



PANIMALAR ENGINEERING COLLEGE

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POONAMALLEE, CHENNAI- 600 123



DEPARTMENT OF MECHANICAL ENGINEERING

NEWSLETTER-THE TORQUE Ready to be driven

Vol. 19 | Issue #1
March 2024

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FROM THE PRINCIPAL'S DESK

I congratulate the Department of Mechanical Engineering for taking the initiative to bring out this Department newsletter in a fashionable manner. I hope this newsletter will provide the platform and opportunity to all the students and staff members of Mechanical Engineering to share and update the information on recent developments taking place in the field of Mechanical Engineering. I wish all the best for bringing out many volumes successfully.

FROM THE HOD'S DESK

I am very happy that our Mechanical Engineering Department is releasing this newsletter as a fore runner of the department activities for this semester. It is of utmost importance that students know things apart from the fundamentals in all fields to help them in their future. This newsletter in general will help the faculty and students to learn the latest developments. It will surely be of help to the students to advance their skills set.

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KART RACING CHAMPIONSHIP



Event Name: A National Level Go-Kart Event -
2024

Organized by: Academy of Indigenous Motor
Sports & Hindustan Engineering College,
Chennai

Participants: Department of Mechanical
Engineering Students

The 2024 National Level Go-Kart event, organized by the Academy of Indigenous Motor Sports and Hindustan Engineering College, witnessed thrilling competition among mechanical engineering students. Teams displayed impressive design and racing skills in an intense contest of innovation and precision. The students from the Department of Mechanical Engineering not only showcased their technical expertise but also outperformed their rivals to clinch the title of overall champions. The event celebrated student excellence in automotive engineering and fostered a spirit of innovation and teamwork, reinforcing the importance of hands-on learning in engineering education.

INNOVATIVE APPLICATIONS OF FLUID POWER

Objectives of the program:

- ☐ Inculcate the importance of innovation and fundamentals of hydraulics and pneumatics
- ☐ Explore the innovative application in fluid power system.
- ☐ Exhibit the development steps involved for development of fluid power systems from the fundamentals laws.

Benefits of the program:

- ☐ Understand the fluid power systems fundamentals.
- ☐ Understand the innovative applications in fluid power systems
- ☐ Understand the approach of innovation in hydraulics and pneumatics system



About the Program:

The seminar makes on attention of innovative applications in fluid power systems among students. The lecture makes attempts to clarify the fundamentals of hydraulics and pneumatics, contribution of individual and evolution of fluid power systems and also approach of innovation in hydraulics and pneumatics systems. The presentation focuses on the difference between hydraulics and pneumatics powered systems and components involved for the system design. The presentation briefly summarizes the Innovative applications of fluid power systems in automotive industry, agriculture industry and construction industry

CFD WORKSHOP

Event Name: CFD Workshop

Organized by: Panimalar Engineering College, Chennai

Participants: Final Year Department of Mechanical Engineering Students

Event Date: 5.02.2024 to 6.02.2024



Panimalar Engineering College is organizing a two-day Computational Fluid Dynamics (CFD) workshop on February 5 and 6, 2024, for final-year Mechanical Engineering students. The workshop aims to provide participants with a deep understanding of CFD principles and their applications in engineering. It will cover essential topics such as fluid flow analysis, heat transfer, and numerical methods used in CFD.

The workshop will also offer hands-on training sessions where students can work with industry-standard CFD software like ANSYS Fluent.

These practical sessions will help students simulate real-world problems, analyze results, and interpret them effectively. Led by experts in the field, the workshop is designed to bridge the gap between theoretical knowledge and practical skills.

This event is a valuable opportunity for students to enhance their technical skills, improve problem-solving abilities, and prepare for careers in industries where CFD is widely used.

CNC WORKSHOP



Event Name: CNC Workshop

Organized by: Panimalar Engineering College, Chennai

Participants: Department of Mechanical Engineering Students

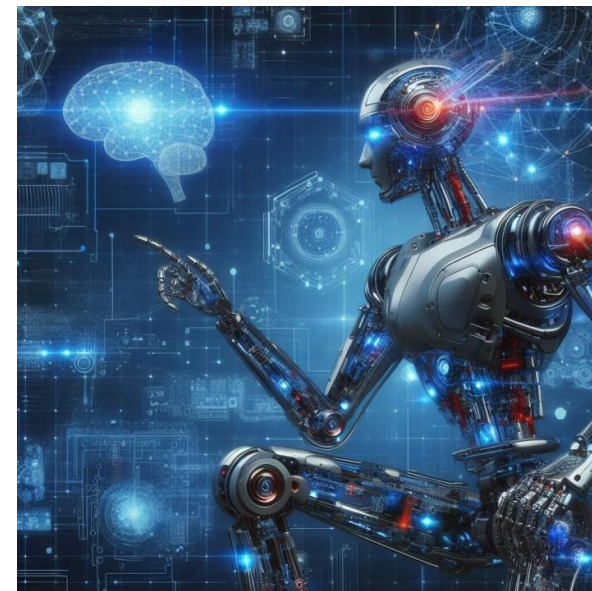
Event Date: 24.01.2024 to 25.01.2024

Panimalar Engineering College is organizing a two-day CNC (Computer Numerical Control) workshop from January 24 to January 25, 2024, designed exclusively for students from the Department of Mechanical Engineering. The workshop aims to provide participants with hands-on experience and practical knowledge in CNC machining, an essential skill in modern manufacturing. Students will learn about the programming, operation, and application of CNC machines, gaining a deeper understanding of precision engineering and automated manufacturing processes.

Experts from the field will conduct interactive sessions, demonstrations, and real-time practice on CNC machines. This workshop is a great opportunity for students to bridge the gap between theoretical learning and industrial practices, enhancing their technical skills and employability in the manufacturing and mechanical engineering sectors. The event is expected to foster innovation, technical know-how, and collaboration among the participants.

RISE OF AI AND ROBOTICS

Traditional mechanical engineering is undergoing a significant transformation fuelled by the integration of Artificial Intelligence (AI) and robotics. This powerful combination gives rise to autonomous systems – machines empowered by AI algorithms that can perform complex tasks with unmatched precision and efficiency.



The applications of AI in mechanical engineering are vast, encompassing industrial automation, self-driving cars, and smart manufacturing facilities (Industry 4.0). But the potential goes beyond factories. Imagine AI-powered drones assisting small farms, conducting daring rescue missions, or even serving as intelligent health companions. The future holds promise for AI-managed entities in public services and social sectors, alongside the development of collaborative robots, medical robots, and even swarms of intelligent machines working together.

INTELLIGENT CONTROL SYSTEMS AND AUTONOMOUS MACHINERY

AI allows for intelligent control systems that can autonomously adjust operating parameters in real-time for optimal performance. These systems are used in various applications, from climate control in buildings to adaptive control in manufacturing processes.



AI and ML power autonomous machinery, such as self-driving vehicles, drones and robotic systems. In mechanical engineering, benefits of these technologies include automating jobs that require high precision, improving safety by reducing human errors and advancing human knowledge through applications such as deep space exploration.

*Merging Human Intelligence
with Smart Technology*