

Gene Prediction & Annotation Pipelines — Hands-on

Gain expertise in gene prediction and functional annotation pipelines with practical ORF calling, evidence integration, and publish-ready reporting.

Gene Prediction & Annotation Pipelines

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Session 1

Fee: Rs 6300 [Apply Now](#)

ORF Calling & Evidence

Ab initio ORF detection and parameters

[Prodigal](#) [EMBOSS getorf](#) [Glimmer](#)

Evidence integration from protein/nucleotide homology

[BLAST+](#) [DIAMOND](#) [MMseqs2](#)

Strand, frame, start codon choice & CDS boundary checks

[Frame checks](#) [Start/Stop rules](#)

Session 2

Fee: Rs 8400 [Apply Now](#)

Domains & HMM Annotation

Protein domain mapping and HMM profile searches

InterProScan **HMMER3** **Pfam**

Signal peptides, transmembranes & localization hints

SignalP **TMHMM** **TargetP**

Annotation evidence codes and confidence scoring

ECO **GO terms**

Session 3

Fee: Rs 11200 Apply Now

Functional Mapping & QC

Annotation transfer and orthology-based mapping

Prokka **eggNOG-mapper** **UniRef**

Parsing and reconciling GFF3/BED features at scale

gffread **BCBio.GFF** **bedtools**

Codon usage, frameshift & nonsense mutation checks

EMBOSS cusp **CodonW** **FrameDP**

Session 4

Fee: Rs 14000 Apply Now

Mini Capstone: End-to-End Annotation

Design reproducible pipeline: input to annotated GFF3

Theory

Automate ORF→domains→functions with reports

Snakemake **Conda/Mamba** **MultiQC**

Deliver final annotation package & summary dashboard

`pandas` `JupyterLab` `Quarto`