

ECCC SYLLABUS

MODULE: **CS M1** PROGRAMMING

LEVEL: **ADVANCED (C)**

The examination of this module includes all aspects of the Intermediate level (B) extended the competencies listed below.

COMPETENCE GROUP	COMPETENCE WITHIN ECCC STANDARDS
1. Basic terminology associated with object-oriented programming	1.1. Object-oriented programming languages. 1.2. The concepts of information related to object-oriented programming: class, object, fields, methods, succession. 1.3. Opportunities provided by the use of object-oriented programming.
2. Support for data streams	2.1. The definition of a data stream, the standard streams. 2.2. Character and binary streams. 2.3. Methods of data reading and writing.
3. Creating classes. Object – class implementation	3.1. Creating a class: field, method, constructor. 3.2. Object Creation: New operator. 3.3. Fields and static methods. 3.4. Finishing methods (finalizers, destructors).
4. Succession	4.1. Conclusion of the classes and succession. 4.2. Overloading of methods (including constructors)
5. Encapsulation	5.1. Reasons for the use of encapsulation. 5.2. Modifiers of encapsulation. 5.3. Encapsulation and succession.
6. Polymorphism	6.1. Covering methods. 6.2. The causes of polymorphism. 6.3. Virtual methods. 6.4. Abstract classes (interfaces).
7. Visual Programming	7.1. Using the graphical user interface. 7.2. Use basic components: a label of text field, buttons, check boxes, slider. 7.3. Interactivity applications. Supports mouse and keyboard. 7.4. Drawing and filling areas, text and fonts.

Preferred development environment for the realization of the advanced-level tasks:

- Java SE Development Kit (JDK) (<http://java.sun.com>)
- Visual Studio Express Edition (<http://www.microsoft.com/express/Downloads>)
- Dev-C++ 5 Beta 9.2 (4.9.9.2) PL (www.bloodshed.net)