

# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity: Workshop on CNC Lab**

**Date of Event: 09 January 2025 (Notice Date: 06 Jan 2025)**

**Resource Person: Mr. Prem Singh, (Prem Industries)**

**Overview & Key Details:** This single-day practical workshop targeted pre-final and final-year mechanical engineering students inside the Central CNC Laboratory. The technical session focused on modern automated manufacturing practices, structural programming configurations, and shop floor industrial safety protocols.

**Outcomes:** Students attained direct hands-on experience writing fundamental industrial code blocks (G-codes & M-codes). The training effectively bridged theoretical production concepts with automated workplace machinery operations.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Industrial Visit of 3rd Sem Students

**Date of Event:** 04 October 2024 (Notice Date: 27 Sep 2024)

**Resource Person:** Mr. Rakesh Paliwal, (Central Machinery Training and Testing Institute)

**Overview & Key Details:** The department organized an experiential field tour for third-semester students to study heavy engineering equipment and structural testing methodologies.

**Outcomes:** Students observed operational industrial components and calibration testing machinery in real-time. This early exposure successfully linked introductory machine metrics with commercial manufacturing standards.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Industrial Visit of 5th Sem Students

**Date of Event:** 08 October 2024 (Notice Date: 03 Oct 2024)

**Resource Person:** Mr. Rakesh Paliwal, Central Machinery Training and Testing Institute

**Overview & Key Details:** Aimed at advanced core learning, this industrial plant visit enabled fifth-semester engineering candidates to analyze massive automation setups, system testing benches, and industrial maintenance routines.

**Outcomes:** The visit directly supported the academic industrial training evaluation framework. Students gathered technical data points to prepare structural evaluation blueprints required for their semester profiles.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Expert Lecture on Additive Manufacturing

**Date of Event:** 27 July 2024 (Notice Date: 24 July 2024)

**Resource Person:** Mr. Anil Upmanyu, Prema Software Solutions Pvt. Ltd.

**Overview & Key Details:** Conducted in the Department Seminar Hall, this specialized presentation outlined rapid prototyping advancements, raw material layers, and slicing optimization software framework.

**Outcomes:** Attendees mapped product cycles from digital CAD blueprints to finalized 3D models. The event highlighted emerging job profiles in rapid manufacturing and digital design systems.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity: Expert Lecture on Refrigeration and Air Conditioning**

**Date of Event: 03 October 2024 (Notice Date: 30 Sep 2024)**

**Resource Person: Mr. Akhil Garg, M/s. Innovations**

**Overview & Key Details:** This thermal curriculum-aligned event delivered deep insights regarding modern HVAC setups, commercial cooling loops, and eco-conscious engineering strategies.

**Outcomes:** Mandated for 5th and 7th-semester students, this lecture clarified industrial vapor compression modifications and multi-stage refrigeration applications, matching theoretical thermodynamic courses.



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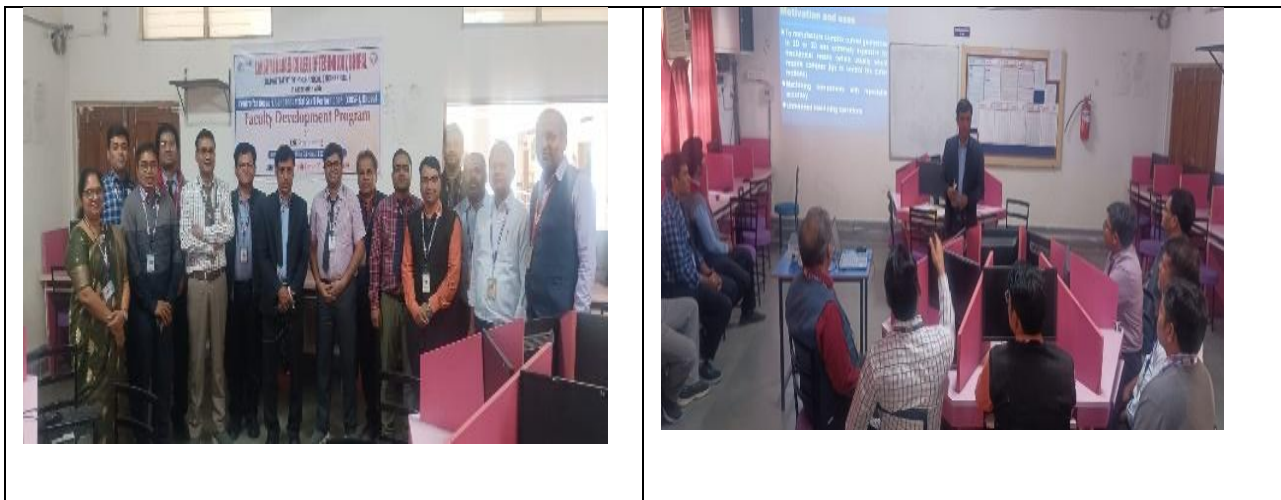
**Activity: One-Week Workshop on Solidworks Software**

