

**DEPARTMENT OF APPLIED MATHEMATICS
INDIAN INSTITUTE OF TECHNOLOGY
(INDIAN SCHOOL OF MINES)
DHANBAD-826004**

Brochure
Short Term Advanced Training Programme
On
“Integral Transformations, Distributions, Wavelet Analysis and Applications” (Phase-II)
(October 08-12, 2018)

Preamble: Integral transformations methods have proven to be great importance in the solution of initial and boundary value problems for partial differential equations. The aim of this programme is to provide extensions of a number of integral transformations to generalized functions so that they can be applied to problems with distributional boundary conditions. Pseudo-Differential Operators known as the special type of integral operator which originated as a powerful tool in the study of partial differential equations, have now a field of independent research. Wavelet analysis is an exciting new method for solving difficult problems in science and technology with modern applications as wave propagation, data compression, signal and image processing, computer graphics and other medical image technology.

About the Programme: The main objective of the programme is to provide the platform where the participants can benefit from the lectures delivered by some eminent experts from country on the given below topics and have interaction with them. The program is intended also to be a platform to participants to have exchange of ideas of common interest. Moreover, the programme provides an opportunity to young researchers to get an overview of the current trends in advanced computational methods and to interact with the experts in the field. The programme is useful to mathematicians, scientists and engineers intending to step into this fascinating area. This programme is designed to provide an introduction to the applications of Integral Transformations, Distributions and Wavelet Analysis.

Topic Includes: The course content will cover the areas of Integral Transformations, Distributions and Wavelet Analysis like: (a) Fourier Transforms, Gabor Transforms, Hankel Transforms, Kontorovich-Lebedev transform, Wavelet Transforms etc. and their Applications. (b) Test Functions and Schwartz's distributions and their elementary properties. (c) Convergence of distributions, Distributional Derivatives, Convolution of Tempered Distributions, Product of convolution, Sobolev Spaces, Pseudo-differential Operators and their properties (d) Multiresolution Analysis and Examples, Properties of Scaling Functions and Orthonormal

Wavelet Bases, Construction of Orthonormal Wavelets, (e) Frames and Wavelet Series. (f) Daubechies and Harmonic Wavelets.

Eligibility Criteria: The programme is aimed at Mathematics; Science and Engineering scholars, Faculty & Scientists who wish to gain a basic understanding of the concepts involved and advanced tools of topics.

Date and venue: October 08-12, 2018; Venue: Executive Development Centre (EDC), IIT (ISM), Dhanbad.

Course fee: 1. The course fee includes kit, breakfast, working lunch, tea & snacks, dinner and accommodation on all five is as follows: For outsider Research Scholars and PG Students: Rs. 2000/-, Faculty: Rs. 3000/-, Industry and R&D Organizations: Rs. 5000/-.

2. The registration fee includes kit (without breakfast, working lunch, tea & snacks, dinner, and accommodation) on all five days is as follows: For outsider and IIT (ISM) Research Scholars and PG Students: Rs. 500/-, Faculty: Rs. 1500/-, Industry and R&D Organizations: Rs. 3500/-.

The registration fee should be paid through Demand Draft (DD) drawn on favour of “**Registrar, Indian Institute of Technology (Indian School of Mines), Dhanbad**” payable at SBI, ISM Branch, Dhanbad.

The details for online transaction (for releasing amount through e-payment) of the fee is given below:

Name of Beneficiary : Registrar, Indian Institute of Technology (Indian School of Mines), Dhanbad

Bank Name : Canara Bank; Branch Name: Saraidhela, Dhanbad-828127.

MICR code : 826015003; IFSC Code: CNRB0000986.

Account no. : 0986101009746.

Type of Account : Savings

Last date of registration: September 15, 2018

The filled in registration form along with the DD/a copy of e-payment transaction details should be sent to the Programme Coordinator/ Co-Programme Coordinator in the address as given below on or before September 15, 2018:

Coordinator	Co-coordinator
Dr. Akhilesh Prasad Associate Professor Department of Applied Mathematics, Indian Institute of Technology (Indian School of Mines), Dhanbad – 826 004, Jharkhand, India. Tel: 0326-2235666 (O); Mobile: 9431711231 E-mail: apr_bhu@yahoo.com : aprasad@iitism.ac.in	Dr. Anurag Jayswal, Associate Professor Department of Applied Mathematics, Indian Institute of Technology (Indian School of Mines), Dhanbad – 826 004, Jharkhand, India. Tel: 0326-2235656 (O); Mobile: 9431122002 E-mail: anurag_jais123@yahoo.com

About the Department: The Department of Applied Mathematics is a highly reputed Department which functions with excellence as its motto. The Department was started in the year 1926 along with other Engineering and Science Departments of the institute and has established itself as a dynamic center for academic and research activities. In addition to the teaching of courses in Mathematics for B.Tech and M.Tech Programmes, the Department offers two P.G. Programs, M.Sc (Mathematics & Computing) and 5 Yr. Int. M.Tech (Mathematics and Computing). The faculty is actively engaged in research in diverse fields such as Analysis, Algebra, Topology Operations Research, Cryptography, Graph theory, Solid Mechanics, Fluid Dynamics, and Mathematical Modelling. At present, there are 23 members on the Teaching Faculty in the Department and more than 100 Research Scholars are working for their Ph.D. The Department has a full-fledged computation laboratory to meet the requirements of the M.Sc. students, research scholars and the faculty.

About the Institute: Indian Institute of Technology (Indian School of Mines) 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., Integrated M.Tech.(Mathematics & Computing), Integrated M.Sc. Tech. and MBA. It also offers M. Phil. and Ph.D. programmes, while also awarding D.Sc. The institute admits students through IIT-JEE and GATE/ISM Exam in respective programmes.

Invited Speakers (Tentative):

1. Prof. B. N. Mandal, FNASc, FIMA (UK), ISI, Kolkata
2. Prof. Sandeep Kumar, IIT (BHU), Varanasi
3. Prof. S. K. Upadhyay, D. Sc, IIT (BHU) Varanasi
4. Dr. Pankaj Jain, South Asian University, New Delhi
5. Dr. Arun Pal Singh, Dayal Singh College, Delhi University
6. Dr. U. K. Singh, IIT (ISM), Dhanbad
7. Dr. Ashish Pathak, Institute of Science, BHU, Varanasi
8. Dr. Akhilesh Prasad, IIT (ISM), Dhanbad

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Registration form

Name:

Designation:

Qualification:

Organization:

Address for Correspondence:

Telephone/Mobile:

E-mail:

DD Particulars:

Amount: Rs.

No.:

Date:

Bank:

Date:

Signature of the Applicant

Place: