COMPUTATIONAL METHODS IN FLUID MECHANICS

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Overview

Fluid (gas and liquid) flows are governed by partial differential equations which represent conservation laws for the mass, momentum, and energy. While the solution to the equations can be found analytically only for a few textbook problems, the majority of the cases required numerical solutions to the conservation equations. The course will focus on computational techniques required to solve the differential equations. The course should be of interest to students, faculty and industry researchers in engineering, mathematics and physics.

The aim of this course is to provide an overview of some of the computational methods used to solve the partial differential equations that arise in fluid dynamics and related fields. The idea is to provide a feel for the computational methods rather than study them in depth.

Course participants will learn these topics through lectures and computational assignments.

Modules	**Duration:** **Jan 29 - Feb 9, 2018** **Location:** **Department of Chemical Engineering, IIT Bombay** **Number of participants for the course will be limited to fifty.**
You Should Attend If…	▪ You are an engineer, physicist or an applied mathematician working in fluid mechanics. ▪ You are student or faculty from academic institution interested in using computational techniques to solve problems in fluid mechanics. ▪ You are an engineer/scientist from industry/research organization using computational methods to solve problems in fluid mechanics.
Fees	The participation fees for taking the course is as follows: **Participants from abroad: US $500** **Industry/ Research Organizations: INR 30000** **Academic Institutions/ Faculty/ NGO: INR 10000** **Students & Research Scholars: INR 3000** The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. The participants will be provided with accommodation on payment basis.

The Faculty

E John Hinch is a Professor of Fluid Mechanics in the Department of Applied Mathematics and Theoretical Physics at the University of Cambridge. He is also a Fellow of Trinity College and a Fellow of the Royal Society. His main research interests are: micro-hydrodynamics, colloidal dispersions, flow through porous media, polymer rheology, non-Newtonian fluid dynamics, mobile particulate systems and applications of mathematics to industrial problems.

Mahesh S Tirumkudulu is a Professor in the Department of Chemical Engineering in Indian Institute of Technology Bombay in Mumbai. He works in the areas of fluid mechanics and colloids & interfaces with focus on research problems related to drying colloidal films, atomization with applications to combustion and sprays, and fluid mechanics of bacterial locomotion.

Course Co-ordinator

Prof. Mahesh S Tirumkudulu
Phone: 91 22 25767227
E-mail: mahesh@che.iitb.ac.in

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http://www.gian.iitkgp.ac.in/GREGN

GIAN Short Term Course on

Computational Methods in Fluid Mechanics

29 January – February 9, 2018

Registration Form

Name(in block letters): _____
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Qualification:

Designation: _____

Organization:_____

Mailing Address:_____
_____
_____
_____
Mobile:_____
Fax:_____

Email:_____

Payment: Rs:_____

DD No.:_____Dt: _____

(DD in favour of "Registrar, IIT Bombay – CEP a/c")

Or NEFT/ RTGS
(Please furnish the foll. details if NEFT/RTGS)
Name of A/c Holder
UTR NO./Transaction ID
Name of Bank & Branch
Date of Payment
Amount

IIT Guest House/ Hostel accommodation required: YES / NO

Signature of Applicant:_____

Date:

Venue for Classes
Classes will be held in Room No. CL 240, Computational Lab of Department of Chemical Engineering, IIT Bombay.

Lecture Notes
To fully realize the objectives of the course, the lecture notes will be made available at the time of registration at IIT Bombay.

Date & Time of Registration:
29th January 2018, 9.00 AM at Chemical Engineering Department, IIT Bombay.

COURSE FEE
Participants from abroad: US $500/-

Industry/ Research Organizations:
INR: 20000/-

Academic Institutions/ Faculty/ NGO: INR: 8000/-

Students & Research Scholars:
INR: 3000/-

The above fees include all instructional materials, computer use for tutorials and assignments, laboratory usage charges, free internet facility. Subject to availability, the participants will be provided with accommodation on payment basis.

The fees may be paid by demand draft drawn in favour of "**The Registrar, IIT Bombay - CEP Account".**

Or through NEFT/RTGS:

Name of beneficiary: Registrar, IIT Bombay
Account name: IIT Main Account
Name of Bank: State Bank of India, IIT Powai
Beneficiary A/C No: 00000010725729128
Bank MICR Code: 400002034
IFSC Code: SBIN0001109
SWIFT Code: SBININBB519

Completed forms may be sent to:
Prof. T. Mahesh, Department of Chemical Engineering, IIT Bombay, Powai,
Mumbai 400 076, India