



## SINF2M1 - Introduction

### Introduction

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The objective of this Master's degree programme is to train computer science professionals capable of understanding and analysing the complex needs of a company, of designing computing systems that meet those needs, of mastering the rapidly evolving technological tools in this area, of implementing solutions, of assuring quality products and procedures in a company.

## SINF2M1 - Teaching profile

### Learning outcomes

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The computer science developers and designers of tomorrow face two major challenges:

- increasingly complex computer science systems
- increasingly varied areas of application

In order to meet these challenges, future diploma holders should:

- master real computer science technologies but also keep up with their constant progress
- work as part of multidisciplinary teams that take into account non-technical issues

This master 60 aims at the in-depth understanding of concepts and the acquisition of thinking and abstraction skills. This theoretical approach is supplemented by the application of concepts which takes an important place in the training. The program therefore includes many projects and works.

Except for exceptions specified in the detailed program, all the courses of the program are given in English, the command of this language being essential in the field of data processing. This offers French-speaking students the opportunity to practice English intensively during their training.

On successful completion of this programme, each student is able to :

1. Demonstrate mastery of a solid body of knowledge in computer science allowing them to solve problems raised in their field of study

This Master's degree programme aims to provide students with advanced knowledge and is based on the fundamentals of computer science acquired in the Bachelor's degree programme. A diversity of subjects are offered in the common curriculum:

- Networking;
- Programming languages;
- Software engineering;
- Artificial intelligence .

2. Organise and carry out the development of a computer system that meets the complex demands of a client

2.1. Analyse a problem to solve or functional needs to be met and formulate a corresponding specifications note.

2.2. Model a problem and design one or more technical solutions in line with the specifications note.

2.3. Evaluate and classify solutions in light of all the criteria included in the specifications note: efficiency, feasibility, quality, ergonomics and environmental security.

2.4. Implement and test the chosen solution.

2.5. Come up with recommendations to improve the operational nature of the solution.

3. Contribute as part of a team to the planning and completion of a project while taking into account its objectives, allocated resources, and constraints

3.1. Frame and explain the project's objectives (in terms of performance indicators) while taking into account its issues and constraints

3.2. Collaborate on a work schedule, deadlines and roles

3.3. Work in a multidisciplinary environment with peers holding different points of view; manage any resulting disagreement or conflicts

3.4. Make team decisions and assume the consequences of these decisions (whether they are about technical solutions or the division of labour to complete a project)

4. Communicate effectively (orally or in writing) with the goal of carrying out assigned projects in the workplace (in English in particular)

4.1. Identify the needs of the client or the user: question, listen and understand all aspects of their request and not just the technical aspects

4.2. Present your arguments and adapt to the language of your interlocutors: technicians, colleagues, clients, superiors

4.3. Communicate through graphics and diagrams: interpret a diagram, present project results, structure information

4.4. Read and analyse different technical documents (rules, plans, specification notes)

4.5. Draft documents that take into account contextual requirements and social conventions

4.6. Make a convincing oral presentation using modern communication techniques

5. Demonstrate rigor, openness and critical thinking as well as a sense of ethics in your work

5.1. Rigorously apply the standards of your discipline (terminology, measurement units, quality standards and security)



∞ LINFO2401



**o Cours alternatifs Calculabilité, logique et complexité**

The student chooses a course from:

⌘ LINFO1123	Calculability, Logic and Complexity	Yves Deville	FB [q2] [30h+30h] [5 Credits] 🌐
⌘ LSINC1123	Calculability, Logic and Complexity	Yves Deville	FB [q2] [30h+30h] [5 Credits] 🌐

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## The programme's courses and learning outcomes

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For each UCLouvain training programme, a [reference framework of learning outcomes](#) specifies the the skills expected of every graduate on completion of the programme. Course unit descriptions specify targeted learning outcomes, as well as the unit's contribution to reference framework of learning outcomes.











