Completed Registration form should be sent to Course coordinators:

Prof. Eldho T.I. / Prof. Y.M. Desai,
Course Coordinators,
Department of Civil Engineering,
Indian Institute of Technology Bombay,
Powai, Mumbai – 400 076

Phone: (022) – 25767339 / 25767333
Fax: (022) –25767302 / 25723480
Email: eldho@civil.iitb.ac.in
desai@civil.iitb.ac.in

Deadline for submitting application:
25 July, 2017
Notification of acceptance:
26 July, 2017
• Incomplete application forms will not
be entertained.
• For additional copies of the registration
form, please xerox or type in the format
given.
For further details:
http://www.iitb.ac.in/~cep/

Boarding & Lodging
Limited accommodation is available in the
Institute Guest house/ Hostels for a very
limited number of participants on payment
as per actual and with advance request.

Faculty
The main resource person: Prof. Perumal
Nithiarasu, Head of Zienkiewicz Centre
for Computational Engineering,
Swansea, University, United Kingdom.
Other Faculty include Prof. Eldho T.I.,
Prof. Y.M. Desai, etc.

Venue for Classes
Classes will be held in Seminar Hall of
Department of Civil 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:
14th August 2017, 9.00 AM at Civil
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.
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”.
For on-line payments, please click here
for Bank Details.

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
INTRODUCTION
Computationally modelling fluid flow has been a topic of intensive research of the last five decades. The progress has been excellent and approximate flow modelling through and over complex geometries is now possible. Although challenges remain in tackling large-scale turbulence and coupled problems, a large number of commercial and open-source codes have been successfully employed in modelling flow in aerospace, civil, mechanical and chemical engineering industries. Using such codes often needs an excellent fundamental knowledge in fluid dynamics, some basic understanding of computational methods and boundary conditions. The proposed course provides advanced knowledge for developing an understanding of computational algorithms and boundary conditions to study fluid dynamics problems. This proposed course covers important computational methods and applications to fluid dynamics problems. Further the specialised application of unstructured computational methods to solve fluid flow problems will be demonstrated. The physical problems of interest include compressible, incompressible and thermal flows. The methods of discretization include mainly finite volume and finite element methods. Initial few lectures will cover some fundamentals but the course will evolve towards more state of the art coupled problems including highly non-linear fluid-structure interaction problems. The modern and emerging method of isogeometric method will also be covered. The course will also provide practical instructions on verifying boundary conditions, approximate solutions and numerical instabilities in addition to introduction on implementation issues. Pre-requisites for this course include a basic course in fluid mechanics and numerical methods for partial differential equations. Some basic programming knowledge is desirable.

COURSE OBJECTIVES & CONTENTS
• Introduction to computational modeling and numerical methods – Finite Difference Method; Finite Volume Method & Finite Element Methods.
• Exposing participants to the fundamentals of computational fluid dynamics (CFD) and coupled problems.
• Providing the participants with the state of the art knowledge on computational methods used in solution of CFD equations.
• Developing a clear understanding of how computational methods, algorithms and boundary condition chosen affect the approximate solution.
• How computational treatment differs if CFD is coupled with solid mechanics. Introduce participants to inter and multi-disciplinary problems.
• Introducing the participants to the new computational approaches such as isogeometric and scan based methods, implementation and verification issues.
• Course participants will learn these topics through lectures and hands-on tutorials. Also case studies and assignments will be shared to stimulate research motivation of participants.

WHO MAY BENEFIT
• Student or faculty from academic institutions dealing with Computational Methods/Fluid Dynamics/CFD;
• Civil, mechanical, or aerospace engineer who is dealing with CFD;
• Person from industry/research org., and interested in learning computational methods and CFD.

GIAN Short Term Course on
Computational Methods with Applications to Fluid Dynamics
14 – 18 August 2017
Registration Form
Name (in block letters): ____________________
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
IIT Guest House/Hostel accommodation required: YES / NO
Signature of Applicant: ____________________
Date: ____________________