



Module PMRF-ISSS003

# MOLECULAR BIOLOGY

## Name of the PMRF student

Simran Srivastava, IISC

## Required background of the students taught

Undergraduate/Postgraduate students interested to pursue research on biological topics

## Faculty coordinator

Prof Sanjana T, Department of Electronics and communication, BMS College of Engineering, Bengaluru

## Online session coordinator

Ms Bhoomika C S, Department of Center for Nanomaterials and MEMS, NMIT, Bengaluru



## Schedule of the module

Course Start date: 1<sup>st</sup> June, 2021

Course End date: 5<sup>th</sup> August, 2021

Lecture days: Tuesday and Thursday

Time: 6:30 pm – 7:30 pm

## Details of the content of the module

- Genome sequence and organization
  - Content of the genome
  - Gene distribution across the genome
- Gene structure and function
  - Exons and Introns
  - Encoding of RNAs and polypeptides
- DNA packaging and chromatin assembly
  - Euchromatin and Heterochromatin
  - Nucleosome assembly
- DNA replication
  - Semiconservative model of replication
  - Introduction to replication machinery
- Transcription in prokaryotes (Overview)
- Transcription in Eukaryotes (Overview)
- RNA processing and post-transcriptional mechanisms
  - RNA splicing and processing
- Gene regulation in prokaryotes
  - Operon model
- Gene regulation in Eukaryotes
  - Chromatin remodeling & DNA modifications
- Introduction to genetic engineering

Meeting link

<https://meet.google.com/hcu-qedk-ipq>

Contact email ID: [issf.forum@gmail.com](mailto:issf.forum@gmail.com)

Registration link:

[https://docs.google.com/forms/d/e/1FAIpQLScdl8Jdqalxwveu-yiXRgwLv3W7yDqivlRj\\_JDJhqNxBit1A/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLScdl8Jdqalxwveu-yiXRgwLv3W7yDqivlRj_JDJhqNxBit1A/viewform?usp=sf_link)