SYLLABUS ECCC

MODULE: **CS M4** ROBOT PROGRAMMING
LEVEL: ADVANCED (**C**)

The examination of this module includes all issues from basic (**B**) extended to the competences set out below.

GROUP OF COMPETENCE	COMPETENCIES WITHIN THE ECCC STANDARD
1. Basics of machine design issues in robotics	1.1. Design Elements 1.2. Gears and cogs 1.3. Clutch 1.4. Shafts
2. Autonomous systems	2.1. Translations of Construction 2.2. Principles of the design of autonomous systems programming
3. Comparision of different program environments	3.1. MSDRS 3.2. RobotC 3.3. NXT-C 3.4. NQC 3.5. Java 3.6. Labview
4. Structure and function of Microsoft environment Robotics Developer Studio	4.1. MSRDS Components Pack 4.2. Functions of MSRDS components
5. Service and basic elements of visual programming	5.1. Defining variables 5.2. ExaDefining constants 5.3. Using functions: if, switch, join, merge, Calculate
6. Create programs using a visual programming language MSDRS	6.1. Principles of combining elements 6.2. Flow Control 6.3. Engine (Generic Differential Drive) 6.4. Direction Dialog and Simple Dashboard robot control
7. Sensors in MSDRS environment	7.1. Touch Sensor (Generic Contact Sensor) 7.2. Image recognition sensor (WebCam) 7.3. Sound sensor (GenericSonar)

Preferred development environment for the implementation of the basic-level tasks::
- LEGO Mindstorms Software NXT-G, Robot C, Microsoft Robotics Developer Studio 2008 or later

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