



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(An Autonomous Institution since 2010)

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

L.B. Reddy Nagar, Mylavaram, NTR District, Andhra Pradesh - 521230



DEPARTMENT OF MECHANICAL ENGINEERING

REPORT ON "SKILL ADVANCED COURSE"

Event Type	: Skill Advanced Course
Date/Duration	: 07-08-2023 to 12-08-2023(Online) & 19-09-2023 to 23-09-2023(Offline) (Two weeks)
Name of the Event	: Electric & Solar Vehicle-Design & Development
Resource Person	: Mr. Rahul Ranjan, Senior Automotive Engineer, AMZ Automotive, Jaipur. : Mr. Rajesh Kumar, Deputy Manager-Electric Vehicle and Emobility, BMS Design Engineer, AMk Industry, Jaipur. : Mr. Reigen K P, EV Design Engineer, AMK Industry, Jaipur.
Name of the Coordinator(s)	: Mr. S. Rami Reddy, Sr. Assistant Professor. : Mr. S. Uma Maheswara Reddy, Assistant Professor.
Target Audience	: B. Tech-V Semester
Total Number of students	: 118
Objective of the Events	: To get Electric and solar vehicle design and development skills.
Outcome of the Event	: Students acquired more knowledge on electrical and solar vehicle design and development and applied to core related example.

Description/Report on Event : The Mechanical Engineering Department conducted two weeks skill advanced course on electrical and solar vehicle design and development for V Semester Students from 07-08-2023 to 12-08-2023(Online) & 19-09-2023 to 23-09-2023(Offline) in association with AMZ Techversity. During the training sessions, the students got the knowledge on the following topics.

- Introduction to Automobile and fundamental components, Chassis and Its types, Braking System, Brake and Its types, Braking Dynamics, Braking Calculation.
- Steering System, Steering Dynamics, Steering Calculation, Wheel Alignment Parameter.
- Suspension Design, Suspension types, Suspension Dynamics, EV Design Parameters, Motor Power and Torque Calculation.
- Introduction to 3 D Modelling, Basic of 2-D Sketching, Components Modelling using Solid Work, Component Selection for Vehicle frame.
- Exploring the future EV, Demand of ev in marking, Challenges Ahead, Grid Integration, Cost Savings, Charging Infrastructure, Environmental Sustainability.
- Introduction on Battery, Types of battery's, Chemistry on All type of batteries, BMS system on battery, Calculation on charging and discharging, Battery design Calculation, Safety on battery.

Feedback/ Suggestions: Overall students are satisfied with this training program.

Two Weeks Skill Advance Course Brochure:-

About the Institute

The Lakireddy Bali Reddy College of Engineering (LBRCE) was established in the year 1998 by Lakireddy Bali Reddy Charitable Trust, whose architect is Er. Lakireddy Bali Reddy garu. The institute is established with the sole aim of providing high quality educational opportunities in the field of science, engineering, technology and management. It is spread over 60 acres of sprawling lush green landscape spotted with orchids and grooves. It is approved by AICTE, affiliated to JNTUK, Kakinada and attained autonomous status in the year 2010. Institute has NAAC accreditation and almost five programs were accredited under NBA-Tier1. The College has also been awarded 2(f) and 12(B) status, apart from the recognition as a 'College with Potential for Excellence (CPE)' from the UGC.

LBRCE has sophisticated infrastructure with dedicated, well qualified and experienced faculty. A separate R&D cell is established in the college to focus on continuous research. It has various sponsored research projects by various funding agencies. All laboratories are equipped with state-of-the art facilities backed by advanced computer systems with latest software. Recently Institute has started the Advanced Robotic Control (ARC) center in association with German Collaboration.

About the Department

Mechanical Engineering is one of the major disciplines in the engineering profession and its principles are involved in the thermal, design and fabrication of nearly all of the physical devices and systems. Continued research and development have led to better machines and processes helping the mankind.

