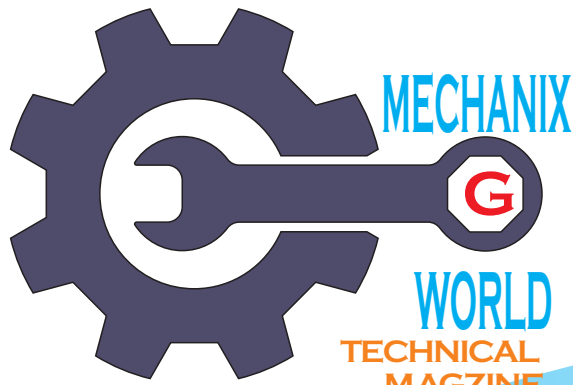


# DEPARTMENT OF MECHANICAL ENGINEERING



2023-24, EDITION-4



**GANGA INSTITUTE OF TECHNOLOGY  
AND MANAGEMENT, KABLANA**



**GANGA INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

**DEPARTMENT OF MECHANICAL ENGINEERING**

# **CONTENT**

	<b>DIRECTOR MESSAGE</b>	<b>01</b>
	<b>HOD MESSAGE</b>	<b>02</b>
	<b>VISION &amp; MISSION</b>	<b>03</b>
	<b>PO &amp; PEOS</b>	<b>04</b>
	<b>ABOUT ME</b>	<b>06</b>
	<b>JOB OPPORTUNITIES</b>	<b>07</b>
	<b>ACTIVITY</b>	<b>09</b>



## DIRECTOR'S MESSAGE



**DR. AMAN AGGARWAL**

GITAM, KABLANA

“

**It gives me great pleasure to extend my warmest greetings to all the passionate individuals and engineering enthusiasts in the mechanical world, as we proudly present the latest edition of "Mechanix G World." I am thrilled to witness the incredible strides and innovations that our mechanical engineering department has achieved. With each passing day, our field evolves; pushing the boundaries of what is possible. I extend my heartfelt gratitude to the editorial team, authors, and reviewers for their unwavering commitment to maintaining the highest standards of content. Together, let us continue to explore, innovate, and advance the realm of Mechanical engineering. I encourage all readers to immerse themselves in the exciting world of Mechanical engineering and be inspired to shape the future.**

”

## HOD'S MESSAGE



**MR. VIVEK**

**GITAM, KABLANA**

“  
**Welcome to the latest edition of our “Mechanix G World” Magazine! We invite you to explore the forefront of mechanical engineering excellence. I am immensely proud of the passion and dedication demonstrated by our community. I encourage you to immerse yourselves in this enriching knowledge, insights, and inspiration collection. This magazine celebrates the relentless pursuit of knowledge, creativity, and problem-solving that define our field. Your passion and dedication make our department a centre of excellence. We hope this edition sparks your curiosity and fuels your drive to create a better, more innovative world.**  
”

## **VISION MISSION OF INSTITUTE**

### **VISION**

**G**ITAM aims to be an outstanding Institute in India through academic excellence in the field of Technology and Management to fulfill the need of the Industry and serve the society.

### **MISSION**

- ⇒ To Provide healthy environment to our students as well as faculty members.
- ⇒ To achieve excellence in technical education
- ⇒ To promote holistic development of students through interaction with alumni, academia, Industry and expert lectures.
- ⇒ To attract nurture and retain the best faculty and technical manpower.
- ⇒ To promote research and development Initiatives.
- ⇒ To contribute to the society by inculcating professional ethics in the students.

## **VISION MISSION OF DEPARTMENT OF MECHANICAL ENGINEERING**

### **VISION**

**“To become a center of excellence in the field of Mechanical Engineering, committed to address societal challenges and evolving needs of industry.”**

### **MISSION**

- ⇒ To achieve excellence in mechanical engineering by providing outcome-based education in a healthy learning environment.
- ⇒ To enhance the student’s technical and entrepreneurial skills by providing advanced learning facilities and co-curricular activities.
- ⇒ To inculcate professional ethics, leadership qualities, and moral and social values among students through interaction with alumni and experts from industry and academia.
- ⇒ To encourage students to research and innovate through project works, workshops, conferences, training sessions, etc.

## PROGRAM OUTCOMES

Engineering Graduates will be able to:

- ⇒ **PO-1 Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- ⇒ **PO-2 Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- ⇒ **PO-3 Design/Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- ⇒ **PO-4 Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- ⇒ **PO-5 Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitation.
- ⇒ **PO-6 The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- ⇒ **PO-7 Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- ⇒ **PO-8 Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- ⇒ **PO-9 Individual and Teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

- **PO-10 Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **PO-11 Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply the set to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.
- **PO-12 Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PEO (PROGRAMME EDUCATIONAL OUTCOMES)

The students will be able to:

- **PEO-1** To produce competent Mechanical Engineers, capable of applying the knowledge of contemporary Science and Technology, to meet the challenges in Mechanical and allied Engineering fields.
- **PEO-2** To prepare the Mechanical Engineering graduates to work in diverse fields in different capacities involving individual and teamwork.
- **PEO-3** To inculcate among the students a sense of ethics, morality, creativity, leadership, teamwork, and professionalism.
- **PEO-4** To instill in the students, the ability to take up innovative research projects and to conduct investigations of complex Mechanical Engineering problems using research-based methods.

## PSO (PROGRAMME SPECIFIC OUTCOMES)

The students will be able to:

- **PSO-1** Solve the real life problems by integrating design, thermal and manufacturing areas of Mechanical Engineering.
- **PSO-2** Adapt to rapid changes in the field of Mechanical Engineering and excel in a multidisciplinary work environment.

