



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME)

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

- Name of the Event : Student Certification Program on Practical Finite Element Analysis using HYPERMESH and LS DYNA
- Event Type : Student Certification Program
- Date / Duration : 07-09-2023 to 16-09-2023
- Resource Person : Mr. B R Muni Venkata Krishna, CEO-Mayinkrish Ventures Pvt Ltd Hyderabad.
- Name of Coordinator : Mr. A.Nageswara Rao, Sr. Asst. Professor
- Target Audience : IV-B.Tech Students
- Total no of Participants: 131 Mechanical Engineering Students

Objective of the event:

This is a certification program on Practical Finite Element Analysis (FEA) using HYPERMESH and LS Dyna is specially meant for engineering final students. The Finite Element Method (FEM) is a well-established technique for analysing the structural behavior of mechanical components and systems. In recent years, the use of finite element analysis as a design tool has grown rapidly. HYPERMESH and LS Dyna is a popular and well recognized general purpose finite element modelling package for numerically solving a large range of problems including static, dynamic mechanical, structural analysis (linear and nonlinear), heat transfer and fluid problems, as well as acoustic and electromagnetic problems. It is widely used in the mechanical, automobile, structural, chemical and aeronautical industries.

Outcome of event:

Introduce to the Finite Element Analysis (FEA) concepts and make familiar with the tools and techniques of the HYPERMESH and LS Dyna software packages. This SDP aims at providing **complete hands-on training** on FEA analysis. The SDP will help the participants to develop expertise on various aspects of HYPERMESH and LS Dyna for FEA applications. The SDP serves the purpose of bringing together the engineers from various domains such as Structural, Thermal and Fluid Dynamics fields.

Day to Day Report

07/09/2023

SESSION DETAILS:-

- Session started at 9.00 A.M.
- Registration of participants for the STUDENT CERTIFICATION PROGRAM ON PFEA USING HYPERMESH& LS DYNA
- Inauguration of program by Dr. S. Pichi Reddy, Head of the Department.
- Introduction to Finite Element Analysis theory and applications.
- Introduction to HYPERMESH software
- Demonstration on operating HYPERMESH environment.
- Steps in HYPERMESH solver
- Participants practiced and interacted with new HYPERMESH Platform software.

08/09/2023

SESSION DETAILS:-

- Session started at 9.00 A.M.
- Briefly explained HYPERMESH Design Modular Window, how to design model in HYPERMESH.
- Draw, modify tool bars in Design Modular Window tool bars
- Participants performed operations draw tool bars like point, line, rectangular, polygon, and circle
- Edit tool options rotate, scale, mirror that was practiced

09/09/2023

SESSION DETAILS:-

- Session started at 9.00A.M.
- Explained various commands types of meshing methods in HYPERMESH
- Demonstration on 2D and 3D model components are meshed
- Participants practiced 2D and 3D model components are meshed.
- Demonstrated how to consider and apply Boundary conditions for different models of problems
- Participants practiced mechanical components and aerospace components.

11/09/2023

SESSIONS:-

- Session started at 9.00A.M.
- Explained Rack and gear problem with remote displacement/force options
- Model imported in to HYPERMESH, performed meshing followed by boundary conditions and solved.
- Finally, resultant momentum to drive the gear on pinion founded.
- Participants participated Rack and gear tutorial
- Explained different structural analysis problems like bars and trusses with procedures
- Participants participated structural analysis tutorials like bars and trusses

12/09/2023

SESSION DETAILS:-

- Session started at 9.00 A.M.
- Explained thermal analysis problems solved options
- Mode imported in to HYPERMESH, performed meshing followed by boundary conditions and solved.
- Finally, heat flux and heat transfer analysis were studied.
- Participant's performed hands on session with thermal analysis of heat exchanger.
- Certification of course completion was presented to participants.

