

Please return to:
Dr. D.P.MISHRA, Coordinator
Short Term Course on "Computational Combustion"
Department of Aerospace Engineering
Indian Institute of Technology
KANPUR 208 016, India

Short Term Course
"Computational Combustion"
28th February—3rd March 2012

Coordinator:

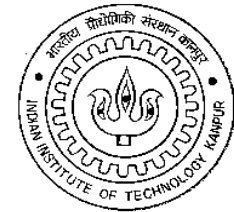
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Last Date for Registration: 14th November 2011

Short Term Course

on

COMPUTATIONAL COMBUSTION
28th February- 3rd March 2012



Department of Aerospace Engineering
Indian Institute of Technology
Kanpur 208 016

&



**The Combustion Institute (Indian
Section)**

About the Course:

Combustion and its control was one of the earliest inventions and it remains an important source of energy for the society. Quantitative interpretations based on a theoretical framework compliments scientific thinking and experimental studies on combustion. This has been made possible by the development of modern electronics and computers, which led to the growth of methods and algorithms for rigorously solving many fundamental and applied problems of combustion. However, as combustion involves elementary processes of fluid dynamics, chemical kinetics, and molecular transport, computation of combustion problems is challenging.

This course aims at introducing the basics of computational combustion. It will expose participants to the computational aspects of combustion processes with the help of some problems viz. premixed flame, droplet combustion, turbulent flame, and supersonic combustion. Commonly used computational methods for simple as well as realistic combustion problems will be covered. Some recent methods to simulate advanced combustion devices will also be discussed. Efforts will be made to provide hands-on experience to the participants. The course is designed such that the participants get a good exposure to both basic principles and their applications and gain a footing for further study in this area.

Course Contents:

Introduction to Combustion Concepts, Governing Equations for Mass, Momentum, Energy and Species, Fundamentals of CFD, Finite Difference and Finite Volume Methods, Solution Algorithm, Error Analysis, Boundary conditions, SIMPLE Methods, RANS Models of Turbulent Flow, Applications of CFD to Combustion Problems: 1D Premixed Flame, Droplet Combustion, Microcombustor, Gas Turbine Combustor.

Registration:

A limited number of participants from industry/research organizations will be selected to attend the course on a first come-first serve basis. Since the course is interdisciplinary, participants from diverse background will find it useful.

Details of registration fee:

Industry/R & D organizations: Rs. 10000/-

Academic institutes: Rs. 5000/-

Registration fee will have to be paid in advance along with the registration form in the form of crossed DD in favor of **the CEP, IIT Kanpur** payable at **SBI, IIT Kanpur**. The fee covers expenses towards registration, lecture materials, refreshments, and a short course dinner.

Deadline:

The completed registration form and demand draft must be received on or before **14th November, 2011**.

Short Term Course**on****“COMPUTATIONAL COMBUSTION”****Registration Form**

Name: _____

Designation: _____

Organization: _____

Address: _____

Phone: _____

E-mail: _____

DD No. _____ Amount: Rs. _____

Whether accommodation is required: **Yes/No**

Date: _____ Signature: _____