**PEO (PROGRAMME EDUCATIONAL OUTCOMES)**



The Department of Mechanical Engineering was established in 2010 with the aim to provide the best knowledge and environment to ensure complete success in whatever field the students choose. This Department is one of the key strength of the Institute. It is making very sincere efforts to produce excellent Mechanical Engineering graduates to meet the present day needs of organizations and the Industry. The experienced and dedicated faculties along with its excellent facilities provide the necessary resources to keep the students updated with the latest industrial trends. The department has created state-of-the-art infrastructure in terms of Workshops, Laboratories and other facilities.



PROGRAMME	DURATION	INTAKE
B.TECH MECHANICAL ENGINEERING	4 YEARS	60
B.TECH MECHANICAL ENGINEERING (LEET)	3 YEARS	06
M.TECH MACHINE DESIGN	2 YEARS	12
M.TECH MANUFACTURING AND AUTOMATION	2 YEARS	18

<u>Why GITAM?</u>	<u>Why ME?</u>	<u>Aspirants often Made Mistakes While Choosing Engineering Branch</u>
Best Academics and Results	Problem-solving opportunities in various industries.	Advised by Parents
State-of-the-art Laboratories	Versatility with a wide range of applications and specializations.	Advised by Relatives
Experienced and dedicated Faculty	Global demand, providing job stability and growth opportunities.	Advised by Friends
Best Placement	Collaboration with diverse engineering disciplines in interdisciplinary teams.	Do not see the Market Scenario after 3-4 Years
Best Infrastructure	Continuous learning and adaptation to new technologies.	Do not See Future Prospects of the Branches



## JOB OPPORTUNITIES

### PUBLIC SECTOR

**PSU:** DMRC, BEL, ISRO, ONGC, DRDO, ECIL, BHEL, BARC, NTPC, HPCL, NHPC, POWER GRID, CIL, IOCL, NALCO, VIZAG STEEL SJVNL, IFFCO, AAI, GAIL, SAIL, HAL, BPCL, Railways and many more.....

**Defence-Sector:** ARMY, NAVY, AIR-FORCE and Paramilitary Forces.

### PRIVATE SECTOR

Tata Motors, Larsen & Toubro (L&T), Mahindra & Mahindra, Reliance Industries, Bajaj Auto, Hero MotoCorp, Maruti Suzuki, Godrej & Boyce, Ashok Leyland, Thermax, Suzlon Energy, TATA Power, Escorts Limited, TVS Motor Company

### SPECIALISATIONS

- » **Aeronautical Engineer:** Performs and supervises the design, development, manufacture and maintenance work of all types of flight vehicles.
- » **Automotive Engineer:** design, manufacture and operate ground-based vehicles, such as motorcycles, automobiles, buses and trucks and their respective engineering subsystems.
- » **Consultant Engineer:** undertake independent contract work for clients in a particular field. Consulting Engineers generally work on a project-by-project basis for a variety of clients.
- » **Engineering Project Manager:** plan, administer and review engineering and technical projects.
- » **Manufacturing Systems Engineer:** design and improve systems and equipment that complete tasks accurately and change raw materials into products with minimal time, materials and energy waste.
- » **Mechanical Design Engineer:** design new machines, equipment or systems taking into account cost, availability of materials, strength and maintenance requirements.
- » **Mining Engineer:** plan and direct the engineering aspects of extracting mineral resources from the earth.

### ENTREPRENEUR

Nuts and Bolts Manufacturing, Solar Panel Installation, Product Assembly Service, Mechanical Engineering Consultancy Firm, Supply Chain Management, Chemical Industry Machines Designing, CNC Machining Business, E-waste Recycling, Machinery Designing, Machinery Distribution, Water disposal machine, Aluminium doors and windows manufacturing unit, Scrap metal business, Manufacturing household gadgets, Mechanical industry machines, Manufacturing of defence weapons, CCTV manufacturing, Mining equipment lease, Generator maintenance services, Fitness equipment manufacturing, Metal sign boards, Outdoor bicycle rack, Teach CAD/CAM/CAE, Repair of automobiles, Manufacturing 3D printers, Training school, Customization of automobiles

**FACULTY EDITOR'S**

**DR. DEVENDER SINGH PUNIA**

**STUDENT EDITOR'S**

<b>VIVEK SINGH</b>	<b>22LME055</b>	<b>2023-24</b>
<b>CHIRAG</b>	<b>20ME003</b>	<b>2023-24</b>
<b>SHUBHAM SANGAL</b>	<b>20ME009</b>	<b>2023-24</b>

**POETRY**

“ From ancient times to the modern age, Machines evolved, turning the next page. The wheel of progress keeps on turning, In every generation, new wonders are discerning.

The Industrial Revolution's thunderous roar, transformed societies, and offered more. Steam engines, factories, mass production, Mechanical prowess reshaping construction.

”

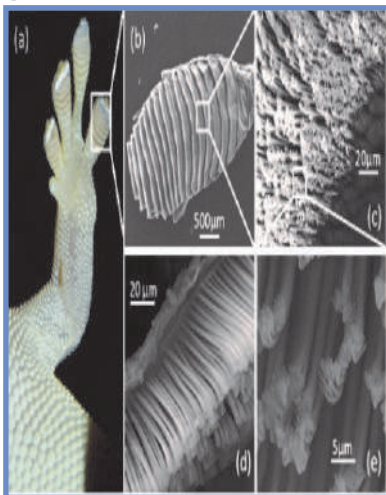
## “BEYOND GLUE : ADVANCEMENT IN ADHESION TECHNOLOGY”

MR. CHIRAG VERMA  
AP (ME)

Lizard geckos, renowned for their remarkable climbing abilities, have inspired ground breaking advances in Material Engineering. The gecko's feet as shown in figure, feature millions of tiny hair-like structures called setae, which create van der Waals forces enabling adhesion to diverse surfaces.

