Summer Internship 2026
Part-1: Tools and Techniques in Biotechnology and Bioinformatics

DAY	MODULES - 60 Hours (06 hours per day)
Day 1	**Biochemical Characterization of Microbes**
Day 2	**Polymerase Chain Reaction** • Principle and components of PCR • Types of PCR • DNA Extraction • PCR setup, amplification, agarose gel electrophoresis analysis
Day 3	**Molecular Identification of Microbes** • Basics of 16S rRNA gene sequencing and ITS region analysis (fungi) • Phylogenetic tree construction and analysis • Sequence databases (NCBI, BLAST)
Day 4	**Cell Disruption Techniques** **Protein Purification Techniques**
Day 5	**Two-Dimensional (2D) Gel Electrophoresis** • Principles of isoelectric focusing • Sample preparation • Gel staining and imaging techniques • Data analysis
Day 6	**Introduction to Bioinformatics & Biological Databases** • Understanding bioinformatics: Definition, Scope and Career Opportunities • Explore major biological databases: NCBI, EMBL-EBI, UniProt, PDB • Gain familiarity with sequence formats
Day 7	**Sequence Analysis & Similarity Search** • Sequence Formats, Concepts and Similarity Searching • Perform sequence alignment: Pairwise and Multiple Sequence Alignments
Day 8	**Genomics & Genome Browsing** • Introduction to: UCSC Genome Browser and Ensembl Genome Browser • Gene Prediction & Annotation
Day 9	**Protein Bioinformatics & Structural Biology** • Protein Databases & Visualization • Protein Analysis: Physicochemical properties, Conserved domains and Motif analysis • Identify active sites • Predict protein structure
Day 10	**AI and Machine Learning in Bioinformatics** • Understand AI applications in bioinformatics • Disease prediction, Drug discovery and Precision medicine

Internship (60 hours) will be provided by the faculty from Department of Biotechnology, Biochemistry and Bioinformatics of GGDSD College, Chandigarh

Summer Internship 2026

Part-2: Clinical Research Methods & Pharmacovigilance

By

ANOVUS Institute of Clinical Research

Topics	Hours
MS Excel for research	3
Research Fundamentals	2
Understanding Surveys & Question Design	2
Research methodology	2
Literature search	2
Research report	
Research Topic Selection and Validation	6
Background and Study Rationale	4
Literature screening	4
Methodology design	4
Data collection	10
Data Analysis	6
Result compilation	3
Discussion	2
Conclusion drafting	2
Ppt Preparation	4
Ppt Presentation	4

Internship (60 hours) will be provided by the Experts from the Industry Partner ANOVUS Institute of Clinical Research, Chandigarh