

5.0 credits	30.0 h + 22.5 h	2q
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Teacher(s) :	Keunings Roland ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	Concepts ; Programming techniques ; Tools ; Technicals libraries
Aims :	<p>Give a broad outline of several computing techniques and tools needed for the design and the implementation of programs in the field of applied mathematics.</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>
Content :	<p>1. Concepts :</p> <ul style="list-style-type: none"> - Memory management, dynamical allocation. - Compilation option. - Source code, object code, link editor, static and dynamics libraries. - Difference between interpreted and compiled languages. Performance comparison. <p>2. Programming techniques :</p> <ul style="list-style-type: none"> - Pass by value and pass by address of arguments. - Calls of librairies. - Containers : list, map, ... - Iterators. - Modularisation and portability. - Optimisation techniques. <p>3. Tools :</p> <ul style="list-style-type: none"> - CVS, Makefile, debugger and maintenance of documentation. <p>4. Technicals libraries :</p> <ul style="list-style-type: none"> - NTL, LEDA, CPLEX, Xpress, Blas, Boost, LAPACK, ... : presentation and use. <p>The choice are made according to the interest of the students.</p>
Other infos :	<p>The exercices are dedicated to a project. The subject is choosen by the students.</p> <p>Prerequisite : knowledge of C++.</p>
Cycle and year of study :	> Master [120] in Mathematical Engineering
Faculty or entity in charge:	MAP