

6 MONTHS PROGRAM PLAN

MONTH	WEEK	ACTIVITY	CURRICULUM
1	1	Video drop and study materials	THE FUNDAMENTALS OF BIOINFORMATICS <ul style="list-style-type: none"> • Introductory bioinformatics • Database, internet tools and their application • Practical introduction study of the basics and major bioinformatics analytical software tools, pipelines and their application
	2	Video drop and study materials	<ul style="list-style-type: none"> • Multiple sequence alignment • Phylogenetics analysis
	3	Video drop and study materials	Bacteria phylogenetic analysis at genome level
	4	Live session	Zoom meeting: live practical guide and completion of the course, review, discussion (q & a) and evaluation.
2	1	Video drop and study materials	PROFESSIONAL COURSE: COMPREHENSIVE AND FUNCTIONAL GENOMICS (NGS DATA ANALYSIS) <ul style="list-style-type: none"> • Accessing of reads on database and processing • Genome assembly
	2	Video drop and study materials	<ul style="list-style-type: none"> • Genome annotation • Gene prediction
	3	Video drop and study materials	<ul style="list-style-type: none"> • Evaluation of result for study
	4	Live session	Zoom meeting: live practical guide and completion of the course, review, discussion (q & a) and evaluation
3	1	Video drop and study materials	PROFESSIONAL COURSE: COMPARATIVE ANALYSIS OF MICROBIAL GENOMICS (NGS DATA ANALYSIS) <ul style="list-style-type: none"> • Understanding the concept of comparative genomics in exploring microbes • Aim and objective of study
	2	Video drop and study materials	<ul style="list-style-type: none"> • Building analytical workflow for comparative study • Accessing the WGS data sample for comparative study
	3	Video drop and study materials	<ul style="list-style-type: none"> • Reads processing and genome assembly • Comprehensive genome analysis
	4	Video drop and study materials	<ul style="list-style-type: none"> • Finishing comprehensive analysis
4	1	Video drop and study materials	<ul style="list-style-type: none"> • Pan-genomics • Evolutionary study
	2	Video drop and study materials	<ul style="list-style-type: none"> • Functional system category • Specialty genes (antibiotic and mobile elements)
	3	Video drop and study materials	<ul style="list-style-type: none"> • Exploring and evaluating the comparative study workflow • Data visualization
	4	Live session	Zoom meeting: live practical guide and completion of the course review, discussion (q & a) and evaluation.

5	1	Live session	COMMENCEMENT OF RESEARCH PROJECT FOR PAPER PUBLICATION <ul style="list-style-type: none"> • Research proposal (discussing topic, aim and objective of study). • Assigning research group and project work • Practical guide in accessing of sample data of interest • Individual and group work on project on commencing analysis • Collection of data (individual and group work)
	2		Commencement of data analysis using the workflow (individual and group work)
	3	“	Zoom meeting: research project practical guide, group mini presentation, discussion, (q & a) and evaluation
	4		Continuation of analysis based on workflow
6	1	“	Accessing results and interpretation (individual and group work)
	2	“	Putting together the paper (individual and group work)
	3	“	Zoom meeting: research project practical guide, group mini presentation, discussion, (q & a) and evaluation
	4	“	Final presentation of project
			GRADUATION