

Training Programme on **DYNAMICAL SYSTEMS: THEORY & APPLICATIONS** **(DSTA 2018)** **April 02-06, 2018**



Organized by:
Department of Applied Mathematics
Indian Institute of Technology (ISM)
Dhanbad, Jharkhand, Pin-826004

Coordinators:

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ABOUT THE IIT(ISM), DHANBAD

IIT (ISM) is a fully residential technical institute having all modern amenities located in the mineral-rich belt of India in the city of Dhanbad, Jharkhand. It was established in 1926 on the lines of the Royal School of Mines, London. It is a technical institute of international acclaim offering a host of programmes like B.Tech, M.Tech, M. Sc. Tech., M.Sc. and MBA. It offers Ph.D. programmes, while also awarding D.Sc. The institute admits students through IIT-JEE and GATE/IIT(ISM) Exam in respective programmes.

ABOUT THE DEPARTMENT

The department provides an outstanding research environment complemented by excellent teaching for its students to flourish in different arena of academics and industry as well. It offers academic programs leading to the award of M. Sc. (Mathematics and Computing), Integrated M. Tech. (Mathematics and Computing), Ph. D. degree and supporting B.Tech and M.Tech courses of IIT(ISM). The department is executing various sponsored projects received by UGC, CSIR, NBHM, ISRO, DST etc. It is well recognized by the external funding agencies with SAP-DRS provided by UGC and FIST provided by DST. To promote the academic and research activities the Society of Applied Mathematics (SAM) was formed in 2009.

LIST OF POTENTIAL SPEAKERS:

- **Prof. B. Ishwar, B.R.A. Bihar University, Muzaffarpur**
- **Prof. Nandadulal Bairagi, Jadavpur University, Kolkata**
- **Prof. Manish Dev Shrimali, Central University of Rajasthan**
- **Prof. Sunita Gakkhar, IIT Roorkee**
- **Prof. Subir Das, IIT (BHU) Varanasi**
- **Dr. Malay Banerjee, IIT Kanpur**
- **Dr. Tanmoy Banerjee, University of Burdwan**

ABOUT THE TRAINING PROGRAMME

The dynamical system is an area of mathematics which describes how a mathematical system in a geometrical space evolves with respect to time. The main purpose of this training programme is to provide a basic training of dynamical systems theory for participants, so that they can use various dynamical system tools for their research work and can explore realistic models in details. This is the third training programme on the same topic (DSTA 2016, DSTA 2017 and DSTA 2018). Class room lectures and hands-on sessions/practical labs will be organized during the course..

TOPICS TO BE COVERED

- **Basics of Dynamical Systems**
- **Stability and Control**
- **Periodic Orbits, Poincare Maps**
- **Lyapunov Exponents**
- **Normalization**
- **Invariant Manifolds**
- **Bifurcations, Chaos**
- **Applications**

ELIGIBILITY FOR PARTICIPATION

Faculty members/Scientists, Research Scholars, UG & PG students and Industrial personnel

PREREQUISITES

Calculus, Linear algebra, Differential and difference equations; Programming language (preferably FORTRAN, C/C++)

COMPUTE LABS

Linux Servers, Workstations with NVIDIA GPUs Tesla Kepler K20, Quadro 6000, GeForce GTX TITAN X(PG600-A04), Generic (Titan X GPU) under NVIDIA GPU Education Centre (GEC):
Awarded in 2014

ACCOMMODATION

(a) In Executive Development Centre (EDC) on Payment basis

- @Rs. 400/- per person/day AC room (on sharing basis)
- @Rs. 800/- per person double bed AC room

(b) In Students Hostel on first come first serve basis

- @Rs. 200/- per person/day
- **REGISTRATION**

Online registration may be made using link given at IIT (ISM) website.

Registration Fee

Rs. 3,000/-for UG/PG Students & Research Scholars

Rs. 5,000/-for Faculties/Scientists

Rs. 7,000/- for Industry Personnel

MODE OF PAYMENT

- Online Fund Transfer through (UPI/BHIM/Bank/ATM/ RTGS/ NEFT etc.)
- DD (in favour of "Registrar, Indian Institute of Technology(ISM)", payable at Dhanbad)

BANK DETAILS

Name of Bank: Canara Bank

Branch Name: Saraidhela, Dhanbad

Email: cb0986@canarabank.com

A/c No.: 0986101009746 (Saving Bank A/c)

Account Holder Name: Registrar, IIT(ISM), Dhanbad

IFSC Code: CNRB0000986

MICR Code: 826015003

TRAVEL SUPPORT:

Second/sleeper class train fare:-TA support will depend on the availability of fund on request with proper justifications

APPLY ONLINE: <https://goo.gl/forms/Q9lfqREY4EuYdegX2>