FSAB1401 Informatique 1

[30h+30h exercises] 6 credits

This course is taught in the 1st semester

Teacher(s): Yves Deville, Elie Milgrom (coord.), Charles Pecheur
Language: French
Level: First cycle

Aims

AIMS
At the end of this course, students should be able
- to demonstrate their understanding of the basic concepts and the methodology of object-oriented programming
- to use the major elements contained in an object-oriented language such as Java in an appropriate way
- ton analyze a simple problem, to propose an algorithmic solution for this problem and to program the solution in Java.

Main themes

Main Themes
Basic concepts of object-oriented programming; the Java programming language; problem analysis; specification and implementation of solutions; linear data structures, including dynamic implementations.
Content and teaching methods
Interface, class, object, instance
Primitive types, values, variables, assignment
Expressions
Instruction types
Methods, parameters, results, and method calls
Specifications
Creation of instances, object references
Class variables, instance variables, local variables and their scope
Polymorphism
Visibility attributes of classes and variables
Class extension and inheritance
Exception mechanisms
Files and input-output operations on files
Arrays : linear and multi-dimensional
Variable-length arrays
Linked list implementations
Use of packages
Graphical user interfaces and evend-driven programming
The chosen teaching method relies on active student participation in their own learning process. The specific modalities of the active learning approach used in the course are left to the initiative of the course teachers, within the framework of the pedagogical choices made by the school of Engineering.

Content and teaching methods

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Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

The course Web site : http://www.info.ucl.ac.be/notes_de_cours/FSAB1401/ contains a wealth of information related to the course, most of which is required or recommended reading for students.
The course relies on the following English-language text book :
J. Lewis et W. Loftus
Java Software Solutions - Foundations of Program Design
(3rd Edition)
Addison-Wesley, 2003, Paperback - 924 pages.
ISBN: 0201781298
The end-of-term evaluation aims to assess both the understanding of the course material and the capacity to apply it to correctly write simple Java programs.

Other credits in programs

FSA11BA	Première année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(6 credits)	Mandatory
FSA12BA	Deuxième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(6 credits)	