The Department of Mechanical Engineering has come into existence in LBRCE (Autonomous) in the year 1998. It offers undergraduate program in Mechanical Engineering with an intake of 180 and a Post-graduate program in the area of Thermal Engineering specialization. The Department has well qualified, dedicated faculty with good laboratory facilities including equipment required for research work. The faculty is actively engaged in research activities in their areas of specialization. In R&D, we get DST and AICTE, MODRABS projects worth of RS.1Crore

In R&D, we get DST and AICTE, MODRABS projects worth of RS.1Crore 27Lakhs. The Department has DASSAULT Systems laboratory in collaboration with AP skill Development Center and has ANSYS 18.1 Licensed Software worth of 28Lakhs for 300 users to carry out research works.

About the Workshop

Electrical Vehicle (EV) is a prominent solution of fuel crises and environmental pollution for global transportation sector. This Program is designed to provide the state-of-the-art trends and advancements in Electric Vehicle.

The Program will focus on theoretical aspects as well as providing hands on experience to the participants. It will enable them to promote industry and institute collaborations by working on the current research problems.

The participants will be introduced to fundamentals of Electric Vehicles, components such as cables, battery, drives and controllers used in of Electric Vehicles. The participants will be trained with hands-on approach in order to have an in-depth insight into the domain of Automobile and expose them to Feasibility & future scope of EV.

Workshop Objective

The course is designed to provide Basic knowledge of Electric & Solar Vehicle- Design and Development.

Highlights of the program are

- ❖ Introduction to Automobile and fundamental components
- ❖ Electric Vehicle Design Parameters
- ❖ Introduction to 3 D Modeling
- ❖ Basics of 2-D Sketching
- ❖ Exploring the Future of Electric Vehicle
- ❖ Environmental Sustainability
- ❖ Introduction on Battery

LAKIREDDY BALI REDDY COLLEGE OF
ENGINEERING (AUTONOMOUS)
MYLAVARAM – 521 230



DEPARTMENT OF MECHANICAL ENGINEERING
IN ASSOCIATION WITH
AMZ TECHVERSITY

Two Weeks Skill Advanced Course on
“Electric & Solar Vehicle- Design and
Development”

(07th to 12th August 2023 Online)
(19th to 23rd September 2023 Offline)

Registration Form

1. Name: _____
2. Regd.No: _____
3. Year of Study: _____
4. Branch: _____
5. Institution: _____
6. Address for Correspondence

7. Phone no: _____
8. E-Mail: _____

Declaration

The above information provided is true to the best of my knowledge. I agree to abide by the rules and regulations of the workshop course.

Place:

Date: _____ Signature of Applicant

Sponsorship Certificate

Mr./Ms. _____
is a student of our Institute and is hereby sponsored to participate in One Week workshop on “Electric & Solar Vehicle- Design and Development”.

Place:

Date: _____ Signature of Head of Institution
(With seal)

COMMITTEE MEMBERS

Chief Patron:

Sri. Lakireddy Jaya Prakash Reddy
Honorary Chairman

Sri. Lakireddy Prasad Reddy
Chairman

Sri.L.Vijaya Kumar Reddy
Vice -Chairman

Patron:

Sri. G. Srinivasa Reddy
President

Dr. K.Appa Rao
Principal

Dr.K.Harinadha Reddy
Vice principal

Advisor:

Dr.M.Srinivasa Rao
Dean Academics

Dr. E.V.Krishna Rao
Dean R&D

Convener:

Dr. S. Pichi Reddy
Professor & HOD, ME

Coordinators:

Mr. S. Rami Reddy
Sr. Assistant Professor

Mr. S. Uma Maheswara Reddy
Assistant Professor

Important Dates

Last date for submission of application: 07th August 2023
Duration of Program: 07th to 12th August 2023 Online

19th to 23rd September 2023 Offline

Resource Persons:

1. Mr.Rahul Ranjan, Senior Automotive Engineer, AMZ Automotive, Jaipur.
2. Mr. Rajesh Kumar, Deputy Manager - Electric Vehicle & Emobility BMS Design Engineer, AMK Industry, Jaipur.
3. Mr. Reigen K P, EV Design Engineer, AMK Industry, Jaipur.

