

One Week Online Short Term Course
On
**“Fundamentals & Application of CFD in Industrial
Fluid Flow and Heat Transfer”**
October 15–19, 2020



ORGANIZING TEAM

Patron

Professor (Dr.) Goutam Sutradar
Director, National Institute of Technology, Manipur

Chairman

Professor (Dr.) Rajesh Kumar Bhushan
Professor, Department of Mechanical Engineering
National Institute of Technology, Manipur

Coordinator

Dr. Dushyant Singh
Assistant Professor, Department of Mechanical Engineering
National Institute of Technology, Manipur

Convener

Dr. Thiyam Tamphasana Devi
Assistant Professor, Department of Civil Engineering
National Institute of Technology, Manipur



Organized By:

**National Institute of Technology Manipur
West Imphal, Manipur, India- 795004**

ABOUT NIT, MANIPUR

National Institute of Technology Manipur, a centrally funded institution is set up to impart quality technical education at various levels of higher learning. It is one of the ten new NITs established and developed as “**Institute of National Importance**” by an act of Parliament in 2007. NIT Manipur started its first session with the three branches of Engineering-Electrical & Electronics Engineering, Electronics & Communication Engineering and Computer Science Engineering. The functioning of the institute was started at its temporary campus at Takyelpat, Imphal under the mentorship of NIT, Agartala. As one of the National Institutes of Technology (NIT), the Institute has the responsibility of providing high quality education in Engineering, Technology and Sciences to produce competent technical and scientific manpower for the country. The Institute offers B Tech, M Tech, M Sc, MBA and PhD programmes in several disciplines of Engineering, Technology and Sciences.

ABOUT THE COURSE

Computational Fluid Dynamics (CFD) has become an important tool in furthering a variety of fields such as Mechanical Engineering, Civil Engineering, Chemical Engineering, Aerospace Engineering, Oceanography, Meteorology, Marine and Naval Engineering etc. Therefore, the scopes of CFD have tremendously been increased in the recent years. In order to accurately describe the CFD problems, an accurate numerical scheme, method and good knowledge of grids must be adopted. This short term course intends to provide a basic understanding of certain modelling for fluid flow and heat transfer practical application problems. Another aim of the short term course will to provide participants the opportunity to use and apply ANSYS (FLUENT) and OpenFOAM software along with mesh generation confidently.

Topics to be Covered

The short-term course aims to include following themes with particular emphasis to Mechanical Engineering, Civil Engineering, Chemical Engineering, Aerospace Engineering, Oceanography, Meteorology, Marine and Naval Engineering:

- 1.Introduction to basic governing equations of fluid flow and heat transfer.
- 2.Introduction to CFD software geometry creation along with meshing tool using (ICEM).
- 3.Overview of turbulence models and Natural heat transfer flow.
- 4.Tutorials on various engineering problems of fluid flow and heat transfer

OBJECTIVES OF THE COURSE

1. The main objective of this STC is to provide a unique platform to facilitate the scientists, researchers, academicians, industrialist and UG, PG/PhD students to share the knowledge for computational fluid dynamics modelling skills.
2. Ability to provide a thorough understanding of the computational fluid dynamics problems.
3. An overview of training in application of ANSYS (FLUENT) and OpenFOAM software.

Who can attend this STC through Online?

Students: (UG, PG, PhD)

Faculty of Engineering: (Any Branch)

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

Registration: Kindly register through this link: <https://forms.gle/yqduGmJi3kzLzDTt9>

Registration fee for attending this STC.

UG Students: Rs 500/- including GST

PG/PhD Students: Rs. 750/- including GST

Faculty: Rs. 1000/- including GST

Engineers /Other professionals: Rs.2000/- including GST

Details of the Bank Account:

Name: Director NIT Manipur IRG

Acc. No. 60330100000143

Bank and Branch: Bank of Baroda, NIT Manipur Campus

IFSC code: BARB0NITMAN

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

For any query, you can contact to the course coordinator

Dr. Dushyant Singh, Assistant Professor (ME)

Email: cfdnitm@gmail.com ; Mb: +91-7085680624

IMPORTANT DATES

Last Date of Registration

October 12, 2020

Resource Persons Biography



Dr. Kuldeep Singh is currently working in the Rolls Royce's University Technological Centre in "Gas Turbine and Transmission Research Centre (G2TRC), University of Nottingham, United Kingdom as a senior researcher. He is leading the CFD team in G2TRC. He has worked with the diverse team of international researchers. He is a Gold Medalist in B.Tech. He did M.Tech and PhD from IIT Delhi. Before joining his current institution, he was Post-Doctoral Fellow in University of Beira Interior, Portugal. He is recipient of DST Inspire Faculty Award in 2017. His research interests are: CFD, Aero-engines, Multiphase Flow Modelling, Turbomachinery, Cycloidal Rotors.

Dr. Udayraj is currently working as an Assistant Professor at Department of Mechanical Engineering, Indian Institute of Technology Bhilai. Dr. Udayraj received his PhD from Indian Institute of Technology Delhi (IIT Delhi). Prior to joining IIT Bhilai, he was a post-doctoral researcher in the Institute of Textiles & Clothing, The Hong Kong Polytechnic University, Hong Kong. Dr. Udayraj mainly works in the field of Heat and Mass Transfer, and Computational Fluid Dynamics (CFD). He has published 2 book chapters and more than 30 technical articles in reputed international journals and conferences. His broad research areas are: Thermal comfort, Thermal protection, Personal cooling/heating systems, Building energy efficiency, Thermal energy storage, Inverse heat transfer and Continuous casting.



Dr. Dushyant Singh is currently an Assistant Professor in the Department of Mechanical Engineering at National Institute of Technology Manipur (NIT Manipur). He received his PhD from Indian Institute of Technology Delhi (IIT Delhi) and Before joining his NIT Manipur, he was a Post-Doctoral Researcher in joint industrial research work with BHEL industry. His current research is collaborative and directly practical engineering applications in industries. He has 35 research articles in reputed International Journals and Conference and published 2 book chapters. He has research interests in the area of CFD, Experimental and Numerical analysis of Fluid Flow and Heat Transfer Enhancement, Multiphase Flows.

Dr. Thiyam Tamphasana Devi is currently working as Assistant Professor in Department of Civil Engineering, National Institute of Technology, Manipur, India. She obtained his PhD from Indian Institute of Technology Guwahati (IIT Guwahati). She has presented several conference papers in India and abroad. She had also published several research articles in journals of repute in these research areas. Her research interest includes hydrological modelling using GIS techniques; and Computational Fluid Dynamics application in fluid flow. She majorly works in turbulence modelling in multiphase and interaction of fluid flow with hydraulic structures.