13/09/2023

SESSION DETAILS:-

- Session started at 9.00 A.M.
- Explained different thermal analysis problems like fins and heat pipes with procedures
- Participates participated structural analysis tutorials like bars and trusses
- Explained heat transfer analysis procedure in HYPERMESH
- Study state and transient temperature distribution steps explained
- Fin pin heat transfer analysis performed
- Participants practiced Fin pin heat transfer analysis using HYPERMESH tool
- Practice session was given to practice all the modules in related to FEA workbenches.

14/09/2023

SESSION DETAILS:-

- Session started at 9.00 A.M.
- Explained model analysis problems solved options
- Mode imported in to HYPERMESH, performed meshing followed by boundary conditions and solved.
- Finally, frequencies and model analysis were studied.
- Participant's performed hands on session with model analysis of spring system.

15/09/2023

SESSION DETAILS:-

- Session started at 9.00 A.M.
- LS Dyan post processor
- Solver Settings
- Results explanations
- Practice session of impact test of car

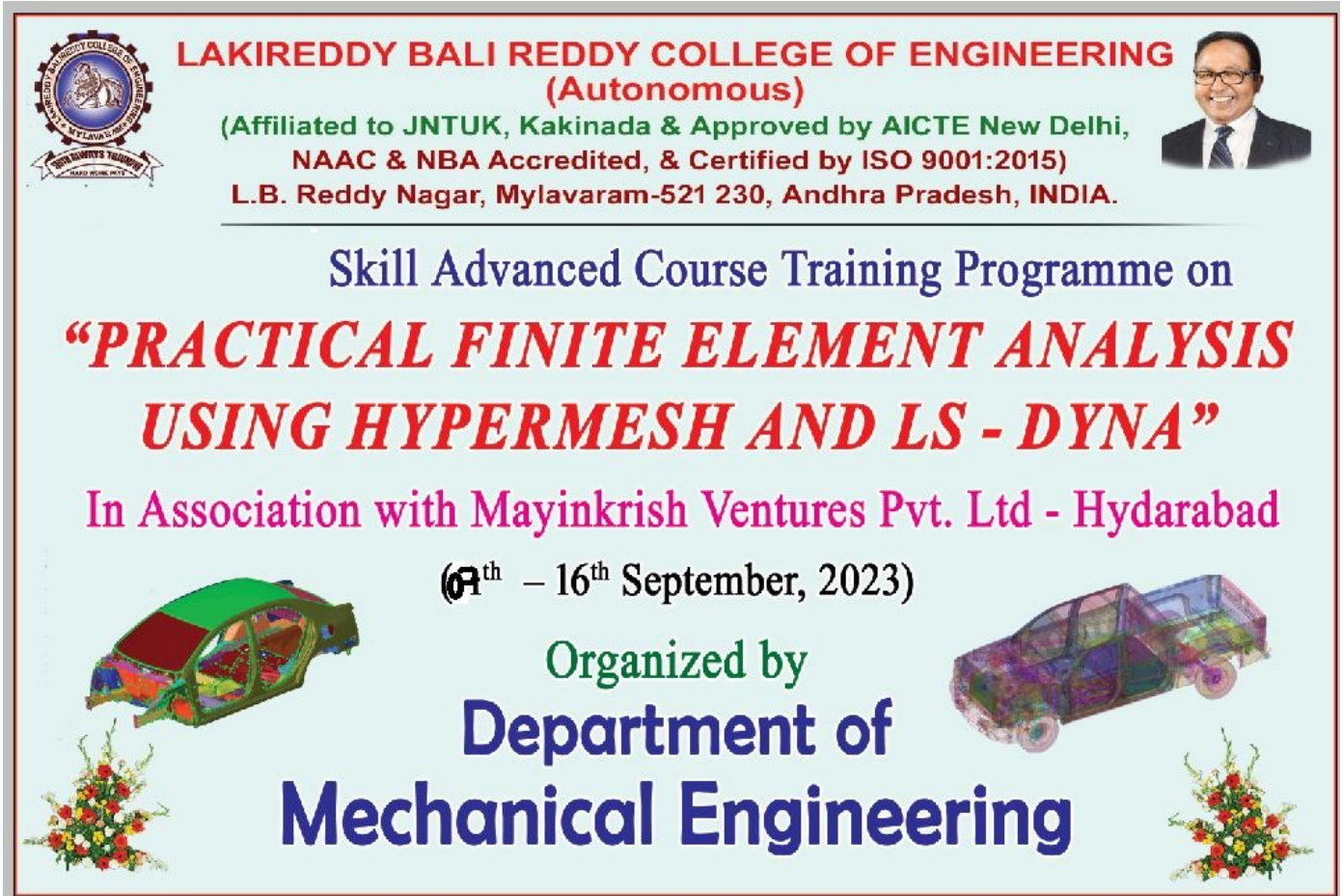
16/09/2023

SESSION DETAILS:-

- Session started at 9.00 A.M.
- Case study with washing machine discussed in real time scenario.
- Report writing of Analysis project explained
- At 3 PM valedictory started.
- Dr. S. Pichi Reddy, Head of the Department addressed the gathering

- Certification of course completion was presented to participants.

Photographs:



The poster features the Lakireddy Bali Reddy College of Engineering logo on the top left, which includes the motto 'WISDOM BEGETS TRUTH' and 'READ WORK BELIEVE'. To the right of the logo, the college name 'LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)' is written in red. Below this, in green, are the affiliations: '(Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi, NAAC & NBA Accredited, & Certified