

## Faculty of Applied Sciences



### FSAB1401 Informatique 1

[30h+30h exercices] 6 credits

This course is taught in the 1st semester

**Teacher(s):** Olivier Bonaventure, Charles Pecheur (coord.)  
**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
- to analyze a simple problem, to propose an algorithmic solution for this problem and to program the solution in Java.

#### Main themes

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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 event-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.

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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/](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

<b>FSA11BA</b>	Première année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(6 credits)	Mandatory
<b>FSA12BA</b>	Deuxième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(6 credits)	
<b>FSA13BA</b>	Troisième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(6 credits)	