UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Software Architecture

2627-2-F1802Q112

Aims

The course has the following specific learning objectives:

- Knowledge and understanding (DdD 1): Understand software design principles, key architectural patterns and models, and methods for documenting system architecture.
- Applying knowledge and understanding (DdD 2):Be able to apply architectural principles and models to develop reusable and flexible software systems, and to document their structure using appropriate notations and tools.

Contents

Software architecture models. Component-based systems. Architectures design at different abstraction levels.

Detailed program

- Why architecture is important, Undestanding quality attributes
- Interfaces
- Virtualization, Cloud, Mobile Systems
- Architecturally Significant Requirements
- Designing an Architecture
- Evaluating an Architecture
- The Role of Architects in Projects
- Architecture Competence, Overview on Documenting an Architecture
- Managing Architecture Debt

- Design of an architectural solution for a simplified case study

Prerequisites

General knowledge and expertise about programming, object-oriented design, software engineering, operating systems, and distributed systems.

Teaching form

Lectures and practical activities by means of in-depth studies and carrying out a practical project.
The in-class lectures follow the "modalità erogativa" and "modalità interattiva" modes.
The course will be given in Italian.

Textbook and teaching resource

Articles and resources will be indicated.

Software Architecture in Practice 4° Edition (14 october 2021), SEI Series in Software Engineering by Len Bass, Paul Clements, Rick Kazman. ISBN-10: 0136886094

[suggested] Engineering Software Products by Ian Sommerville. ISBN-10: 013521064-X

Semester

First semester.

Assessment method

The final evaluation will be based on a discussion on:
- the in-depth study assigned
- a document summarizing the architectural specification of the developed project

Evaluation criteria used: quality of the presentation and knowledge of the topic in the first part; quality of the solution proposed in the second part.

Office hours

On appointment.

Sustainable Development Goals