

SYLLABUS :-

Tools of recombinant DNA: restriction endonucleases and other enzymes, plasmid, bacteriophage, cosmid and other vectors. c-DNA and genomic library, Gene isolation, cloning and expression, DNA sequencing, oligonucleotide synthesis, Southern and Northern hybridization, FISH, PCR, RAPD, RFLP, DNA fingerprinting and their applications for diagnosis of disease, site-directed mutagenesis, Gene silencing, Gene transfer technologies, Gene therapy; Molecular basis of genetic diseases, genetic counseling.

Functional genomics: DNA chips and microarray gene screen technology; transgenic animals and gene knockout techniques, cell culture based techniques.

Practical: DNA isolation and purification, restriction enzyme analysis, southern hybridization, DNA sequencing, PCR, RAPD, gene cloning, identification of recombinant clone and expression of protein in bacteria and eukaryotic cells.