EE-490(i) **Lab in nanoelectronics**

Kis Andras

Cursus	Sem.	Type
Electrical and Electronical Engineering	MA1, MA3	Opt.
Electrical and electronic engineering minor	H	Opt.
Minor in Quantum Science and Engineering	H	Opt.
Quantum Science and Engineering	MA1, MA3	Opt.

Language of teaching	English
Credits	4
Withdrawal	Unauthorized
Session	Winter
Semester	Fall
Exam	During the semester
Workload	120h
Weeks	14
Hours	**4 weekly**
Project	4 weekly
Number of positions	**30**

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

Summary

Students will work in the laboratory and the EPFL CMI cleanroom on a process flow for fabricating devices based on 2D semiconductors.

Content

1. Material verification
2. Lithography, etching and material deposition in the CMI cleanroom for device fabrication
3. Characterisation of devices produced in the cleanroom.

Keywords

Nanoelectronics, nanodevices, 2D materials.

Learning Prerequisites

Required courses

Semiconductor devices I
General Physics 4

Recommended courses

Semiconductor devices II (EE-567)

Learning Outcomes

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

- Analyze Device performace
- Elaborate Devices based on nanomaterials
- Systematize Experimental results
- Contextualise Experimental results in a context of the wider research field.

Transversal skills

- Collect data.
- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Demonstrate the capacity for critical thinking
- Write a scientific or technical report.

Teaching methods

Exercises carried out in person in a laboratory.

Assessment methods

Reports for individual laboratory exercises and a final paper on a related topic assigned by the teacher.

Resources

Moodle Link

- https://moodle.epfl.ch/course/view.php?idnumber=EE-490(i)