Rediscover Integral Calculus

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Abstract. The School of Sciences of the University of Minho (ECUM) has always been linked to teacher training. Recently, Integral Calculus was integrated into the new Program of the course Mathematics A at the 12th grade level. This workshop intends to help teachers in the revision and continuous training of this theme. Objectives to be achieved:

- To review concepts related to Integral Calculus.
- To present strategies of introduction to the theme to be applied in the classroom.
- To understand ways to communicate and teach science, and to learn science.
- To encourage collaboration between teachers and the sharing of ideas and experiences.

Keywords. Integral calculus, mathematics.

Educational Robotics Today

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Abstract. In recent years using robotics in education has emerged and several new hardware and software solutions are now available to aid in the teaching. Using robotics helps to inspire, motivate, and encourage youngsters in the learning process. With a bit of imagination, one can easily adapt the tools from this discussion to the classroom making teaching and learning a fun and engaging experience.

Keywords. Robotics, education, teaching, learning, hardware, software.

Robotics Demonstration with the Lego EV3 Equipment

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Abstract. Grade 7th students of the school AE Carlos Amarante in Braga have worked this school year with LegoTM EV3 robotics kits provided by the Hands-on Science Network, exploring its different capabilities. In particular they dealt with some challenges using the commands to control the motors based in the data acquired with touch, infrared or sonar sensors. In this science fair presentation the students will show interactively the results of their work.

Keywords. Hands-on, educational robotics, basic school, sensors and actuators.

A Practical Approach for Learning Robotics

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Abstract. Robotics is a technical discipline with theoretical concepts difficult to convey to newbies, however, with a controlled and guided experimentation approach one can transmit knowledge efficiently and at an incredible speed. You think it´s possible to teach the basic concepts needed to build and program a standalone mobile robot in three days? RoboParty proves it is possible.

Keywords. Robotics, education, program, autonomous, mobile, robot.