SINF1BA - Introduction

Introduction

Introduction

Computer science, or more generally information and communications technology (ICT), is everywhere; everyone uses computers/ smartphones/… to communicate, work, study, play, travel, and manage. More and more activities are assisted by computers. SMEs, public services, education world, associations, leisure, in two words the world, has a growing need for computer scientists who are competent, creative and motivated. We cannot count the daily-used IT systems: Internet, mobile, social networks, robotics, home automation, e-commerce, search engines, business management, hospitals, road safety, exhibitions and management of theatres or museums, transport, energy supply and many other areas rely on IT. There will be more and more areas impacted by ICT tomorrow and more complex applications will be needed.

With the bachelor's degree in computer science, you will

• understand in depth the foundations for the design and implementation of simple computer applications;

• master the basic underlying computer technologies;

• have developed your ability for reasoning and abstraction, required to design future applications;

• master the mathematical techniques involved in such reasoning;

• get the luggage necessary for the future "master in computer science," oriented toward the development of complex software applications.

Your profile

You

• have a taste for problem solving;

• are pushed by a great curiosity;

• overflow of creativity and imagination;

• are a head for abstraction, analysis and synthesis;

• have a methodical mind and show rigor in your reasoning;

• are good for human contact, organization of teamwork, leadership, etc.

Following a strong mathematical option during high school and feeling an attraction to science or economics are assets.

Your future job

During his career, the computer scientist will flourish and evolve in one or more of the following profiles:

• The designer identifies the needs of the future user and determines the technical means useful to fulfil these needs. He is able to speak "the language" of the customer, it has a fairly broad culture to interact successfully with non-computer experts. He masters computer technology to identify the best solution. It builds a quality architecture for this solution.

• The achiever is able to translate the indications and guidelines produced by the designer in computer components. He analyses in detail some components of the architecture, he programs, tests, deploys these components into an integrated solution. His technical expertise is very sharp.

• The IT project manager takes care of the smooth running of the project; he is responsible for the completion of the tasks associated with these systems, their safety, planning their development. As the designer, it has qualities in terms of human contacts, a good general education and strong technical skills.

Your programme

The bachelor has a compulsory part covering different disciplines

• computer science ;

• mathematics ;

• economics, management and social sciences;

• English;

• sciences and technology.

You choose a minor to complete your training. This option allows to open your study program to domains you are interested outside the computer science or to deepen some fields closer to the mandatory part of the program (computer science or management).

Once bachelor, you will continue your training by the Master in Computer Science.

SINF1BA - Teaching profile

Learning outcomes

General objectives

This bachelor's programme offers a general approach to computer science in the context of basic university training. The bachelor's programme leads to the title of " Bachelor of Computer Science" and upon completion of this first cycle of studies, the student will be granted access to the master's programme in Computer Science.

This university-level training in computer science prepare future specialists capable of creating and elaborating complex and efficient computing systems that satisfy the numerous and ever-increasing needs in our society. It thus trains "software creators" rather than pure programmers. More specifically, the bachelor's programme in computer science aims at the acquisition of the following technical competences and skills :

- Gaining an in-depth understanding of the basic essentials needed to design and implement simple software systems;

Year

List of available minors

Besides the core study, students will choose:

• the Additionnal module in Computer Science
• or one of the minors in the list below.

> Minor in Law (access) *[en-prog-2023-minadroi]*
> Minor in Urban Architecture

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- Mandatory
- Optional
- Not offered in 2023-2024
- Not offered in 2023-2024 but offered the following year
- Offered in 2023-2024 but not the following year
- Not offered in 2023-2024 or the following year
- Activity with requisites
- Open to incoming exchange students
- Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

Core study

General and training

Mathematics

LBIR1212	Probabilities and statistics (I)	Patrick Bogaert	FR [q1] [30h +15h] [4 Credits]
LINFO1113	Numerical algorithmic		

Religion courses for students in exact sciences

The students select one course between:

⊠ LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	FR [q1] [15h] [2 Credits]
⊠ LTECO2300	Societies, cultures, religions : Ethical questions	Marcela Lobo Bustamante	FR [q1] [15h] [2 Credits]
⊠ ~~LTHEO~~2840	Science and Christian faith	Benoît Bourgine Paulo Jorge Dos Santos Rodrigues	FR [q1] [15h] [2 Credits]
⊠ LTECO2200	Societies-cultures-religions : Human Questions	Régis Burnet	FR [q1] [15h] [2 Credits]

⊠ LSST1001	IngénieuxSud	Stéphanie Merle Jean-Pierre Raskin (coord.)	FR [q1+q2] [15h +45h] [5 Credits]
○ LINFO1361			

SINF1BA - Information

Access Requirements

Decree of 7 November 2013 defining the landscape of higher education and the academic organization of studies.

Teaching method

A significant part of the courses in Computer Science will focus on learning techniques through problem solving. Amongst others, two integrated computer science projects will enable the students to integrate the various course topics and expose them to the problem of realizing small-scale projects (via laboratory sessions in the first year), or medium-scale projects (via a project during the second quadrimester of the third year).

Evaluation