Universidad Zaragoza

**Year : 2019/20**

# 30245 - Software Architecture

## Syllabus Information

**Academic Year:** 2019/20
**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

### 1.1.Aims of the course

### 1.2.Context and importance of this course in the degree

### 1.3.Recommendations to take this course

## 2.Learning goals

### 2.1.Competences

### 2.2.Learning goals

### 2.3.Importance of learning goals

## 3.Assessment (1st and 2nd call)

### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

## 4.Methodology, learning tasks, syllabus and resources

### 4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as Study and work from the very first day. Lectures will be focussed on learning concepts and techniques for designing software architectures. The role of the student will be prominent both in teaching classes and in problem-solving classes. The latter will focus on applying the theory to solve complex design problems. The workgroup will be guided to reach the development of a medium-sized software with a special focus on documenting the architecture.

### 4.2.Learning tasks

The course includes the following learning tasks:

- Lectures will develop the Program of the course.
- Problem-solving classes will be focussed on design problems.
- The students will develop a course project for developing and documenting the architecture of the software.

### 4.3.Syllabus

The course will address the following topics:

- Introduction to Software Architecture

- Documenting Software Architecture
    *Module View. Component and Connector View. Deployment View. Documenting Interfaces
- Architectural Patterns
    - MVC
    - Pipe and Filter
    - Shared Data
    - Publish-subscribe
    - Client/Server
    - Broker
    - Microkernel
    - Adaptive Architectures

## 4.4.Course planning and calendar

**Calendar**

- Problems and Theory (2 hours per week).
- Assessment of workgroups. 30 minutes per group and week.

**Students work**
150 hours as follows:
30 hours for theory and problems classes
90 hours workgroup (including 7 hours of professor assessment)
25 hours of individual work and study
5 hours for evaluation.

## 4.5.Bibliography and recommended resources

http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=30245&Identificador=14710

[BB: Bibliografía básica / BC: Bibliografía complementaria]


- [BB] Documenting Software Architectures: Views and Beyond / Paul Clements...[et al.]. - 2nd ed. Addison-Wesley Professional, 2010
- [BB] Pattern-Oriented Software Architecture. A System of Patterns / Frank Buschmann...[et al.] John Wiley & Sons, 1996
- [BB] Web Services / Gustavo Alonso ... [et al.] Springer, 2004