Abstract
This article describes the process of mathematical analysis of a mechanical device that is designed to be adapted to a wheelchair, the equations of motion in the plane of the device has been made from the Euler Lagrange equations of classical mechanics, also non holonomic constraints of the system are characterized by Lagrange multipliers, integration of both mathematical concepts are a part of the formulation of a kinematic model which is the foundation of dynamic system analysis and implementation of control laws. The kinematic parameters are described in a three-dimensional inertial reference system commonly used by mechanical engineers. The equations describing the motion of this mechanical system are the result of mathematical analysis; this methodology can be applied to the analysis of any dynamic system subject to the Earth inertial conditions.

Keywords
kinematics, wheelchair, equations of motion, Lagrange multipliers, non holonomic constraints.