by ISO 9001:2015)'. The address 'L.B. Reddy Nagar, Mylavaram-521 230, Andhra Pradesh, INDIA.' is listed in black. A portrait of a man in a suit and glasses is on the top right. The main title 'Skill Advanced Course Training Programme on "PRACTICAL FINITE ELEMENT ANALYSIS USING HYPERMESH AND LS - DYNA"' is centered in blue and red. Below the title, it says 'In Association with Mayinkrish Ventures Pvt. Ltd - Hyderabad' in pink, followed by the dates '(9th – 16th September, 2023)' in black. The organizing department, 'Department of Mechanical Engineering', is written in large blue letters. Two 3D car models, one green and one purple, are shown on either side of the department name, with floral decorations at the bottom corners.

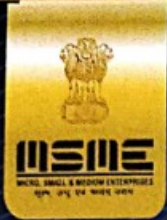
**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(Autonomous)**
(Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi,
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L.B. Reddy Nagar, Mylavaram-521 230, Andhra Pradesh, INDIA.

**Skill Advanced Course Training Programme on
"PRACTICAL FINITE ELEMENT ANALYSIS
USING HYPERMESH AND LS - DYNA"**

In Association with Mayinkrish Ventures Pvt. Ltd - Hyderabad
(9th – 16th September, 2023)

**Organized by
Department of
Mechanical Engineering**

Fig: Poster for Practical FEA Using HYPERMESH & LS DYNA



MAYINKRISH VENTURES PVT. LTD.

A registered MSME firm

www.mayinkrish.com

Nafeez residency, Begumpet, Hyderabad - 500016

Certificate of completion

This is to certify that

Mr./Ms. ANDRAJU HARIKA (20761A0303) He/she has successfully completed the program on Practical finite element analysis using HyperMesh & LS-DYNA during 07th Sep - 2023 Organised by Department of Mechanical Engineering, Lakireddy Bali Reddy College of Engineering in association with Mayinkrish Ventures Pvt. Ltd, Hyderabad.

Fig: certificate for HYPERMESH participants

PHOTOS:



