LS 533AEukaryotic Gene ExpressionName of the Faculty :K. Natarajan* and R. Muthuswami		2 Credit
Sr.No.	Торіс	Faculty Name/ Contact Hours
1.	Gene expression in eukaryotes: an overview	KN/1
2.	Eukaryotic gene structure, Initiation of transcription by RNA polymerase and transcription machinery.	RM/1
3.	Modification of chromatin structure and activation of gene expression	RM/2
4.	Regulatory cis elements, various modes of binding of transcription factors to hose elements, concept of weight matrix.	RM/1
5.	Enhancers, Enhancer RNAs (eRNAs) and gene regulatory network	RM/1
6.	Long non-coding RNAs in gene regulation	RM /1
7.	Genome-wide transcription and its role in gene regulatory network	KN/1
8.	Various families of gene regulatory proteins: helix-turn-helix, helix-loop-helix, homeodomain, leucine zipper and Zn family of transcription factors.	RM/1
9.	Histone modifications and chromatin structure	RM /1
10.	Histone modifying enzymes and transcription	RM/2
11.	Mapping chromatin structure	RM/1
12.	Genome-wide chromatin maps and Histone Code	RM /1
13.	Co-transcriptional and Post-transcriptional events in gene expression	KN/2
14.	Co-transcriptional and Post-transcriptional events in gene expression	KN/2
15.	Translational control of gene expression	KN/2
16.	Ribosome profiling assays to study translationally regulated mRNAs	KN/1
17.	Integration of extracellular signals to the transcription machinery	KN/1
18.	Diversification of cellular proteome by differential splicing	KN/1
19.	Small regulatory RNAs and their role in gene regulation	KN/1

Further Reading:

- 1. Principles of genome Analysis and Genomics : SB Primose and R M Twyman
- 2. Molecular Biology of the Cell : Alberts et al
- 3. Genes X by Lewin
- 4. Reviews/research articles