**Lesson Plan**

**Name of faculty: Visiting Faculty**

**Discipline: Applied sceince**

**Semester: IInd**

**Subject: Fundamental of Biotechnology**

Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

Work Load(Lecture/Practical) per week (in hours): Lectures: 03 hours, Practicals-04 hours, Tutorials:02hours

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| **Week** | **Theory** | |
|  | **Lecture day** | **Topic(Including assignment/ test)** |
| 1st |  | Concept &definition of Biology |
|  | Characteristics features of living organism cell ultrastructure |
|  | function of cell organelles like nucleus mitochondria, chloroplast |
| 2nd |  | Ribosomes & endoplasmic reticulum |
|  | -do- |
|  | Difference between PROKARYOTIC & EUKARYOTIC cell |
| 3rd |  | -do- |
|  | Difference between animal and plant cell |
|  | Definition carbohydrate, Lipids, Proteins, Nucleic Acids, Vitamins Harmons & Enzymes |
| 4th |  | General classification and importance functions of carbohydrate, Lipids, Proteins, Nuclic Acids, Vitemins Harmons & Enzymes |
|  | -do- |
|  | -do- |
| 5th |  | Cell division- Mitosis and its utility to living systems. |
|  | Meiosis and its genetic significance |
|  | Gene concept, location definition and structure  First Assignment |
| 6th |  | First Sessional |
|  | Introduction to replication transcription, translationMutations, Genetic disorder |
|  | Human traits |
| 7th |  | Genetic of blood groups, diabeties type I & II |
|  | -do- |
|  | Brief introduction to morphology and pathogenicity of bacteria |
| 8th |  | -do- |
|  | -do- |
|  | Brief introduction Fungi, Virus Protozoa beneficial and harmful for human being |
| 9th |  | -do- |
|  | Tools used in recombinant DNA technology |
|  | -do- |
| 10th |  | -do- |
|  | Plasmids as nature’s interlopers, restrictions enzymes as nature’s pinking shear |
|  | Vectors as gene transfer vehicles  Production and significance of transgenic plants and animals |
| 11th |  | -do- |
|  | Basic concept of genetically modified organism |
|  | Second sessional |
| 12th |  | Definition of Biotechnology’s Application of Biotechnology in Agriculture |
|  | -do- |
|  | -do- |
| 13th |  | Definition of Biotechnology’s in Medicine, Environment |
|  | -do- |
|  | Industry and Forensic Science |
| 14th |  | -do- |
|  | Role of biology in information Technology(Bioinformatics) |
|  | Nano technology(Nano biotechnology) |
| 15th |  | Microelectromechanical system(Bio-MEMS) and Sensors(Biosensors)s |
|  | Ethical Issues related to biotechnology Second Assignment |
|  | Third Sessional |