

Course Coordinators

Dr. Dinesh Kumar
Assistant Professor

Mechanical Engineering Department, MNIT- Jaipur

Dr. Amit Kumar Singh
Assistant Professor

Mechanical Engineering Department, MNIT- Jaipur

Registration Fees

Participation from Industry : Rs. 4,000/-

Institutional Participants : Rs. 2,000/-
/ Faculty Members

Students and Research Fellows : Rs. 1,000/-

Overview and Course Objectives

The Finite Element Method (FEM) / Finite Element Analysis (FEA) is a numerical and computer-based technique of solving a wide range of practical engineering problems that arise in different fields and which are otherwise difficult to solve analytically. The FEM associated with high computing facilities and available commercial packages such as Altair HyperWorks® has replaced the traditional method of validation of a design or theory and has drastically reduced the time and money spent on physical testing. FEA is now a vital and irreplaceable tool in almost all engineering industries including automotive, aerospace, defence and many others.

At the end of the course, the participants are expected to have fair understanding of:

- ✚ Introduction to FEM and other numerical methods
- ✚ Basics of linear finite element analysis procedures.
- ✚ Modelling and analysis of structural, thermal and flow problems using FEM and HyperWorks®.
- ✚ Computational and programming aspects of finite element analysis.

About MNIT



Malaviya National Institute of Technology (MNIT) Jaipur is one of the NITs established by Ministry of Human Resource Development (MHRD), Government of India (GOI). Earlier, the Institute, known as MREC Jaipur, was established in 1963 as a joint venture of the GOI and the Government of Rajasthan. Later in 2002, the college was given the status of National Institute of Technology, and on 15 August 2007, proclaimed Institute of National Importance through Act of Parliament. MNIT campus spreads over 325 acres of lush green area in the prime location of Jaipur city. Presently, the Institute is in its Golden Jubilee year and as a part of year-long celebrations of its 50 years of teaching and excellence, various academic activities are planned. The present course is one of the events being organized to celebrate its Golden Jubilee. At present, in addition to research, consultancy and developmental activities, the Institute offers UG and PG level courses (M.Tech./M.Sc. & Ph.D.) to about 4500 students in almost all leading fields of engineering, technology, management and sciences.

How to Reach MNIT

Jaipur is well connected by road, rail and air services. MNIT is situated on Jawaharlal Lal Nehru (JLN) Marg and is about 9 kms from main-railway station as well as Central Bus Stand (Sindhi Camp) of Jaipur. Airport (located at Sanganer) is about 5 kms away from the institute.

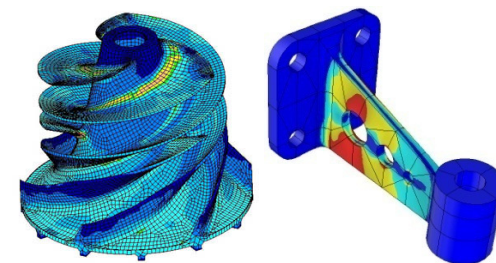


MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

ANNOUNCES

Short Term Training Programme (STTP)

On



Introduction to Finite Element Method (FEM) with Hands-on Alta HyperWorks

(3-7 June, 2013)

About Mechanical Engg. Deptt.

Mechanical Engineering Department started functioning in 1963 at the start of the institute. The department offers a four-year course leading to the Bachelor's Degree in Mechanical Engineering. It also offers two full-time and part-time postgraduate programs in Manufacturing Systems Engineering & Energy Engineering and planning to start Design & Production Engineering from July 2013. Department also offers Ph. D programme in various specializations of the Mechanical Engineering.

Benefits of Attending the Course

Persons who would attend the course should benefit in strengthening their background in the following areas:

- ✚ Understanding of the formulative steps involved in the finite element model development from the governing equations of engineering and applied science, particularly, structural, heat transfer and fluid flow problems.
- ✚ Insights into the relationship between the physical data (e.g., loads, boundary conditions, constitutive behaviour, etc.) and the finite element model of a physical problem.
- ✚ Ready to use the commercially available FEA Packages via. HyperWorks to analyze any engineering structure.
- ✚ Knowledge to teach the finite element analysis procedures to others

Course Contents

The short-term course aims to include following themes:

- ✚ Background: Introduction FEM and other Numerical Methods
- ✚ Basics of linear finite element analysis procedures.
- ✚ Variational and weighted residual formulations
- ✚ Finite element types (bars, beams, 2D, plate and shell elements) and their derivation via constant and higher order approximation functions.

- ✚ Assembly of stiffness matrices, application of loading and boundary conditions
- ✚ Applications of FEM to 1-D and 2-D Problems
- ✚ Computer Implementation of FEM
- ✚ Hands-on experience of FEM using Altair HyperWorks

Experts

The course content will be delivered from a pool of experts on the subject from MNIT, Jaipur and other academic institutes i.e. IIT's/NIT's & industry.

Who Should Attend?

This course is aimed at engineers, faculty of engineering at Degree / Diploma levels, PG students, Research Scholars, practicing engineers in government & industry of various disciplines, who intend to teach FEM and/or use the commercially available FEA Packages to analyze structure. Persons from mechanical, production, civil, automobile (having basic knowledge of solid mechanics, heat transfer and fluid flow) are eligible to attend the course.

Important Dates & Address for Correspondence

Last date of Registration with Fees: 15 May, 2013
Intimation of confirmation : 20 May, 2013

Address for Correspondence

Dr. Dinesh Kumar
Assistant Professor, Department of Mechanical Engineering, MNIT Jaipur, JLN Marg, Jaipur 302 017
www.mnit.ac.in

Dr. Dinesh Kumar: vermadinesh2002@gmail.com
09929206830

Dr. Amit Kr. Singh: asmniti@gmail.com
09982518680

REGISTRATION FORM

Introduction to Finite Element Method (FEM) with Hands-on Altair HyperWorks

Full Name: _____

Designation: _____

Department: _____

Organisation: _____

Experience (in years)-Teaching: ____ Industry: ____

Address of Correspondence: _____

Pin Code: _____ Phone: _____

Mobile No.: _____ E.mail: _____

Registration Category: (Please Tick)

- ☐ Participants from Industry
☐ Students & Research Scholars
☐ Institutional Participants / Faculty Members

Details of Registration Fee:

Name of Bank & Branch _____

DD No.: _____ Dated: _____ for Rs. _____

(Note: DD should be drawn in favour of “**Registrar, MNIT Jaipur**” payable at Jaipur)

Date:

Signature of Participant

The applicant is hereby sponsored and will be permitted to attend this STTP.

Signature and stamp of the Sponsoring Authority

(Note: Please post your completely filled registration form)