

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

5 credits	30.0 h + 30.0 h	Q1
-----------	-----------------	----



**This learning unit is not being organized during this academic year.**

Language :	English
Place of the course	Louvain-la-Neuve
Main themes	<ul style="list-style-type: none"> <li>• Concurrent programming paradigms (shared state, message passing, and declarative competition)</li> <li>• Major programming concepts that include function, object, class, abstraction, instantiation, inheritance, state, encapsulation, competition, dataflow, lazy evaluation, non-determinism, agent (active object), lock, monitor, transaction, deadlock, higher order programming, compositionality, etc.</li> <li>• Techniques of reasoning and design with different paradigms to design correct programs</li> <li>• Practical applications in several areas (eg logic circuits simulation, elevator simulation, transaction manager).</li> </ul>
Aims	<p>Given the learning outcomes of the "Bachelor in Computer science" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes:</p> <ul style="list-style-type: none"> <li>• S1.I5</li> <li>• S2.2-4</li> <li>• S5.2, S5.4-5</li> </ul> <p>Students completing successfully this course will be able to</p> <ol style="list-style-type: none"> <li>1. define precisely and use wisely in medium-sized programs the key concepts of programming;</li> <li>define the main paradigms of concurrent programming (shared state, message passing and declarative competition), with the concepts they contain and the properties they give to programs;</li> <li>explain the relationships (similarities, differences) between these different paradigms;</li> <li>explain the link between programming languages and the main paradigms of concurrent programming;</li> <li>write medium-sized programs in these concurrent programming paradigms.</li> <li>think using abstractions (reason correctly on a system that includes several layers of abstractions, and define new abstractions to simplify the resolution of a problem)</li> </ol> <p>-----</p> <p><i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i></p>
Faculty or entity in charge	INFO

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Aims
Additional module in computer science	LSINF110P	5		