



DEPARTMENT OF MECHANICAL ENGINEERING

Report on the 5-Day Online Faculty Development Program (FDP)

Title: Advances in Engineering Design, Smart Manufacturing, and Thermal Systems

Duration: 23-12-2024 to 28-12-2024

Organized by: Koneru Lakshmaiah Education Foundation, Department of Mechanical Engineering, Vijayawada Campus

Summary: The FDP successfully enhanced participants' knowledge in advanced topics of engineering design, smart manufacturing, and thermal systems. It fostered interdisciplinary collaboration and encouraged sustainable practices in engineering education and research.

Target Audience: Faculty from cohorts of Engineering Design, Smart Manufacturing, and Energy & CFD.

Day 1: 23rd December 2024

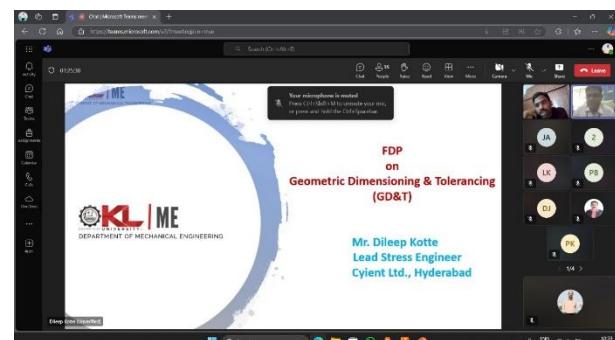
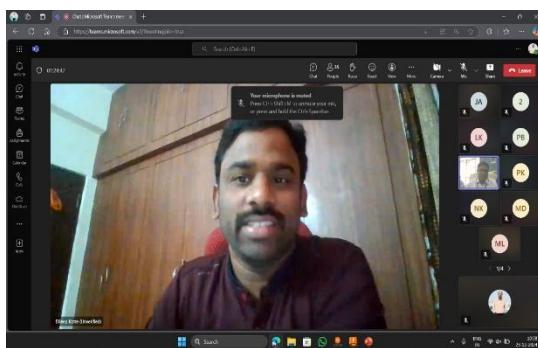
Session 1:

- Time: 10 AM - 1 PM
- Topic: Geometric Dimensioning and Tolerance
- Resource Person: Mr. Dileep Kotte
- Hosting Cohort: Smart Manufacturing (E25)
- Description: This session focused on the importance of geometric dimensioning and tolerance in manufacturing processes. Attendees learned about precision engineering and methods to enhance product quality through effective tolerance management.



MR. DILEEP KOTTE

Lead Stress Engineer
Cyient Ltd, Hyderabad





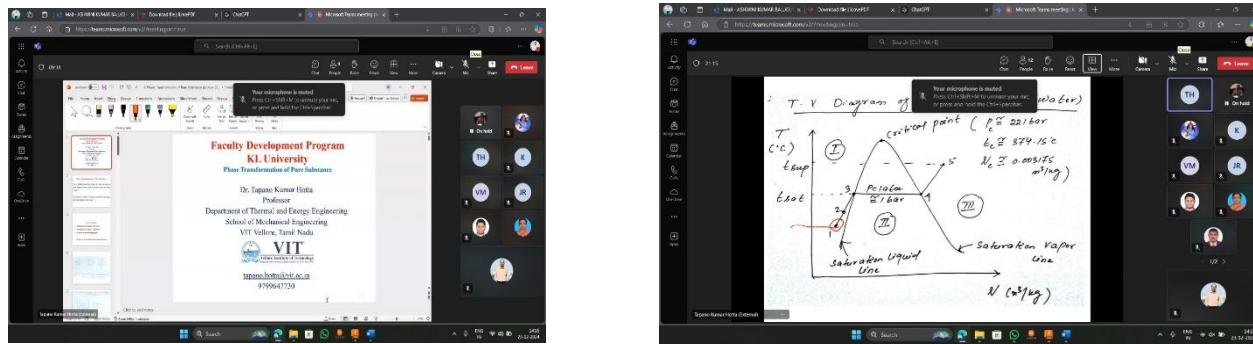
Session 2:

- Time: 2 PM - 5 PM
- Topic: Phase Transformation of Pure Substances
- Resource Person: Dr. Tapano Kumar Hotta
- Hosting Cohort: Energy & CFD (E14)
- Description: The session explored the fundamental principles and applications of phase transformations in pure substances, providing insights into thermodynamic changes and their implications in engineering.



