NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY

(PHARMACY INSTITUTE), GREATER NOIDA, U.P. 201306

A Report on

Bioinformatics: From Data to Discovery

Noida Institute of Engineering and Technology (Pharmacy Institute), Greater Noida, organized a short-term certification course for Bachelor of Pharmacy students on the topic **"Bioinformatics: From Data to Discovery"** from **February 20th to 23rd, 2024**. A Four-day certification course on **" Bioinformatics: From Data to Discovery"** was conducted to provide participants with in-depth knowledge of bioinformatics. The course covered data acquisition, data processing & management, data analysis, and its applications.

On the first day, the session was inaugurated by **Dr. Rupa Mazumder**, Dean, NIET (Pharmacy Institute), who introduced the fundamentals of bioinformatics. Further, the session began with an overview of bioinformatics, highlighting its history, key concepts, and relevance in the pharmaceutical field, and provided insights into genomics, proteomics, and pharmacogenomics. The students gained a conceptual understanding of how bioinformatics tools assist in drug discovery and disease research. On the second day, **Dr. Sushma Talegaonkar**, Associate Professor, DIPSAR, focused on biological databases and sequence alignment. Students learned to retrieve data and perform sequence alignments using tools such as BLAST and Clustal Omega. The third day session was delivered by **Dr. Javed Ali**, Professor, Jamia Hamdard, New Delhi, who introduced participants to genomic data analysis and the basics of molecular docking. The session covered genome annotation, gene prediction, and comparative genomics. In the second half of the day, students were introduced to the fundamental principles of ligand-receptor interactions, with demonstrations using molecular docking tools such as AutoDock and SwissDock. The final day was addressed by **Dr. Sushma Verma**, Professor, NIET, who introduced the students to a virtual lab simulation, where students worked with platforms like the NCBI database, UCSC Genome Browser, and DrugBank. They were divided into groups to perform mini-projects, which included identifying target proteins for diseases and retrieving relevant sequences and structural information. The programme concluded with an assessment in the form of a quiz, followed by the distribution of certificates of participation.