Molecular Genetics and Genetic Engineering (LS 501) (2 credits)

M. Sc. IIIrd Semester (Monsoon) July-December, 2018

Lecture Schedule (Tuesday and Thursday, 11-12)

Jul 24	From Genetics to Molecular Genetics and Genetic Engineering	PCR
Jul 26	Transcriptional Control Regions of Prokaryotic and Eukaryotic Genes	PCR
July 31		PCR
Aug 2		,,
Aug 7		,,
Aug 9		,,
Aug 14	DNA Modifying Enzymes, DNA Cloning and Manipulating Cloned DNA	PCR
Aug 16		,,
Aug 21		,,
Aug 23	RNA isolation, cDNA Synthesis, cDNA Library Construction and its Applications	PCR
Aug 28		,,
Aug 30		
Sep 4	Genomic DNA Library Construction and its Applications	PCR
Sep 6		,,
Sep 11		,,
Sep 13	Identification and Analysis of Recombinant DNA Clones	PCR
Sep 18		,,
Sep 20		,,
Sep 25	DNA Sequencing Technology and its Applications	KN
Sep 27		”
Oct 4	RNA Sequencing Technology and its Applications	KN
Oct 9		,,
Oct 11	Methods to study Gene Expression and its Applications	KN
Oct 16		,,
Oct 18		
Oct 23		,,
Oct 25		,,
Oct 30	Protein-Protein Interactions and its Applications	KN
Nov 1		
Nov 6		
Nov 8	Polymerase Chain Reaction and its Applications	,,
Nov 13		,,
Nov 15	Site-directed Mutagenesis, Genome Editing (Crispr-cas, Zfn, Talen etc.) and their Applications	PCR
Nov 20		
Nov 22		PCR
Nov 27	Gene Knock-out and Knock-down Methods and their Applications	PCR
Nov 29	Transgenic Systems and their Applications	PCR

PCR*: Prof. P.C. Rath, KN: Prof. K. Natarajan, * Coordinator (Oct 2 Holiday)

Books recommended: Principles of Gene Manipulation, S.B. Primrose, R.M. Twyman & R.W. Old (6^{th} Edn.,2001) Blackwell Science; Principles of Gene Manipulation & Genomics, S.B. Primrose & R.M. Twyman (7^{th} Edn., 2006) Blackwell Publishing