Engineers have replicated this mechanism, developing synthetic adhesives with similar properties. These innovations hold promise for various applications, from medical bandages and wearable electronics to advanced robotics and space exploration. The gecko-inspired materials offer strong, reversible adhesion without the need for chemicals or extreme conditions, revolutionizing how we approach stickiness and opening new avenues for technological advancement.

Research includes developing practical applications and prototypes. Gecko-inspired adhesives have potential uses in various fields, including robotics (e.g., climbing robots), medical devices (e.g., bandages), and consumer products (e.g., wall hooks). An initiative to develop climbing technologies of boots for US Special Forces, inspired by gecko adhesion.



### Gecko inspired Engineering Design

- Engineers have been inspired to create synthetic adhesives that mimic the structure and function of gecko setae.
- These adhesives can be used in a variety of applications, such as climbing robots, medical devices, and reusable tapes.

### Challenges and Considerations

- **Material Durability:** Synthetic materials need to be durable enough to withstand repeated use without significant wear.
- **Environmental Factors:** Adhesion can be affected by the surface roughness, humidity, and temperature. Engineers must design materials that can perform reliably under various conditions.
- **Scalability:** Producing gecko-inspired adhesives at a large scale and low cost remains a challenge.

## “THE ROLE OF MECHANICAL ENGINEERING IN SPACE EXPLORATION”

MR. VIVEK  
HOD (ME)

Mechanical engineering is vital in space exploration, encompassing the design, development, and maintenance of spacecraft, satellites, and rovers. Engineers focus on structural design, ensuring vehicles withstand space's harsh conditions like extreme temperatures and vacuum. They develop thermal control systems to manage equipment temperatures and design propulsion systems, including rocket engines and attitude control for spacecraft orientation.

In robotics, mechanical engineers design systems like Mars rovers and robotic arms for tasks such as sample collection and repairs. They also work on autonomous systems, enabling spacecraft to operate independently. Advanced materials research is crucial for creating components that endure space's extremes, while additive manufacturing offers the potential for producing parts in space, reducing launch needs.

Testing and simulation are essential; engineers conduct vibration and thermal vacuum tests to ensure spacecraft durability. For human spaceflight, they design life support systems, ensure safe and habitable environments, and work on crewed spacecraft, focusing on comfort and reliability.

In planetary exploration, mechanical engineers design landing systems and habitats, addressing environmental control to maintain liveable conditions. Their work is fundamental in overcoming space exploration challenges, advancing technology, and enabling both human and robotic missions.



## “MECHANICAL ENGINEERING IN DEFENCE INDUSTRY: INNOVATION & CHALLENGES”

DR. JITENDER KUMAR  
ASS. P (ME)

Mechanical engineering is vital in the defense industry, driving innovations and addressing key challenges. Engineers in this field contribute to the development and maintenance of advanced military systems and equipment.

### Innovations

- **Advanced Materials:** The use of lightweight, high-strength composites and alloys enhances the performance and durability of military vehicles and weaponry.
- **Unmanned Systems:** Mechanical engineers design drones and autonomous vehicles for reconnaissance, surveillance, and combat, leveraging advanced propulsion and sensor technologies.
- **Additive Manufacturing:** 3D printing allows for rapid prototyping and production of complex components, facilitating faster development and on-demand manufacturing of parts.
- **Robotics and Automation:** Innovations in robotics enhance capabilities in areas like bomb disposal and logistics, reducing risks to personnel and improving efficiency.
- **Stealth Technology:** Engineers work on reducing the radar, infrared, and acoustic signatures of military assets, improving stealth capabilities.



## Challenges:

- **Cost and Budget Constraints:** Developing advanced technologies requires balancing innovation with cost-effectiveness within strict budget limits.
- **Reliability and Durability:** Military equipment must be reliable and durable in harsh environments, demanding robust design and minimal maintenance.
- **Rapid Technological Advancements:** The fast pace of technology requires constant upgrades and adaptation to maintain cutting-edge capabilities.
- **Cybersecurity:** Increased digitization of systems poses cybersecurity risks, necessitating strong protective measures.
- **Ethical Considerations:** The use of autonomous systems in combat raises ethical questions, particularly concerning decision-making.

## “THE IMPACT OF CLIMATE CHANGE ON MECHANICAL ENGINEERING PRACTICE”

MR. PARVESH  
AP (ME)

Climate change impacts mechanical engineering practices by necessitating more sustainable and resilient designs. Mechanical engineers focus on several key areas to address these challenges:

### 1. Sustainable Design and Materials:

- Engineers are prioritizing energy-efficient systems to reduce greenhouse gas emissions. They are also developing renewable energy technologies like wind turbines and solar panels, optimizing them for efficiency.
- Sustainable material choices, including recycled and bio-based options, are increasingly important to minimize environmental impact.

### 2. Climate-Resilient Infrastructure:

- As extreme weather events become more frequent, engineers design infrastructure to withstand hurricanes, floods, and heatwaves. This includes innovations in water management systems to address water scarcity and changing precipitation patterns.

### 3. Transportation and Emissions Reduction:

- The shift towards electric and hybrid vehicles is a major focus, with mechanical engineers developing efficient electric drivetrains and lightweight designs to reduce carbon emissions. Additionally, there is significant research into alternative fuels like hydrogen and biofuels.

### 4. Environmental Impact Assessment and Mitigation:

- Engineers conduct lifecycle analyses to assess the environmental impact of products from production to disposal, promoting more sustainable practices. They also develop technologies to control pollution and reduce emissions in industrial processes.

