PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement facilitated by the Institute of Smart Structures and Systems

### Module PMRF-ISSS049/2023

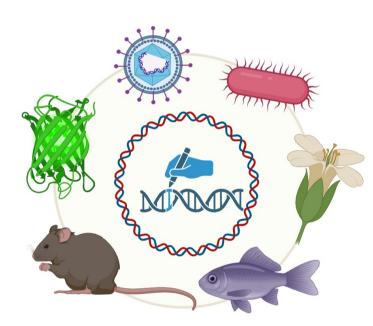
# **Recombinant DNA Technology**

#### Name of the PMRF student

## Sumandeep Kaur

#### **Required background of the students taught**

Taught Enzymology, Scientific Writing, Basics of Biology to Bachelor's and Master's level Students at Ramaiah University of Applied Sciences



#### Details of the content of the module

- 1. Introduction to recombinant DNA technology (Lectures on its relevance to society)
- 2. Basic techniques (I) of rDNA technology: Cloning and expression of proteins in mammalian, Plant and Bacterial systems (Lectures), Vector systems used for expression: Transient and Stable, transgenics
- 3. Basic techniques (II) of rDNA technology: Electrophoresis, RT-PCR, qPCR, Western Blotting (Lectures and Discussions)
- 4. Advanced techniques: CRISPR-Cas9, TALENS, Zinc Fingers mediated Genetic manipulations. Knock-In, Knock-Out, Site Directed Mutagenesis (Lectures)
- 5. Applications of Genetic Modifications in Medicine, Agriculture (Lectures and Discussions)
- 6. Ethical concerns regarding Genetic manipulations: where to stop (Discussions)

#### Schedule of the module

The course will be conducted twice a week, starting 3 October 2023 to 12 December 2023.

Each session will be 1.5 hour (Tuesday, Friday) 2:30 to 4:00 PM. Total 16 Lectures and 3 Problem solving sessions will be conducted. 2 Sessions for difficult points will also be held.

#### Meeting link : Will be shared later

#### Contact email ID: isss.forum@gmail.com

**Registration link:** 

Link

https://docs.google.com/forms/d/e/1FAIpQ LSe4fPrCQikQHOW7shqrkconG\_Tax\_JiCAQA 1hd4L1FZfBVzAg/viewform?usp=sharing