


5.00 credits

30.0 h + 30.0 h

Q1

Teacher(s)	Pecheur Charles ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	This course assumes acquired skills in programming, algorithms and data structures covered by the LEPL1402 course and the logic concepts covered by the LINFO1114 course.
Main themes	<ul style="list-style-type: none"> • Specification of simple programs, with procedures and with data structures • Logic and recurrence • Proof of simple programs, with procedures and with data structures • Algorithm design techniques • Programming schemes
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <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"> • S1.I5, S1.G1 • S2.2 • S3.2 <p>Students completing successfully this course will be able to</p> <ul style="list-style-type: none"> • imagine a correct and efficient algorithm to solve a given problem; • create and specify the design of a software product using an appropriate program design and notation methodology; • demonstrate the exactness of simple algorithms; • use a rigorous approach to ensure the exactness of the result, using mathematical tools.
Evaluation methods	The assessment is based on the work done during the semester (25%) and on a written exam during the session (75%). The works cannot be represented in the second session; in September, the final grade will be made up of the exam only (100%). Depending on the circumstances, the exam can be organized remotely.
Teaching methods	<p>The course includes:</p> <ul style="list-style-type: none"> • lectures every week, • exercise sessions to apply the concepts seen in class in simple situations, • projects to practice the techniques when designing a larger application. <p>Depending on the circumstances, all or part of the courses and exercises could be broadcast and recorded so that they can be followed remotely.</p>
Content	<ul style="list-style-type: none"> • Specification of programs • Proof of simple programs: wp calculus • Recurrence and Induction • Proofs of programs: method of inductive assertions • Procedures and recursion • Data structures • Decomposition into sub-problems • Automatic Program Proofs • Object-oriented programming: design patterns
Inline resources	All resources are available at site Moodle du cours .
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Additional module in computer science	APPSINF	5		
Master [120] in Chemistry and Bioindustries	BIRC2M	5		