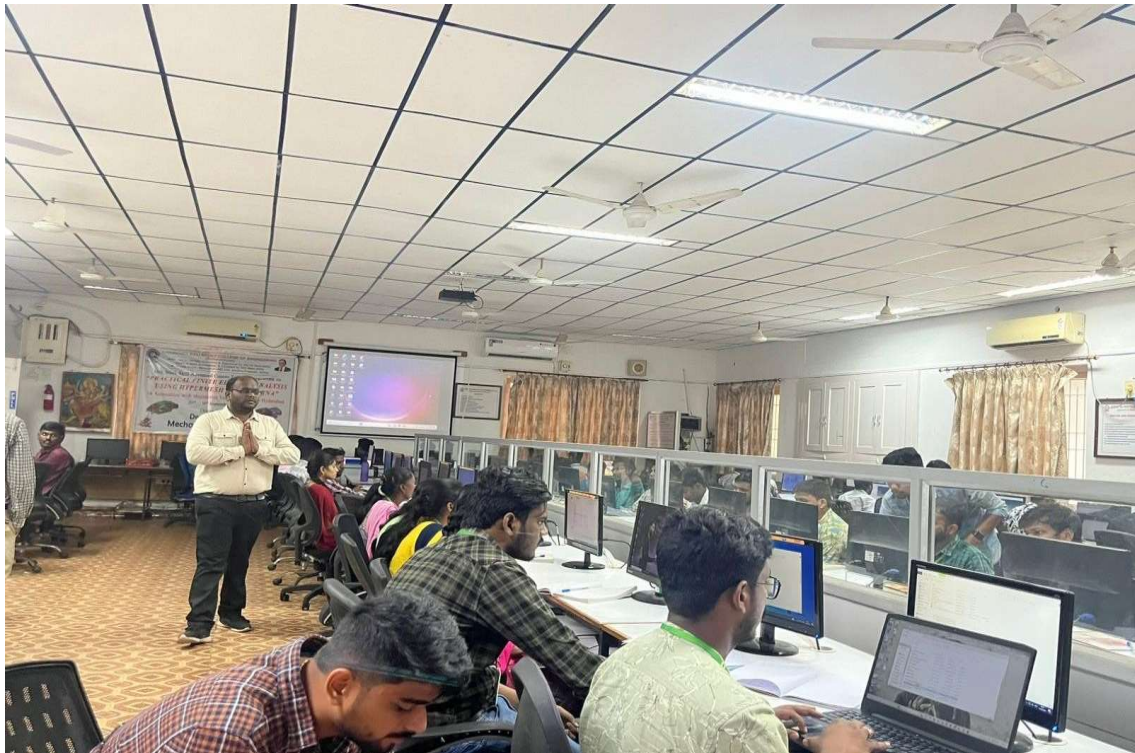
Inaugural address by Dr. S. Pichi Reddy Mechanical Engineering Department Head



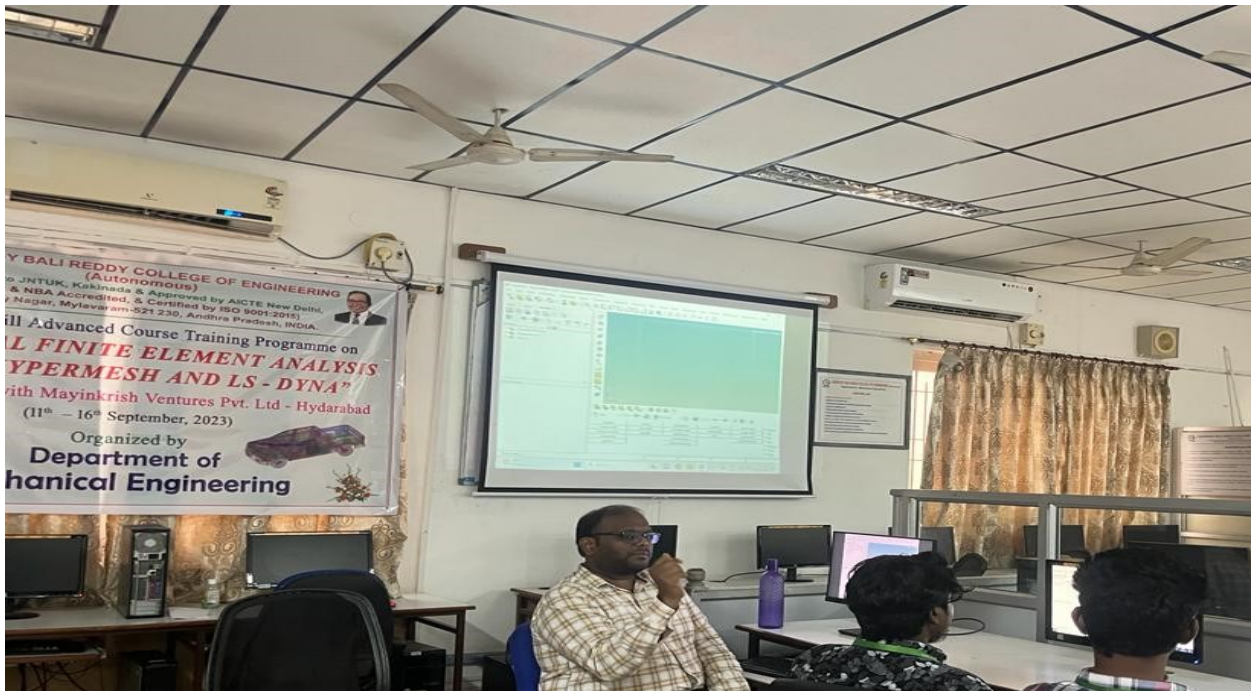
Inaugural address by resource person in Day 1



