

INSTITUTO TECNOLÓGICO Y DE ESTUDIOS SUPERIORES DE MONTERREY

CAMPUS ESTADO DE MÉXICO

**Project Proposal:** “Drunk Mixer”

**Teacher:** Alf Kjartan Halvorsen

**Subject:** Robotics Project

**Team:**

Luis Andrés Medina Calderón A01379628

Leonardo Valencia Benítez A01378568

Aldo Fuentes Mendoza A01373294

Enrique Romero Vazquez A01373298

1. **General description:**

The project consists in the creation of an embedded system capable of serving drinks in a bar. The client will make the order through a website which is connected to the system. The mixer is able to make 10 different alcoholic drinks while keeping track of how many drinks it has served and how much liquid is left to make them. It will use 3 soft drinks and 3 alcoholic drinks.

This project is composed of three main parts, the electronics, the mechanical and the control system.

1. **Electronics.**
   1. This part will contain all the electrical components and circuits needed for the mixer to function properly. Including actuators and sensors, power supply, etc.
   2. The electronics will be embedded in the final model.
2. **Mechanical.**
   1. The mechanical part will consist of a set of tubes and valves that control the liquid served into the cups. Furthermore, it will use a simple robotic arm that will take the cup out of a pile and put it in a conveyor belt so the liquid can be served. All the process will be done in stages and the conveyor belt is in charge of moving the cup or glass through the process until the final step where the customer can take it.
3. **Control System.** 
   1. The control system will be a PID to control the DC motor that moves the conveyor belt in order to prevent spilling. It will also keep the process running smoothly, checking that every step of the process was done correctly and that it can continue to the next one. It is expected that the machine will be able to serve up to 3 cups at a time, following one after the other as a 3 step pipeline. The movement of the simple robotic arm will also be controlled by this system, using algorithms for the cinematic.
4. **Sketch.**
   1. 