Core Course

LS 452—MOLECULAR BIOLOGY [3 credits]

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S No	Topic	Contact Hours
1.	Macromolecules and Organization: DNA, RNA: Structure, Conformation, Denaturation, Renaturation	
2.	Chromatin structure, nucleosome	
3.	Genes and genome organisation	
4.	Transposons and retrotransposons	
5.	Processes: DNA Replication-mechanism-Prokaryotes/eukaryotes	
6.	RNA world and RNA Replication	
7.	Mechanism of transcription- Prokaryotes/eukaryotes	
8.	RNA processing: capping, polyadenylation, splicing, editing	
9.	Genetic code and translation	
10.	Regulation: Transcriptional regulation- Prokaryotes/eukaryotes	
11.	Translational regulation	
12.	Epigenetics	
13.	Gene silencing, RNA interference	

Suggested reading:

1. Genes IX. Lewin (2008)
2. Molecular Biology of the Gene. Watson et. al. (6th edn., 2009)
3. Molecular Cell Biology. Lodish et. al. (6th edn., 2008)
4. Molecular Biology of the Cell. Alberts et. al. (5th edn.,2007)