

## Master Degree's in Formal Methods in Computer Science

Academic course 2019-2020

### Information

**Compulsory courses:** 18 ECTS  
**Elective courses:** 30 ECTS  
**Optional external internship:** 6 ECTS  
**Final Master's Thesis:** 12 ECTS

The Master consists of 60 credits divided into a compulsory module of **Fundamental Formal Methods**, made of 3 subjects (18 ECTS), and an optional module of **Complementary Formal Methods**, where the student will have to choose 5 subjects (30 ECTS) from an offer of 10, one of which is an **internship** in a company or research group. The Master's degree is completed with a final **Master's Thesis** (12 ECTS).

### Curriculum

CODE	SUBJECT	SEMESTER	STATUS	ECTS	MODULE
33131	Theory of programming languages	1 (UCM)	Compulsory	6	I
33132	Static analysis of programs and constraint solving	1 (UCM)	Compulsory	6	I
33133	Models of concurrency	1 (UCM)	Compulsory	6	I
33134	Formal methods for testing	1 (UCM)	Option	6	II
33135	Formal model-driven software development	1 (UAM)	Option	6	II
33136	Design of bio-inspired algorithms	1 (UAM)	Option	6	II
33137	Machine learning	1 (UAM)	Option	6	II
33138	Program-assisted verification	2 (UCM)	Option	6	II
33139	Analysis of concurrent and distributed systems	2 (UPM)	Option	6	II
33140	Design of correct-by-construction systems	2 (UPM)	Option	6	II
33141	Quantum computing	2 (UCM)	Option	6	II
33142	Internships in companies or research groups	2	Option	6	II
33144	Master's thesis	2	Compulsory	12	III

Modules:

- I. Fundamental Formal Methods
- II. Complementary Formal Methods
- III. Master's Thesis

**According to the agreements of the Committee on Postgraduate Studies at UAM, those elective subjects having less than five students enrolled, may not be taught. Involved students will be advised for relocation and enrollment in other subjects.**

**The offer of optional subjects could suffer minor changes before the start of lessons for reasons of adjustments in Master's teaching organization, in which case, it will be properly announced.**