

**Technical experts for lecture**  
**On**  
**“Computational Methods and Analysis For Engineers”**



Prof. Ravindra D Gudi  
IIT Bombay



Prof. Tanmay Basak, IITChennai



Dr. Senthil  
Murugon S., Associate Prof. , IIT  
Guwahati



Dr. Gaurav Manik, Associate  
Prof. ,IIT Roorkee



Dr. Seshagiri Rao Ambati , Associate  
Prof. NIT Warangal



Dr. Ashish S. Chaurasia  
,Associate Prof., VNIT Nagpur



Dr. Vimal Kumar, Associate Prof.,  
IIT Roorkee



Prof. Sachin L. Borse,  
ICER, Pune



Dr. B. Srinivasa Babji , Ex. Digital  
Services Lead in Industrial  
Automation, ABB Bangalore



Dr. K.N. Gupta, Associate Prof.,  
GUET Guna



Prof. Kannan A., IIT Chennai

**CHIEF-PATRON**



**Professor (Dr) Lalit Kumar Awasthi,**  
Director,  
Dr B R Ambedkar National Institute of Technology,  
Jalandhar

**CONVENER**

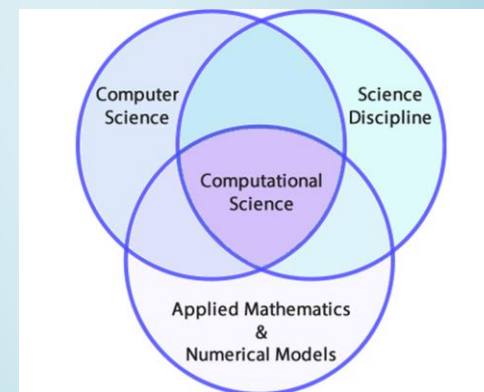


**Dr Sangeeta Garg**  
Associate Professor & Head,  
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**ORGANIZING COMMITTEE**

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**One Week Online**  
**Short Term Course**  
**(TEQIP-III SPONSORED)**  
**On**  
**“Computational Methods and**  
**Analysis for Engineers”**



**(November 18-22, 2020)**

**Organized by**



**COURSE COORDINATOR**



**DR. RAJ KUMAR ARYA**  
**ASSOCIATE PROFESSOR**  
**DEPARTMENT OF CHEMICAL ENGINEERING**  
**DR. B.R. AMBEDKAR NATIONAL INSTITUTE OF**  
**TECHNOLOGY , JALANDHAR, PUNJAB**

## ABOUT NIT, JALANDHAR

Dr B.R. Ambedkar National Institute of Technology Jalandhar (NITJ) was established in the year 1987 as Regional Engineering College and was conferred the status of National Institute of Technology (Deemed University) by the Government of India on October 17, 2002 under the aegis of Ministry of Human Resource Development, New Delhi. The Government of India has declared the Institute as an “*Institute of National Importance*” under an act of Parliament in 2007.

As one of the National Institutes of Technology (NIT), the Institute has the responsibility of providing high quality education in Engineering, Technology and Sciences to produce competent technical and scientific manpower for the country. The Institute offers B Tech, M Tech, M Sc, MBA and PhD programmes in several disciplines of Engineering, Technology and Sciences.

## ABOUT THE DEPARTMENT

The Department was established in 1990 and has been playing a vital role in the development of Chemical Engineering education and research by offering B.Tech, M. Tech and PhD programmes. Its Alumni are occupying eminent positions in chemical industries, research and academic institutions in India and abroad. The Department has established state-of the art laboratories with sophisticated equipment for undergraduate courses and research work. The Department recently received coveted FIST grant of Rs. 155 Lac from Department of Science and Technology, New Delhi to augment post graduate research.

## OBJECTIVES OF THE COURSE

In our day to day engineering problem solving procedures as we proceed to formulate solutions we tend to end up with different types of equations. These equations could be a nonlinear equation, a system of non-linear equations, linear algebraic equation, a system of linear algebraic equations, linear ordinary differential equation, a system of linear ordinary differential equations, non-linear ordinary differential equation, a system of non-linear ordinary differential equations, a system of coupled ordinary differential equations, a system of coupled non-linear ordinary differential equations, partial differential equations (linear and non-linear) or a system of coupled partial differential equations (linear and non-linear).

Questions linger in our minds whether the generated answers are correct or wrong, and thus these equations need to be analyzed and solved using some efficient techniques which would give an answer close to the analytical solution. This short term course has been designed with an aim to give hands-on experience to students, scholars and researchers of chemical engineering specially those working in the modeling and simulation field on the usage of various computational techniques, their applications and limitations.

