

Introduction

Design today has transformed from 'experience based' to 'software tools assisted'. Over the last decade, rapid advancement in computational power coupled with availability of high-end, low cost CAE softwares, has contributed largely to the development of design. Hands-on-knowledge on these softwares is essential to meet the growing demand of industry for trained designers. This course is designed to enhance the knowledge of faculty members of engineering institutions, scientists, designers and practicing engineers from industries, who intend to adopt an integrated approach of CAE using CAD and FEM. The relevance of the present course is to familiarize the participants with the theoretical aspects and the associated softwares in the field of CAD and FEM.

Objective

CAD and FEM are already established compulsory subjects in the curriculum of all engineering institutes. However, there is a big gap between the theoretical concepts and practical applications of CAD and FEM due to lack of computational facilities (commercial softwares and more so trained instructors). This course aims at bridging this gap and enriching the teachers and engineers by imparting knowledge of theory and fundamentals, coupled with hands-on-experience through lab sessions on advanced CAE softwares. This will help in building their knowledge base and research capabilities in the area of CAD and FEM. The overall aim being to contribute in the process of producing qualified, trained, CAE professionals. This two weeks summer course will provide an opportunity to familiarize with and practice on the use of latest CAE softwares and develop innovative designing skills.

Course contents

- Introduction / Design Methodology
- **AutoCAD** based 2d Drawing / Drafting lab sessions
- Graphic transformations and Viewing transformations
- Curve modeling, Surface modeling, 3d Solid modeling
- **Turbo C++ / Matlab** based Computer Programming / Graphics lab sessions
- **IDEAS / Unigraphics** based Solid modeling and Surface modeling Lab sessions
- CAD s/w (**ProEngineer, Solidworks, AutoDesk Inventor etc.**) based tutorials by industry experts
- Downstream applications - Optimization, CAM, Reverse Engineering, Rapid prototyping, Robotics, Medical imaging
- FEM fundamentals / CAD for FEM
- Problem solving / Lab sessions in Structural, Thermal analysis, Dynamics, Composites etc. (**ABAQUS / ANSYS** based)
- FEM s/w (**Hypermesh, Optistruct, LS-Dyna**) based tutorials by industry experts
- Industrial Case studies / Recent advances

The participants will be provided **Evaluation CDs** of various CAE softwares and handouts/course material comprising of computer programs, simplified concise theory and step by step solutions / tutorials to a variety of basic, general utility problems.

Resource persons

The course instructors/faculty will be drawn from MNNIT (MED), IITs, NITs, software industry professionals, other premier national level institutions and nearby industries.

Participants

The program is open to faculty of AICTE approved engineering colleges, engineers from industries and scientists from R & D labs. Alternately, custom made courses specific to the needs of the industry / R & D labs participants can be designed.

Registration

Registration form in the prescribed format should reach the Course Coordinator on or before 4th July 2008. The selected participants will be informed through the Institute website (www.mnnit.ac.in) or by phone/email on or before 11th July 2008. There is **no registration fee** for the faculty of AICTE recognized institutions as the programme is sponsored by MHRD, Govt. of India, New Delhi. For industry personnel the fee is **Rs. 7000/-** for 2 weeks course and **Rs. 4000/-** (Rs. Four thousand only) for 1 week course. However, while registering, a fee of Rs. 200/- by way of DD drawn in favour of **Director, MNNIT Allahabad** has to be sent in advance, which will be refunded on registration.

Mail the application form to:

Dr. Mukul Shukla

Course Coordinator & Assistant Professor
Department of Mechanical Engineering
MNNIT, Allahabad – 211004, U.P.

Email: mukulshukla@mnnit.ac.in
mukulshukla2k@gmail.com

Fax: 0532-254 5341, 5077

Cell: 0-9415307960, 9410405980

Accommodation and travel

Accommodation will be provided in the institute premises. TA will be reimbursed restricted to AC III class to faculty of AICTE recognized institutions traveling by the shortest route to Allahabad.

APPLICATION FORM / SPONSORSHIP CERTIFICATE

AICTE (MHRD) Staff Development Programme

on

CAD & FEM

(July 21 – August 2, 2008)

1. Name:
2. Date of birth:
3. Designation:
4. Institution:
5. Whether institution is AICTE approved- Yes/ No
6. Address for correspondence:

Phone:

E-mail:

7. Educational qualifications:
8. Experience (in years)
Teaching / Industry / Research:
9. Prior exposure to CAD/FEM:
10. Accommodation required - Yes/ No

Declaration

The information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the course and shall attend the course for the entire duration. I also agree to inform the Coordinator in case, I am unable to attend the course.

Place:

Date: Signature of candidate

Dr/Mr/Mrs/Ms-----
is an employee of our institute and is hereby sponsored to participate in the **AICTE SDP** on **CAD & FEM**.

Place:

Date: Signature & Stamp of Head of Institution

Further details and the Brochure can also be downloaded by following the weblink on the institute website www.mnnit.ac.in

About MNNIT Allahabad

Motilal Nehru National Institute of Technology (MNNIT), Allahabad (formerly MNREC) is the first in the chain of RECs setup in the country. Since 1964 it has been a centre of technological excellence in the state of UP in particular and the country in general. The institute is funded by the World Bank under the TEQIP scheme and has constantly been rated amongst the top 20 government engineering institutions of the country. The institute has 8 engineering, 3 basic sciences and a humanities department, in addition to a management school. The institute offers 8 UG, 27 PG and Ph.D. programmes. The institute is a fully residential, networked campus.

MNNIT Allahabad is well connected by rail, road and air. Allahabad is located on Delhi-Howrah main train route, and is connected by air service too. Bamrauli airport is 14 kms from the institute.

About Mechanical Engg. Department

Department of Mechanical Engineering is the leading department of the institute. It offers BTech (in Mechanical and Production and Industrial Engg), MTech (CAD-CAM, Design, Production and Product Design and Development) and PhD. The department has 30 highly qualified faculty. More than 40 PhDs have been produced by the department which is also a QIP centre for PhD and MTech. The department has state-of-the-art laboratories and is equipped with latest softwares and equipments. The department also has liaison with reputed industries and R & D organizations for imparting training, consultancy and R & D services.

**AICTE (MHRD) Sponsored
Staff Development Programme**

on

CAD & FEM

July 21 -August 2, 2008

Patron

Prof. Arun Baran Samaddar
Director

Chairman

Prof. Raghuvir Kumar
Head, Mechanical Engineering Department

Course Director - Summer Schools

Prof. A. K. Misra

Course Coordinator

Dr. Mukul Shukla



Organized by

**Department of Mechanical Engineering
Motilal Nehru National Institute of Technology
Allahabad – 211004, UP**

