



**One Week
Online Short Term Course
On
Modeling and
Identification of
Physiological Systems
(MIPS-2021)
(20-24 October 2021)**



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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. cardiovascular system), and associated diseased conditions (e.g. coronary artery disease), (b) formulation of the optimization problem(s) to carry out identification of the physiological models, (c) biomedical signal processing and control, and (d) machine learning-based screening of diseased subjects. In the later part of this STC, a brief session on application of deep learning approaches to biomedical systems would be conducted.

Topics to be covered

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

Departmental Organizing Committee

- | | |
|----------------------|----------------------|
| ❖ Prof. Dilbag Singh | ❖ Er. Narinder Singh |
| ❖ Prof. A K Jain | ❖ Dr A K Singh |
| ❖ Dr Roop Pahuja | ❖ Dr Karan Veer |
| ❖ Dr K S Nagla | ❖ Dr O P Verma |
| ❖ Dr Sheela Tiwari | ❖ Dr Sathiya S |
| ❖ Dr Ravi Verma | |

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/mips2021/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.