



# Sensing & Perception

## Lab 3 – Weighing-Scale 2.0

### **Pôle**

Numérique

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Version : 1 R 0

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Promotion : 2025

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Program : EENG3

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Date : May 14<sup>th</sup> 2023

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## 1. Context

A start-up company that aim is to develop a revolutionary weighing scale is organizing a hackathon. Several engineering teams are participating to this contest. The company will hire the winners. The goal of this hackathon is to develop a proof of concept of a weighing scale in less than 4h. It should have the following features:

- Vintage (mechanical) style i.e. red arrow in circle (see Figure 1);
- Digital display;
- Precise and accurate;
- Cheap;
- Between 4 and 9 cm<sup>2</sup> sensing area;
- Connected (Weight information could be transmitted to a smartphone app).



Figure 1 : Example of weighing scale with vintage style (from <https://www.rehabmart.com/product/pro-health-bathroom-scale-49851.html>)

You remember that during your studies at ECAM in the frame of a course entitled “Sensing & Perception” you experimented with Velostat to create force sensors. You think it is a good idea to use this material to build your proof of concept. In addition, you will also be using a servomotor, a microcontroller, several electronic components (resistors, capacitors...) and other material (cardboard, wood...).

## 2. Schedule

From 1.30pm to 5.10pm, your team develops a fully functional system.

From 5.10pm to 5.30pm, the jury performs some tests to evaluate it.

## 3. Assessment

The jury will take into consideration several criteria to evaluate your team:

- Behaviour during the hackathon;
- Accuracy and precision of the system;
- Design of the system;
- Scientific report describing the system (Introduction, methods, results, conclusion and references). A template is provided and the report should be submitted by **Sunday May 21<sup>st</sup> 2023 11.59pm**.