Target Audience

The workshop is open to all third year B. Tech Graduate students of AICTE approved engineering colleges.

Registration Particulars

Application in the prescribed format duly sponsored by the Head of the Institution should reach the coordinators on or before 5th August 2023

Note: Brochure & registration form can also be downloaded from our college website.
<http://www.lbrce.ac.in>

Registration Fee

For Each Student: Rs.1000/-

- ❖ Certificate provided for eligible students.

NOTE

The participants need to pay the registration fee preferably through online in the given bank account. The receipt of payment details may be sent to the email: ramireddy.mec@gmail.com

Account Name	LBRCE
Account Number	3172828720
Branch	Central bank of India, L.B. Reddy Nagar, Mylavaram
IFSC	CBIN0283964

Two Weeks Skill Advanced Course on
“Electric & Solar Vehicle- Design and
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ORGANIZED BY

DEPARTMENT OF MECHANICAL ENGINEERING



IN ASSOCIATION
WITH AMZ
TECHVERSITY



LAKIREDDY BALI REDDY COLLEGE OF
ENGINEERING (AUTONOMOUS)

Approved by AICTE, New Delhi and Affiliated to
JNTUK, Kakinada. Accredited by NAAC, Accredited by
NBA (Tier-I), ISO 9001:2015 Certified Institution,

Mylavaram -521230, Krishna (Dt),

Andhra Pradesh, India,

Ph: 08659-222933. Fax: 08659-222931

Website: www.lbrce.ac.in

Day To Day Report

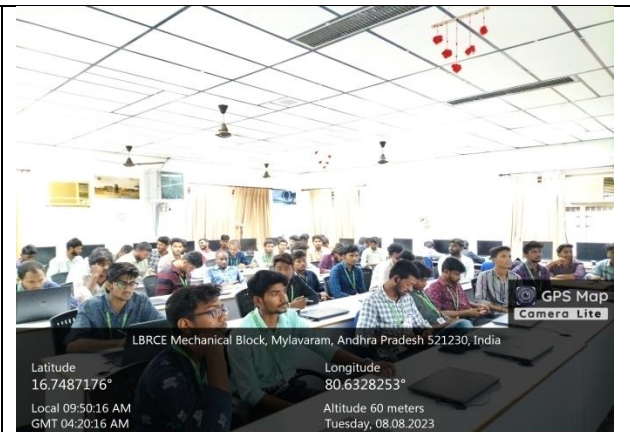
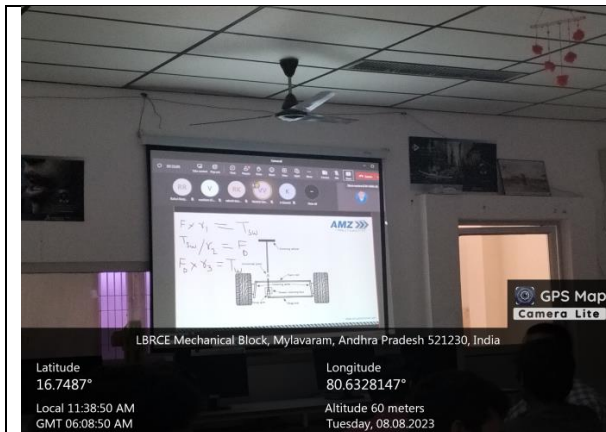
07/08/2023: Forenoon Session (09:00 AM to 12:30 PM)

Topics Covered: Introduction to Automobile and fundamental components, Chassis and Its types, Braking System, Brake and Its types, Braking Dynamics, Braking Calculation.



