

Biomedical Knowledge Graphs & Semantic Web — Hands-on

Build end-to-end biomedical Knowledge Graphs (KGs) that integrate omics, clinical, and literature data. Learn semantic web standards (RDF/OWL/SPARQL), map to biomedical ontologies, validate with SHACL, embed graphs for ML, and design reproducible KG pipelines and APIs for downstream analytics and discovery.

Biomedical Knowledge Graphs & Semantic Web

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Session 1

Fee: Rs 15,200 [Apply Now](#)

RDF/OWL, Ontologies & Modeling

Semantic web foundations & graph data models

[RDF/RDFS](#) [OWL 2](#) [RDF-star](#)

Biomedical ontologies & alignment

[OBO/GO/DOID](#) [UMLS/MeSH/SNOMED](#) [BioPortal/OLS](#)

Conceptual & logical modeling

[classes/properties/shapes](#) [reasoning basics](#) [FAIR &](#)

provenance

Session 2

Fee: Rs 20,800 Apply Now

SPARQL, SHACL & KG Construction

Query & APIs

SPARQL 1.1 CONSTRUCT/UPDATE GraphQL over KGs

Validation & quality

SHACL shapes constraint checks provenance/ETL logs

ETL & tooling

RDFLib/Apache Jena OntoText/GraphDB
Neo4j/TTL/CSV2RDF

Session 3

Fee: Rs 26,600 Apply Now

KG Embeddings & Graph ML

Knowledge graph embeddings

TransE/TransH/RotatE DistMult/Complex node2vec

Graph learning for bio tasks

GCN/GAT/GraphSAGE graph transformers link prediction

Pipelines & evaluation

pykeen/pyg/dgl hits@K/MRR/AUC leakage & splits

Session 4

Fee: Rs 33,000 Apply Now

Mini Capstone: Biomedical KG

Assemble a KG from multi-source bio data

Theory + Practical

Expose queries & analytics

SPARQL endpoint **REST/GraphQL** **dashboards**

Deliverables: TTL/OWL, queries & report

data package **validation logs** **PDF/HTML**