**AIR FORCE SCHOOL BAMRAULI**

ACADEMIC SESSION 2019-20

MONTHLY SPLIT-UP OF SYLLABUS

Class –XII Sub: Biotechnology

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| Sl. No. | Month | Chapter/Unit Lesson | Topic/Sub Topic |
| 1 | Apr | **Recombinant DNA Technology** | Introduction; Tool of rDNA Technology; Marketing Recombinant DNA; Introduction of Recombinant DNA into Host Cells; Identification of Recombinants; DNA Library; DNA Probes; Hybridization Techniques; Polymerase Chain Reaction (PCR); DNA Secquencing; Site-directed Mutagenesis |
| 2 | May | **Protein Structure and Engineering** | Introduction to the World of Proteins; 3-D Shape of Proteins; Structure-Function Relationship in Proteins Purification of Proteins; Characterization of Proteins; Protein based Products; Designing Proteins (protein engineering) |
| 3 | Jun | **Genomics and Bioinformatics** | Introduction; Genome Sequencing Projects; Gene Prediction and Counting; Genome Similarity, SNPs and Comparative Genomics; Functional Genomics; Proteomics; History of Bioinformatics; Sequences and Nomenclature; Information Sources; Analysis using Bioinformatics Tools |
| 4 | Jul | **Microbial Culture and Applications** | Introduction, Microbial culture techniques, Measurement and kinetics of microbial growth, Scale up of microbial process, Isolation of microbial products, Strain isolation and improvement, Applications of microbial culture technology, Biosafety issues in microbial technology |
| 5 | Aug | **Plant Cell Culture and Applications** | Introduction; Cell and Tissue Culture Techniques; Applications of Cell and Tissue Culture; Gene Transfer Methods in Plants; Transgenic Plants with Beneficial Traits; Biosafety in Plant Genetic Engineering |
| 6 | Sep | **Animal Cell Culture and Applications** | Introduction, Animal cell culture techniques, Characterisation of cell lines, Methods of gene delivery into cells, Scale-up of animal culture process, Applications of animal cell culture, Stem cell technology, Tissue engineering |
| 7 | Oct | Revision of Syllabus.  Question Answer as per NCERT guidelines | Chapter 1&2 |
| 8 | Nov | Revision of Syllabus.  Previous year paper discussion | Chapter 3&4 |
| 9 | Dec | Revision of Syllabus | Chapter 5&6 |