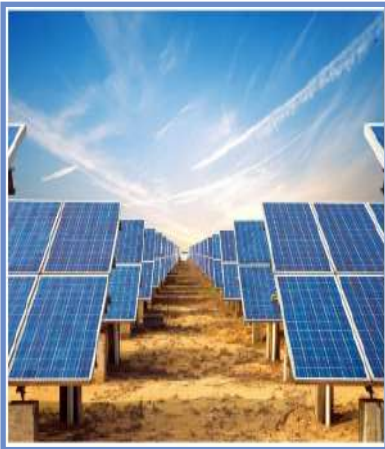
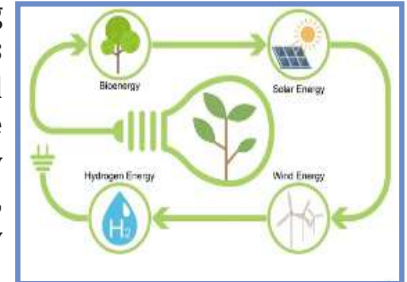


In summary, climate change drives mechanical engineering towards sustainable, efficient, and resilient solutions, emphasizing reduced environmental impact and adaptation to new challenges.

**“RENEWABLE ENERGY TECHNOLOGIES: PAVING THE WAY FOR A SUSTAINABLE FUTURE”**

**MR. MANMOHAN  
AP (ME)**

As the global community grapples with climate change and dwindling fossil fuel reserves, the importance of renewable energy technologies has never been more pronounced. These technologies harness natural processes that are continuously replenished, providing a sustainable and environmentally friendly alternative to conventional energy sources. This article explores the major renewable energy technologies, their advancements, and their impact on the future of energy production.



**Solar Power:**

Solar power captures the sun's energy through photovoltaic (PV) panels or solar thermal systems. PV panels convert sunlight directly into electricity, while solar thermal systems use sunlight to heat a fluid, generating steam to drive a turbine.

**Advancements:**

- **Efficiency Improvements:** Modern PV panels now achieve over 22% efficiency rates.
- **Cost Reduction:** The cost of solar panels has dropped by over 80% in the last decade.
- **Energy Storage:** Innovations in battery storage technologies, such as lithium-ion batteries, have improved the reliability of solar power.

**Wind Energy:**

Wind energy harnesses the kinetic energy of wind through turbines to generate electricity. It is one of the fastest-growing renewable energy sources.

**Advancements:**

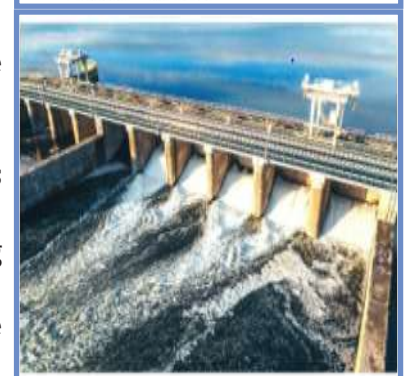
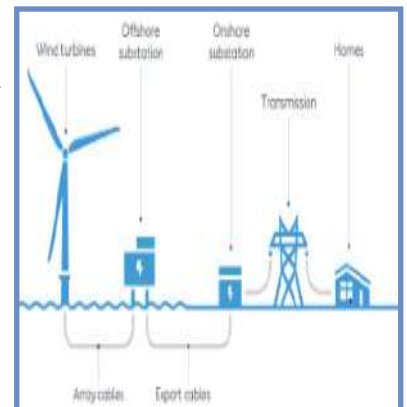
- **Turbine Technology:** Modern wind turbines are larger, more efficient, and capable of generating more power.
- **Predictive Maintenance:** Advanced sensors and AI-driven analytics are improving operational efficiency.
- **Hybrid Systems:** Integration of wind energy with other renewable sources and storage systems enhances grid stability.

**Hydroelectric Power:**

Hydroelectric power generates electricity using the gravitational force of falling or flowing water.

**Advancements:**

- **Small and Micro Hydro:** Innovations are making it possible to harness energy from smaller water bodies.
- **Pumped Storage:** Acts as a giant battery, storing energy by pumping water uphill during low demand.
- **Environmental Mitigation:** Modern projects are designed to minimize ecological impact.

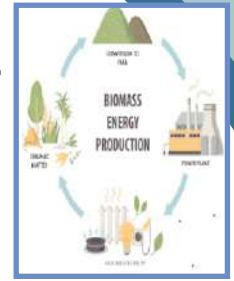


## Biomass Energy:

Biomass energy is produced from organic materials such as plant and animal waste. It can be used for heating, electricity generation, and as a transportation fuel.

### Advancements:

- **Second-Generation Biofuels:** Produced from non-food biomass sources.
- **Biogas:** Advanced anaerobic digestion processes are enhancing efficiency.
- **Waste-to-Energy:** Technologies converting waste into energy are gaining traction.



## Geothermal Energy

Geothermal energy harnesses heat from beneath the Earth's surface for electricity generation and direct heating applications.

### Advancements:

- **Enhanced Geothermal Systems (EGS):** Improves the viability of geothermal energy by creating artificial reservoirs.
- **Hybrid Geothermal Systems:** Combining geothermal with other renewable technologies.
- **Direct Use Applications:** Expanded use for direct heating applications.

### Impact and Future Prospects:

The transition to renewable energy technologies is critical for reducing greenhouse gas emissions and mitigating climate change. These technologies also offer economic benefits, including job creation and reduced dependency on imported fuels.

### Future Prospects:

- **Global Integration:** Increasing integration into national grids, supported by smart grid technology.
- **Policy Support:** Stronger government policies and incentives.
- **Research and Development:** Continued investment in R&D.
- **Community and Microgrid Solutions:** Expansion of community-based projects and microgrids.

**Conclusion:** Renewable energy technologies are essential for a sustainable future and represent a dynamic and rapidly evolving field within mechanical engineering. By leveraging advancements in solar, wind, hydroelectric, biomass, and geothermal energy, we can create a resilient and sustainable energy system that meets the demands of present and future generations. Continued innovation and adoption of these technologies will be pivotal in our journey towards a cleaner, greener planet.