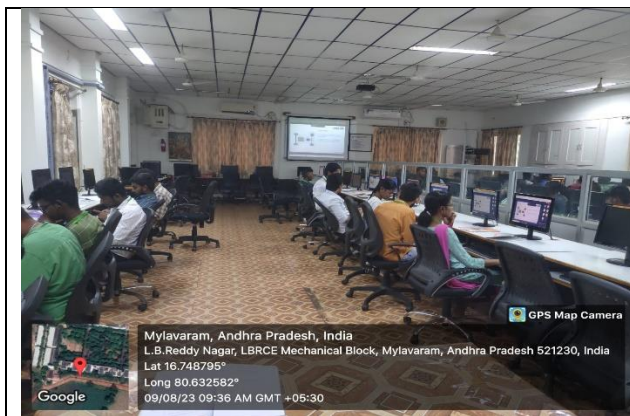
08/08/2023: Forenoon Session (09:00 AM to 12:30 PM)

Topics Covered: Steering System, Steering Dynamics, Steering Calculation, Wheel Alignment Parameter.



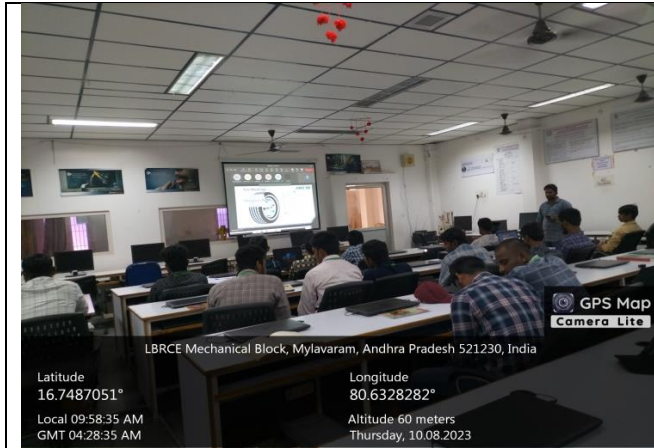
09/08/2023: Forenoon Session (09:00 AM to 12:30 PM)

Topics Covered: Suspension Design, Suspension types, Suspension Dynamics, EV Design Parameters, Motor Power and Torque Calculation.



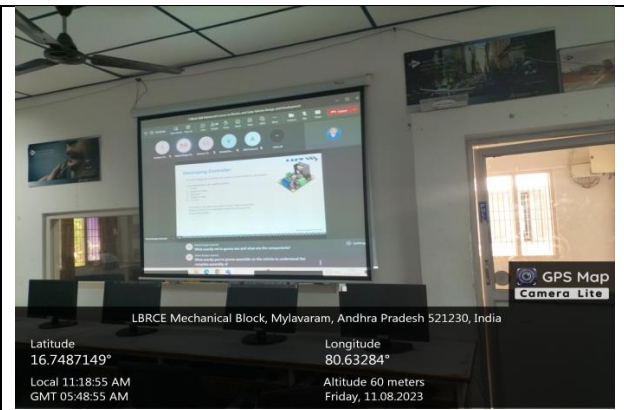
10/08/2023: Forenoon Session (09:00 AM to 12:30 PM)

Topics Covered: Introduction to 3 D Modeling, Basic of 2-D Sketching.



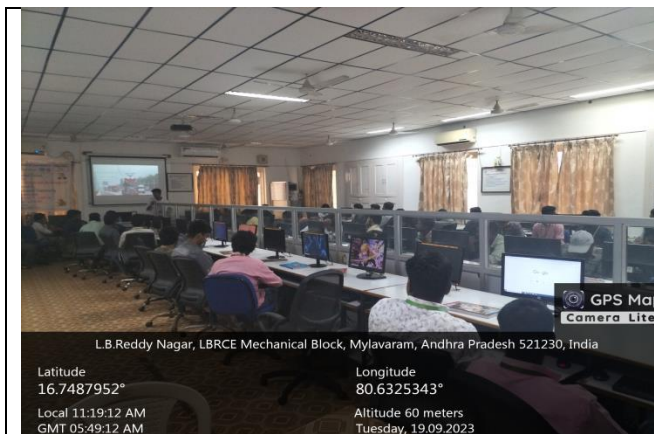
11/08/2023: Forenoon Session (09:00 AM to 12:30 PM)

Topic Covered: Components modeling using Solid Work, Component Selection for Vehicle frame.



