



Polyयांत्रिकी



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FROM THE DESK OF DEAN R&D



Mr. Ajay Sharma
Dean R&D
IIMT College of Polytechnic

**Industrial Machinery: Monitoring and Management
through the Internet of Things**

The rapid evolution of information technology, characterized as the Fourth Industrial Revolution (Industry 4.0), has spurred the development of smart factories through the Internet of Things (IoT). The concept of integrating the internet with industrial machineries is a key driver of this transformation. IoT facilitates real-time communication between machines and sensor-equipped devices, enabling the collection of production data. This data can be accessed via mobile applications, analyzed, and used to make predictions aimed at optimizing productivity within manufacturing systems. Under the Industry 4.0 framework, machines equipped with intelligent technology and embedded sensors can communicate with one another (machine-to-machine communication) and make autonomous control decisions. This capability significantly enhances operational efficiency and productivity in manufacturing environments. In the revolutionary vision from conventional factories to smart factories, IoT-

enabled devices play a crucial role. Connecting mobile terminals with smart objects such as machines, automated guided vehicles, and conveyors facilitates vertical integration, enabling the implementation of flexible and reconfigurable smart factories.

Predictive Maintenance and Operations

Management: This enables early anomaly detection, shifting maintenance from reactive to predictive, reducing downtime, and preventing costly breakdowns. Specifically, IoT-based health monitoring of bearings and gear sets has revolutionized predictive maintenance by continuously collecting data on critical parameters, such as temperature rise, frictional torque, and vibrations. This data is analyzed in real-time, allowing for early identification of deviations and impending failures, ultimately extending life, reducing downtime, and promoting sustainable industrial practices.

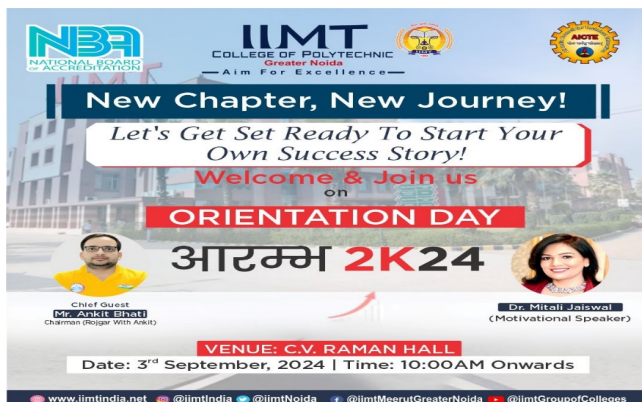
Challenges and Opportunities of IoT Integration in

Industrial Systems The current manufacturing environment has several limitations, including static IT architectures that are unable to handle various changes and uncertainties, unbalanced flexibility between hardware and software systems, rigid and confined enterprise boundaries that hinder virtual collaboration, and insufficient attention to system sustainability.



ORIENTATION PROGRAMME

The Orientation Programme “आरंभ 2K24” took place on 3rd September 2024 at CV Raman Hall, IIMT College of Engineering, Greater Noida, with the goal of warmly welcoming and introducing new students to the college’s academic and administrative environment. The event began with the traditional lighting of the lamp and a Ganesh Vandana, symbolizing a positive start to the students’ academic journey. The Chief Guest, Mr. Ankit Bhati, Chairman of Rojgar With Ankit (RWA), and Guest of Honour, Dr. Mitali Jaiswal, a motivational speaker, delivered insightful speeches, encouraging students to embrace challenges, seize opportunities, and pursue their academic journey with determination and resilience.

