

# Robo-Sumo Competition for the Intelligent Systems Design Program

Build and program a sumo-wrestling lego mindstorms robot!

## Teams

Form 6 teams. Lists for signing up for the teams will be posted on a notice board. Each team should have 4-7 members.

## Construction

Construction time: 8.00 – 20.00 Wednesday 25th of September. You may only use the contents of one mindstorms set. Each set contains 3 motors, 3 light sensors, 2 touch sensors, 1 angle sensor and various other building blocks. The robot may have any shape, but must at the start of a match fit inside a 30 by 30 by 30 cm box. The robot must also have a lamp, unobstructed, on the highest point of the robot. The lamp must be turned on at all times during the matches. We suggest that you use NQC (Not Quite C) to program the robot. NQC is available for linux, windows and mac:

<http://www.baumfamily.org/nqc/>

## Playing field

The matches will take place in a fairly dark room (to make it easier to detect the other robots lamp with the light sensor). The competition takes place on a raised platform with a radius of about 58 cm. The surface of the playing field will be white and will have a thick black border along the edge.

## Rules

Each match is played best out of three rounds. A robot can lose the round by:

- Falling off the platform
- Breaking or tipping over so it no longer conforms to the construction rules (the lamp is no longer turned on, no longer located on the highest point or is obstructed).

The maximum length of a round is 2 minutes. Switching program slot between rounds is allowed, but not reprogramming. Repairs are allowed between rounds, but not modifications.

## **Tournament**

Round-robin tournament. The winner of the competition is determined in a final between the 2 highest ranked teams.