**Date of Event: 15 October 2024 onwards (Notice Date: 09 Oct 2024)**

**Resource Person: Mr. Keshav Patel, M/s. Sai CAD Solutions Pvt. Ltd.**

**Overview & Key Details:** An intensive, 7-day technical training module held daily from 10:00 AM to 04:00 PM in the Central CAD/CAM Laboratory. Topics evolved from 2D sketching to mechanical structural simulation.

**Outcomes:** Participating students successfully modeled complex engineering sub-assemblies, ran stress checks, and derived automated engineering drafts. Certificates were issued to candidates fulfilling the 80% attendance milestone.



## DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** One-Day Seminar on Sustainability Assessment of a Building Integrated with Solar PV Cell

**Date of Event:** 09 October 2023 (Notice Date: 04 Oct 2023)

**Resource Person:** Dr. Manoj Gour, MITS, Gwalior

**Overview & Key Details:** This expert seminar focused on renewable green infrastructure developments and structural lifecycle assessments of Building-Integrated Photovoltaics (BIPV).

**Outcomes:** Final-year students investigated real-world clean-energy architecture metrics, mastering calculations for carbon-offset quotas and systemic energy recovery parameters.



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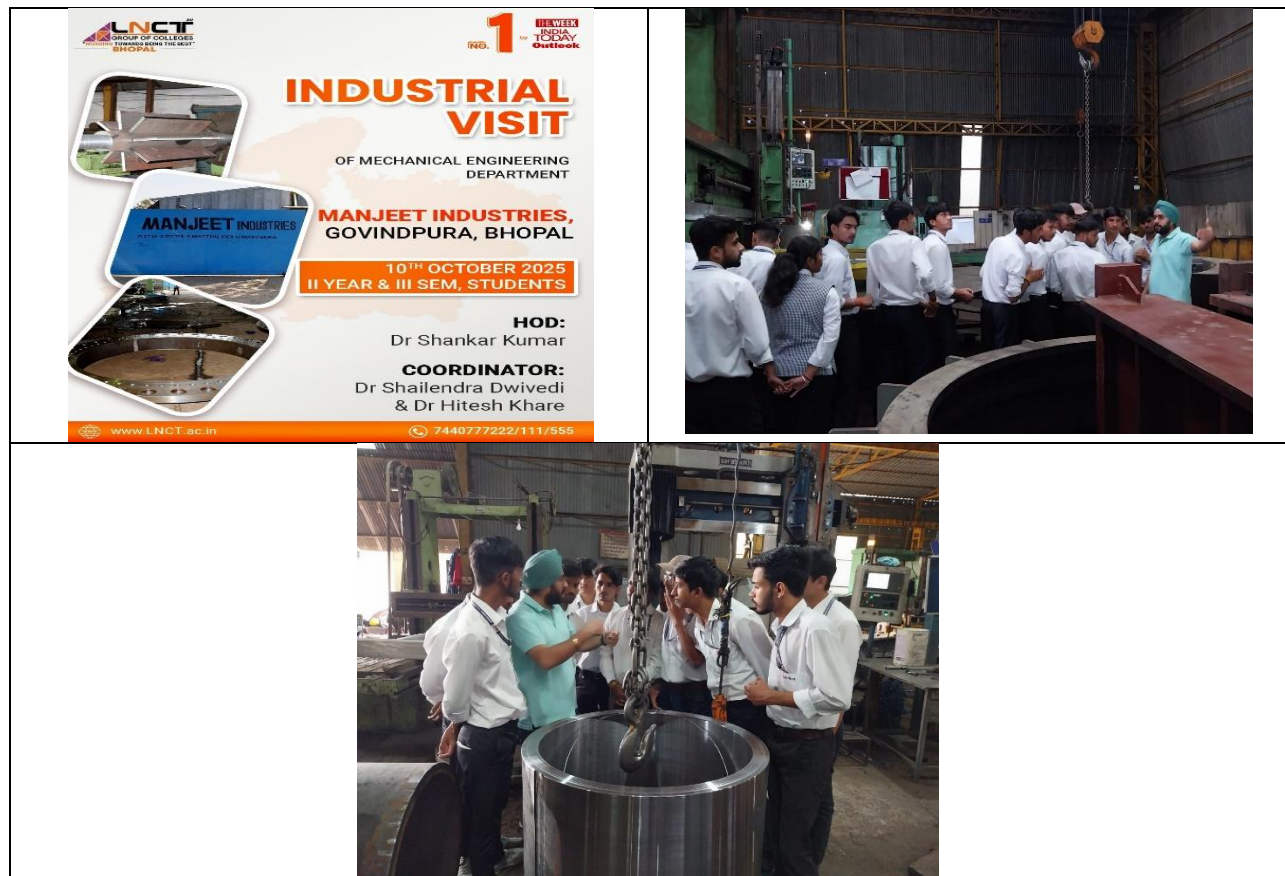
**Activity: Industrial Visit to Manjeet Industries**

**Date of Event: 01 April 2024 (Notice Date: 27 March 2024)**

**Resource Person: Mr. Gurdeep Sodi, Manjeet Industries**

**Overview & Key Details:** A dedicated off-site industrial study tour structured to demonstrate shop floor assembly optimizations, quality control chains, and manufacturing automation structures.

