

REGISTRATION FORM

AICTE sponsored
QIP Short Term Course
on
**Computational Methods in Heat Transfer
and Fluid Flow**

3rd to 9th December 2015

Name : _____
Date of Birth : _____
Gender : Male Female
Qualification : _____
Designation : _____
Organization : _____
Years of Experience : _____
Mobile : _____
Email id : _____
Accommodation Required : Yes No
Pursuing PhD ? : Yes No

Signature

Head of the Institution
(Signature with Office Seal)

ORGANIZING COMMITTEE

Chief Patron
Dr S R K Prasad, Correspondent, CIT

Patron
Dr R Prabhakar, Secretary, CIT

Chairman
Dr V Selladurai, Principal, CIT

Co-ordinator
Dr A S Krishnan, Associate Professor, CIT

ADDRESS FOR CORRESPONDENCE

Dr A S Krishnan
Department of Mechanical Engineering
Coimbatore Institute of Technology
Coimbatore— 641014
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Phone: 9442900190

RESOURCE PERSONS

The resource persons include eminent people from IITs, NITs, Anna University, Government and Government Aided Institutions, Leading scientific organizations and Industries.

ELIGIBILITY AND SELECTION

Faculty from AICTE approved institutions and personnel from industries / R&D organizations are eligible to participate in the program. The total intake is restricted to 30. Selection will be on first come first served basis.

IMPORTANT DATES

Last Date for Receipt of Application : 10th Nov 2015

Intimation of Selection : 15th Nov 2015

BOARDING AND LODGING

Boarding and Lodging facilities will be provided only for outstation candidates on twin sharing basis. No family accommodation will be provided.

Coimbatore Institute of Technology
(Government Aided Autonomous Institution)
Coimbatore - 641014, India

Announces
AICTE Sponsored

QIP Short Term Course on Computational Methods in Heat Transfer and Fluid Flow

3rd to 9th December 2015

COORDINATOR

Dr A S KRISHNAN



Organized by

Department of Mechanical Engineering
Coimbatore Institute of Technology (CIT)
Coimbatore - 641014, India

HOST INSTITUTION

Coimbatore Institute of Technology (CIT), started in 1956 by Sri. V. Rangasamy Naidu is reckoned for its academic and research excellence in engineering and technology. CIT is a Government Aided Autonomous Institution affiliated to Anna University, Chennai. The institute has a reputation with service of competent well qualified faculty members and dynamic management to set highest standards in engineering research and development. CIT offers undergraduate, post graduate and PhD programs with curriculum of global standards, promoting the students to compete internationally. All the courses are accredited by NBA. The institute has celebrated its Golden Jubilee in the year 2006 and has collaborations with leading frontier universities and industries in India and abroad for promotion of innovative engineering ideas. CIT has a laurel foliage on the head as an emblem of victory. Recently, CIT was awarded with the Beyond Success “Bizz Award 2015” for maintaining global standards and excellence, the “Best Education Institute in Engineering” by Asian Education Leadership Awards 2014 and the “Outstanding Engineering Institute (South)” consecutively for the seventh time

HOST DEPARTMENT

The Department of Mechanical Engineering is one of the earliest departments in CIT, started in the year 1956. It offers programs right from under graduate to doctoral level. The department has a team of well qualified and experienced faculty members having vast experiences and specialized in different areas of thermal, design and manufacturing streams with many remarkable achievements. It was started in the year 1956 with Bachelor of Engineering, since then many quality engineers graduated from here, have served the society and the nation. It has moved further by adding Post graduate degree programmes in engineering in the field of Heat Power Engineering in 1965 and Advanced Manufacturing Technology in the year 2005. Doctorate Programme was started in the year 1972, and as on date it has awarded more than 70 Ph.Ds. Thirteen out of thirty eight faculty members are doctoral degree holders from premier institutes including Indian Institute of Technology and Loughborough University, with the rest of them in the pursuit. There are 22 laboratories accounting for more than Rs. 6 Crores for research and academic work with a

work force of 33 technical staff. The infrastructure and people together have been instrumental in producing more than 3000 quality engineers for the past 59 years through quality education.

INTRODUCTION

In the era of concern for Energy and Environment, studies on these are of great significance. Heat transfer and Fluid flow find their presence in a plethora of systems involving energy and environment. This ranges from everyday domestic activities like heating of water, refrigerators to complex industrial and commercial applications like aircraft and rocket propulsion, energy interaction between celestial objects, etc. Some of these are simple with several properties essentially remaining constant or at least justifiable to be assumed so, while some are on the other pole. Prohibitive experimental costs and scarcity of exact solution using classical analytical techniques have necessitated the dependence on numerical techniques for heat transfer and fluid flow, also referred to as Computational Fluid Dynamics. The rapid growth of computational hardware in the second half of the previous century has greatly contributed to the applicability of numerical techniques to a wide range of complex problems. Hence, it has become more than academic interest for engineers and scientists working across disciplines to have a knowledge of computational/numerical techniques in heat transfer and fluid flow.

OBJECTIVE

This short term course, with the aid of theory, illustration and tutorial, aims to introduce Faculty members from academia and participants from industry with at least a Bachelor's degree and who have completed basic courses in Mathematics, Fluid Mechanics and Heat Transfer to:

- Concepts in modeling simple problems in heat transfer and fluid flow.
- Difference between experimental, analytical and numerical approaches and their synergy.
- Advantages and constraints of computational techniques over their experimental counterparts.

COURSE OUTCOMES

On successful completion of the course, the participants will be able to:

1. Demonstrate basic knowledge in modeling simple problems in heat transfer and fluid flow
2. Independently study scholarly articles on computational techniques, including books providing advanced treatise.
3. Explain the advantages of computational techniques over their experimental counterparts.
4. Carry out physical interpretation of the results obtained through CFD.

COURSE CONTENTS

- ♦ Governing Equation - General 3D Heat Conduction Equation
- ♦ Formation of Difference equations
- ♦ Numerical Methods for Solving Algebraic Equations
- ♦ Discretization of Geometry and Mesh Generation
- ♦ Grid Independence Study and Numerical Errors
- ♦ Laws and Governing Equations in Radiation
- ♦ Modeling of radiation in participating media
- ♦ Reynolds Transport Theorem and Governing Equations of Mass, Momentum and Energy
- ♦ Formation of difference equations in convection and fluid flow
- ♦ Forced Convection
- ♦ Natural Convection
- ♦ Special Topics

TRAVEL

The outstation participants are eligible for 3-Tier AC train fare by the shortest route. The TA/DA for outstation participants will be met as per AICTE norms.

CAUTION DEPOSIT

Prospective candidates need to pay a refundable caution deposit of Rs.500/- along with registration form through demand draft in favour of QIP-CMHTFF, payable at Coimbatore. There will be no refund for candidates who have been selected, but fail to attend the program.