

# Formal verification of computer systems

**Lecturer**

Jean-François RASKIN (Coordinator)

**Course mnemonic**

INFO-F412

**ECTS credits**

5 credits

**Language(s) of instruction**

English

**Course period**

Second term

**Campus**

Plaine

## Course content

Kripke Structures and Labeled Transition Systems, Temporal logics, omega-automata, mu-calculus, Model Checking, Symbolic and efficient Model Checking, Specification Languages and Formal Description Techniques, Testing, Program Verification by Invariant Technique.

## Objectives (and/or specific learning outcomes)

Study of the techniques and existing tools to formally specify and verify critical systems.

## Pre-requisites and co-requisites

### Course having this one as co-requisite

INFO-Y099 | Multicore programming | 6 crédits

## Teaching method and learning activities

Ex-cathedra course and practical works.

## References, bibliography and recommended reading

- > Model Checking - Clarke, E., O. Grumberg et D. Peled, Mit Press, 1999.
- Principles of Model-Checking. C. Baier and J.P. Katoen. Mit Press, 2006.

## Other information

### Place(s) of teaching

Plaine

### Contact(s)

Prof. Jean-François Raskin

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## Evaluation method(s)

Other and Oral examination

### Evaluation method(s) (additional information)

Oral exam.

### Main language(s) of evaluation

English

## Programmes

### Programmes proposing this course at the faculty of Sciences

MA-INFO | **Master in Computer science** | finalité Professional/unit 1 and finalité Professional/unit 2

### Programmes proposing this course at the Brussels School of Engineering

MA-IRIF | **Master of science in Computer Science and Engineering** | finalité Professional/unit 1 and finalité Professional/unit 2