## CERTIFICATE COURSE

The Department of Mechanical Engineering conducted a five days certificate course on “INDUSTRIAL ROBOTICS” from 17/07/2023 to 21/07/2023. Mr. Parveen Kumar was the resource person of this interactive session.

**Objective:** This course is designed to develop student’s skills in kinematics analysis of robot systems, trajectory planning and robot control.

### Course Outcomes:

- Demonstrate an ability to apply spatial transformation to obtain forward kinematics equation of robot manipulators.
- Demonstrate an ability to solve inverse kinematics of simple robot manipulators.
- Demonstrate an ability to obtain the Jacobian matrix and use it to identify singularities.
- Demonstrate an ability to generate joint trajectory for motion planning



**CERTIFICATE COURSE**

The Department of Mechanical Engineering conducted a five days certificate course on “SUPPLY CHAIN MANAGEMENT & LOGISTICS” from 26/12/2023 to 30/12/2023. Mr. Sumit Verma was the resource person of this interactive session.

**Objective:** The Supply Chain is to make products available to meet customer demand that includes delivery to the appropriate location, on time, in sufficient quantity. Supply Chain Management is focused on doing that in the most efficient and effective way.

**Course Outcomes:**

- Understand the fundamentals of Supply Chain Management Concepts.
- Apply knowledge to evaluate and manage an effective supply chain.
- Understand the foundational role of logistics as it relates to transportation and warehousing.
- Analyze and improve supply chain processes.



**INDUSTRIAL VISIT AT “MV INTERNATIONAL”**

**Objective:** The purpose of the visit was to provide an opportunity for the students to have real insight into manufacturing processes and experience the working environment on the shop floor area. So that students will be able to compare their theoretical knowledge with the practical one.

MV International is a leading manufacturer and exporter of a wide range of Industrial Ovens & Batch Ovens. We have been catering to various industries with our wide range of superior-quality Industrial Drying ovens.

**MV International:** In the company, there is a team of more than 200 highly qualified and experienced professionals in all the relevant Technical and Engineering Disciplines. MV International is an ISO 9001:2008 certified company established as a trustworthy name in the field of Industrial Ovens. We have set certain parameters for our success. Our customized range of products includes motor heating ovens, Varnish baking ovens, Electric industrial ovens, Electric drying ovens, Drum heating ovens, Core ovens, Paint baking ovens, top loading ovens, Motor drying ovens, Electric ovens for HT LT motors, Transformer heating oven, Infrared conveyor oven, Teflon coating oven, Industrial batch ovens, etc., is attributed with the latest technology. We also have a well-knitted network along the vertical supply chain - both with the manufacturers and distributors to fulfill timely delivery of products and spares.

In this company, a wide range of Industrial Ovens is widely appreciated by our clients in domestic and international markets. Manufactured as per industrial standards, these are widely used in industries like Heavy engineering, Refineries, chemicals, petrochemicals, Fertilizer, Steel plants, Mining, offshore, Railways, Defense, Aerospace, and Nuclear.





**CONCLUSION:** This industrial visit will benefit the students in terms of learning the working culture in an industrial oven manufacturing unit. The students understand the basics of design and manufacturing steps in making ovens. During the plant visit, students passionately interacted with the senior retired engineer to learn all the basics of the concerned processes and clear their doubts. Overall it was very nice, knowledgeable, and fruitful to visit at Ms./MV International.

## INDUSTRIAL VISIT AT "SUPERTECH EV LTD, BAHADURGARH "

**Objective:** The purpose of the visit is to give the students an opportunity to interact with Industry Experts, gain firsthand knowledge of production procedures and observe the working atmosphere on the shop floor. Industrial visit helps students to combine their theoretical knowledge of operations with the practical knowledge of its actual functioning.

**About Supertech EV Ltd.:** The well-known private sector company Supertech EV Ltd, run by Mr. Yetender Sharma and Mr. Vaibhav Singh, specializes in sheet metal and tubular parts. They were founded in 2010, and as of this writing, they can produce 36,000 sets of electric vehicle components annually using cutting-edge machinery. They handle the full production process, from manufacture to distribution, with a focus on cutting-edge, intelligent electric vehicles that have received "Pilot" certification from the International Centre for Automotive Technology. Dedicated to pushing the limits of electric vehicle technology and producing top-notch goods, Supertech EV Ltd.



Supertech EV Ltd. intends to create reasonably priced electric and hybrid automobiles. To undertake market analyses, evaluations, and technological comparisons, we use task groups. We have opened shops all over India to give our dealers trustworthy information on hybrid and electric vehicles. Making electric vehicles available to everyone is our aim.



**Outcomes:**

- Students gained practical knowledge of the design and manufacturing process of various sheet metal and tubular parts of electrical vehicles.
- Students observed and learnt to apply quality control measures and inspection methods in EV component manufacturing.
- Students interacted with the workshop supervisor to learn all the basics of manufacturing processes and modern tools.
- Students explored potential career paths in manufacturing, quality control, research and development, and other related fields.

**CONCLUSION:** The students gained knowledge of the workplace culture in an industrial assembly line for electric vehicles as a result of this industrial visit. The fundamental manufacturing processes used to create electric vehicles are understood by the students. Students passionately engaged with the engineer during the plant tour to learn all the fundamentals of the relevant processes and to get their questions answered. Overall, visiting supertech EV Ltd. was pleasant, educational, and beneficial.

**INDUSTRIAL VISIT AT “LPS BOSSARD, ROHTAK”**

**Objective:** Purpose of visit was to provide an opportunity to the students to have real insight into manufacturing processes and experience the working environment on the shop floor area. So that students will be able to compare their theoretical knowledge with the practical one.

