**Nuevas tecnologías**
**Equipo Electrónico**
**Automatización y Robótica**
**Sensores Fotoeléctricos**
**Variadores**

**New technologies**
**Electronic Equipment**
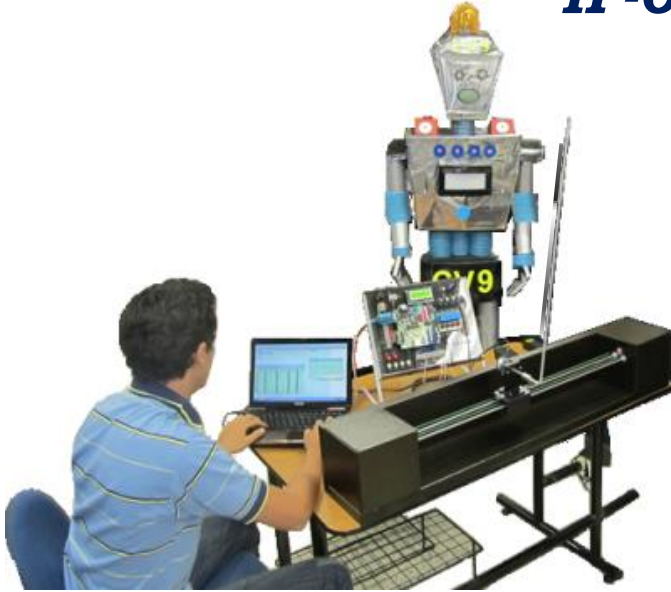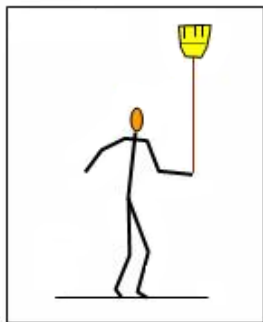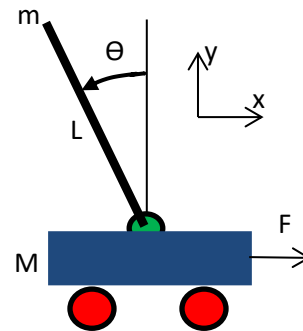**Automation & Robotics**
**Photoelectric Sensor**
**Drivers**

# Inverted Pendulum
# IP-01

*The inverted pendulum is an excellent lab practice for those interested in control, systems, mechanics, process, electronics, mechatronics and robotics. This is a very fundamental application for robotics to understand among other concepts, the equilibrium concept.*

*The pendulum is one of the typical applications in control theory. Despite it's simple appearance, its importance relies on the fact that control algorithms can be numerous and complex.*

*For human begins it is relatively easy to balance a sweep on the finger's tip. Our brain coordinates the movement of the hand with the needed force and direction to avoid the sweep yo fall or to lose its equilibrium condition.*

*When having autonomous machines, this application becomes very complex, since it requires to have a control system to emulate in quality and speed the human brain. The target remains to be the total equilibrium of a mobile stick.*
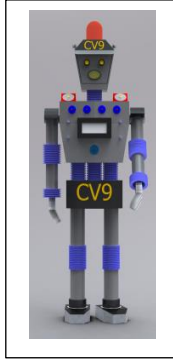
**Nuevas tecnologías**
**Equipo Electrónico**
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**New technologies**
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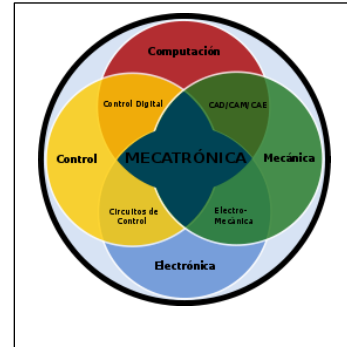**Photoelectric Sensor**
**Drivers**

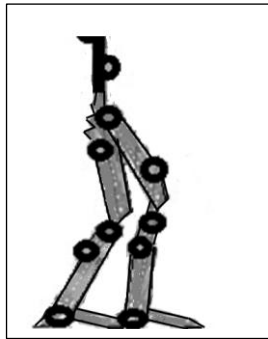# Application

### Robots equilibrium

### Vehicles

### Mechatronic

### Satelict positioning

### Bíped Robots

### Hoist

## Technical Features

**Dimensions:** *120x 35x35 cm.*
**Weight:** *10 Kg.*
**Speed:** *15cm/s.*
**Motor type:** *Stepper y DC.*
**Feedback electric:** *Encoder.*
**Control:** *Open to use any Microcontroller, PLC, PC or DAQ board..*
**Control type:** *Stand Alone, PC.*
**Software:** *Matlab and simulink (interface required), any other or our PTS F1616.*

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## Others Products

- *Climate chamber Fitotrón.*
- *Algae Biofuel Pilot Plant.*
- *Mini-Plant for Malt/Beer/Soda production.*
- *Inverted Pendulum.*
- *Speed, Position and Generation plant.*
- *PLC trainer (Generic, AB, Siemens, e.t.c.).*
- *Solar heating system.*
- *Hydrogen cells trainer.*
- *Solar and Eolic energy trainer.*
- *Water supply plant.*
- *Motor-generator plant.*
- *Oscilloscopes.*
- *SCADA.*
- *Others didactic proceses (in preparation)*
- *Motor-generator group.*
- *Frequency drives.*
- *Step and servomotors.*
- *SCADA.*