SYLLABUS ECCC

MODULE: **CS M4** ROBOT PROGRAMMING
LEVEL: BASIC (**A**)

GROUP OF COMPETENCE	COMPETENCIES WITHIN THE ECCC STANDARD
1. **Introduction to Robotics**	1.1. Robots and machines – construction and principles of operation 1.2. Robot Classification 1.3. The use of robots
2. **Modules of robots and machines**	2.1. Microcontroller 2.2. Servomotors 2.3. Sensors
3. **Algorithms**	3.1. Principles of building algorithms 3.2. Block Diagrams
4. **The programming environement NXT-G**	4.1. The user interface 4.2. Communication with the controller 4.3. The basic modules of the program
5. **The underlying structural issues**	5.1. Principle components 5.2. Rules for connecting the elements 5.3. Example constructions
6. **Drive**	6.1. The principle of servomotors 6.2. Servomotors control
7. **Input**	7.1. Touch Sensor 7.2. Ultrasonic Sensor 7.3. Light Sensor 7.4. Color Sensor
8. **Creating programs using NXT-G environment**	8.1. Rhe basic concepts of programming 8.2. Visual programming (drag and drop) 8.3. Loop Block 8.4. Conditional Block 8.5. Block waiting for a signal 8.6. Alternative solutions 8.7. Program Optimization

Preferred development environment for the implementation of the basic-level tasks::

- LEGO Mindstorms Software NXT-G

Required equipment:

- LEGO Mindstorms 2.0
- A computer with a minimum 1GHz processor with Windows XP or later