DR. TAPANO KUMAR HOTTA

Professor
 Department of Thermal & Energy
 Engineering
 School of Mechanical Engineering
 VIT Vellore, Tamil Nadu



Day 2: 24th December 2024

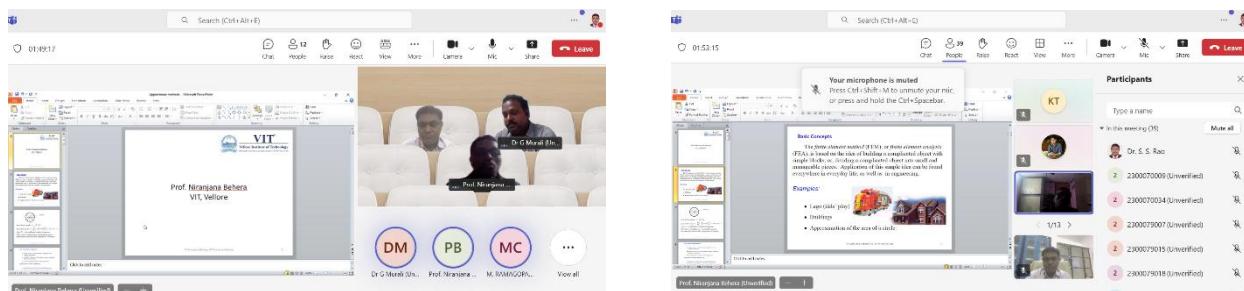
Session 3:

- Time: 10 AM - 1 PM
- Topic: Approximate Methods
- Resource Person: Dr. Niranjana Behera
- Hosting Cohort: Energy & CFD (E14)
- Description: This session introduced approximate analytical methods used in engineering analysis, emphasizing simplifications for solving complex problems effectively.



DR. NIRANJANA BEHERA

Professor
 VIT University, Vellore-632814,
 Tamilnadu





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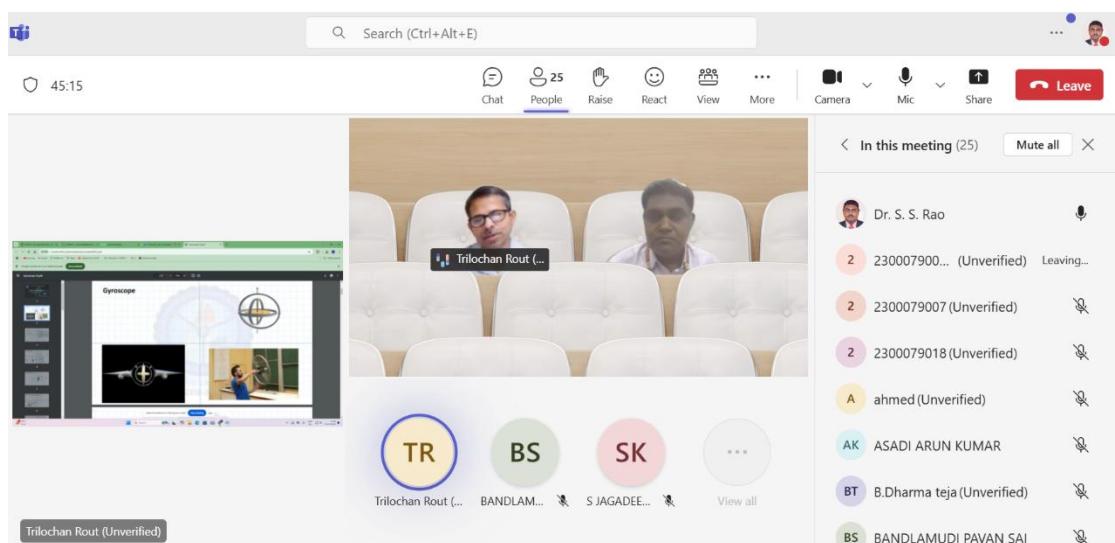
Session 4:

- Time: 2 PM - 5 PM
- Topic: Gyroscopic Effect
- Resource Person: Dr. Trilochan Rout
- Hosting Cohort: Engineering Design (E15)
- Description: The participants gained an understanding of the gyroscopic effect and its relevance to the design and stability of mechanical systems. Practical examples and case studies enriched the discussion.



DR. TRILOCHAN ROUT

Professor & Dean, Faculty and Planning
Parala Maharaja Engineering College,
Sitalapalli, Berhampur - Odisha, India



Day 3: 26th December 2024

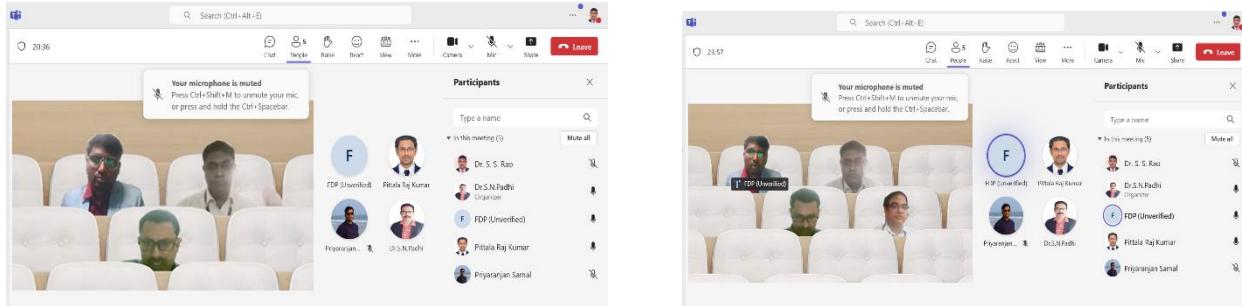
Session 5:

- Time: 10 AM - 1 PM
- Topic: Selection of Belt Drives
- Resource Person: Dr. Chokka Syam Kumar
- Hosting Cohort: Engineering Design (E15)
- Description: The session covered criteria for selecting belt drives in mechanical systems, highlighting efficiency, durability, and maintenance aspects.