**Outcomes:** Students evaluated material-handling bottlenecks and observed mechanical manufacturing loops firsthand, gathering structural data points for academic credit requirements.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** One-Day Seminar on Electric Vehicles

**Date of Event:** 21 September 2023 (Notice Date: 16 Sep 2023)

**Resource Person:** Dr. R. K. Mandloi, Retired Professor, MANIT Bhopal

**Overview & Key Details:** This automotive-themed seminar introduced students to EV structural baselines, battery chemistries, powertrain controls, and regenerative braking dynamics.

**Outcomes:** Pre-final and final-year mechanical engineering cohorts mapped modern eco-friendly vehicle layouts, reviewing market engineering trends and global powertrain design expectations.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity: One-Day Seminar on Anaerobic Reactor**

**Date of Event: 06 September 2023 (Notice Date: 02 Sep 2023)**

**Resource Person: Dr. Prashant Baredar, Professor, MANIT Bhopal**

**Overview & Key Details:** Hosted in the Department Seminar Hall, this energy-focused gathering detailed organic waste conversion processes, biomass physics, and green processing structures.

**Outcomes:** Students analyzed reactor chamber designs and biochemical energy pathways, directly strengthening academic concepts taught in elective sustainable energy courses.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Special Lab Session on Dynamics of Machines Lab

**Date of Event:** 12 February 2024 (Notice Date: 07 Feb 2024)

**Resource Person:** Dr. Neeraj Dubey

**Overview & Key Details:** An expert-led practical session in the DOM Laboratory tracking rotating parts balancing, gyroscopic couples, and mechanical vibration patterns.

