

SensorLab workshop

02.04.2019

14.00-17.00

Dzirzciema iela 16,

B-209 and B-211



**RĪGAS STRADIŅA
UNIVERSITĀTE**

RSU Physics Department

- **Biomechanics. The measurement of flexion/extension angles of upper limbs (or lower limbs), position. Registration of heart rate changes.**
 - ⇒ How angle changes when moving? (jumping)
 - ⇒ What is the difference in heart rate before and after exercise? What is the difference in flow rate before and after exercise? Compare the student's airflow.
 - ⇒ Check the duration of your jump!
- **A workout for your thumb. The force of a thumb.**
 - ⇒ What is the difference between the right hand thumb and the left hand thumb? Which hand is a "main hand"?
- **Boyle's law. The can's crush.**
 - ⇒ What happens to pressure in a closed system? (What is the relationship between pressure and volume in gases?)
 - ⇒ How does temperature's change influence the pressure and volume?
 - ⇒ Why brain swelling (hydrocephalus, infection, meningitis etc.) increases the pressure inside the skull?
- **Osmose. Diffusion.**
 - ⇒ What is diffusion? What is osmosis?
 - ⇒ What processes in your body happen according to the principles of diffusion and osmosis?
- **Water/liquid quality. The effect of acid on teeth.**
 - ⇒ How CocaCola affects your teeth?
 - ⇒ Compare the conductivity for different liquids (Coca Cola/Fanta/Sprite/juice/water/distilled water).
- **Energy by food.**
 - ⇒ The difference between endothermic and exothermic reactions.
 - ⇒ What is a calorie? How to burn calories without sport activities?
- **Plant pigment.**
 - ⇒ What colors of light are absorbed by spinach leaves and beet greens?
- **Color vision. How do we see?**
 - ⇒ What is the basic color for trichromatic vision? Who is monochromatic?
- **ECG (electrocardiogram).**
 - ⇒ What kind of parameters affect ECG?
 - ⇒ What is the electrical heart axis?
 - ⇒ Why electrodes must be connected in a special way?

Welcome on board!

<http://conference2019.rsu.lv/events/sensorlab-workshop>