

Course Presentation

SJK005 – Cloud computing

University Master's Degree in Intelligent Systems

University Jaume I

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About me

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Introduction

Cloud computing is currently one of the most demanded technologies in the labour market by companies that want to transition to Industry 4.0.

Companies are adopting Cloud computing due to the high flexibility and scalability of the solutions deployed in the Cloud, that depend on pay-per-use/traffic/data volume.

Competences and learning outcomes

1. Apply the methodology and develop applications for Cloud Computing.
2. Describe what Cloud Computing is, and identify the best cloud solution (private, public, hybrid) for each situation. Work out how to deploy a public/private Cloud Computing solution. List and describe the different services offered in Cloud Computing.
3. Describe what container technology is. Deploy containers using appropriate infrastructure. Create applications that are deployed in a container.
4. Describe what container orchestration is. Solve container orchestration using the right technology.
5. Use/deploy containers intended for use with tasks related to Big Data.
6. Use/deploy containers intended for use with tasks related to Artificial Intelligence and Machine Learning.

Competences and learning outcomes

Theory (15 h.)

1. What is Cloud Computing?
2. Applications for Cloud Computing.
3. Containers and their orchestration
4. Cloud Computing Big Data, Artificial Intelligence and Machine Learning.

Teaching methodology: Exposition of theoretical concepts, with demonstrative examples of the different concepts introduced.

Training activities: Exercises proposed on the theoretical concepts presented. The exercises will be solved during the theory sessions.

Competences and learning outcomes

Seminars (5 h.)

1. Container technologies.
2. Artificial Intelligence and Machine Learning in public and private Cloud.

Teaching methodology: Students will be asked to reflect, expose the results of the reflections, and debate on the techniques and tools introduced in the theory sessions.

Formative activities: Different activities will be proposed to be solved individually or in groups, depending on the specific activity.

Competences and learning outcomes

Laboratory (30 h.):

1. Application development for Cloud Computing.
2. Containers and their orchestration.
3. Development of Cloud Computing applications for Big Data, Artificial Intelligence and Machine Learning.

Teaching methodology: Students will perform a series of activities to put into practice the theoretical concepts presented in the theory.

Teaching activities: Students will develop computer projects that will be deployed in private and/or public networks.

Competences and learning outcomes

Laboratory (30 h.):

Teaching methodology: Students will perform a series of activities to put into practice the theoretical concepts presented in the theory.

Teaching activities: Students will develop computer projects that will be deployed in private and/or public networks.

- Each project group 4 students.
- You propose the objectives of your project!!!

Learning assessment

Project: 80% of the final mark.

Reports and memoranda of practical: 20% of the final mark.

Students will hand in a report with the work done in each of the seminars of the course (10%). In addition, they will also hand in reports of the work done in internships (10%). Students will develop, as a group, a project during the internship sessions (60%), which must be presented in the last internship session (20%).

Students must achieve 5 points out of 10 in each of the tests in which the grade is divided to pass the course.

The final grade will be obtained as the average, with weights, of each of the grades obtained in the different tests.

If a student does not reach a minimum of 5 points in any of the tests, he/she may retake the test to reach the 5 points.

Learning assessment

Learning assessment	Percentage on final mark	Minimum mark
Seminar 1	5%	5
Seminar 2	5%	5
Project report	10%	5
Project	60%	5
Project presentation	20%	5

Final thoughts

- Try to join people with different profiles in your working group.
- Experiment with all tools that we are going to see.
- Enjoy the course and enjoy it with your classmates.
- Be pro-active. No questions is wrong.
- Share your knowledge with your classmates.

Any question?