Bossard India (LPS Bossard Pvt Ltd) is an Indo-Swiss JV, providing single window solutions for complete fasteners & C parts management. Global presence in 19 countries & 75 locations since 1831. Leading Fastener house is providing assembly technology solutions for customers globally. We're surrounded by products fastened by things you can see screws, nuts and bolts but we at LPS Bossard help customers boost their productivity by surfacing the hidden potential of fastening.



**About LPS Bossard Pvt Ltd:** In the company, there are a team of more than 250 highly qualified and experienced professionals in all the relevant Technical and Engineering Disciplines. Our key Personnel, who are the brain trust of LPS Bossard Pvt. Ltd., have assimilated extensive experience by working on shop floors during early stages of their careers in reputed private sector Nut & Bolt manufacturing plants in India.

In the company, there were two floors - ground floor and the first floor. At the ground floor, the design department was there and the first floor manufacturing unit was there. Senior retired people and young engineers from various PSUs and private company engineers guided our students enthusiastically and passionately. They visited every corner of the company and gave meaningful knowledge about the design and manufacturing of the industry.



### Outcomes:

- Students gained practical knowledge of the design and manufacturing process of various machine components.
- Students observed and learnt to apply quality control measures and inspection methods in machine component manufacturing.
- Students interacted with the workshop supervisor to learn all the basics of manufacturing processes and modern tools.
- Students explored potential career paths in manufacturing, quality control, research and development, and other related fields.

**CONCLUSION:** This industrial visit will benefit the students in terms of learning working culture in a Nut & Bolt manufacturing unit. The students understand the basics of design and manufacturing steps in making Nut & Bolt. During plant visit, students passionately interacted with the Senior retired engineer to learn all the basics of concerned processes and cleared their doubts. Overall it was very nice, knowledgeable and fruitful to visit LPS Bossard Pvt Ltd.

## INDUSTRIAL VISIT AT “VITA MILK PLANT, ROHTAK”

**Objective:** Purpose of visit was to provide an opportunity to the students to have real insight of milk manufacturing processes and experience the working environment of the production unit. So that students will be able to compare their theoretical knowledge with the practical one.



Rohtak, Haryana, India  
Opposit bita milk plant hooda service station Street, WHFV+4RF, Gohana Rd, Rajendra Nagar, Rohtak, Haryana 124001, India  
Lat 28.922264°  
Long 76.59452°  
29/02/24 11:41 AM GMT +05:30

**ABOUT VITA MILK PLANT:** Vita Milk Plant is one of the largest integrated milk products manufacturers in India. The Haryana Dairy Development Cooperative Federation Ltd. (HDDCF) is engaged in procurement and processing of milk and manufacturing of milk products under the famous market brand "Vita". A range of Vita Products is including Pasteurized Full Cream Milk, Standard Milk, Toned Milk, Double Toned Milk, A2 Cow Milk in pouches Ghee, Table Butter, Paneer, Sterilized Flavoured Milk, Mithi lassi, Namkeen lassi, Chhach, Dahi, Kheer, Rabri, Milk Cake, Kaju Pinni, Besan Laddu, Khoya Burfi, Mango Drink, Ice Cream, etc. which are being manufactured and sold by approx. 250 no. of milk and milk products distributor, Institutions, Defense Units, Districts Jails & 420 no. of milk booth network. In future we are going to install more booths in Haryana/Chandigarh to provide good quality liquid milk & milk products to the general public. Vita products are manufactured from milk procured from Village Level Dairy Cooperative Societies and processed at our own Milk Plants which are ISO 9001:2008 & ISO 22000:2005 and HACCP certified. Vita milk products are known for their quality and good taste not only in Haryana but throughout the entire Northern Region. The sale of Vita products also contributes to the economic upliftment and welfare of farmers of Haryana who provide us milk through the village level milk cooperative societies.

To provide ghee, cattle feed, mineral mixture & seeds etc. to village level milk cooperative societies for further sale to producer members. These standard products cover a very wide range of industries viz. Milk sectors, dairy products sectors etc.



### Outcomes:

- Students gained practical knowledge of the design and manufacturing process of various sheet metal and tubular parts of electrical vehicles.
- Students observed and learnt to apply quality control measures and inspection methods in EV component manufacturing.
- Students interacted with the workshop supervisor to learn all the basics of manufacturing processes and modern tools.
- Students explored potential career paths in manufacturing, quality control, research and development, and other related fields.

**CONCLUSION:** This industrial visit will benefit the students in terms of learning working culture & various machining processes involved in making different types of dairy products. During the plant visit, students enthusiastically interacted with the workshop supervisor to learn all the basics of manufacturing processes and cleared their doubts. Overall it was nice and fruitful to visit the company.

## INDUSTRIAL VISIT AT “TATA MOTORS, BAHADURGARH”

**Objective:** The visit was organized by the college in M/s Tata Motors to provide basic knowledge of operation and experience the working environment of the automobile service station. So that students are capable enough to correlate theoretical knowledge with practical knowledge.



**About Tata Motors, Bahadurgarh:** Tata Authorized Service Centre in Bahadurgarh stands as a beacon of automotive care, catering to the needs of Tata passenger vehicle owners with precision and commitment. The service center offers a comprehensive range of services, from routine maintenance to complex repairs, leveraging state-of-the-art equipment and skilled technicians. Their expertise extends across all Tata vehicle models, ensuring every customer receives tailored solutions. Genuine Tata parts and meticulous attention to detail characterize every service, guaranteeing optimal performance and longevity for each vehicle. Stringent quality control measures are in place to uphold Tata's renowned standards.

