

Workshop

Basic Bioinformatics Skills

Organizer

CUBiDA (Core Unit Bioinformatik, Datenintegration und Analyse) at the Universitätsklinikum Erlangen

Instructors

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Outline

This workshop provides participants with an overview of essential bioinformatics skills, gain practical tips on getting started with a bioinformatics project, and learn about good practices for performing data analysis and sharing results. The workshop also includes hands-on sessions to explore and understand the command line interface.

Outcome

At the end of the workshop, participants will be able to navigate the Linux environment in the terminal and feel comfortable when working with bioinformatics software.

Number of participants

5 to 15

Target audience

This workshop is designed for researchers who are new to Bioinformatics and intend to use the command-line interface for their analysis.

Unless participants can demonstrate equivalent prior knowledge, attendance at this workshop is a prerequisite for other CUBiDA workshops.

Prerequisites

There are no prerequisites for this workshop.

Teaching format

The workshop will comprise a mix of interactive lectures with short hands-on exercises. Computers with preinstalled software and data will be provided to all participants. During the workshop, we will also give you access to all our teaching materials.

Provisional workshop schedule

DAY 1

8:30 am-
4:30 pm

Introduction to Bioinformatics.
The Bioinformatics workflow (quality control, analysis, visualization, sharing).
Reproducible research in data analysis.
Setting up and managing a Bioinformatics project. Naming conventions.
The Unix Shell. Command-line fundamentals. Basic navigation and file operations. Viewing file contents. Handling common compressed formats.
Working with Streams and Redirection. Managing and interacting with processes.
The Unix pipe. Creating workflows.
Basic regular expressions.
Retrieving Bioinformatics data. Data transfer and download. Introduction to public databases.
Reproducible command execution. Writing a simple, multi-line shell script.

Questions

Please, contact us at mik-cubida@uk-erlangen.de.