Eligibility:

Faculty, students, researchers and practicing engineers from Chemical Engineering and allied areas are welcome to attend the course. Please see the course fee section for your entitlement to course fee waiver.

Accommodation, Food and Travel:

Faculty from TEQIP-III institutes are eligible to attend this course without any course fee. Travel allowance is limited to maximum 3-tier AC class, round-trip fare (train fare or lower) on submission of tickets. Limited shared accommodation is available in institute guest houses for TEQIP-III faculty members without payment. For all other candidates, TA, accommodation and food are not included in course fees. The organizer can help the candidates with booking of accommodation on chargeable basis, subject to availability of rooms. Course fee for all the candidates includes the registration kit and course materials.

Course Coordinators:

Dr. Debasis Sarkar

Dr. Parag A. Deshpande

Department of Chemical Engineering,
IIT Kharagpur, Kharagpur – 721302
West Bengal

Email: dsarkar@che.iitkgp.ac.in, parag@che.iitkgp.ac.in

Phone: +91-3222-283920/16

FAX: +91-3222-255303

Course Contents:

Process models and simulations involving

I. Non-linear algebraic equations; Applications to equations of state, calculation of friction factor, etc.

II. Simultaneous linear equations; Calculation of mass, energy balances, steady state compositions in continuous flow reactors, etc.

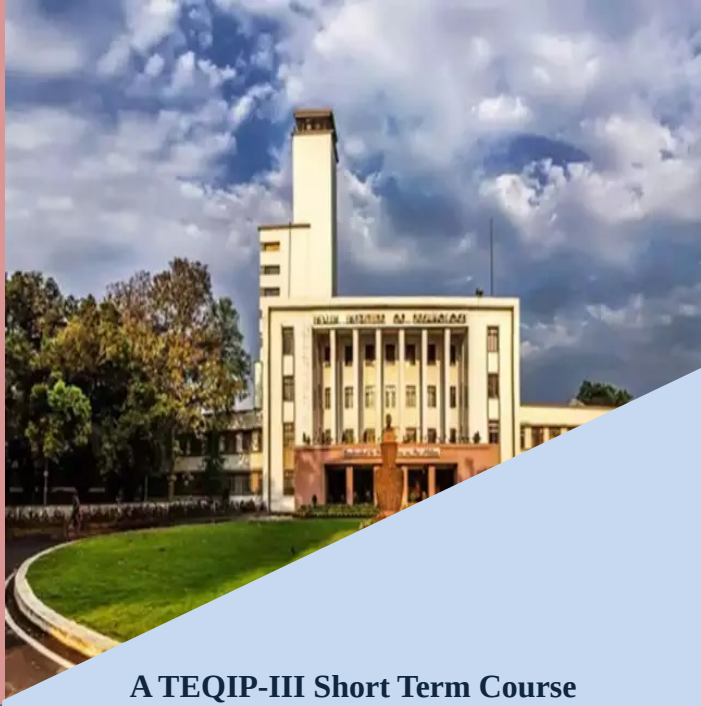
III. Ordinary differential equations: Initial value problems; Application to dynamical systems, reaction kinetics, etc.

IV. Ordinary differential equations: Boundary value problems; Applications to solutions of temperature distribution in a slab, concentration profiles in a catalyst pallet, etc.

V. Partial differential equations; Parabolic problems; Applications to solution of heat equation in two and three dimensions. Elliptic problems; Application of finite element techniques for steady state solution of temperature distribution in two and three dimensional slabs, etc.

Course Objective:

The aim of this course is to introduce various numerical techniques and their applications in solving simple to complex problems of chemical engineering. A wide variety of mathematical equations are involved in design and analysis of various chemical equipment and processes. Choice of a suitable numerical technique to stimulate a chemical process requires prior knowledge of various numerical techniques and their practical implementations. This course is intended to provide detailed principles and working of such numerical techniques for simulating chemical processes with MATLAB as the computing tool.



A TEQIP-III Short Term Course
on

"Computer Simulations with MATLAB Applications for Chemical Engineers"

A Continuing Education Programme of Indian Institute of Technology Kharagpur

Save the date:
April 20-24, 2020
(5 Days)

Organized by :
Department of Chemical Engineering
Indian Institute of Technology
Kharagpur-721302, India

About IIT Kharagpur:

Kharagpur is situated at a distance of 130 km from Kolkata and is unique with its green, calm and quiet campus, away from the din and bustle of city life. Historically, IIT Kharagpur started its journey in the "Hijli Detention Camp" which presently houses a science and technology museum, known as Nehru Museum of Science and Technology. Also, the scenic township of Digha on the sea beach is only 120 km away from Kharagpur.

How to Reach IIT Kharagpur?

Kharagpur is an important rail junction, and is well-connected to all parts of the country by rail service (SER). Numerous local and express trains are available from Howrah. The institute is approximately 7 km from Kharagpur railway station. Auto-rickshaws (INR 130) and taxis (INR 150) are available from the railway station for reaching IIT Campus.

Couse Fee:

- Faculty members of TEQIP-III approved colleges (seats limited to 20) — **No fee**
- Faculty from other Non- TEQIP-III institutes — **INR 10,000/-**
- IIT Kharagpur students — **INR 3,000/-**
- Students from other institutes — **INR 6,000/-**
- Industry personnel — **INR 30,000/-**

How to Apply?

Application must be made online before the last date of registration (**31/03/2020**). Use the following link to apply online.
https://erp.iitkgp.ac.in/CEP/courses.htm

Last date of registration: 31st March, 2020

Faculty:

IIT KGP faculty will deliver the lectures.

About the Instructors

Dr. Debasis Sarkar
Associate Professor,
Department of Chemical Engineering,
Indian Institute of Technology
Kharagpur

Dr. Sarkar received his Ph.D in Chemical Engineering from the Indian Institute of Science, Bangalore. He was a Post-doctoral fellow at Western University, Canada. Prior to joining IIT Kharagpur, he worked with ICES Singapore and HBTI Kanpur. His current research interests include crystallization process engineering and bio-systems engineering. His teaching interests include Optimization Techniques, Instrumentation and Process Control, Advanced Heat Transfer, and Computer Aided Process Engineering.

Dr. Parag A. Deshpande
Associate Professor,
Department of Chemical Engineering,
Indian Institute of Technology
Kharagpur

Dr. Deshpande received his Ph.D. in Chemical Engineering from the Indian Institute of Science, Bangalore after which he worked as a postdoctoral fellow at Northwestern University, USA. He has been serving as the faculty of Chemical Engineering at IIT Kharagpur since 2012. His current research interests include computational catalysis and biomolecular simulations. He has been actively involved with teaching Advanced Mathematical Techniques to masters students.

Abhishek Maharana
Research Scholar,
Department of Chemical Engineering, Indian Institute of Technology
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Swayam Prabha Misra
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Department of Chemical Engineering, Indian Institute of Technology
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