

30245 - Software Architecture

Syllabus Information

Academic year: 2023/24

Subject: 30245 - Software Architecture

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 439 - Bachelor's Degree in Informatics Engineering

ECTS: 6.0

Year: 3

Semester: Second semester

Subject type:

Module:

1. General information

The subject "Software Architecture" builds on the knowledge acquired in the subject "Software Engineering" and provides students with techniques and patterns for the construction of medium, large and very large software systems . It is a compulsory subject within the "Software Engineering" specialization.

These approaches and objectives are aligned with Goal 9 of the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement.

2. Learning results

- Know how to design software architectures based on components, frameworks and factories.
- Know how to make software designs with a wide range of patterns.
- Know how to identify the most common antipatterns in a software design.
- Know how to design and document the architecture of a software system, from different points of view and levels of abstraction.
- Know the basic techniques of MDA and applies them in object-oriented design.

3. Syllabus

- Introduction to software architecture
- Software architecture documentation
 - Module View; Component and Connector View. Distribution View
 - Interface documentation
- Architectural patterns
 - Layered architectures
 - Client/Server
 - Broker
 - Publication-subscription
 - MVC
 - Microservices
- Antipatterns

4. Academic activities

Lectures: 24 hours

Theoretical sessions in which the contents of the subject will be explained

Problems and cases: 10 hours

Discussion and interpretation of design patterns

Laboratory practices and software development: 18 hours

Advanced software development

Teaching assignments: 15 hours

Presentation and discussion with the professor of the exercises, works and practices developed

Personal study and team software development: 77 hours

Assessment tests. 6 hours

5. Assessment system

The subject will be assessed in the **global** assessment modality by means of the following activities:

- **Intermediate tests** (60% of the grade, minimum 5 out of 10). They will consist of exercises and evaluable teaching assignments individually or in groups and individual theoretical-practical written tests.

- **Practical laboratory development** (40% of the grade, minimum 5 out of 10). Software development will take the form of work and/or practices to be developed in teams.

If the student has not passed any of these activities during the semester, they will have the opportunity to pass the subject by means of a global test in the two official exam calls.