

Reproducible Research & FAIR Data — Hands-on

Gain expertise in designing FAIR and reproducible genomics workflows—versioning, environments, containers, provenance, automated QA dashboards, and submission-ready docs.

Reproducible Research & FAIR Data

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Session 1

Fee: Rs 6300 [Apply Now](#)

FAIR Principles & Version Control

FAIR: Findable, Accessible, Interoperable, Reusable—practical checklists

Theory

Git essentials, branching models, releases and semantic versioning

[Git](#) [GitHub/GitLab](#) [Semantic Versioning](#)

Data & code citation, README/CONTRIB, LICENSE, DOI minting

[CITATION.cff](#) [Zenodo](#) [REUSE.software](#)

Session 2

Fee: Rs 8400 Apply Now

Environments & Containers

Deterministic environments with Conda/Mamba; locking and export

Conda **Mamba** **Micromamba**

Containerization and reproducible runners for HPC/Cloud

Docker **Apptainer/Singularity** **Podman**

Data packaging, checksums, manifests and integrity audits

sha256sum **RO-Crate** **BagIt**

Session 3

Fee: Rs 11200 Apply Now

Workflow Engines & Provenance

Portable pipelines with Snakemake/Nextflow; config, profiles, CI/CD

Snakemake **Nextflow** **GitHub Actions**

Provenance tracking & audit trails; parameter hashing and logs

MLflow/Weights & Biases **checksum manifests**

QC dashboards & results notebooks for review and reuse

MultiQC **Quarto** **JupyterLab**

Session 4

Fee: Rs 14000 Apply Now

Mini Capstone: Reproducible Bundle

Design a FAIR-compliant, containerized pipeline with full provenance

Theory

Automate ingest→QC→analyze→report and export an archival bundle

Snakemake **Conda/Apptainer** **Quarto/MultiQC**

Deliver RO-Crate/BagIt bundle, manifest, checksums and README set

RO-Crate **BagIt** **Zenodo DOI**