UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Analisi e Progettazione del Software

2223-2-E3101Q109

Aims

The student will achieve the skills necessary to develop software projects of medium/large dimensions. In particular the student will be able to analyze a problem, write a requirement specification, analyze and design a solution, implement a component of the analyzed system exploiting the development environment and versioning system introduced in the course.

Contents

The main aim of this course is to introduce the software development process, concentrating in particular on the object-oriented analysis and design phases. Another aim is to introduce some Design Patterns.

Detailed program

1. Introduction to Software Engineering and the Software Development Process. Agile development processes.
2. Analysis of requirements and specification of use cases
3. OO-Analysis and Design and use of GRASP patterns
4. UML Diagrams
5. Design Patterns
6. Laboratory activities on the use of environments for the development and control of versions
7. Introduction to test driven development.
8. Introdction to Code Refactoring and Code Smell in the Code.

Prerequisites

Knowledge on an object-oriented language like Java.

Teaching form

The lessons of the course are in italian, with some slides and papers to study in English.

Lessons, laboratory sessions, classroom exercises, laboratory exercises and homework

The lessons will be taken in presence.

Textbook and teaching resource

Larman, Applicare UML e i pattern – analisi e progettazione orientata agli oggetti, Pearson, 5° ed, 2020.

I. Sommerville, Ingegneria del Software, Pearson, 10° ed, 2017. (solo due capitoli).

M. Fowler, UML Distilled, Peason, 4° ed, 2018.

Slide, articles and tutorials on some topics of the course.

Semester

Second semester

Assessment method

Learning assessment consists of a written online exam with exercises, questions on all the program of the course and then a mandatory oral exam.

The assessment for the students following the course consists in an extension of a project assigned during the Laboratory activity and a mandatory oral exam.

Exercises assigned during Lab.

Office hours

Francesca Arcelli Fontana: by appointment.

Oliviero Riganelli by appointment.

Sustainable Development Goals