Technical Education Quality Improvement Program - III

Sponsored

One Week Online Short Term Training Program

on

"Fundamentals and Applications of CFD"

(September 07-13, 2020)

Organized by

Department of Mechanical Engineering

Sardar Vallabhbhai National Institute of Technology, Surat

ORGANIZING COMMITTEE

Patron

Prof. S. R. Gandhi,
Director, SVNIT Surat

Chairman

Prof. Shailendra Kumar
Head, Mechanical Engg. Dept.
SVNIT, Surat

Course Coordinators:

Dr. Vipul M. Patel
Assistant Professor, MED
vmp@med.svnit.ac.in
Mobile: 09582701745

Dr. Amit Kumar
Assistant Professor, MED
amit.kumar@med.svnit.ac.in
Mobile: 09050254684

Dr. Rohan Pande
Assistant Professor, MED
rohanpande@med.svnit.ac.in
Mobile: 08793113173

About the Institute

The institute was initially established as Sardar Vallabhbhai Regional College of Engineering & Technology in 1961 and it is elevated to Sardar Vallabhbhai National Institute of Technology with the status of 'Deemed University' on 4th October 2002. The Sardar Vallabhbhai National Institute of Technology (SVNIT) is one of the pioneering engineering institutions of the country, which has contributed many outstanding engineers in India and abroad. It is conducting six UG programs, seventeen PG programs, three integrated five years M.Sc. Programs, and Ph.D. program in all disciplines of engineering and applied sciences. Special attention is given to interdisciplinary research all across departments. The institute has an excellent placement record and growing by high pace in research as well.

About the Department

The Department of Mechanical Engineering is one of the oldest departments from the start of institute (1961). The department has qualified and dedicated faculty members with the specialization in various areas. The department is undertaking a UG programs in Mechanical Engineering, five PG programs (Thermal System Design, Mechanical Engg., Turbo Machines, CAD/CAM, and Manufacturing Engg.) and a research program leading to PhD degree in related specialization. For industry people, master program by research and part time PhD program are also available. The research facilities in mechanical department are developing with addition of new equipment and laboratories, and modernization of old laboratories.

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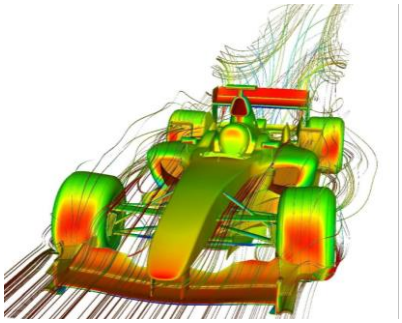
About the Course



The scopes of modelling and simulation have tremendously been increased in the recent years. With the faster growth of high performance computer, it has been possible to solve complex problems of fluid flow and heat transfer. The modelling techniques are also significantly improved because of the ever increasing computing power. Computational fluid dynamics modelling has now become extremely useful in the design of many thermal systems.

The objective of the course is to emphasize the participants with the basic need of modelling for heat transfer problems. Basic concepts of various computational methods which include the traditional as well emerging methods would be presented. The course also aims at giving the participants an exposure to various complex topics of fluid flow and heat transfer.

Course objectives

After the completion of the workshop, participants will be able to

- understand the fundamental of governing equations of fluid flow and heat transfer
- discretize governing equations
- get overview of turbulence models
- realize the essential parameters of CFD based simulations
- understand the use meshing and simulation tool through live demonstration
- perform simulation of some important engineering problems
- appreciate applications of CFD in Bio-heat transfer application.
- develop code for 1-D and 2-D heat transfer problems.

Course contents

The following are the main contents of the course:

- Basic governing equations of fluid flow and heat transfer.
- Discretization of governing equations for pure conduction, conduction-convection and transient heat transfer
- Properties of numerical methods
- Overview of turbulence models.
- SIMPLE algorithm for pressure-velocity coupling
- Introduction to meshing tool (ICEM) and finite volume based solver ANSYS-FLUENT.
- Structured and unstructured meshing
- Application of CFD to important problems of mechanical and aerospace engineering
- Overview of application of CFD in Bio-heat transfer application.

Registration fee

- Research Scholars (only 5 seats): Rs. 400/-
- Faculty: Rs. 500/-
- Industry Delegate: Rs. 1000/-

Number of participants are limited to 50. Short listed candidates will be informed through email.

WHO WILL BENEFIT?

Students: UG, PG, PhD (Mechanical, Civil, Chemical)

Faculty of Engineering: (Mechanical, Civil, Chemical)

Other Professionals: Engineers & Scientists from Industry and R & D Organizations

RESOURCE PERSONS

Resource Persons for the course will be highly experienced faculty members from reputed institute like IITs, NITs and experts from industries.

IMPORTANT DATES

Last Date of Registration
September 01, 2020

ADDRESS FOR COMMUNICATION

For any query, you can contact to the course coordinator

Dr. Amit Kumar
Assistant Professor, MED
amit.kumar@med.svnit.ac.in
+91-9050254684

APPLY ONLINE AT:

https://forms.gle/ctBmWk69N9AM6rg99