**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class:BSc Bioinfo(E)1st Year**  **Name of the Teacher:Dr Vikas Sharma**

**Subject:Intro to bioinformatics Period :3rd (4-6)**

**Paper :A Room No : Bioinformatics Lab**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | Introduction to Bioinformatics, Databases |
| Week 2 | 22-08-2022 to 27-08-2022 | ORF, Splicing, Alternate Splicing, Introns, Exons |
| Week 3 | 29-08-2022 to 03-09-2022 | Splice Variants, Triplet Coding, Supercoiling |
| Week 4 | 05-09-2022 to 10-09-2022 | Introduction to Proteins, Different Structural levels of Protein. |
| Week 5 | 12-09-2022 to 17-09-2022 | Identity, Similarity, Homology |
| Week 6 | 19-09-2022 to 24-09-2022 | FASTA, Entrez, PubMed, Medline, ASN.1 |
| Week 7 | 26-09-2022 to 01-10-2022 | Notion of Homology |
| Week 8 | 03-10-2022 to 08-10-2022 | Functional Divisions of Sequence Databases |
| Week 9 | 10-10-2022 to 15-10-2022 | Nucleotide Sequence databases, Flat File Format |
| Week 10 | 17-10-2022 to 22-10-2022 | Genpept, Swissprot, Uniprot |
| Week 11 | 25-10-2022 to 27-10-2022 | NCBI Resource |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | NCBI Bookshelf |
| Week 14 | 07-11-2022 to 12-11-2022 | Melting Temperature |
| Week 15 | 14-11-2022 to 19-11-2022 | Double Helix, Closed Circular DNA |
| Week 16 | 21-11-2022 to 26-11-2022 | Revision |

**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: BSc Bioinformatics (E)2nd Year Name of the Teacher:Dr. Vikas Sharma**

**Subject: Sequence Analysis Period : 4th(4-6)**

**Paper :A Room No : Bioinformatics lab**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | Local & Global alignment |
| Week 2 | 22-08-2022 to 27-08-2022 | Gap Penalty |
| Week 3 | 29-08-2022 to 03-09-2022 | Affine gap penalty |
| Week 4 | 05-09-2022 to 10-09-2022 | Blast Algorithm |
| Week 5 | 12-09-2022 to 17-09-2022 | Significance of Alignments : E value, Scores |
| Week 6 | 19-09-2022 to 24-09-2022 | Clustal W, Clustal X |
| Week 7 | 26-09-2022 to 01-10-2022 | Principles of Taxonomic Identification |
| Week 8 | 03-10-2022 to 08-10-2022 | Distance & Parsimony Methods |
| Week 9 | 10-10-2022 to 15-10-2022 | Clustering Methods |
| Week 10 | 17-10-2022 to 22-10-2022 | Rooted & Un rooted Trees |
| Week 11 | 25-10-2022 to 27-10-2022 | Boot Strapping, Phylip |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Tree of Life |
| Week 14 | 07-11-2022 to 12-11-2022 | Scoring Functions |
| Week 15 | 14-11-2022 to 19-11-2022 | Sum Of pairs Measures |
| Week 16 | 21-11-2022 to 26-11-2022 | Revision |

**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class:BSc Bioinformatics(E)3rd Year Name of the Teacher:Dr. Vikas Sharma**

**Subject:Introduction to Genomics Period :5th (4-6)**

**Paper :A Room No : Bioinformatics Lab**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | Human Genome Project |
| Week 2 | 22-08-2022 to 27-08-2022 | Annotation |
| Week 3 | 29-08-2022 to 03-09-2022 | Repeats |
| Week 4 | 05-09-2022 to 10-09-2022 | Hierarchical & Shotgun Sequencing |
| Week 5 | 12-09-2022 to 17-09-2022 | Base Calling |
| Week 6 | 19-09-2022 to 24-09-2022 | Polymorphisms |
| Week 7 | 26-09-2022 to 01-10-2022 | SNPs, Repeats |
| Week 8 | 03-10-2022 to 08-10-2022 | Manual & automated Sequencing methods |
| Week 9 | 10-10-2022 to 15-10-2022 | Sequencing Accuracy |
| Week 10 | 17-10-2022 to 22-10-2022 | Coding , Non-coding regions |
| Week 11 | 25-10-2022 to 27-10-2022 | Sequencing Methods |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | DNA Sequencing by Capillary Electrophoresis |
| Week 14 | 07-11-2022 to 12-11-2022 | DNA Sequencing by Capillary Electrophoresis |
| Week 15 | 14-11-2022 to 19-11-2022 | Revision |
| Week 16 | 21-11-2022 to 26-11-2022 | Revision |