19/09/2023 :(09:00AM to 04:00PM)

Topics Covered: Exploring the future EV, Demand of ev in marking, Challenges Ahead, Grid Integration, Cost Savings, Charging Infrastructure, Environmental Sustainability



20/09/2023: (09:00AM to 04:00PM)

Topics Covered: Introduction on Battery, Types of battery's, Chemistry on All type of battries, BMS system on battery, Calculation on charging and discharging, Battery design Calculation, Safety on battery.



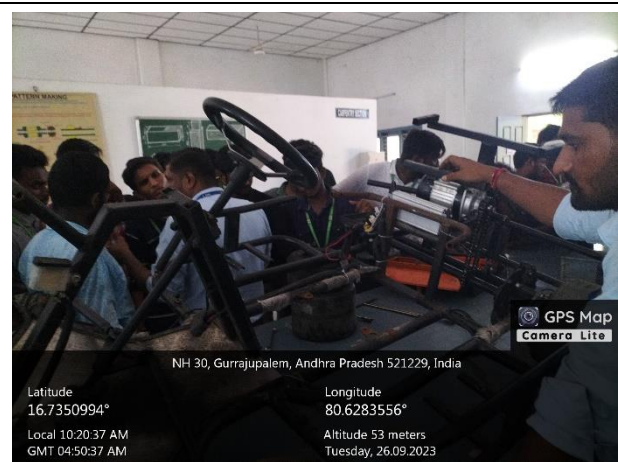
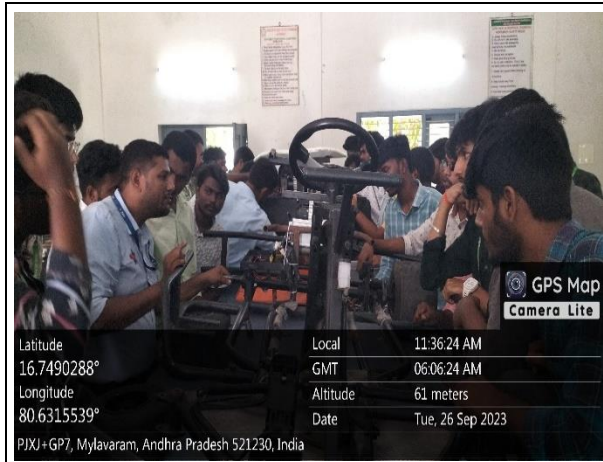
25/09/2023: (09:00AM to 04:00PM)

Topics Covered: Hands on Practices on component of Electric Vehicle.



26/09/2023: (09:00AM to 04:00PM)

Topics Covered: Assembly of Electric Vehicle.



27/09/2023: (09:00AM to 04:00PM)

Topics Covered: Component testing and driving session by students.



Feedback / Suggestions:

