

Molecular Phylogenetics & Tree Reconstruction — Hands-on

Gain expertise in molecular phylogenetics—curation, model testing, ML/Bayesian tree building, bootstraps, clocks, dating, and publication-grade visualization.

Molecular Phylogenetics & Tree Reconstruction

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Session 1

Fee: Rs 6300 [Apply Now](#)

Data Curation & Models

MSA curation, trimming & partitioning strategies

[MAFFT](#) [MUSCLE](#) [trimAl](#)

Nucleotide & amino-acid substitution models

[JC69/K80/GTR](#) [WAG/JTT/LG](#)

Model selection with information criteria & tests

[ModelFinder](#) [ModelTest-NG](#) [AIC/BIC](#)

Session 2

Fee: Rs 8400 Apply Now

ML/Bayesian Inference

Distance, ML and Bayesian tree building methods

FastTree **RAXML-NG** **IQ-TREE 2** **MrBayes**

Support metrics: bootstraps, SH-aLRT & posterior probs

UFboot **PP**

Partitioned & mixture models; heterogeneous rates

Γ rates **I+G** **C60**

Session 3

Fee: Rs 11200 Apply Now

Clocks, Dating & Support

Strict vs relaxed molecular clocks & calibrations

BEAST 2 **TreeTime** **Calibration priors**

Divergence time estimation & credibility intervals

HPD ranges **ESS checks**

Topology tests & congruence across partitions

AU/SH tests **Approximately unbiased**

Session 4

Fee: Rs 14000 Apply Now

Mini Capstone: Phylo Pipeline

Design reproducible pipeline from MSA to dated tree

Theory

Automate inference & support metrics with reports

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

Visualize & annotate trees for publication & iTOL

FigTree **iTOL** **ETE/DendroPy**