

5.00 credits

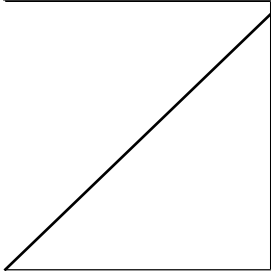
30.0 h + 30.0 h

Q2



**This learning unit is not open to incoming exchange students!**

Teacher(s)	Van Roy Peter ;
Language :	French
Place of the course	Charleroi
Prerequisites	<p>This course assumes that the student already masters basic programming skills targeted by courses LINFO1101 or LEPL1401 and concepts on algorithmics and simple data structures covered by course LEPL1402.</p> <p><i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i></p> <p><i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i></p>



<p>Content</p>	<p>The goal of this course is to broaden and deepen the programming knowledge acquired in preceding courses. The course treats the following subjects:</p> <ul style="list-style-type: none"> <li>• The course gives a uniform framework for all programming concepts, organised as programming paradigms.</li> <li>• The course gives a formal semantics and reasoning techniques for all paradigms.</li> <li>• The course gives an introduction to lambda calculus as foundation of functional programming and higher-order programming.</li> <li>• Higher-order programming is used as organizing principle for the construction of procedural abstractions.</li> <li>• Concurrent programming is presented in two forms, namely deterministic dataflow and message-passing concurrency.</li> <li>• Data abstraction is presented in its general form and with its two principal derived forms, namely object-oriented programming and abstract data types.</li> <li>• Symbolic programming and algorithm design principles are used throughout the course.</li> <li>• Five important programming paradigms are presented in the course: functional programming, object-oriented programming, deterministic dataflow programming, actor dataflow, and active object (multi-agent) programming.</li> </ul> <p>Examples of practical applications are given for all concepts and all paradigms.</p>
<p>Faculty or entity in charge</p>	<p>SINC</p>

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Computer Science	<a href="#">SINC1BA</a>	5	<a href="#">LSINC1101</a>	