

# Qiskit Workshop - Attendee Guide

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#### About

This Qiskit tutorial is meant to introduce the audience to Qiskit as an SDK for programming quantum computers on the cloud. Whether it is used as a research tool or an educational tool, Qiskit offers a broad range of modules, an extended documentation, and several features for supporting any person working in quantum computing. During the tutorial, the users will learn the basics of quantum computing through hands-on exercises.



#### What is Qiskit?

Qiskit is an open-source software development kit for working with quantum computers at the level of pulses, circuits, and application modules. Learn more <a href="here">here</a>.

## Who should attend?

This tutorial is for students and researchers interested in Quantum Computing. Whether you are new to quantum computers or someone already familiar with the subject, this is a tutorial for you as it an opportunity to have a hands-on experience with IBM quantum services.



### Agenda

4 November

Friday

**Topics** 

9:00 AM - 12:00 PM

500/1-001 – Main Auditorium (CERN)

Presenter – Dr. Elisa Bäumer, IBM Quantum

Basics of Quantum Computing

Running first quantum circuits using the IBM Quantum Composer

IBM Quantum Lab: Qiskit code to run and evaluate quantum circuits

Grover's algorithm and its implementation with Qiskit

Measurement error mitigation

IBM Quantum Community Team

#### Recommendations & Resources

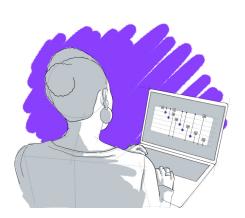
• Participants should bring their own laptop

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• <u>Create an IBM Account</u> and <u>Install Qiskit</u> beforehand (free)

• Some programming experience is a plus, but not required

Additional: Oiskit textbook Python 3.7 or later Jupyter notebook



Qiskit is committed to maintaining the highest level of enjoyment, accessibility, and inclusivity by maintaining an environment of respect, empathy, and compassion for others. In order to support that, we ask that each attendee review the <a href="Qiskit Community Code of Conduct">Qiskit Community Code of Conduct</a> before the event, and be familiar with our community standards to join us in maintaining a safe and welcoming event for all.