

## PROGRAM DATES & VENUE

The program will be held during 06-11 July 2026 at the Dept. of Aerospace Engineering, IISc, Bangalore. ([click here](#) for location ).

## COURSE FEE

	Professional		Students	
	Industry* / R&D labs	Institutes / Universities	PhD.	MTech / BTech / Project Staff
Until 25 June 2026	30,000 INR	24,000 INR	18,000 INR	12,000 INR
25 June 2026 to 4 July 2026	35,000 INR	30,000 INR	22,000 INR	15,000 INR

### Note :

- 1) 18% will be additionally charged for the GST.
- 2) Project Staff of an academic institute will be considered as equivalent to MTech Students.
- 3) Due to limited number of seats, allotment will be on first-come first-serve basis.

**The course fee includes the course kit, lunch and two times coffee/tea during the lectures.**

## TRAVEL & ACCOMODATION

Limited accommodation has been arranged in the IISc Guest Houses for participants attending the program, on payment basis (approx. 1000 Rs. + GST per night). Rooms will be allotted subject to availability and are intended to provide comfortable and convenient access to the Institute facilities during the event. Participants are encouraged to make their accommodation arrangements well in advance, as the number of rooms is limited.

## TOPICS

Introduction and Motivation
Overview of Sensors for Navigation
Reference Frames and Coordinate Transfer
Inertial Navigation Systems (INS)
Global Positioning Systems (GPS)
State Estimation Using Kalman Filters
INS-GPS Fusion using Kalman Filters
Recurrent Network in Estimation
3D Gaussian Splatting based SLAM
Ranging Codes for Satellite Navigation System
Synthetic Aperture Radar (SAR) Technology
Drone Borne SAR
NavIC Error Mitigation Techniques
Overview of Radars
Radar Signal Processing
Multi-Sensor Data Fusion for Surveillance
Detection of Low-Altitude, Slow-Speed and Small (LSS) Targets
State Estimation for Multi-Target Tracking



## TUTORIAL WORKSHOP ON Signal Processing for High-Precision Navigation and Surveillance

**06 – 11 July 2026**

**Dept. of Aerospace Engineering  
Indian Institute of Science  
Bangalore, 560 012**

## SUMMARY

This short course is designed to provide a strong technical foundation in Signal Processing for High-Precision Navigation and Surveillance for academic researchers, industry professionals, scientists, and BTech/MTech/Ph.D. students. The program covers INS/GNSS integration, Kalman filtering, radar signal processing, SAR, multi-sensor data fusion, AI-enabled estimation, and modern SLAM techniques for aerospace and autonomous systems. Emphasis will be placed on both theoretical understanding and practical applications including UAV navigation, surveillance, target tracking, and autonomous sensing systems. Participants are expected to gain the background necessary for advanced work in navigation, estimation, and surveillance systems.

## INVITED SPEAKERS



### Prof. Suresh Sundaram

Professor AE and Chair, Cyber-Physical System, IISc  
Bangalore

**Prof. Suresh Sundaram** specializes in flight control, autonomous systems, robotics, computer vision and AI..



### Prof. Vijay Kumar

Honorary Professor at Electronics and  
Communication Engineering Dept. of IISc Bangalore  
**Prof. Vijay Kumar** specializes in algebraic coding theory for wireless communication, data storage, satellite navigation systems.



### Dr. Tapan Mishra

Ex-Director, Space Applications Centre, ISRO,  
Ex-Director, Physical Research Laboratory

**Dr. Tapan Mishra** is an expert in Synthetic Aperture Radar (SAR), radar design, signal processing, and airborne SAR systems.



### Dr. Megha Maheswari

Scientist, URSC, ISRO, Bengaluru

**Dr. Megha Maheswari** has experience in satellite remote sensing, global navigation satellite system (GNSS) reflectometry.



### Dr. A. Vengadarajan

Scientist, LRDE, DRDO

**Dr. A. Vengadarajan** has excellent hold on Radar Systems in general.



### Dr. R.S. Narasimhan

Scientist, LRDE, DRDO

**Dr. R. S. Narasimhan** is an expert in AI Based radar signal processing.



### Mr. Senthil Rangarajan

Scientist, LRDE, DRDO

**Mr. Senthil Rangarajan**, LRDE, DRDO, has expertise in conventional radar signal processing.



### Dr. R. Rajesh

Scientist, CABS, DRDO, Bengaluru.

**Dr. R. Rajesh**, CABS, DRDO, Bengaluru, is an expert in Information theory, Radar, Energy harvesting, Multiple access channels joint source channel coding.



### Dr. Kumar Vijay Mishra

Senior Fellow, US army research

**Dr. Kumar Vijay Mishra** is an expert in radar systems for low-altitude, slow-speed, and small (LSS) target detection.



### Dr. P.K. Menon

Optimal Synthesis Inc., USA

**Dr. P.K. Menon** specializes in optimal control, state estimation, and guidance systems for aerospace vehicles.

## Speaker & Workshop Co-Ordinator

### Prof. Radhakant Padhi

HAG Professor, Aerospace Engineering, IISc



**Prof. R. Padhi** is an expert in aerospace navigation, state estimation, and intelligent guidance systems. His work includes INS/GNSS integration, Kalman filtering, autonomous systems, and advanced navigation technologies for DRDO and ISRO missions.

## REGISTRATION DETAILS

Interested participants can either scan the QR code below for registration or follow this link:

<https://forms.cloud.microsoft/r/sg2XAb6L5m>



Scan Here

### Note:

- 1 A valid proof (e.g. copy of ID card) has to be provided during registration *if claiming for a student rate*. The registration is on first come first serve basis due to limited number of seats.
- 2 After filling this form, if you are shortlisted for the course then you will receive a link with a validity of 48 hours to complete the payment and upon payment completion your seat will be confirmed for the course.
- 3 If fee is not paid within 48 hours after the payment link is received, then the seat will be offered to next waitlisted candidate.

## ADDRESS FOR CORRESPONDENCE

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