Certificate Course in Bioinformatics

UndertheMeitY,Governmentof India-fundedproject:

"Smart Bioinformatics Ecosystem: Leveraging AI and Cloud Technology for Innovation and Capacity Building in Bioinformatics"

OrganizedbyNIELIT Guwahati

In collaboration with Department of Botany, Chemistry, Physics, Zoology,

Jawaharlal Nehru College, Boko

Venue:Jawaharlal Nehru College From 16th March, 2026

Schedule:

Day	Time	Topic
Day 1 16/03/26	10:30–11:00AM	**Inauguration**
	11:10AM–12:45PM	**Theory:** Concepts of biological databases, data types, and metadata interpretation; principles of data integration across genomics, transcriptomics, and proteomics.
	1:30–4:00PM	**Practical:** Hands-on retrieval, integration, and basic analysis of datasets from NCBI, EMBL-EBI, UniProt, and PDB.

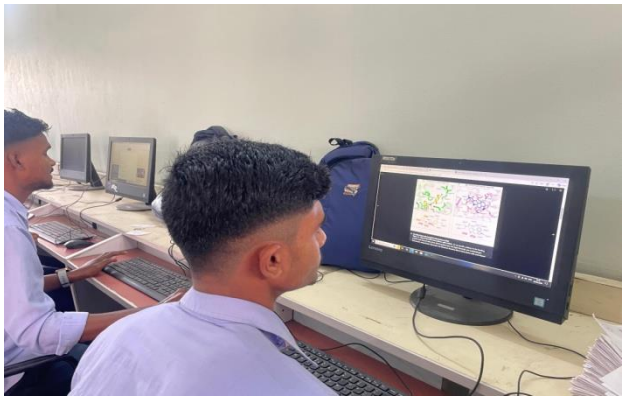
Day	Time	Topic
Day 2 17/03/2026	10:00AM–12:30PM	**Theory:** Principles of scoring matrices, substitution models, pair wise and multiple Sequence alignments. Fundamentals of sequence similarity, homology Inference and functional annotation. Introduction To advanced BLAST algorithms
	1:30PM- 4:00PM	**Practical:** Apply alignment algorithms Perform BLAST searches, analyze homology, and annotate sequences using: BLASTn, BLASTp, BLASTx and tBLASTn. Generate multiple sequence alignments

Day	Time	Topic
Day3 18/03/2026	10:00AM–12:30PM	**Theory:** Introduction to advanced BLAST algorithms and phylogenetic tree construction and concept Related to phylogeny
	1:30PM- 4:00PM	**Practical:** construct basic phylogenetic tree susing MEGA and various tools to visualized a phylogenetic tree

Day	Time	Topic
Day4 19/03/2026	10:00AM-12:30PM	Theory: Protein structure fundamentals, PDB/UniProt resources, and basics of structure refinement and prediction.
	1:30PM- 4:00PM	Practical:Visualizeproteinstructuresin3D, analyze Secondary and tertiary structure feature susing UCSF Chimera, PyMOL, and apply basic computational prediction/refinement methods Using SWISS Model Work space and MODELLER.

Day	Time	Topic
Day 5 20/03/2026	10:00AM-12:30PM	Theory: Overview of functional annotation of gene/protein. Mapping of biological pathways, interpret pathway level biological insights
	1:30PM- 4:00PM	Practical: functional annotation of gene/protein. Mapping of biological pathways using different bioinformatics tools

NIELIT organized a "Certificate Course in Bioinformatics" in collaboration with Department of Zoology, Botany and Chemistry for B.Sc. 4th semester student's from16. 03. 2026 to 20.03.2026. A total of 80 students participated in the programme. Mr. Manabendra Nath and Mr. Nabajyoti Goswami, Senior Faculty of NIELIT was present as Resource Person in this event.




GPS Map Camera
Kamrup,Assam,India
Tinigharia Mugakhol Road, Boko, Kamrup, Assam 781123, India
Lat 25.965269, Long 91.215521
Wednesday, 18/03/2026 02:45 PM GMT+05:30
Note : Captured by GPS Map Camera