

About IIT Kharagpur



Kharagpur - a dusty town tucked away in the eastern corner of India, famous until 1950 as home to the longest railway platform in the world - became the nursery where the seed of the IIT system was planted in 1951. IIT Kharagpur started its journey in the old Hijli Detention Camp in Eastern India, where some of the country's great freedom fighters toiled and sacrificed their lives for India's independence. Spurred by the success of IIT Kharagpur, four younger IITs sprouted around India in the two following decades, and from these five came thousands of IITians, the brand ambassadors of modern India. Success of this institution at Kharagpur wrote India's technological odyssey.

The Institute takes pride in its relentless effort to provide the best platform for both education as well as research in the areas of science and technology, infrastructure designs, entrepreneurship, law, management, and medical science and technology. IITKGP is not just the place to study technology, it is the place where students are taught to dream about the future of technology and beam across disciplines, making differences enough to change the world.

Program Features / Structure

Classroom lectures – **50%**
Case study– **50%**

Program Schedule and Venue

Online, 5 Days,
8th – 12th Feb 2021
(9:30 AM – 5 PM)

Program Fee

AICTE Approved
Institute / Govt.
Institute – **Nil**
Govt Labs – **500 INR**
(with appropriate ID)

Other category –
₹2500

Who Will Benefit

Academicians, post grad students and practicing engineers in the field of mechanical / aerospace /civil / production / marine with background in simulations

Last Day of Registration

1st
FEB 2021

Certification / online link

First 200 entries and registered candidates get link for the workshop. Others can see live on YouTube
Soft-copy of certificate for registered candidates

How To Apply

Use the link: <https://erp.iitkgp.ac.in/CEP/courses.htm> to apply ONLINE

Signup → Login → Profile Fillup → Choose a Program → Apply Now

Contact Us

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AICTE QIP QUALITY IMPROVEMENT PROGRAMME

Indian Institute of Technology Kharagpur 2020

HPC Applications in CAE for Multi-Disciplinary Design Optimization

Online Workshop Jointly Organized by IIT
Kharagpur and Zeus Numerix, Pune.

5 Days
8 - 12 Feb 2021

Course Overview

Simulations are nowadays more or less coupled in nature. All the systems that are being designed have conflicting requirements like light but tough! Engineers have long created a balance between these conflicting requirements to design products. As the nature of these conflicting requirements becomes even more multi-disciplinary, traditional methods of doing trade-offs is now not feasible.

Several algorithms have been developed that use the power of HPC to arrive at an optimized solution for given constraints. The endeavor of this workshop is to introduce the participants to such methodologies to help in better design.

Through case studies the participant will be introduced to pros and cons of various methods. Discussion will happen on specific problem statements and what methods are useful for those problems.

Program Objectives

- Know latest optimization methods
- Learn about engineering applications through case studies
- Learn about R&D projects in optimization methods
- Use new methods in dissertation / research
- R&D managers to know about problem specific approach

What You Will Learn

Program Content

- Introduction to MDO
- Modeling and Simulation
- Design Space Exploration
- Decomposition and coupling
- Approximate Methods
- Reduced Order Modeling
- Gradient Calculation
- Numerical Optimization
- Various optimization techniques
- Multi-objective optimization
- Case study – CFD/FEM based aircraft wing opt
- Demo - HPC access to solve large size problem

Who Should Attend

- Faculty in numerical simulations
- PG/PhD students doing optimization projects
- Govt R&D Labs scientists
- Modeling and Simulation Engineers
- Product designers

Faculty and Coordinators

Dr Debasis Chakraborty (Chief Guest), Prof IIT Bombay and Director COPT. 30+ years of simulation experience



Prof KP Sinhamahapatra
Aerospace, IIT Kharagpur
Expert in LES, Acoustics, Internal Flows. 30+ years experience



Prof RPRC Aiyar
IIT Bombay and FCRIT
35+ yrs in Electromagnetics, optimization and EM materials



Prof GR Shevare
IIT Bombay & Chairman Zeus
45 yrs in Optimization, CFD, MDO, HPC, CEM, Fan Design, FSI



Prof. Palaniappan Ramu
IIT Madras
Uncertainty quantification, propagation and analysis, Applied statistics



Prof Mira Mitra
IIT Kharagpur
Structural Health Monitoring, Wavelets, Vibration, Composites



Dr. Sikha Hota
IIT Kharagpur
Trajectory optimization, Obstacle avoidance algos, Guidance



Prof Abhijit Gogulapati
IIT Bombay
Optimization, Aero & Aerothermo elasticity, Reduced Order Modeling



Dr. Akshay Prakash (Course Coordinator), IIT Kharagpur
High order simulations, Lattice Boltzmann method, Optimization

