



**One Week
Online Short Term Course
On
Modeling and
Identification of
Physiological Systems
(MIPS-2023)
(25-29 May 2023)**



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About NIT, Jalandhar

Dr B R Ambedkar National Institute of Technology Jalandhar is among the 31 NITs established by Ministry of Education (earlier MHRD), Government of India. The institute came into existence in the year 1987 (earlier Regional Engineering College, Jalandhar) and obtained the status "Institute of National Importance" by Act of Parliament 2007. The institute is offering B. Tech. programme in various disciplines such as Computer Science and Engineering, Electronics and Communication Engineering, Instrumentation and Control Engineering, Mechanical Engineering, Civil Engineering, Textile Technology, Biotechnology, Chemical Engineering, and Industrial and Production Engineering. In addition to that, the institute offers M. Sc. programmes in Mathematics, Physics and Chemistry, M.Tech. programmes in all the Engineering departments, and Ph. D. programmes in various disciplines.

About the Short Term Course

The mathematical models of physiological systems are helpful in understanding the functions of the underlying physiology and can aid in generating new pathological and physiological theories. Hence, these can facilitate clinical prediction of system failure at an early stage of disease development. In this STC, we mainly touch upon four themes that are central to computational approach to physiology--- (a) mathematical modeling of physiological systems (e.g., central nervous system), and associated diseased conditions (e.g., stroke), (b) formulation of the optimization problem(s) to carry out identification of the physiological models, (c) pre-processing and processing of physiological signals (e.g., ECG, EEG), and (d) machine learning-based screening of diseased subjects. In this STC, we intend to discuss physics-based models as well as data-driven models of the physiological systems.

Topics to be covered

- **Mathematical modeling of physiological systems, and associated diseased conditions**
- **Estimating states and parameters of physiological models**
- **Applications of signal processing in processing physiological signals**
- **Machine learning-based approaches for physiological classification**

Departmental Organizing Committee

❖ Prof. Dilbag Singh	❖ Dr. Karan Veer
❖ Prof. A K Jain	❖ Dr. Amit K. Singh
❖ Dr. R Pahuja	❖ Dr. Richa Sharma
❖ Dr. K S Nagla	❖ Dr. Anil K. Yadav
❖ Dr. S Tiwari	❖ Dr. Ravi Verma
❖ Dr. Rajesh Singla	❖ Dr. Deblina Biswas
❖ Dr. OP Verma	❖ Dr. Mahendra Kumar

Registration Fee:

Faculty/Students from NITJ	Rs. 500
Faculty/Students from Outside NITJ	Rs. 590/- Including GST

Link for the Online Registration and Payment:

https://www.nitj.ac.in/events_registration/stc_mips/login

Note:

- Single registration to attend all lectures
- Prior registration is mandatory to attend STC
- E-certificate will be issued to the participants on successful participation in the course
- Webinar meeting link and other instructions will be shared via e-mail to all registered participants
- The distinguished speakers are faculties from the prestigious institutions of the nation such as IITs, NITs, IIITs and others.