

# QNickel9

December 8-10 & 15-17, 2023 | Online

## QNickel9 | Quantum Computing and Programming Workshop December 8-10 & 15-17, 2023

Join this FREE online introductory workshop on ‘Quantum Computing and Programming’, which focuses on Oracle’s quantum algorithms. Learn the basics of quantum computing and how to write simple quantum programs.

The workshop runs over 6 days, with about 9 hours of training using QWorld’s **Nickel** Introductory Training (<https://qworld.net/qnickel9>). Educational materials and lectures will be in English. Mentor support will be in English and the local language of the QCousins attending the event. The workshop will be hosted via a dedicated Discord server.

Participants are expected to work individually for at least 16 hours to complete the following sections of Nickel: *Conventional Quantum Algorithms in Qiskit*, Solving Max-Cut problem using Grover’s Search in Cirq

<https://gitlab.com/qworld/nickel>

The tutorial is a collection of Jupyter notebooks. Python will be used to solve tasks and Qiskit library will be used to code quantum programs.

### Who can attend?

Anyone interested in learning more about quantum computers can attend. You should know at least one programming language and be familiar with Python before the workshop. Installation instructions and a few notebooks on the basics of mathematics will be shared for you to review before the workshop.

**Participants who successfully complete the workshop will receive a diploma.**

### How to apply

Please fill in and submit the application form at <https://bit.ly/40PdcMg> by **30 November 2023**.

### Got a question?

Find out more at <https://qworld.net/qnickel9/> or email [workshop@qworld.net](mailto:workshop@qworld.net)

### Workshop organisers

The QNickel9 workshop, organised by QCousins of **QTurkey**, **QIran**, **QSouthAfrica**, and **QUAE**, is a collective quantum workshop specific to the regions where the cousins are the majority.

### Schedule

#### December 08, Friday

Introduction to Qiskit | Classical gates | Phase kickback

#### December 09, Saturday

Deutsch Algorithm | Deutsch-Jozsa Algorithm

#### December 10, Sunday

Bernstein-Vazirani Algorithm | Simon’s Algorithm

#### December 15, Friday

Introduction to Cirq | Grover Algorithm revisited

#### December 16, Saturday

Max-Cut Problem and Bipartite Graphs

#### December 17, Sunday

Adders and Numbers Checking | Grover algorithm for Max-Cut Problem

