

A. D. Patel Institute of Technology
(A Constituent College of CVM University)



Mechanical Engineering Department
(NBA Accredited)

A Short Term Training Program [Online] on

Applied Computational Fluid Dynamics for
Renewable Energy and Hydraulic Machines Sector

01-05 February, 2021

Sponsored By:

All India Council for Technical Education
under AQIS 2019-20

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Coordinator

Dr. Vishal N. Singh
(Principal, ADIT)

Co-Coordiators

Dr. Mitesh I. Shah
(Professor, ME, ADIT)

Prof. Bhaumik J. Sheth
(Asst. Professor, ME, ADIT)

About CVM University:

CVM University (CVMU) is promoted by Charutar Vidya Mandal (CVM) established in the year 1945 as a charitable trust with the prime objective of rural development through education under the inspiration of great Sardar Vallabhbhai Patel. University campus is spread over 700 acres and comprises of 20 institutions range from Engineering, law, Ayurveda, pharmacy, architecture and management. The CVM University offers world class infrastructure and highly competent faculty members. The university is recognized as leading private university by Education Department of government of Gujarat.

About Institute:

A D Patel Institute of Technology was established in the year 2000, is one of the pioneering institute imparting technical education in the state of Gujarat, India. The institute is located in satellite township of New Vallabh Vidyanagar having green natural environment and beautiful landscape near educational hub of the state, Vallabh Vidyanagar and Milk city Anand. Institute is running eight UG programmes viz. Mechanical, Automobile, Civil, Computer, Electrical, Electronics and Communication, Food Processing Technology and Information Technology; and Six PG programmes including Thermal Engineering, CAD/CAM, Renewable Energy, Food Technology, Artificial Intelligence and Signal Processing and communication.

About Department:

Department of Mechanical Engineering, ADIT was established in the year 2000 with the state of the art workshop and laboratories. It is accredited by NBA for the period of three years from 2019- 2022. Currently, Department has undergraduate student Intake of 90. Department also runs three Post graduate Programs: 1.Thermal Engineering 2.CAD/CAM and 3. Renewable Energy. Department consists faculties having M. Tech and PhDs from various IITs/NITs with average experience of 10 Years. Department organizes FDPs, workshops and seminars on regular basis sponsored by DST, GUJCOST, SSIP etc.

About STTP:

This training course addresses the fundamental aspects of Computational Fluid Dynamics by providing a solid knowledge base for its attendees. The program will equip its participants with essential skills and practical tools for forming and implementing that in the emerging areas of CFD to renewable energy sector, hydraulic machines like turbines, pumps, compressors etc. and thermal power stations.

This program will help the practising faculties and industry experts in the domain of computational fluid dynamics to gain theoretical as well as practical insights with the help of studying numerical techniques related to solar energy, wind energy, bio energy. The program will not only be limited to use of CFD in renewable sector but it will also provide sessions on integration of CFD with hydraulic turbines, hydraulic pumps, wave propagation, compressors. It will also highlight the current scenarios of Thermal Power Plants.

Topics Covered

- Applications of Computational Fluid Dynamics to Renewable Energy
- CFD Analysis of Heat Exchangers and Power Plant Systems
- CFD analysis of Hydraulic Machines and IC Engines
- Numerical Solutions of CFD to Wind, Solar and Biomass systems

Resource Persons

Expert Lectures from leading personalities in the field of CFD from IITs/NITs and reputed universities

Target Participants

Faculties/Reserach Scholars/Industry delegates from Mechanical and other allied branches of engineering of AICTE approved institutions are eligible to apply.

Registration

Registration Link: <https://rb.gy/nonicx>

Limited Seats are available. Registration will be done on first come first basis.

No Registration Fees. Last date of registration: 29/01/2021

Mode Of Event

All sessions will be conducted Online through Google Meet Platform.

Contact Persons:

Dr. M. I. Shah/ Prof. Bhaumik Sheth
Program Co-Coordinators
Mechanical Engineering Department
A. D. Patel Institute of Technology
New V V Nagar, Anand, Gujarat
www.adit.ac.in
Mobile: 9429543108/9998267201
Email: mitesh78.iitd@gmail.com/me.bjsheth@adit.ac.in

Applied Computational Fluid Dynamics for Renewable Energy and Hydraulic Machines Sector

Schedule of Event

Day-1: 01/02/2021	
10:00 am to 11:30 am	CFD pre-processing techniques: mesh generation methods
11:45 am to 01:15 pm	CFD for Wind turbine & Wind Farm Simulation
02:30 pm to 04:00 pm	CFD Application in the Analysis of Renewable Energy System
Day-2: 02/02/2021	
10:00 am to 11:30 am	Applications and challenges of CFD analysis for Steam Turbine
11:45 am to 01:15 pm	Role and Challenges of CFD for development of Wind Mill
02:30 pm to 04:00 pm	Some Studies on Fluid Dynamics and Heat Transfer Characteristics of Novel Finned Cyclone Separators
Day-3: 03/02/2021	
10:00 am to 11:30 am	Role of CFD in Solar Dryer
11:45 am to 01:15 pm	Computational Fluid Dynamics on Biomass Gasification system
02:30 pm to 04:00 pm	Case Study on: CFD Analysis of the Solar collector
Day-4: 04/02/2021	
10:00 am to 11:30 am	Application of Computational Fluid Dynamics in Thermal Power Plant
11:45 am to 01:15 pm	CFD Analysis on a wave propagation
02:30 pm to 04:00 pm	CFD for Centrifugal Pump
Day-5: 05/02/2021	
11:45 am to 01:15 pm	Application of Aspen Plus for simulating a Fluidized Bed Reactor
02:30 pm to 04:00 pm	Application of CFD in Latent Heat Thermal Energy Storage for Solar Energy Systems
04:00 pm to 04:30 pm	Valedictory Function

Organizing Committee:

Dr. R. R. Shah
Prof. B. J. Dutt
Prof. S. Y. Rajput
Prof. V. J. Banker
Prof. M H Thakkar
Prof. N. V. Parmar