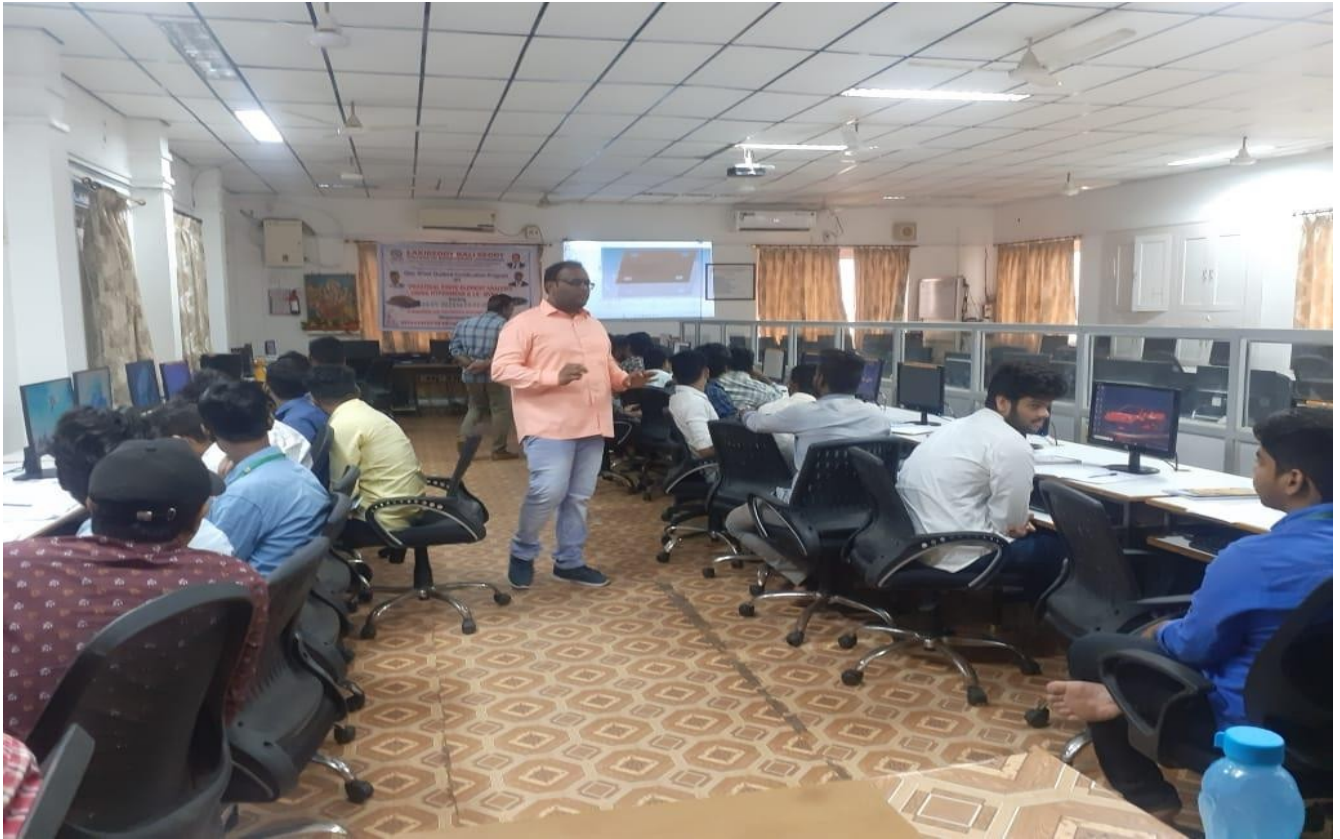
Students in practicing of Hypermesh & L.S.Dyna



