

Biological Databases, Standards & Ontologies

Gain expertise in curated biological databases, FAIR data standards, and ontology-driven annotations through real-world practical sessions.

Biological Databases, Data Standards & Ontologies

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Session 1

Fee: Rs 4500 [Apply Now](#)

Core DBs, FAIR & Metadata

Landscape of primary & secondary biological databases

[NCBI](#) [EMBL-EBI](#) [UniProt](#) [Ensembl](#)

FAIR principles & minimal information checklists

[MIXS](#) [MINSEQE](#) [FAIR](#)

Accessioning, identifiers & cross-references

[BioSample](#) [BioProject](#) [Accession](#)

Programmatic access & rate-limits

EDirect **Entrez API** **EBI APIs**

Session 2

Fee: Rs 6000 **Apply Now**

Standards & Ontologies

Data models & schemas for sequence, variant & sample data

FASTQ/VCF/GFF3 **JSON/JSON-LD** **RO-Crate**

Ontology basics & evidence codes

OBO Foundry **GO** **SO** **ECO**

Semantic web tooling & validation

OWL **RDF** **SHACL** **SPARQL**

Practical term mapping & annotation pipelines

InterPro **BioPortal** **OntoRunner**

Session 3

Fee: Rs 8000 **Apply Now**

Curation & Submissions

Metadata templates & validator tooling

ENA Webin **SRA** **GEO**

Versioning, provenance & audit trails

Git **RO-Crate** **PROV-O**

Automation for bulk loads & updates

Python **pandas** **curl**

Session 4

Fee: Rs 10000 **Apply Now**

Mini Capstone: Knowledge Graph Build

Designing semantic model & entity alignment

Theory

Ingest from ENA/GEO with validated metadata

EDirect **GEOquery** **Webin-CLI**

Triple store load & competency queries

GraphDB **Blazegraph** **SPARQL**

Final report preparation and defense

Quarto **JupyterLab** **pandas**