

WORKSHOP MODULE

 <p>DAY 1</p>	<p>Introduction to Metagenomics</p>	<ul style="list-style-type: none">• Definition and Principles of Metagenomics• Culture-Dependent vs. Culture-Independent Methods• Types of Metagenomics<ul style="list-style-type: none">◦ Amplicon Sequencing (16S rRNA, ITS)◦ Shotgun Metagenomics• Importance of Microbial Diversity Studies <p>Tools & Databases</p> <ul style="list-style-type: none">• NCBI• MG-RAST
 <p>DAY 2</p>	<p>Sample Collection and DNA Sequencing</p>	<ul style="list-style-type: none">• Environmental sample collection (Soil, Water, Human microbiome)• DNA extraction methods• Sequencing technologies used in metagenomics <p>Sequencing Platforms</p> <ul style="list-style-type: none">• Illumina sequencing platforms• Oxford Nanopore sequencing platforms
 <p>DAY 3</p>	<p>Metagenomic Data Processing</p>	<ul style="list-style-type: none">• Raw sequencing data formats (FASTQ)• Data quality control• Adapter trimming and filtering• Introduction to metagenome assembly <p>Hands-On Tools</p> <ul style="list-style-type: none">• FastQC• Trimmomatic• MEGAHIT
 <p>DAY 4</p>	<p>Taxonomic and Functional Analysis</p>	<ul style="list-style-type: none">• Microbial Community Profiling• Taxonomic Classification of Microorganisms• Functional Gene Annotation and Analysis <p>Tools</p> <ul style="list-style-type: none">• Kraken2• MetaPhlan• KEGG Database
 <p>DAY 5</p>	<p>Applications of Metagenomics</p>	<ul style="list-style-type: none">• Human Microbiome Research• Environmental Metagenomics• Industrial Biotechnology• Antibiotic Resistance Studies• Introduction to AI in Metagenomics <p>Case Studies</p> <ul style="list-style-type: none">• Gut Microbiome Analysis• Ocean Microbial Diversity Studies

FEE: IND RS 999/ USD \$55



www.catredu.com



0522-3192510
8887565470



director@catredu.com



Vikas Nagar, Lucknow



[Catr_lko](https://www.instagram.com/Catr_lko)



Centre for Advanced
Training Research



[@CATR_Institute](https://www.youtube.com/@CATR_Institute)



[@catredulko](https://www.telegram.com/@catredulko)