

**About the IIT(ISM) Dhanbad:** IIT Dhanbad(ISM) established in 1926, is a premier institute of India under MHRD, Govt. of India. IIT(ISM) Dhanbad is situated in the city of **Dhanbad**, which is also known as the coal capital of India. This institute is located 3 km from the Dhanbad Railway Station, which lies on the Kolkata-Delhi railway main line. Dhanbad is also connected with Kolkata by National Highway-2 (Grand Trunk Road). Subhash Chandra Bose Domestic/International Air port, Kolkata is about 250 KM away from Dhanbad.

**Department of Mechanical Engineering:** Mechanical engineering department is one of the biggest academic departments of IIT(ISM) Dhanbad. In 1997, the institute began admitting B.Tech students through the **Joint Entrance Examination** (IIT-JEE). Apart from the B.Tech programme, this department has four post graduation courses namely, M.Tech in Thermal Engg, Machine Design, Manufacturing Engineering and Tribology and Maintenance Engg. Department has big state-of-the-arts Heat Transfer, I.C.Engines, Refrigeration and Air-conditioning and Solar Energy Laboratories. Department has also computing facility for solving flow and heat transfer problems.

**Theme of CFD Course:** Thermal systems such as power plant components, automobile engines, air craft engines, cooling of electronic component. solar and wind energy systems etc. can not be designed without the fundamental and advanced knowledge of Thermal Engineering(Fluid Mechanics, Heat Transfer and Thermodynamics). During recent years, it has become possible to obtain numerical predictions of complex situations involving fluid flow and heat transfer. These computations give useful design information and provide interesting insights into the physical processes. Thus, the computational analysis enriches the experimental information by supplying the details that may be difficult to measure. The primary aim of this course would be to focus on fundamentals of computational Fluid Dynamics and its applications for solving flow and heat transfer problems

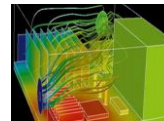


**SHORT TERM COURSE**  
ON

**COMPUTATIONAL FLUID DYNAMICS(CFD)**

Jan 12-15, 2018

Organized by



Department of Mechanical Engineering  
Indian Institute of Technology(ISM), Dhanbad-  
826004

[www.ismdhanbad.ac.in](http://www.ismdhanbad.ac.in)

VENUE: CAD LAB, DEPARTMENT OF  
MECHANICAL ENGINEERING

**Course contents:**

Introduction to CFD, Conservation of mass and momentum, Continuity and N-S Equations, Energy Equations, Classifications of PDE and its physical behaviors, Fundamentals of Discretization: Finite Difference Method, Finite Volume Method Application of FDM to 1-D and 2-D heat conduction, Matrix inversion, Point by point iteration, line by line iterative method, Upwind differencing scheme, artificial diffusion, Explicit, implicit and semi-implicit method, Concepts of consistency, stability and convergence analysis, Finite Volume Method: Basic concept, flux balance, FVM for solving heat conduction problems, FVM formulation for

convective diffusion, SIMPLE Technique, Vorticity-stream function formulation, Primitive variable approach for solving N-S Equations, Code development, Use of ANSYS-FLUENT Software

**SPECIAL FOCUS ON: TUBULAR/PLATE HEAT EXCHANGERS AND SOLAR SOLLECTOR**

**REGISTRATION FORM**

Short Term Course on **Computational Fluid Dynamics(CFD)**

Name -----  
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Designation-----

Organization-----

Phone----- Mobile----

I would like to attend the Short term course organized by the Department of Mechanical Engineering to be held on Jan 12-15, 2018 at IIT(ISM) Dhanbad,

An A/C payee Multicity Cheque/Bank Draft on-----dated -----for Rs. ----  
-----Drawn on Bank -----

----- in favour of Registrar,  
IIT(ISM) Dhanbad payable at Dhanbad.

Place -----

Date-----

Signature

Registration Fee  
Delegates from Academia  
Rs 2000/-  
Delegate from Industry/R&D Centre  
Rs. 3000/-  
Student delegates  
Rs. 1000/-

**SPEAKERS:** Expert from IIT Madras, IIT Delhi and IIT(ISM) Dhanbad

CONTACT PERSON: **DR. S.N.SINGH, COURSE COORDINATOR, DEPT OF MECH ENGG,IIT(ISM) DHANBAD, MOB: 9471191153**