computer Engineering	Escola Tècnica Superior d'Enginyeria	3	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1400 - Degree in Computer Engineering	Information systems and intelligent systems	COMPULSORY

COORDINATION

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SUMMARY

The course "**Development of Web Applications**" is a subject of the third year of the Degree of Computer Engineering, which covers part of the compulsory subject *Information Systems and Intelligent Systems*.

This course constitutes a natural evolution of the knowledge and skills acquired in the course "*Human-Computer Interaction*" concerning the development of desktop applications. The course is thus devoted to more 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 (PHP, servlets, JSP) .

s, JSP) .

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, Computing and Data Bases (2nd year)

COMPETENCES / LEARNING OUTCOMES

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G4 - Ability to define, evaluate and select hardware and software platforms for the development and implementation of computer systems, services and applications, in accordance with both the knowledge and the specific skills acquired in the degree.

G5 - Ability to design, develop and maintain computer systems, services and applications using software engineering methods as an instrument for quality assurance, in accordance with both the knowledge and the specific skills acquired in the degree.

G6 - Ability to design and develop computer systems and centralised or distributed computer architectures which integrate hardware, software and networks, in accordance with both the knowledge and the specific skills acquired in the degree.

R11 - Knowledge and application of the features, functionalities and structure of distributed systems, computer networks and Internet, and ability to design and implement applications based on them.

R1 - Ability to design, develop, select and evaluate computer applications and systems while ensuring their reliability, safety and quality, according to ethical principles and current legislation and regulations.

R4 - Ability to draw up the technical specifications of a computer system, according to standards and regulations.

R8 - Ability to analyse, design, build and maintain applications in a robust, secure and efficient manner by choosing the most suitable paradigm and programming languages.

TI2 - Ability to select, design, implement, integrate, evaluate, build, manage, exploit and maintain hardware, software and network technologies, within adequate cost and quality thresholds.

TI6 - Ability to design systems, applications and services based on network technologies, including the Internet, the web, e-commerce, multimedia, interactive services and mobile computing.

DESCRIPTION OF CONTENTS

1. Fundamentals of Web

Web components: Using the standards 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

• Sessions devoted to moderated discussions, and the resolution of problems and exercises that the students have previously worked

• Laboratory-based practical exercises

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). These tasks will be primarily conducted on an individual basis, thus enabling to enhance self-employment.

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

Students can choose between two different assessments:

- Continuous assessment system (First Call)

- Overall system (Second Call)

Continuous assessment system (First Call)

The evaluation of the course is conducted by the aggregation of the following elements:

- Continuous assessment (N_Continua), based on the students participation and their degree of involvement in the teaching-learning process, taking into account the regular attendance to onsite activities and the resolution of questions and problems, and the development of the works proposed to be delivered. Delay in turning in problems and works proposed will have a 50% penalty on that problem or work.

- Assessment of practical activities (N_Practicas,) from the achievement of objectives in the laboratory and problems sessions, and the preparation of reports. Individually Oral presentations will be also part of this evaluation elements in order to evaluate the students capacity for creating documents and transfering knowledge. Delay in turning projects will be penalized with a decrease in the final assessment of that projects of 10% for each of the required points. The maximum penalty will be 50%.

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

Continuous assessment is distributed among the following items:

- Attendance 5%

- Participation 5%

- Activities throughout the course 25%

It will be necessary, at least, to obtain a 5 in N_Continua and N_Practicas to have the possibility to pass the course.

Attendance to laboratory sessions is mandatory. Students who do not attend at least a 80% of the laboratory sessions will not pass the practices evaluation in first call.

Overall System (Second Call)

This method is applicable to any student who did not pass the subject in first call.

The evaluation of the course is conducted by the aggregation of the following elements:

- Continuous assessment (N_Continua), based on the students participation and their degree of involvement in the teaching-learning process, taking into account the regular attendance to onsite activities and the resolution of questions and problems, and the development of the works proposed to be delivered. Delay in turning in problems and works proposed will have a 50% penalty on that problem or work.

- Assessment of practical activities (N_Practicas,) from the achievement of objectives in the laboratory and problems sessions, and the preparation of reports. Individually Oral presentations will be also part of this evaluation elements in order to evaluate the students capacity for creating documents and transfering knowledge. Delay in turning projects will be penalized with a decrease in the final assessment of that projects of 10% for each of the required points. The maximum penalty will be 50%.

- Individual objective test (N_Examen), consisting of an exams, or knowledge test, which consist of both theoretical/practical questions and problems.

Final Score = 20% × N_Continua + 50% × N_Prácticas x 30% N_Examen

It will be necessary, at least, to obtain a 5 in N_Practicas and N_Examen to have the possibility to pass the course.

In both cases, the evaluation of this subject will be done in compliance with the University Regulations in this regard, approved by the Governing Council on 30th May 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

- David Gourley & Brian Totty. HTTP. The Definitive Guide. ISBN-10: 1-56592-509-2, ISBN-13: 978-1-56592-509-0. Editorial: O¿Reilly. 2002
- Collings, Matk J. Pro HTML5 with CSS, Javascript, and Multimedia. ISBN: 1-4842-2462-0, 978-1-4842-2462-5. 2018
- 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.