DR CHOKKA SYAM KUMAR

Scientist Assistant Professor
IITDM Jabalpur
Email: syamkumare@iitdmj.ac.in



Session 6:

- Time: 2 PM - 5 PM
- Topic: CNC and AI Technology: Scope, Challenges, and Opportunities
- Resource Person: Dr. Kali Charan Rath
- Hosting Cohort: Smart Manufacturing (E25)
- Description: This session provided insights into integrating artificial intelligence with CNC technologies, discussing challenges and future trends in smart manufacturing.



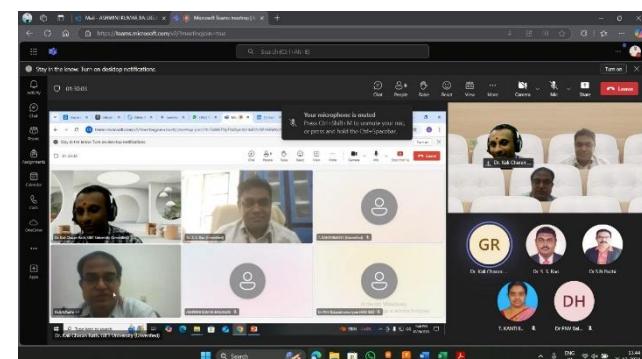
DR. KALI CHARAN RATH

Associate Professor
Department of Mechanical Engineering
Gandhi Institute of Engineering and
Technology University,
Odisha, Gunupur, India



**Day 4: 27th
December
2024**
Session 7:

- Time:

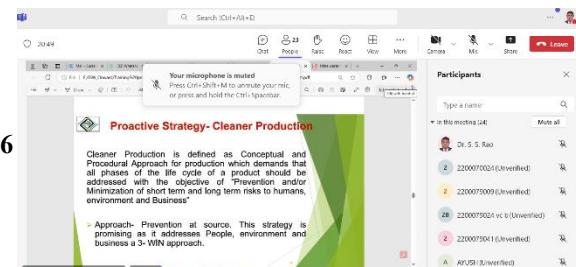


10 AM - 1 PM

- Topic: Mining and Its Impact on Environment (Air, Water & Waste Management)
- Resource Person: Mr. Suresh Kumar Mohapatra
- Hosting Cohort: Energy & CFD (E14)
- Description: The environmental impacts of mining activities were thoroughly examined, with an emphasis on sustainable waste and resource management practices.



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Session 8:

- Time: 2 PM - 5 PM
- Topic: Sustainable Product Design & Manufacturing
- Resource Person: Singari Reddaiah
- Hosting Cohort: Engineering Design (E15)
- Description: This session explored strategies for sustainable product design, promoting eco-friendly materials and manufacturing processes.



SINGARI REDDAIAH

Scientist SG & Dy General Manager
SDHC SHAR,
Sriharikota

Day 5: 28th December 2024

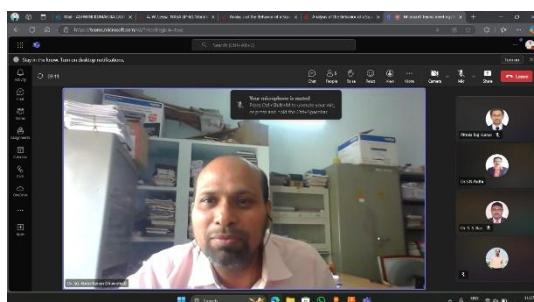
Session 9:

- Time: 10 AM - 1 PM
- Topic: Non-Linear Stress Analysis of Beams
- Resource Person: Dr. Abdul Kalam
- Hosting Cohort: Engineering Design (E15)
- Description: Participants learned advanced techniques for analyzing non-linear stress in beams, with practical examples from engineering structures.



DR. ABDUL KALAM

Sr.Asst.Professor
Mechanical Engineering Department
P.V.P.Siddhartha Institute of
Technology,
Kanuru Vijayawada-7



Session 10:

- Time: 2 PM - 5 PM
- Topic: National Education Policy (NEP) 2020 & Outcome-Based Education (OBE)
- Resource Person: Dr. D.V.A. Rama Sastry



**Dr.DEVULAPALLI V.A.RAMA
SASTRY**

ASSOC.PROF.
Ph.D
Mechanical Vibrations



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- Hosting Cohort: Engineering Design (E15)
- Description: The concluding session provided an overview of NEP 2020 and its implications for higher education, with a focus on implementing outcome-based education frameworks in engineering.

Prepared by

Approved by