

Marine & Aquatic Microbiome Informatics (Blue Bio) — Hands-on

Build end-to-end marine and freshwater microbiome analytics for ecology, blue economy and monitoring. Learn size-fractionated sampling, amplicon/shotgun pipelines, co-assembly and MAG recovery, functional/pathway profiling, and integration with oceanographic metadata (CTD, salinity, nutrients). Apply workflows to estuaries, coastal, open-ocean and aquaculture systems, including HAB and pathogen surveillance, with reproducible geospatial reports.

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Session 1

Fee: Rs 8800 [Apply Now](#)

Field Design, Size-Fractionation & Metadata

Sampling across water bodies

[coastal/open-ocean/estuary/lake](#) [depth profiles & mixed layers](#) [replicates & diel cycles](#)

Size-fractionation & filtration

[0.2–3 \$\mu\$ m \(bacteria\), >3 \$\mu\$ m \(plankton\)](#) [viral fractions](#)

($<0.2 \mu\text{m}$) preservation & cold chain

Oceanographic metadata (CTD)

salinity/temp/DO/nutrients turbidity/chl-a/PAR

MIXS/OBIS-ready fields

Session 2

Fee: Rs 11800 Apply Now

Amplicon & Shotgun Marine Pipelines

Amplicons for marine taxa

16S (bacteria/archaea) 18S/ITS (eukaryotes) COI
(metazoa)

Shotgun specifics for seawater

host/organellar depletion high-diversity assembly
tips viral/prok/euk profiling

Taxonomy & functions

kraken2/centrifuge; phylo tools
HUMAN/eggNOG/KEGG/MetaCyc HAB/AMR marker
panels

Session 3

Fee: Rs 14800 Apply Now

Co-assembly, MAGs & Functional Oceans

Sample-wise vs co-assembly

mixed community challenges coverage/ANI
considerations derep & strain bins

MAG recovery & QA/QC

completeness/contamination taxonomy (GTDB) &
phylogeny virus/plastid contigs flags

Functional oceanography links

N/P/Fe cycling genes **carbon fixation/blue-carbon**
roles **mixing fronts/biomes & niches**

Session 4

Fee: Rs 18800 Apply Now

HAB/Pathogen Surveillance & Geo-Dashboards

Harmful algal blooms (HAB) analytics

marker panels & thresholds **early-warning indices**
remote-sensing overlays

Aquaculture & pathogen watch

vibriosis/viral fish pathogens **antibiotic-resistance**
panels **water-quality triggers**

Geo dashboards & reporting

QGIS/leaflet maps **time-series & front maps** **SOPs &**
stakeholder briefs