



# **MALAVIYA MISSION TEACHER TRAINING CENTRE IIITDM Kancheepuram**

## **Reconfigurable Intelligent Surfaces for 6G Wireless Communication**

### **About MMTTC:**

The Malaviya Mission Teacher Training Center (MMTTC) at IIITDM Kancheepuram is funded by the Ministry of Education (MoE) under the Malaviya Mission Teacher Training Programme. The mission aims to transform higher education by integrating Indian values and ethos into teaching, research, publications, patents, and institutional development. Established as one among the 116 centers in the country, the MMTTC at IIITDM Kancheepuram focuses on design and manufacturing education. It develops e-learning materials, low-cost laboratory instruction modules, and innovative projects for students and teachers.

## **SHORT TERM PROGRAMME**

**Date:**  
23<sup>rd</sup> June to 28<sup>th</sup> June 2025

**Online**

### **About the programme:**

The smart radio environment (SRE) is going to have a prominent role in the upcoming sixth generation (6G) wireless communications. The current wireless environment does not have control over the channel, but in SRE, the channel can be controlled to have many benefits, like better signal reception, high throughput, high data rates, etc. To control the wireless environment, the reconfigurable intelligent surfaces (RISs), which are planar structures, will be placed inside the channel, and by controlling the RIS, the channel can be controlled. However, designing the RIS is not easy as it needs to offer various kinds of beam-manipulations like beam-steering, beam-splitting, beamforming, etc. Metasurfaces, which are 2D metamaterials, have been explored in the literature and identified as promising candidates to develop the RIS structures.

In this seven-day short-term program, several experts working on the metasurfaces, 2D metamaterials, reconfigurable intelligent surfaces, and advanced antenna designs will share their knowledge and enrich the audience in the field of RIS. After attending this course, it is expected that the participants will understand everything about the RIS from the basics to the design procedures and measurements.

### Topics covered:

- ❖ Reconfigurable Intelligent Surfaces for Future Wireless Communications
- ❖ Theory, Background, and Design Methodology of Reconfigurable Intelligent Surfaces
- ❖ Metasurfaces for Reconfigurable Intelligent Surfaces
- ❖ Metagratings for Reconfigurable Intelligent Surfaces
- ❖ Metasurface Antennas
- ❖ Microwave Technologies for 6G Wireless Communication
- ❖ Advanced Antenna Designs for 6G Applications
- ❖ Smart Radio Environment
- ❖ Phase Gradient Metasurfaces
- ❖ Dielectric Resonator Antennas for 6G Technology
- ❖ Machine Learning in Designing RIS
- ❖ RIS for Smart Cities and IoT

**Registration Fees:**  
**NIL**

### Registration:

1. Register and login as a participant in [www.mmc.ugc.ac.in](http://www.mmc.ugc.ac.in)
2. In the dashboard click on “Apply for Other programmes”
3. Select Apply for “Short Term Programme” and from the dropdown select the Programme Name and Center Name as “Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram (23/06/2025-28/06/2025)”
4. Choose the title from the dropdown menu and enter the remaining personal information including year of joining, total years of experience etc.
5. Upload the NOC on Institute/College/University letterhead as per the format provided in <https://docs.google.com/document/d/1-lgQyeNjISjJw14cMFyIJMi-Jhw2Hq4PI/edit?usp=sharing&ouid=115411563109741780255&rtopf=true&sd=true> **here**
6. Click on Submit to complete the registration process.



### Resource Persons :

The course content will be delivered by resource persons from leading and prestigious academic institutions, research labs and industry.

### Eligibility:

Faculty members working in universities and colleges that are included under Section 2(f) of the UGC Act are eligible to attend STP.

This programme shall be taken into consideration for fulfillment of the requirements as laid down in Career Advancement Scheme as per UGC Regulations.

### Coordinator :

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