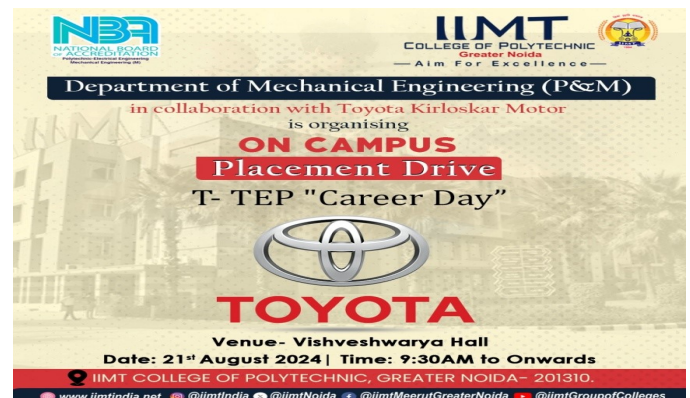


Felicitation of the Guest of Honour



TOYOTA PLACEMENT DRIVE

The T-Tep Placement Drive "Career Day" was held at IIMT College of Polytechnic, Greater Noida, on August 21, 2024, organized by Toyota Kirloskar Motor. Companies like Uttam Toyota, Thirty Six Toyota, MGF Toyota Gurugram, and Galaxy Toyota participated, with representatives including Mr. Pranay Dutt, Ms. Sanchi, Mr. Manikant, Mr. Sitender Singh, Mr. Praveen Kumar, and Mr. Sheetal Tingloo. Director Shri Umesh Kumar welcomed the guests, along with students and faculties from CV Raman and St. Francis ITI College. Out of 120 students interviewed, 59 were selected—25 for Galaxy Toyota, 18 for Uttam Toyota, 11 for Thirty Six Toyota, and 5 for MGF Toyota Gurugram from the T-Tep 2023-24 batches.



Students were selected in Toyota Placement Drive

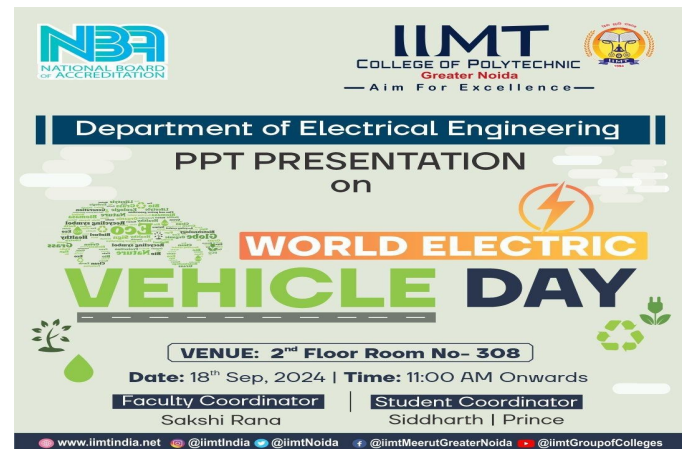


Department of Electrical Engineering



PPT PRESENTATION

The PPT Presentation on Electric Vehicles was conducted for the Electrical Engineering (EE) students on Wednesday from 11:00 AM onwards, coordinated by Ms. Sakshi Rana. The primary objective of the presentation was to raise awareness about electric vehicles and their environmental benefits. The session covered the definition of electric vehicles, highlighting that EVs operate on electric motors instead of internal combustion engines and can be powered by various sources such as batteries, solar panels, or fuel cells. The presentation emphasized the importance of electric vehicles in reducing greenhouse gas emissions, lowering air pollution, and promoting environmental sustainability. The event successfully conveyed the significance of EVs in today's world, helping students become advocates for cleaner, more sustainable transportation solutions.



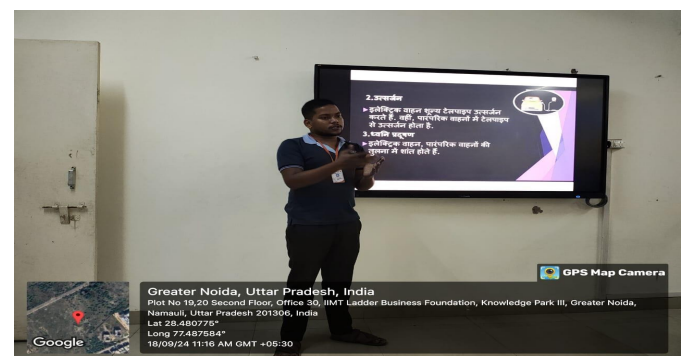
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Department of Electrical Engineering
PPT PRESENTATION
on
**WORLD ELECTRIC
VEHICLE DAY**

VENUE: 2nd Floor Room No- 308
Date: 18th Sep, 2024 | Time: 11:00 AM Onwards
Faculty Coordinator | Student Coordinator
Sakshi Rana | Siddharth | Prince

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PPT Presentation by Student of EE

