UE Thematic and interdisciplinary projects

Level
Baccalaureate +5

ECTS
6 credits

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

Semester
Automne

- **Teaching language(s):** English
- **Open to exchange students:** Yes
- **Code d'export Apogée:** PAX9NPAL

Presentation

Description

This UE Thematic and interdisciplinary projects is divided in 2 parts :

Part 1 : *Quantum practicals on IBM-Q*
Teachers : Julien Renard (CNRS) Matias Urdampilleta (CNRS)

Projects will be focused on the implementation of elementary quantum algorithms on superconducting quantum processors and simulators (IBM-Q). It relies on a “learning by doing” strategy. Developed skills: Python & quantum circuits.

Part 2 : *Quantum seminars*

A series of seminars (regular and extended ones) will complete the regular course offer during the fall semester.
For the academic year 2024-2025, the program (18 hours in total) is the following:

- 3 extended seminars (3 x 1.5 hours each)
  - Mechanical systems in the quantum limit, Jérémie Viennot (CNRS)
  - Spin Qubits with NV centers, Benjamin Pigeau (CNRS)
  - Modeling and Simulation for Spin Quantum Dots and Qubits, Yann-Michel Niquet (CEA)

- 3 regular seminars (1.5 hour each)
  - What is a PhD ? Olivier Isnard, Director of the Physics Doctoral School
  - Quantum Start-ups presentations.
  - Short presentations of PhDs students about their work.

Course parts

UE Thematic and interdisciplinary projects - CMTD	Lectures (CM) & Teaching Unit (UE)	34h

Period : Semester 9

Useful info

Campus

- Grenoble - University campus