

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 the design and analysis of various chemical equipment and processes. Choice of a suitable numerical technique to simulate 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 on a specific computational platform.

Faculty:

IIT KGP faculty will deliver the lectures.

Eligibility:

Faculty from AICTE-approved degree-level engineering colleges/universities are eligible to attend this course without course fee. Travel allowance is limited to maximum 3-tier AC class, round-trip fare (train fare or lower) on submission of tickets. For participants from other institutions and industry, a course fee of Rs. 30,000/- is required to be paid which will include boarding and lodging in the institute guest house and course material. No TA/DA shall be paid to such participants.

Course Contents

Process models and simulations involving

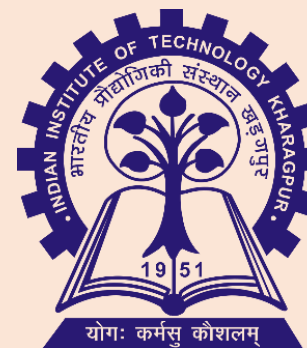
- I. Non-linear equations; applications to equations of state, calculation of friction factor, calculation of mass and energy balances and steady state compositions in continuous flow reactors.
- II. Simultaneous linear equations; applications to steady state solutions of systems of ordinary differential equations.
- III. Ordinary differential equations: Initial value problems; applications to dynamical systems, reaction kinetics.
- IV. Ordinary differential equations: Boundary value problems; applications to solutions of temperature distribution in a slab, concentration profiles in catalyst pellet.
- V. Partial differential equations: parabolic problems; applications to solution of heat equation in two and three dimensions.
- VI. Partial differential equations: Elliptic problems; application of finite element techniques for steady state solution of temperature distribution in two and three dimensional slabs.



An AICTE-QIP Short Term Course on “Numerical Techniques for Chemical Process Simulations”

November 20-26, 2017

*A Continuing Education Programme of
Indian Institute of Technology
Kharagpur*



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

General Information

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 technological museum known as the Nehru Museum of Science and Technology. Also, the scenic township of Digha on the sea beach is only 120 km away from Kharagpur.

Connectivity

Kharagpur is an important 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 (Rs. 100) and taxis (Rs. 150) are available from the railway station for reaching IIT Campus.

Course Coordinators

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Course Fee:

Faculty members of AICTE approved colleges -- No fee (seats limited to 30)
Other institutes/industry -- Rs. 30,000/-

Course fee includes course material, accommodation and food during the course.

Accommodation and Food

Limited shared accommodation is available in institute guest houses for AICTE affiliated faculty members without payment. Non-shared accommodation for participants from industry is available on a payment basis (Rs. 1000/- per day in TGH A/C single room or Rs. 1500/- for double occupancy). On prior intimation, we will try to arrange accommodation with the above charges. Course fee includes food and snacks.

How to Apply

Interested participants may apply in the form given herewith (or a photocopy of the same) along with the course fee (if applicable) in the form of a demand draft drawn in favour of ‘CEP-STC, IIT Kharagpur’, payable at Kharagpur. The completed application should be sent to the mailing address of any of the course coordinators latest by Sept 30, 2017. In view of the limited seats, selection will be made on first come first serve basis.

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Registration Form

Name

Designation

Sex (M/F)

Organization

Highest academic qualification

Address

Phone/Fax

Mobile

Email (compulsory)

Accommodation required (Yes/No)

Details of bank draft: Amount Rs

Draft no.:..... Dated:

Issuing Bank & Branch:.....

Date:

Place:

Signature

Recommendation and forwarding from the Organization:

Signature with seal of the
Head of the Organization