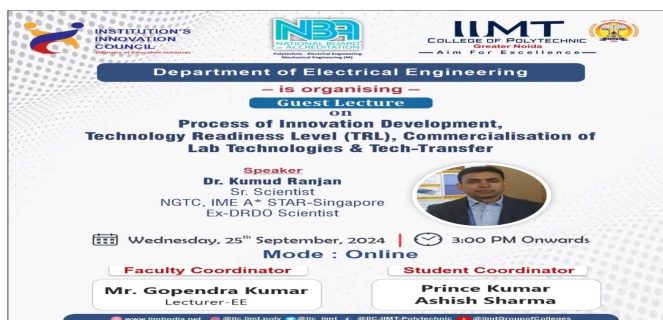


14 Apr' 1891-
6 Dec' 1956

"The journey to success requires patience and persistence"- Dr. B.R. Ambedkar

GUEST LECTURE

The event titled "Process of Innovation Development, Technology Readiness Level (TRL), Commercialization of Lab Technologies & Tech-Transfer" was held on a Wednesday from 3:00 PM onwards. The invited speaker, Dr. Kumud Ranjan, a senior scientist from NGTC, IME A STAR-Singapore, shared valuable insights on the process of innovation development, TRL, commercialization of lab technologies, and tech-transfer. The outcome of the lecture was that participants gained a deeper understanding of innovation development, TRL, and technology commercialization, enriching their academic experience.



WORKSHOP

The Workshop on Design Thinking, Critical Thinking, and Innovation Design, organized by the Electrical Engineering Department, took place on Thursday, beginning at 11:00 AM and lasting throughout the day. The event provided participants with a comprehensive understanding of the key aspects of these concepts, focusing on their practical applications. Through engaging discussions and interactive activities, attendees explored how design thinking and critical analysis can be applied to hydraulic and pneumatic systems, enhancing their problem-solving skills and encouraging innovative solutions in these areas.



Faculties & Students Attended the Online Guest Lecture



Felicitation of the Trainer



Students Engaged in the Workshop



14 Apr' 1891-
6 Dec' 1956

Education is the key to unlock the golden door of freedom- Dr. B.R. Ambedkar

Department of Civil Engineering



ENGINEERS' DAY

On September 13, 2024 the Civil Engineering Department of IIMT College of Polytechnic celebrated Engineers' Day to honour Sir M. Visvesvaraya. The event, held at Vishveshwarya Hall, began with a lamp-lighting ceremony and Saraswati Vandana.

The Director emphasized the crucial role of engineers in modern infrastructure during his speech. Second-year students presented posters on topics like smart cities and sustainable construction, impressing the attendees.

A quiz competition followed, with prizes awarded to winners. The event concluded with a felicitation ceremony, distributing mementos and certificates, promoting teamwork and engineering excellence.



Department of Civil Engineering



Humble tribute to
Dr. M. Visvesvaraya
on his Birth Anniversary

is celebrating

ENGINEER
Day

15th September, 2024

"Hard work performed in a disciplined manner will in most cases keep the workers fit and prolong his life."

Date - 13th September, 2024 | Time : 03:00 PM Onwards

Venue:
Vishveshwarya Hall

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14 Apr' 1891-
6 Dec' 1956

"A nation is not made by its rulers but by its citizens"- Dr. B.R. Ambedkar



Winners were Awarded with the Prizes





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Department of Civil Engineering

Poster presentation of Innovative Ideas



Faculty coordinators
Mr. Avinash Kumar
(Lecturer)

Date - 19th September, 2024 | Time : 03:00 PM Onwards

Venue: Vishveshwarya Hall

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POSTER PRESENTATION

The Civil Engineering Department of IIMT College of Polytechnic, Greater Noida, organized the *Poster Presentation on Innovation* to encourage students to showcase their creative engineering ideas. Participants presented their research and designs in areas like civil engineering, sustainability, and smart technologies.

The event provided a platform for students to share innovative solutions to real-world challenges while fostering collaboration, learning, and critical thinking.

Over 50 students participated, with Parkash Kumar (ME 1st year) winning first place, Priya Chaurasiya (CE 2nd year) securing second, and Soumya Ranjan Rout coming third.



Students Showcased
their talents through
Poster Presentation



Posters made by the
Students



14 Apr' 1891-
6 Dec' 1956

"Education is the backbone of progress"- Dr. B.R. Ambedkar

Department of Mechanical Engineering



VISHWAKARMA POOJA

The Mechanical Engineering Department of IIMT College of Polytechnic, Greater Noida, celebrated Vishwakarma Jayanti on 17th September 2024. This event, held in the workshop lab, is of great importance to the department as Lord Vishwakarma is regarded as the divine architect. The celebration began with the installation of Lord Vishwakarma's photo by the workshop technicians, led by Mr. Harvir Singh, who worshipped the machinery as a personification of the deity.

Faculty members from other departments, including Civil Engineering, Electrical Engineering, and Applied Sciences, were also present. After the pooja, prasad (sweets) was distributed to all those in attendance.