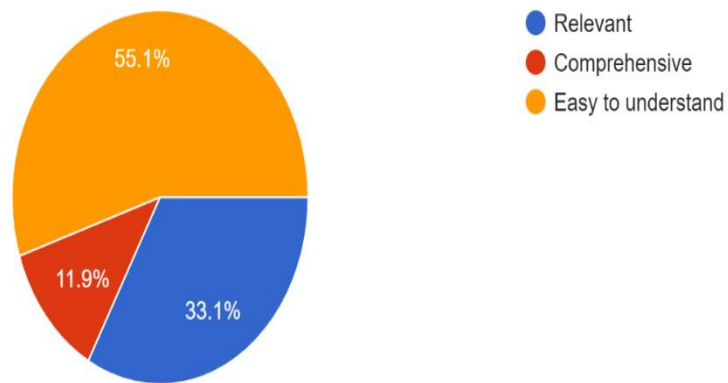
1. The course provided valuable insights into electric vehicles, which proved to be beneficial for advanced studies.
2. The content of the Electric Vehicle (EV) course proved to be highly beneficial for students Pursuing Mechanical Engineering.
3. The course greatly facilitated the understanding of the fundamental principles of electric vehicles.
4. Knowledge was acquired through the hands-on experience of assembling and disassembling electric vehicles.

Feedback Report: The student participants gave their feedback on the two weeks workshop and the responses wereshown in the form of graph given below

Feedback from the participants:

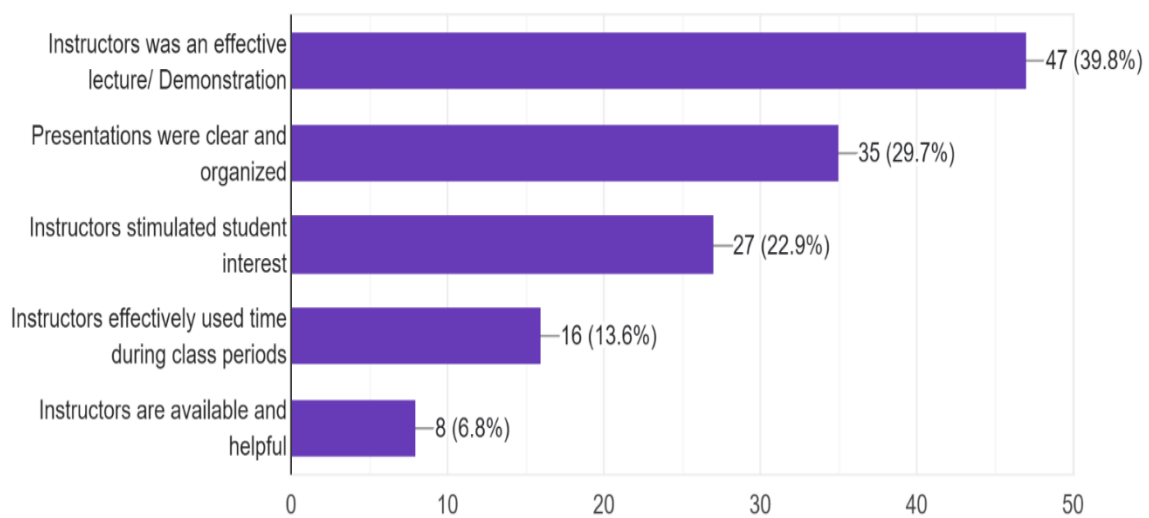
1. The workshop content was

118 responses



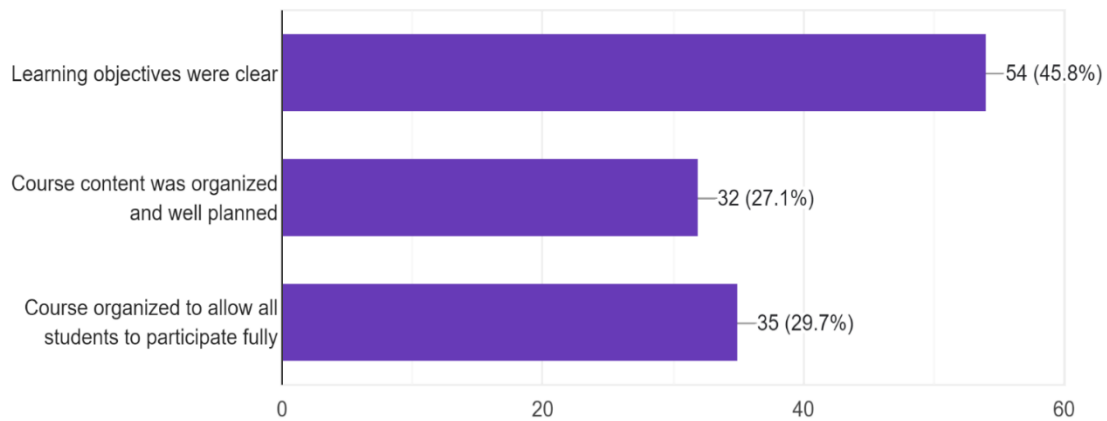
2. Skill and response of the instructors