## WHO CAN ATTEND THIS STC

Registration is open to: academia, industry and R & D laboratories. Interested participants may apply by filling in the Google Form with payment proof on or before 16<sup>th</sup> November 2020.

## REGISTRATION FEE

|                       |                 |
|-----------------------|-----------------|
| Academia              | <b>Rs.100/-</b> |
| Industry participants | <b>Rs.200/-</b> |

Registration fee (Non refundable) should be paid through Paytm OR Google Pay: +91-9819588825 following the payment, screenshot of the same needs to be uploaded during registration. There is no registration fee for NITJ students and employees.

**Registration link for NITJ :**

<https://forms.gle/xwvAPQRD36KKwySEA>

**Registration link for others:**

<https://forms.gle/XxB46qonxH25h2TS8>

**E-CERTIFICATES WILL BE ISSUED TO THE REGISTERED PARTICIPANTS ONLY.**

## CONFIRMATION OF PARTICIPATION

On receiving the Google form and fee remittance receipt, participants will be sent confirmation of their participation through email by 16<sup>th</sup> **November, 2020**. As the programme will be conducted online, the number of participants in the STC would be limited to 200. Candidates are therefore advised to register early to avoid disappointment.

For any queries related to the STC, kindly contact: [aryark@nitj.ac.in](mailto:aryark@nitj.ac.in), or +91-9819588825



**Dr. B. R. Ambedkar National Institute of Technology, Jalandhar**  
**Department of Chemical Engineering**  
**One Week Online International Short Term Course**



on

**“Computational Methods and Analysis for Engineers” November 18 to 22, 2020**

Registration link for NITJ : <https://forms.gle/xwvAPQRD36KKwySEA> , Registration link for others : <https://forms.gle/XxB46qonxH25h2TS8>

| Date and Time           | 10:00 – 11:00  | 11:00-12:00  | 12:00-13:00 | 13:00-14:00  | 14:00-15:00  | 15:00-16:00   | 16:00-17:00        |
|-------------------------|--|--|-------------|--|--|---|--------------------|
| 18-11-2020<br>Wednesday |  | <b>Linear Regression Analysis</b><br>by<br>Prof. Ravindra D. Gudi , Department of Chemical Engineering, IIT Bombay.  |             |  |  | <b>Finite Element Modeling</b><br>by<br>Prof. Tanmay Basak, Department of Chemical Engineering, IIT Chennai -   |                    |
| 19-11-2020<br>Thursday  | <b>Chemical Engineering Computation Using Comsol Mutiphysics</b><br>by<br>Dr. Ashish Chaurasia, Associate Professor, Department of Chemical Engineering, VNIT Nagpur.  |  |             | <b>Response Surface Methodology and Optimization</b><br>by<br>Prof. Kannan A., Department of Chemical Engineering, IIT Chennai.  |  | <b>Data Analytics in Process Industries</b><br>by<br>Dr. B. Srinivasa Babji , Consultant , Ex. Digital Services Lead in Industrial Automation, ABB Bangalore. |                    |
| 20-11-2020<br>Friday    | <b>Orthogonal Collocation Technique and It's Application in Packed Bed Adsorption Column</b><br>by<br>Dr. Kaushal Naresh Gupta, Associate Professor, Department of Chemical Engineering, Jaypee University of Engineering & Technology, Guna, M.P. |  |             | <b>Modeling and Optimization of Membrane Separation Processes</b><br>by<br>Dr. Senthil Murgon, Associate Professor , Department of Chemical Engineering, IIT Guwahati. |  |   |                    |
| 21-11-2020<br>Saturday  | <b>Polynomial Interpolation and Least-Square Approximation: Applications in Chemical Engineering</b><br>by<br>Dr. Vimal Kumar, Associate Professor, Department of Chemical Engineering, IIT Roorkee .  |  |             |  | <b>Molecular Modelling and Computational Analysis: Applications in Development of Composites and Coatings</b><br>by<br>Dr. Gaurav Manik, Department of Polymer and Process Engineering , IIT Roorkee.  |   |                    |
| 22-11-2020<br>Sunday    |  | <b>Formulation of Governing Equation and Solving with Finite Difference in Heat and Fluid Flow</b><br>by<br>Prof. Sachin L. Borse, Department of Mechanical Engineering, Imperial College of Engineering and Research, Wagholi, Pune, Maharashtra. |             |  | <b>Modeling and Simulation of Wastewater Treatment Plants</b><br>by<br>Dr. Seshagiri Rao Ambati, Associate Professor, Department of Chemical Engineering, National Institute of Technology ,Warangal . |   | <b>Valedictory</b> |

For any query related to STC, please contact, **Dr. Raj Kumar Arya**, Course Coordinator , [aryark@nitj.ac.in](mailto:aryark@nitj.ac.in), or +91-9819588825