VNIVERSITAT DE VALÈNCIA

Course Guide
44826 Distributed Component-Based and Service-Based Development

COURSE DATA

Data Subject	
Code	44826
Name	Distributed Component-Based and Service-Based Development
Cycle	Master's degree
ECTS Credits	4.0
Academic year	2019 - 2020

Study (s)

Degree	Center	Acad. year	Period
2234 - M.D. in Web Technology, Cloud Computing and Mobile Apps	School of Engineering	1	Second term

Subject-matter

Degree	Subject-matter	Character
2234 - M.D. in Web Technology, Cloud Computing and Mobile Apps	2 - Server-Side Development	Obligatory

Coordination

Name	Department
GRIMALDO MORENO, FRANCISCO	240 - Computer Science

SUMMARY

English version is not available

Esta asignatura introducirá al alumno en el paradigma del desarrollo de aplicaciones web basadas en la integración de componentes distribuidos y servicios. Esta aproximación, que hace especial hincapié en la reutilización del código, persigue definir e implementar sistemas web como resultado de la agregación de componentes independientes y débilmente acoplados, lo que permite acelerar y optimizar los procesos de desarrollo del software. Para ello, se dará una visión de las principales plataformas y marcos de desarrollo orientados a componentes en el entorno web, las tecnologías disponibles y sus campos de aplicación.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

To successfully complete this course, it is recommended that students know the basic technologies for the development of web applications, both from the client and from the server side.

OUTCOMES

2234 - M.D. in Web Technology, Cloud Computing and Mobile Apps

- 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.
- 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.
- 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.
- 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.

- Ability to design and evaluate servers, applications and systems based on distributed computing.
- Ability to design, develop and maintain Web applications using technologies and frameworks both in the client and in the server sides.

LEARNING OUTCOMES

- Specify and complete computer tasks that are complex, incompletely defined or unfamiliar
- Describe and explain techniques and methods applicable to their particular area of study and identify their limitations
- Organize your own work independently, demonstrating initiative and exercising personal responsibility
- Perform bibliographic searches and reviews using databases and other sources of information
- Learning and improving personal performance as the basis for lifelong learning and professional development
- Communicate effectively both verbally and through other media to a variety of audiences and preferably in a second language
- Design and develop applications combining different technologies
- Design and develop distributed web computing architectures based on remote procedure calls.
- Design and develop distributed web computing architectures based on message oriented systems.
- Design and develop applications using frameworks on the server side
- Design and develop Web services
- Design and develop Rest services

DESCRIPTION OF CONTENTS

1. Frameworks for the development of Web applications: JavaEE and Spring

2. Development of Web applications based on distributed components using EJBs

3. Development of loosely coupled Web applications using JMS

4. Service and microservices oriented arquitectures

5. Web Services

6. RESTful Web services

WORKLOAD

ACTIVITY	Hours	% To be attended
Theoretical and practical classes	40,00	100
Development of group work	6,00	0
Study and independent work	35,00	0
Preparation of practical classes and problem	16,00	0
Resolution of online questionnaires	3,00	0
TOTAL	**100,00**	

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:

Final grade = 0,1*SE1 + 0,3*SE2 + 0,2*SE4 + 0,4*SE6

- Second call:

Final grade = 0,1*SE1 + 0,3*SE2 + 0,2*SE4 + 0,4*SE6

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

Basic

- Beginning Spring Boot 2: Applications and Microservices with the Spring Framework. K. Siva Prasad Reddy (http://dx.doi.org/10.1007/978-1-4842-2931-6)
- Spring 5 Recipes: A Problem-Solution Approach. Marten Deinum, Daniel Rubio, Josh Long (http://dx.doi.org/10.1007/978-1-4842-2790-9)
- Java EE 8 cookbook: build reliable applications with the most robust and mature technology for enterprise development. Elder Moraes (http://proquest.safaribooksonline.com/?uiCode=valencia&xmlId=9781788293037)
- Java EE 8 Recipes: A Problem-Solution Approach. Josh Juneau (http://dx.doi.org/10.1007/978-1-4842-3594-2)

Additional

- Java Platform, Enterprise Edition (Java EE) Official site. http://www.oracle.com/technetwork/java/javaee/overview/index.html
- Spring Framework Official site. http://www.spring.io

- Pro Spring 5: An In-Depth Guide to the Spring Framework and Its Tools. Iuliana Cosmina, Rob Harrop, Chris Schaefer, Clarence Ho (http://dx.doi.org/10.1007/978-1-4842-2808-1)
- Architecting modern Java EE applications : designing lightweight, business-oriented enterprise applications in the age of cloud, containers, and Java EE 8. Sebastian Daschner (http://proquest.safaribooksonline.com/?uiCode=valencia&xmlId=9781788393850)

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

1.Contents

The contents of the subject will not be modified.

2.Volume of work and teaching scheduling

Since students can work autonomously and collaboratively through the tools provided, the dedication in hours by ECTS is not modified.

3.Teaching methodology

The University of Valencia (UV) has made available to teachers and students different tools for synchronous videoconferencing. In this subject, the Blackboard Collaborate tool has been chosen.

This tool allows the creation of channels in which it can be grouped in pairs. In this way, each couple has a private space that allows them to:

- Make video conferences without interfering with other couples
- Share documents
- Raise doubts

The UV has a Virtual Classroom that is used by all the teachers of the master. On this platform is the class material, the delivery of practical tasks and a forum for the resolution of doubts in a collaborative and asynchronous way.

During class hours the teacher will connect to the videoconferencing tool and may choose to:

- Solve doubts
- Instruct the students to view a video with the material that would be worked on in the corresponding classroom.
- Hold a workshop synchronously
- Explain the practice to be developed and let the students work autonomously solving any doubts that may arise.

The objective is that in the hours of class of the subject almost the same tasks are carried out that would be carried out in the equivalent face-to-face class.

The tutorials will be done by email and through the Teams tool.

4.Assessment

The activities and their weight in the evaluation are indicated below:

- Practical bulletins of exercises (code, scripts and memories): 40%
- Active participation during the sessions of the subject: 10%
- Final work (code, scripts, memory and presentation): 50%

These criteria will be valid for both calls.

5. Bibliography

The recommended bibliography is available online so it is not modified.