



Bioinformatics Training on Genome Data Analysis of Genetic and Infectious Diseases

Date: July, 28th - July, 30th, 2025; **Venue:** Univ. of Nouakchott, Mauritania

Program Schedule

Day 1: July, 28, 2025	
08:30 - 09:00 Mauritania Time	Registration and Installation
09:00 - 09:10	Welcome Remarks by Prof. Dr. Ali Ould Mohamed Salem El Boukhary , President & Professor at University of Nouakchott, Mauritania
9:10- 9:20	Opening Remarks of Prof. Dr. M. Iqbal Chaudhary , Coordinator General of OIC- COMSTech.
9:20-9:30	Vote of Thanks by Dr Ahmedou , Director of Research at the University of Nouakchott
9:30-10:00	Group photograph and Coffee Break.
10:00-10:30	Topic: Different sequencing approaches in genetic testing and infectious diseases Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
10:30-11:00	Topic: Role of Bioinformatics in genomic data analysis Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
11:00- 12:00	Topic: Basic concepts of sequencing data analysis and overview of Linux Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
12:00-13:00	Topic: Hands-on session: Quality checks, Data preprocessing Alignment with reference genome Lecture: Online resources for genetic data analysis. Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
13:00-14:00	Lunch and Prayers
14: 00 - 15:00	Topic: Lecture: What is variant calling, filtering, and annotation Hands-on session: Variant Calling, Variant Filtering and Annotation Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
15: 00 - 17:00	Topic: Lecture: Overview of TB Hands-on session: TB data analysis Dr. Zaira Rehman , IHHN, Karachi, Pakistan.



Day 2: July 29, 2025	
09:00 - 09:30	Topic: Hands-on session: TB data analysis Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
09:30-10:00	Topic: Hands-on session: TB data analysis Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
10:00 -10:30	Coffee break
10:30 - 12:00	Hands-on session: Phylogenetic analysis and outbreak investigation Dr. Zaira Rehman , IHHN, Karachi, Pakistan.
12:00 - 13:00	H1: Assembly (Linux/Velvet); Reads Alignment (Linux/Bowtie), Quantification (python script) Prof. Dr. Waseem Haider , CUI, Islamabad, Pakistan.
13:00 - 14:00	Lunch and prayer Break
14:00- 15:00	H2: Data Analysis in Excel Prof. Dr. Waseem Haider , CUI, Islamabad, Pakistan.
15:30 - 17:00	H3: Data Analysis R Prof. Dr. Waseem Haider , CUI, Islamabad, Pakistan.
Day 3: July 30, 2025	
09:00 -10:30	Lecture: AI and Machine Learning Prof. Dr. Waseem Haider , CUI, Islamabad, Pakistan.
10:30 - 11:00	Coffee Break
11:00 - 13:00	H4: Introduction to Python Prof. Dr. Waseem Haider , CUI, Islamabad, Pakistan.
13:00 - 14:00	Lunch and Prayer break
14:00 - 15:00	H5: Data Analysis in Python Prof. Dr. Waseem Haider , CUI, Islamabad, Pakistan.
15:00 - 16:30	H6: Machine Learning in Python Prof. Dr. Waseem Haider , CUI, Islamabad, Pakistan.
16:30 - 17:00	Closing and certification