**Outcomes:** 4th and 6th-semester attendees calibrated structural governor machines, documented rotational vibration graphs, and finalized mandatory engineering experiment modules.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Expert Talk on Powder Metallurgy

**Date of Event:** 20 October 2023 (Notice Date: 17 Oct 2023)

**Resource Person:** Er. Shiv Singh, AMPRI, Bhopal

**Overview & Key Details:** This specialized workshop focused on advanced industrial material production methods, blending mechanisms, high-pressure die compaction, and sintering stages.

**Outcomes:** Students mapped mechanical material synthesis steps, utilizing research data shared by the AMPRI laboratory to master structural parts development options.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Expert Talk on CNC Machine

**Date of Event:** 21 October 2023 (Notice Date: 18 Oct 2023)

**Resource Person:** Dr. Tilak Joshi, AMPRI, Bhopal

**Overview & Key Details:** An academic technical talk discussing automated machinery design setups, multi-axis system controls, and smart manufacturing layouts.

**Outcomes:** Core engineering batches evaluated advanced part programming matrices, matching automated manufacturing theory with industry workflows.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Expert Talk on Powder Metallurgy

**Date of Event:** 20 September 2022 (Notice Date: 14 Sep 2022)

**Resource Person:** Mr. Shiv Singh, AMPRI, Bhopal

**Overview & Key Details:** An essential manufacturing curriculum lecture targeted at early semester batches regarding sintered components and metal powder behaviors.

**Outcomes:** Provided foundational material science knowledge to 3rd and 5th-semester students, showing how porous structures are eliminated via hot industrial compaction profiles.



## DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Expert Talk on 3D Printing

**Date of Event:** 21 September 2022 (Notice Date: 15 Sep 2022)

**Resource Person:** Dr. Mohit Sharma, AMPRI, Bhopal

**Overview & Key Details:** This seminar hall technical delivery explained rapid additive prototyping layers using FDM, SLA, and SLS apparatus variables.

**Outcomes:** Pre-final and final-year students learned how to select optimization settings within popular slicing software tools, analyzing structural research achievements from AMPRI.



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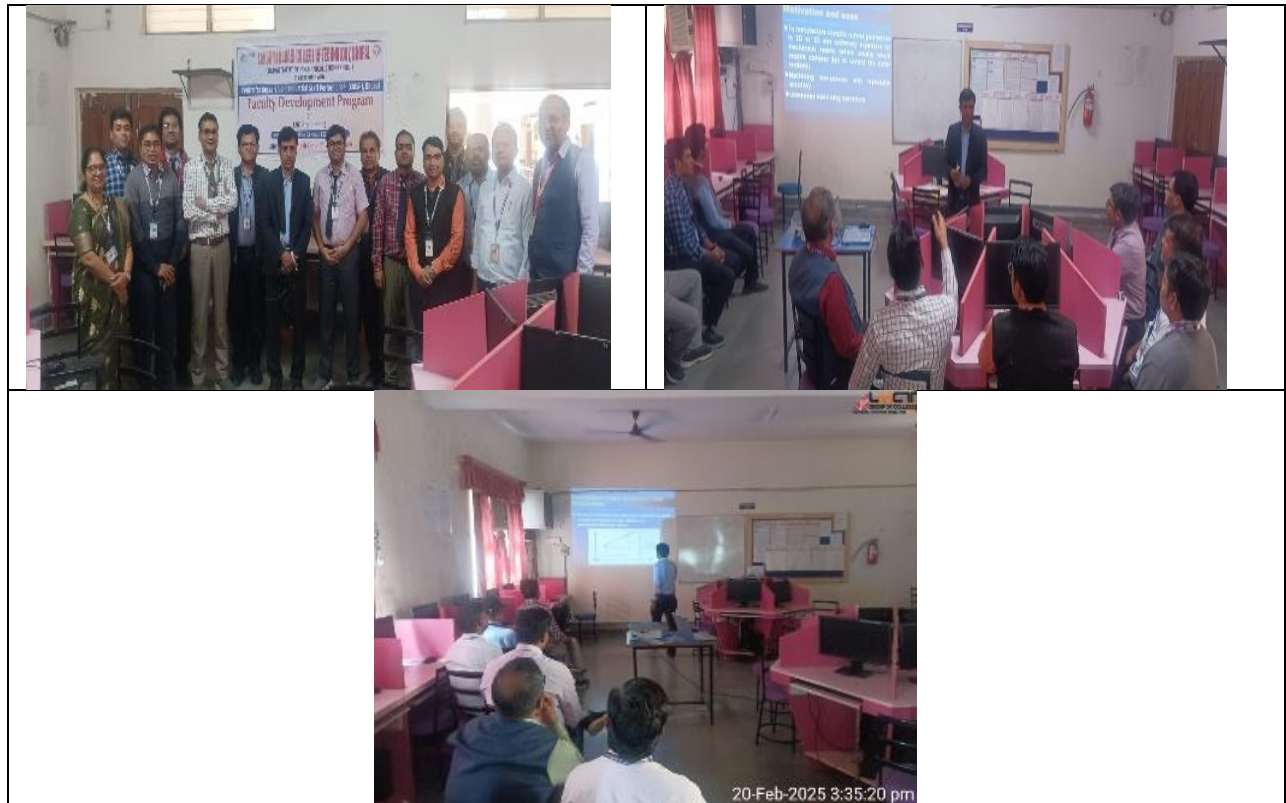
**Activity:** One-Week Workshop on Aeromodelling and RC Plane Assembly

