UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Software Architecture

2223-2-F1801Q150

Aims

How to apply design principles, patterns, and architectures to create reusable and flexible software systems. How to document the system architecture. Software architectures of the new generation of systems.

Contents

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

Detailed program

- Definition and overview of software architecture
- The architecture business cycle
- Understanding and achieving quality attributes
- Architecture design using patterns and tactics
- Documenting software architecture
- Evaluating software architecture
- Architecture in the Cloud
- 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

Lessons and classroom presentations and discussion of projects and in-depth studies carried out by the students.

The course will be given in Italian.

During covid-19 emergency, the lectures and recitations will be both online and recorded.

Textbook and teaching resource

Articles and resources will be indicated.

[suggested] Software Architecture in Practice (3rd Edition) (SEI Series in Software Engineering) 3rd Edition by Len Bass, Paul Clements, Rick Kazman. ISBN-10: 0321815734

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

Semester

First semester.

Assessment method

The final evaluation will be based on:
- the presentation of the in-depth study assigned, presented and discussed in the classroom.
- a document summarizing the architectural specification of the project presented and discussed in the classroom.

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