

GS_Quantum_UE_Quantum Labworks

+4

Level Baccalaureate ECTS 3 credits

Component **UFR PhITEM** (physique, ingénierie, terre, environnement, mécanique)

Semester Printemps

- > Teaching language(s): English
- > Open to exchange students: Yes
- > Code d'export Apogée: PAX8NQAF

Presentation

Description

The goal of this course is to offer a pool of advanced quantum labworks covering a broad field of topics: quantum materials, quantum engineering, quantum information and quantum technologies.

Students will attend from 5 to 7 labworks (depending on the number of students) among the ones listed below:

- Labwork 1: 2D Materials 1, atomic force microscopy and Raman spectroscopy on graphene, F. Marchi and N. Bendiab
- Labwork 2: 2D Materials 2, scanning tunneling microscopy on graphene bilayers, V. Renard
- Labwork 3: Hall effect, magnetoresistance of semiconductors, A. Kuhn
- · Labwork 4: Superconductivity, evidence of the Meissner effect, A. Kuhn
- Labwork 5: Quantum optics 1, generation of entangled photon pairs using non-linear optics, P. Segonds
- Labwork 6: Quantum optics 2, entanglement and Bell inequalities, D. Ferrand
- Labwork 7: Quantum oscillations in topological materials, A. Pourret
- Labwork 8: Photon bunching in cathodoluminescence, G. Jacopin

The detailed planning will be established after the start of the academic year.





TΡ

Period : Semester 8

Useful info

Campus

> Grenoble - University campus



28h

