

6.0 credits

30.0 h + 30.0 h

1q

Teacher(s) :	Bonaventure Olivier ; Pecheur Charles ;
Language :	Français
Place of the course	Louvain-la-Neuve
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 event-driven programming
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. <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>
Evaluation methods :	An intermediary evaluation takes place at mid-term. The mark obtained for this evaluation accounts for 1/3 of the final mark, only if it is superior to the mark obtained during the exam. The end-term exam aims to assess both the understanding of the course material and the capacity to apply it to correctly write simple Java programs.
Teaching methods :	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 :	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
Bibliography :	The course relies on the following English-based text book : D. Eck, Introduction to Programming Using Java, Sixth Edition, 2013, http://math.hws.edu/javanotes/
Cycle and year of study :	> Bachelor in Engineering
Faculty or entity in charge:	BTCI