Customer satisfaction is at the core of the service center's philosophy. With a focus on transparency, timeliness, and effective communication, they strive to exceed customer expectations at every interaction. Feedback mechanisms ensure continuous improvement and a customer-centric approach. Embracing innovation, the service center incorporates cutting-edge technologies to streamline processes and enhance service delivery. From diagnostic tools to digital service records, they leverage technology to provide a seamless experience for customers. In line with Tata's commitment to sustainability, the service center adopts eco-friendly practices and adheres to environmental regulations. Waste management initiatives and energy-efficient operations underscore their dedication to minimizing environmental impact.

Beyond servicing vehicles, the center actively engages with the local community through various initiatives. From road safety awareness campaigns to skill development programs, they contribute to the well-being of Bahadurgarh and its residents.



## Outcomes:

- Students gained hands-on experience observing and sometimes participating in real-world automotive maintenance and repair tasks, deepening their practical understanding of mechanical systems and procedures.
- Students gain insights into industry-standard practices, safety protocols.
- Students interacted with the workshop supervisor to learn all the basics of manufacturing processes and modern tools.
- Students explored potential career paths in manufacturing, quality control, research and development, and other related fields.

**CONCLUSION:** The students gained knowledge of the workplace culture in an automobile service station for passenger vehicles as a result of this industrial visit. The fundamental processes used in service, maintenance and repair of vehicles are understood by the students. Students passionately engaged with the engineer during the plant tour to learn all the fundamentals of the relevant processes and to get their questions answered. Overall, visiting Tata motors was pleasant, educational, and beneficial.

## INDUSTRIAL VISIT AT “TATA MOTORS, BAHADURGARH”

**Objective:** Purpose of visit was to provide an opportunity to the students to have real insight of manufacturing processes and experience the working environment of the production unit. So that students will be able to compare their theoretical knowledge with the practical one.



**ABOUT PARLE BISCUITS PVT. LTD.:** Parle Products has been India's largest manufacturer of biscuits and confectionery, for almost 90 years. Makers of the world's largest selling biscuit, Parle-G, and a host of other very popular brands, the Parle name symbolizes quality, nutrition and great taste. With a reach spanning even the remotest villages of India, the company has definitely come a very long way since its inception.

Many of the Parle products - biscuits or confectioneries, are market leaders in their category and have won acclaim at the Monde Selection, since 1971. With a 43% share of the total biscuit market and a 15% share of the total confectionary market in India, Parle has grown to become a multi-million-dollar company. While to consumers it's a beacon of faith and trust, competitors look upon Parle as an example of marketing brilliance.



**Outcomes:**

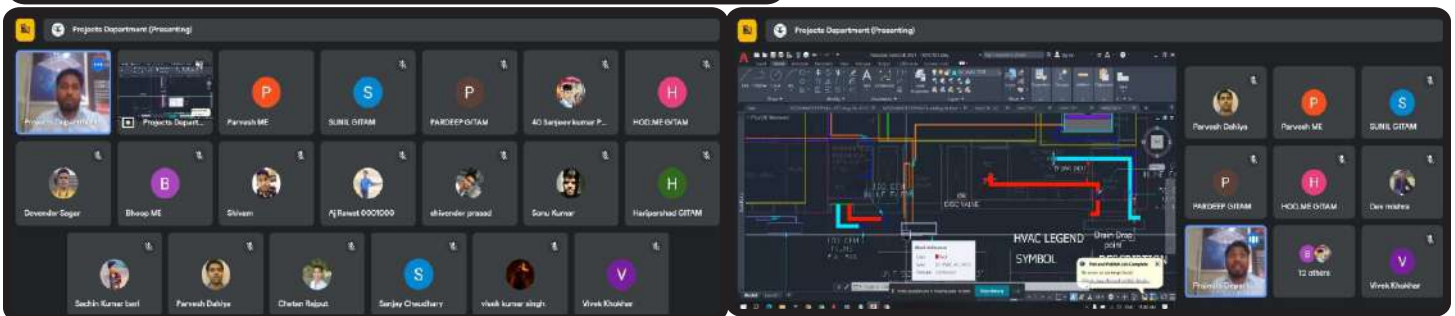
- Enhanced understanding of theoretical concepts through practical application.
- Development of critical thinking skills by analyzing industry practices and processes.
- Development of soft skills including communication and teamwork.
- Promotion of lifelong learning by instilling a sense of curiosity and inquiry
- Preparation for the challenges of the professional world, fostering confidence and resilience.

**CONCLUSION:** This industrial visit will benefit the students in terms of learning working culture & various machining processes involved in making different types of products. During the plant visit, students enthusiastically interacted with the workshop supervisor to learn all the basics of manufacturing processes and cleared their doubts. Overall it was nice and fruitful to visit the company.

**ALUMNI TALKS**



**Objective:** Alumni talk helps the student to better understand their curriculum and the use of curriculum during their job. Alumni talks become an eye opener for the students on how to enter a company after completion of their course and use their skill for better performance.

