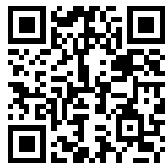**NITTTR BHOPAL**

GUJ-9/2025-2026
Theoretical and Practical Approach of CAD and Hands-on with CFD Software
16-06-2025 to 20-06-2025
EC Ahmedabad

https://erp.nitttrbpl.ac.in/poc2025/?id=regGUJ-9

Scan QR to Register

Learn Online with New Digital Learning Platform: e-Prashikshan

Rationale

In today's engineering landscape, the integration of theoretical knowledge with practical skills is paramount for addressing complex challenges in fields ranging from aerospace and automotive to renewable energy and biomedical engineering. Theoretical understanding provides the foundation upon which practical applications are built, enabling engineers to innovate, design, and optimize systems with efficiency and precision. The Computer-Aided Design (CAD) and Computational Fluid Dynamics (CFD) program adopts a comprehensive approach that combines theoretical principles with hands-on experience, aiming to equip students with the multidisciplinary skills needed to excel in diverse engineering domains. Theoretical and Practical Approach of CAD & hands-on with CFD software program is designed to equip students with the theoretical understanding and practical skills needed to excel in the dynamic field of engineering. By integrating theory and practice, emphasizing experiential learning, embracing interdisciplinary perspectives, and preparing students for advanced studies and research, the program aims to cultivate versatile engineers capable of driving tech

Programme Outcomes

Theory Mastery: Demonstrate a thorough understanding of the theoretical principles underlying CAD and CFD methodologies, including fluid dynamics, numerical methods, and geometric modeling.
CAD Proficiency: Develop proficiency in utilizing CAD software for creating and manipulating 2D and 3D geometric models, emphasizing accuracy, efficiency, and adherence to industry standards.
CFD Fundamentals: Acquire a solid foundation in the fundamental principles of Computational Fluid Dynamics, encompassing governing equations, boundary conditions, discretization techniques, and solution algorithms.
Mesh Generation: Gain expertise in generating high-quality meshes for complex geometries using CAD models, ensuring grid independence, element quality, and computational efficiency.

Programme Content

Introduction to Basics of CAD, Curve, Surface Solid evaluation using advanced concept of CAD.
Introduction to Basics of CFD, CFD Work Flow, Overview of CFD Software Ansys Fluent
Introduction to Fluent, modeling capabilities, Fundamental Concept of modeling, introduction to different boundary conditions. Focus will be on single phase flow, Heat transfer modelling

Target Group

Faculty of Mechanical Engineering and allied disciplines

Coordinator & Co-Faculty

Dr. Ravi Kumar Gupta
Associate Professor
Department of Mechanical Engineering Education
rkgupta@nitttrbpl.ac.in

Expert