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Department of Mechanical Engineering is
Celebrating

**विश्वकर्मा
पूजा**

🕒 09:00 AM ONWARDS 📅 17th September, 2024
📍 Mechanical Engineering Workshop

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14 Apr' 1891-
6 Dec' 1956

"Freedom of mind is the real freedom"- Dr. B.R. Ambedkar



Rituals Performed by Faculties & Students



The session saw active participation enhancing understanding of funding processes and improving investor readiness. Entrepreneurs also gained insights into industry trends and potential follow-up opportunities for pitching their ideas. The session was organized by the Faculty Coordinator, Vishnu Kumar Singh, Lecturer ME-M



GUEST LECTURE

The session, led by Dr. Amit Rai, educated early-stage entrepreneurs on securing angel and venture capital funding. Participants learned about the investment process, including pitch preparation, understanding term sheets, and investor expectations.

The event provided networking opportunities and shared success stories, motivating attendees to confidently approach investors.



**Session Presented by the
Speaker**



**Faculties & Students
Attended the Guest
Lecture**



14 Apr' 1891-
6 Dec' 1956

"Without equality, freedom is meaningless"- Dr. B.R. Ambedkar

FACULTY CORNER

AGILE MANUFACTURING: A MODERN APPROACH FOR DYNAMIC MARKETS

Agile Manufacturing is an innovative production strategy aimed at boosting flexibility, efficiency, and responsiveness in manufacturing processes. This approach combines various methodologies, such as Lean Manufacturing, Just-In-Time (JIT), and Total Quality Management (TQM), allowing organizations to swiftly adapt to evolving market conditions and customer needs.

The key principles of agile manufacturing include modular product design, effective communication, and the integration of advanced technologies like automation and the Internet of Things (IoT). These components enable rapid customization, streamline operations, and enhance decision-making.

Key Benefits

- 1. Flexibility:** Easily adjusts to new product variations and customer demands.
- 2. Reduced Lead Time:** Faster production cycles lead to quicker delivery times.
- 3. Cost Efficiency:** Minimizes waste and optimizes resource utilization.

4. Enhanced Customer Satisfaction: Customizes products to align more closely with customer expectations.

5. Competitive Advantage: Empowers companies to respond rapidly to market changes, ensuring they stay ahead of competitors.

Despite its advantages, implementing agile manufacturing may present challenges, including high initial costs, the necessity for skilled workforce training, and required infrastructure upgrades. Successfully overcoming these obstacles requires a strategic approach and a commitment to ongoing improvement.

In summary, agile manufacturing is transforming traditional production by making it more adaptive, customer-focused, and future-ready. Companies that adopt this approach can gain a significant advantage in today's fast-paced industrial landscape.



Mr. Jugendra Singh
M.Tech (IE&M),
B.Tech (ME)



14 Apr' 1891-
6 Dec' 1956

"Injustice anywhere is a threat to justice everywhere"- Dr. B.R. Ambedkar

STUDENT CORNER

THE EFFECT OF SOCIAL MEDIA ON TODAY'S GENERATION

Social media has revolutionized communication and lifestyle, especially for the younger generation, through platforms like Instagram, TikTok, and Facebook.

It brings both positive and negative impacts. Positively, it enhances global connectivity, democratizes access to information, fosters creativity, and provides educational opportunities. However, negative effects include mental health struggles like anxiety and depression, addiction that hampers productivity, distorted realities due to curated content, privacy concerns, and a decline in real-life social skills.

While social media offers many advantages, its overuse can lead to significant challenges for today's youth.



Priya Chaurasia
CE, II Year

GENERAL CORNER- QUIZ

General Knowledge Questions

1. Which is the National animal of India?
2. Who was the first President of India?
3. Who is known as the Father of the Nation in India?
4. Which is the largest ocean of world?
5. Which is the longest river of Indian peninsula?
6. Which is the oldest political party in India?
7. Which is the smallest planet in solar system?
8. Rainbow consists of how many colours?
9. What is the National Anthem of India?
10. Who designed the National Flag of India?

Answers of Previous Newsletter General Corner (Apr-Jun'2024)

- | | |
|------------------|--------------------|
| 1. Cold Shoulder | 2. E-mail |
| 3. SWAT | 4. French manicure |
| 5. Chillax | 6. Emoji |
| 7. Zillion | 8. Earbud |
| 9. Flower child | 10. Cosplay |



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FROM THE
 **EDITOR'S
DESK**

"We extend our sincere appreciation to our dedicated readers, whose engagement and support drive the success of our esteemed quarterly newsletter. We also express profound gratitude to our talented authors, whose innovative research enriches the scholarly discourse in our field.

Finally, we extend special thanks to our distinguished Editor-in-Chief for his guidance, leadership, and unwavering commitment to excellence.

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