118 responses



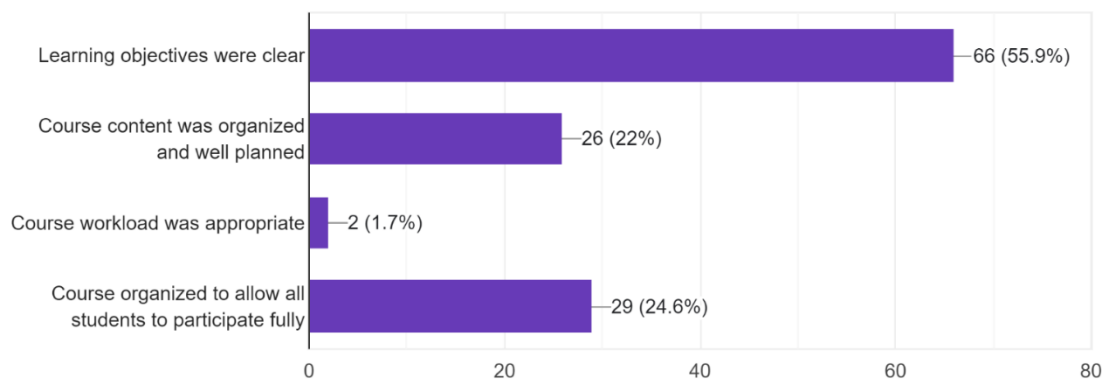
3. Course content

118 responses



4. What aspects of this course were most useful or valuable

118 responses

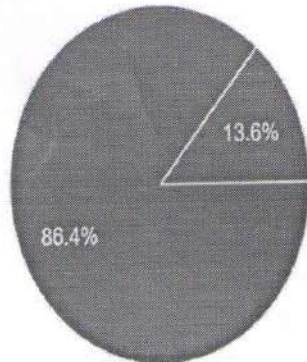


5. What Aspects of this course were most useful or Valuable.

- THE WAY OF EXPLAINING ABOUT THE EV AND ORENTATION IS SUPER
- CORSE CONTENT WAS ORGINASED AND WELL PLANED
- LEARNING OBJECTIVES WERE CLEAR
- TO BRING THE LIVE MODEL OF EV
- GIVE MORE TIME FOR PRACTICIAL KNOWLADGE
- BRINING THE LIVE MODEL OF EV IS GOOD
- IMPROVE THE PRESANTATION SKILLS
- VALUABLE
- BRAKING SYSTEM
- EXCELLENT TEACHING
- THIS EV CORSE WERA VERY USEFUL FOR MECHANICAL STUDENTS

6. Did you find the training program useful?

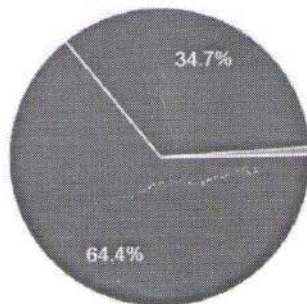
118 responses



- Very useful
- Quite useful
- Not useful at all

7. Did it cover what you were expecting?

118 responses



- Completely
- Partially
- Not at all

Signature		
	Mr. S. Rami Reddy Mr. S. Uma Maheswara Reddy	Dr. S. Pichi Reddy
	Name of the coordinator(s)	Head of the Department