Course title: Molecular Genetics

Overall Aim of Course: Developing knowledge and understanding in molecular genetics, genetic materials in organisms and their functions, and practical skills in molecular genetics techniques.

Contents: The key concepts in molecular genetics. Nucleic acid structure and function, DNA replication, transcription, translation, chromosome structure and remodelling and regulation of gene expression in prokaryotes and eukaryotes. DNA isolation and structure synthesis and mRNA stability, RNA types. Analysis of nucleic acids, molecular hybridization techniques, re-association kinetics and repetitive DNA, nucleic acids, DNA recombination, and gene conversion. Regulation of gene expression. Electrophoresis and PCR application.