

MICRO-503

**MEMS practicals II**

Bertsch Arnaud, Boero Giovanni, Brugger Jürgen

Cursus	Sem.	Type
Microtechnics	MA2, MA4	Opt.

Language of teaching	English
Credits	2
Withdrawal	Unauthorized
Session	Summer
Semester	Spring
Exam	During the semester
Workload	60h
Weeks	14
Hours	<b>2 weekly</b>
Practical work	2 weekly
Number of positions	

**Il n'est pas autorisé de se retirer de cette matière après le délai d'inscription.**

**Summary**

Objective of this practical is to apply in specific experimental settings the knowledge acquired in various MEMS related class

**Content**

The practical is organized in several lab experiments.

The part I (winter semester) is dedicated to MEMS technology and MEMS simulation:

- Finite element simulation of MEMS
- Design of MEMS actuators
- Fabrication of MEMS actuators
- Characterization of MEMS actuators
- Noise in sensors

The part 2 (spring semester) is dedicated to sensors:

- capacitive accelerometer
- ISFET
- Glucose sensor
- piezoresistive pressure sensor • Electrokinetic chip

**Learning Outcomes**

By the end of the course, the student must be able to:

- Conduct an experiment
- Report on experiments

**Transversal skills**

- Demonstrate the capacity for critical thinking

### **Teaching methods**

Practicals supervised by assistants

### **Assessment methods**

Based on work in the lab, answer to questions during experimental sessions and quality of the report

### **Supervision**

Office hours	Yes
Assistants	Yes

### **Resources**

#### **Moodle Link**

- <https://go.epfl.ch/MICRO-503>