**Date of Event:** 10 January 2023 onwards (Notice Date: 05 Jan 2023)

**Resource Person:** Mr. Pankaj Bhojwani, M/s. Beyond Gravity, Bhopal

**Overview & Key Details:** An extensive 7-day fluid dynamics and aviation workshop integrating classroom aerodynamics with live fabrication and open-field flight trials.

**Outcomes:** Student groups fully assembled flight-ready remote-controlled airplanes, calibrated onboard electronic speed controllers (ESCs), and practiced pilot operations via software simulators.



## DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** One-Day Seminar on Rapid Prototyping

**Date of Event:** 25 November 2022 (Notice Date: 21 Nov 2022)

**Resource Person:** Mr. Vikash Pandey, M/s. Dauto Pvt. Ltd.

**Overview & Key Details:** This single-day presentation highlighted automated product design loops, CAD data conversion rules, and additive material selections.

**Outcomes:** Core cohorts studied industrial prototyping pipelines, using real commercial project timelines provided by Dauto Pvt. Ltd. to contextualize consumer product creation.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity: One-Week Workshop on ANSYS Software**

**Date of Event: 06 February 2023 onwards (Notice Date: 02 Feb 2023)**

**Resource Person: Mr. Keshav Patel, M/s. Sai CAD Solutions Pvt. Ltd, Bhopal**

**Overview & Key Details:** A structured 7-day deep-dive engineering simulation training course held inside the Central CAD/CAM Laboratory.

**Outcomes:** Students completed practical problems covering static structural geometry meshes, harmonic vibrations, transient heat distributions, and simple fluid flow (CFD) modeling in ANSYS Fluent.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity: Industrial Visit to Manjeet Industries (2023 Session)**

**Date of Event: 04 April 2023 (Notice Date: 30 March 2023)**

**Resource Person: Mr. Gurdeep Sodi, M/s. Manjeet Industries, Bhopal**

**Overview & Key Details:** A plant tour focused on assembly lane balancing, production optimization tools, and floor logistics tracking.

**Outcomes:** Students documented real-time factory operations and manufacturing layouts, applying field notes toward their structural industrial training validation metrics.



# DEPARTMENT OF MECHANICAL ENGINEERING ACTIVITY REPORT

**Activity:** Special Lab Session on Dynamics of Machines Lab

**Date of Event:** 09 February 2023 (Notice Date: 06 Feb 2023)

**Resource Person:** Dr. Neeraj Dubey, LNCT, Bhopal

**Overview & Key Details:** A specialized, expert-guided practical class arranged in the departmental DOM Laboratory to study governor mechanisms and gyroscopic balance criteria.

**Outcomes:** 4th and 6th-semester student groups calibrated mechanical balancing rigs and logged rotational mass vibration properties to satisfy academic lab files.