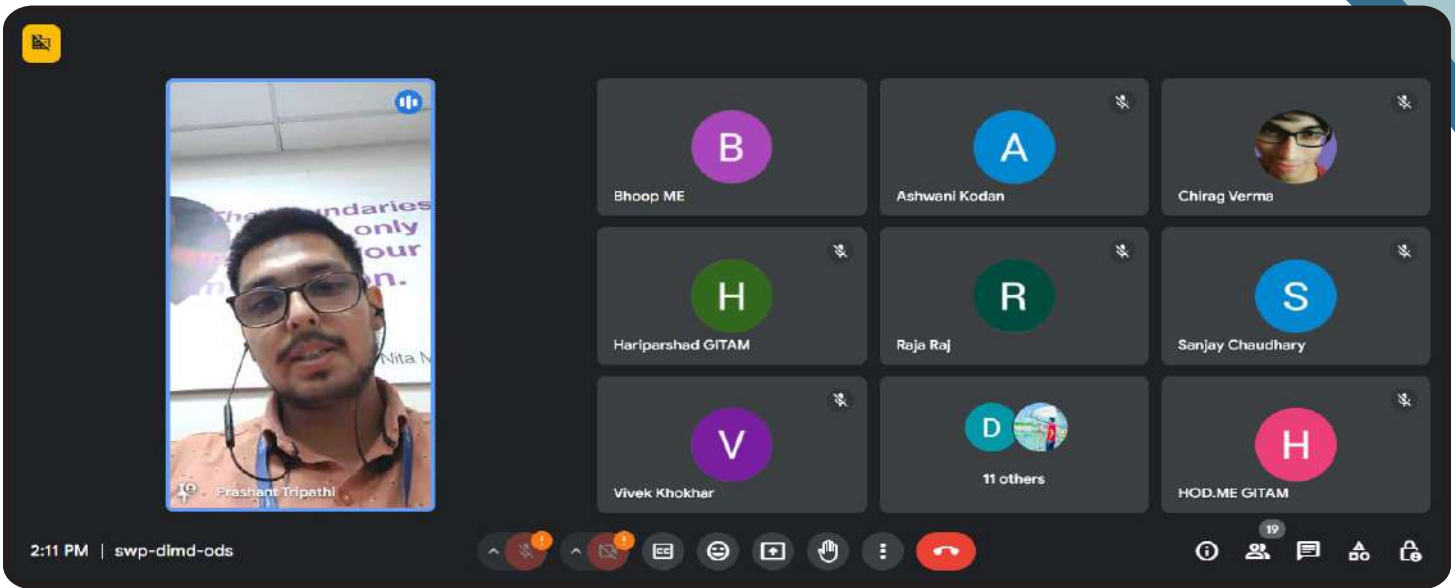


Mr. Rahat Madni was invited for Alumni Talk. He interacted with the students and gave career guidance regarding higher studies and jobs in mechanical engineering field. The alumni provided course-specific information to the students.

**ALUMNI TALKS**

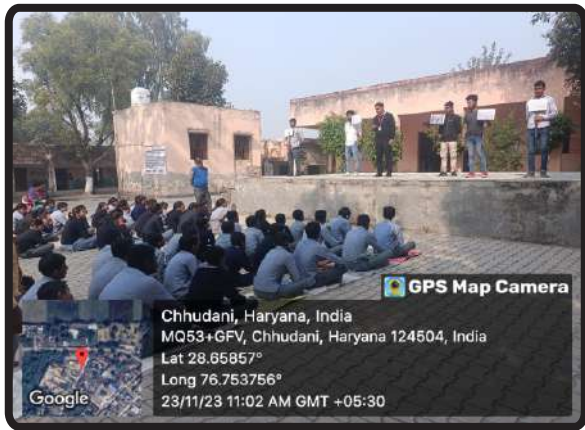
**Objective:** Alumni talk helps the student to better understand their curriculum and the use of curriculum during their job. Alumni talks become an eye opener for the students on how to enter a company after completion of their course and use their skill for better performance.

Mr. Prashant Tripathi was invited for Alumni Talk. He interacted with the students and gave career guidance regarding jobs in the mechanical engineering field.



**EXTENSION ACTIVITY ON “DIGITAL PAYMENT AWARENESS PROGRAM”**

An extension activity on Digital Payment Awareness Program was organized by “MECHFUSION” (Technical club of Mechanical Engineering Department) on 23.11.2023 at Govt. Senior Secondary School, Chhudani. Knowledge about digital payments (i.e. what is digital payments, what are various modes of digital payments, benefits and losses) was shared with the students.



**OBJECTIVE:**

- Raise awareness about the security measures in place for digital payments.
- Educate about common types of fraud in digital payments.
- Inform about rights and responsibilities when making digital payments.
- Highlight the environmental benefits of digital payments.
- Encourage more people to adopt digital payment methods by highlighting their convenience.

**OUTCOMES:**

- Become known to environmental benefits of digital payments
- Adopted to digital payment methods by highlighting their convenience.
- Become more adept at recognizing various types of fraud schemes prevalent in digital payments.
- Educated about common types of fraud in digital payments.
- Increased awareness to adopt a more vigilant approach when engaging in digital transactions.



**EXTENSION ACTIVITY ON “DIGITAL PAYMENT AWARENESS PROGRAM”**

An extension activity on Digital Payment Awareness Program was organized by “MECHFUSION” (Technical club of Mechanical Engineering Department) on 28.02.2024 at Saheed Ramesh Gulia Govt. Sr. Sec. School, Kheri Jat, Jhajjar. Knowledge about digital payments (i.e. what is digital payments, what are various modes of digital payments, benefits and losses) was shared with the students.



**OBJECTIVES:-**

- Raise awareness about the security measures in place for digital payments.
- Educate about common types of fraud in digital payments.
- Inform about rights and responsibilities when making digital payments.
- Highlight the environmental benefits of digital payments.
- Encourage more people to adopt digital payment methods by highlighting their convenience.

**Outcomes :**

- Become known to environmental benefits of digital payments
- Adapted to digital payment methods by highlighting their convenience.
- Become more adept at recognizing various types of fraud schemes prevalent in digital payments.
- Educated about common types of fraud in digital payments.
- Increased awareness to adopt a more vigilant approach when engaging in digital transactions.

**PLACEMENT OF MECHANICAL ENGINEERING**



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**PRASHANT MISHRA**



**NARENDER KUMAR**



**MUBASHIR NABI**



**MANOJ KUMAR**



**ANUJ**



*“Strive for perfection in everything you do. Take the best that exists and make it better. When it does not exist, design it.”*

*Sir Henry Royce*

## PROGRAMMES OFFERED

M. TECH

B. TECH (LEET)

MCA

B. TECH

MBA

BCA

BBA



# GANGA INSTITUTE OF TECHNOLOGY AND MANAGEMENT

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