Practice sessions



Lecture on 2D & 3D modeling in Hypermesh



Practice session of L.S.Dyna



Message by resource person during valedictory



Message by Dr. P Ravindra Kumar during valedictory

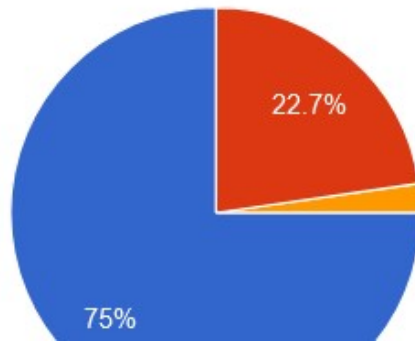


Certificate distribution by Dr.S.Pichi Reddy, HoD ME and resource person

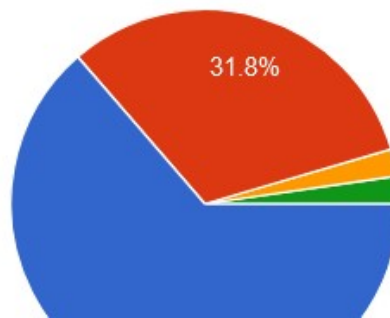
Feedback / Suggestions: Increase Laboratory Sessions, Real time case studies

Feedback Report:

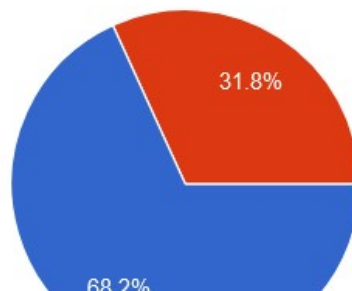
1. Contents covered by the resource person on the given topic



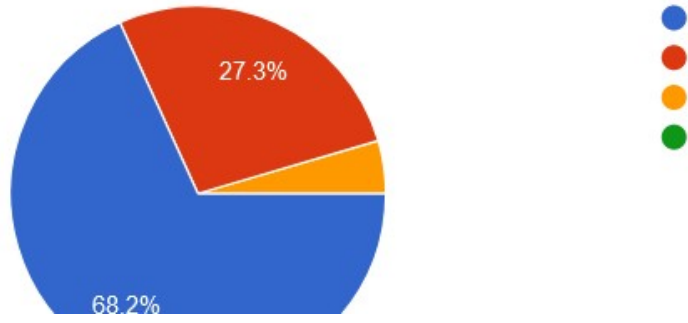
2. Voice clarity on a given presentation



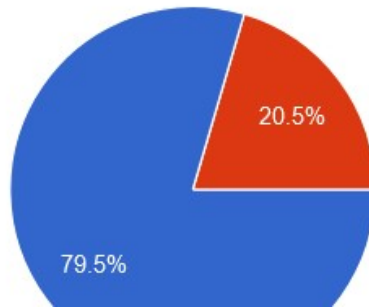
3. Doubts cleared by the resource person



4. Audio/video content shared by the resource person



5. Resource person depth of knowledge on softwares



[Signature]
HEAD
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LAKIREDDY BALI REDDY COLLEGE OF ENGG
MYLAVARAM - 521 230, Krishna St, A.P.