Biological Data Analytics

1. **LTP structure** of the course: 3-1-0

2. Course Plan:

| Component | Unit | Topics for Coverage |
|-----------|------|--------------------------------------------------|
| C 1 | Unit | Review of the basic concepts of Probability (up |
| | 1 | to Bayes Theorem) and Statistics (Central |
| | | tendencies and standard deviations) |
| | Unit | Probability Distribution functions: Binomial, |
| | 2 | Poisson and Normal distributions, Central Limit |
| | | Theorem and it's applications. |
| C2 | Unit | Sampling distribution, Estimation, Interval |
| | 3 | estimation, Confidence interval, Test of |
| | | hypotheses, Z-test, t-test, the chi-square test, |
| | | F-test and ANOVA test. |
| | Unit | Correlation and Regression analyses, |
| | 4 | Correlation Coefficients, Least square method |
| | | and curve fittings, Single and multi variable |
| | | regression. |

3. **Text Book:** 'Biostatistics -A Foundation for Analysis in the Health Sciences' by Wayne E. Daniel and Chad L. Gross.

4. Reference: 'Fundamental of Biostatistics' by Bernard Rosner.