	Peter, J. R., *i*Genetics: A Molecular Approach, Pearson Education.	
	Sambrook, J., Fritsch, E. F. and Maniatis, T., Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, New York.	
	Streips, U.N. and Yasbin, R.E., Modern Microbial Genetics, John Wiley.	
	Synder, L., Peters, J. E., Henkin, T. M. and Champness, W., Molecular Genetics of Bacteria, ASM Press.	
	Trun, N. and Trempy, J., Fundamental Bacterial Genetics, John Wiley & Sons.	
	Watson, J. D., Baker, T. A., Bell, S. P., Gann, A., Levine, M., Losick, R. Molecular Biology of the Gene, Pearson/Benjamin Cummings	
Learning Outcomes	1) Explains principles/concept of prokaryotic and eukaryotic genetics, viral genetics and their application. 2) Learn Mutagenesis, mutation and mutants and their significance in evolution. 3) Understanding the concepts of bacterial and eukaryotic plasmids.	

Programme: M.Sc. (Microbiology)
Course Code: MIPC-402
Title of the Course: MICROBIAL GENETICS [P]
Number of Credits: 1, Practical
Contact hours: 30
Effective from Academic Year: 2022-23

Prerequisites	Students should have basic knowledge of DNA and RNA structure and Prokaryotic and eukaryotic genome.	
Objective:	To learn the basic principles and techniques of microbial genetics.	
Content:		**(30)**
1.	Isolation of genomic DNA from bacteria.	
2.	Isolation of plasmid DNA from bacterial cells by Alkaline Lysis method.	
3.	Spectrophotometric quantification and determination of purity of bacterial plasmid and genomic DNA.	
4.	Agarose gel electrophoresis, visualization and documentation of plasmid and genomic DNA using Gel Doc system.	
5.	UV mutagenesis and screening of pigment deficient mutants of *Serratia marcescens*.	
Pedagogy:	Hands-on experiments in the laboratory, video, online data	
References/ Readings	As given under Theory Course MITC-402	
Learning Outcomes	1. Understanding the principles and concept of Prokaryotic DNA isolation and purification. 2. Exposure to the basic techniques of Mutagenesis.	