

Ontology Driven Data Harmonization — Hands-on

Unify messy, multi-source biomedical data into analysis-ready datasets using ontologies and common data models. This module covers vocabulary services, terminology mapping, schema alignment (FHIR/OMOP/CDISC), unit normalization, identity resolution, SHACL validation, and phenotyping—wrapped in versioned, testable ETL pipelines for research and translational use.

Ontology Driven Data Harmonization

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Session 1

Fee: Rs 15,400 [Apply Now](#)

Models, Ontologies & Mapping Basics

Common data models & schemas

[HL7 FHIR](#) [OMOP CDM](#) [CDISC/SDTM/ADaM](#)

Terminologies & identifiers

[UMLS/SNOMED CT](#) [LOINC/ICD/ATC](#)
[MeSH/HGNC/DrugBank](#)

Mapping strategies & design

[value sets & concepts](#) [semantic alignment](#)
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Session 2

Fee: Rs 20,800 Apply Now

Harmonization ETL & Terminology Services

ETL patterns & tools

dbt/Airflow **Pandas/Spark** **FHIR bulk data**

Terminology APIs & mapping

UMLS/CTS2 **OHDSI vocab** **map quality scores**

Data cleaning & normalization

unit conversions **entity resolution** **dedup & deconflict**

Session 3

Fee: Rs 26,400 Apply Now

Interoperability, QA & Validation (SHACL)

Interoperability patterns

FHIR resources **OMOP ETL checks** **data contracts**

Quality rules & validation

SHACL shapes **constraint tests** **test datasets**

Phenotype definitions & cohorts

value sets & logic **reproducible queries**
documentation & audit

Session 4

Fee: Rs 33,200 Apply Now

Mini Capstone: Cross-Cohort Harmonized Set

Build an end-to-end harmonization pipeline (2–3 sources)

Theory + Practical

Validate & package for reuse

SHACL report **data dictionary** **provenance manifest**

Deliverables: code, mappings & PDF brief

ETL scripts/notebook **value sets** **PDF/HTML**