



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Automated analysis of software and models

2122-87R-01

Title

Automated Analysis of Software and Models

Teacher(s)

Braione Pietro and Giovanni Denaro

Language

English

Short description

The course will survey the methods and tool for specifying and analyzing models of software-based systems and their actual implementations. It will present the relevant literature about:

- Languages to express models of software-based systems;
- Languages to express properties of interests of models and software implementation;
- Algorithms to decide whether a model or a software implementation has a property of interest.

The course will be hands-on, i.e., it will be grounded on actual tools available for academic use. Theory will be alternated with a set of practice exercise sessions based on relevant examples, that will allow the students to gain confidence with the presented tools for the analysis of models and programs.

Topics

1. Software analysis 1: symbolic execution (Braione)
2. Software analysis 2: dataflow analysis (Denaro)
3. Model specification and analysis 1: relational models (Braione)
4. Model specification and analysis 2: model checking (Denaro)
5. Topic to be decided in agreement with students (software analysis 3 or model specification and analysis 3) (Braione)

CFU / Hours

2.5 CFU / 20 hours

Teaching period

June/July 2022
