Department of
Mechanical Engineering

AJAY BINAY INSTITUTE OF TECHNOLOGY

Achievement

- Placement Hiring
- Virtual Technical Talk
- Cources for Placement

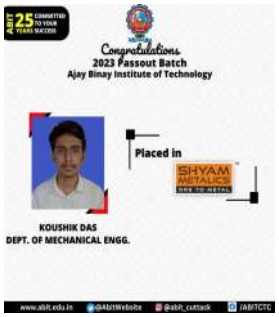
MECH-a-BIT

~Newsletter of Mechanical Engineering Department~

Volume-3,Issue-4 April-2023

Placement Hiring

Heartly congratulation the following students for getting through various companies.students name Koushik Das Placed in Shyam Metalics & Sambit mohanty, Bedanshu basu, Adhikari suryakatanta placed in Windcare India pvt, ltd.



6th International karate competetition

Congratulation Sahil Swain (1st sem mechanical engg.) on winning 3rd prize (Bronze medal) in 3rd to 5th February 2023 at Visakhapatnam

ODISHA STARTUP MELA

Seeding Innovation –2023

All the Students and faculty participants who have taken part in the most prestigious Entrepreneurship event

Steampunk Repin Vertical steam engine

Faculty Achievements

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Robotic Welding

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Autonomous Vehicle

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Sector-1,
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Email:
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AJAY BINAY INSTITUTE OF TECHNOLOGY

Recent Advances in Mechanical Engineering

Biomechanics and Bioengineering

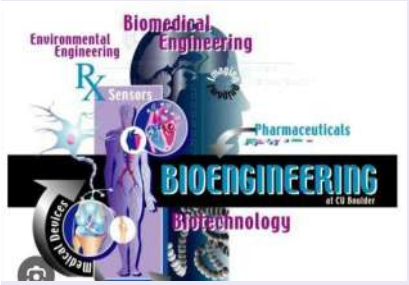
Biomedical Engineering and Biomechanical Engineering are **two interdisciplinary fields in engineering, biology, and healthcare**. While they share common ground in their attempt to enhance human health, they diverge in their particular applications and areas of emphasis.

Biomechanics

Definition: Biomechanics studies the mechanical aspects of living organisms, including humans, focusing on how biological systems move, respond to external forces, and maintain stability .

Scope: It applies mechanical principles to understand the structure and function of biological systems at various levels, from cells to whole organisms .

Bioengineering:



Definition: Bioengineering, also known as biological engineering, is the application of engineering principles to solve biological problems and design solutions for biological systems .

Scope: It encompasses a wide range of disciplines, including biomedical engineering, biotechnology, and chemical engineering, with a focus on improving human health and quality of life

Interrelation:

- Biomechanics is a key subfield within bioengineering, providing the fundamental understanding of the mechanics of biological systems that bioengineers use to design and develop solutions.
- Both fields are interdisciplinary, drawing on principles from biology, physics, chemistry, and engineering .
- They often overlap, particularly in areas like prosthetics, orthopedics, and tissue engineering
- For example, developing a prosthetic limb requires expertise from both biomechanics (understanding the mechanics of the human limb) and bioengineering (designing and manufacturing the prosthetic)

Department of
Mechanical Engineering

AJAY BINAY INSTITUTE OF TECHNOLOGY

Achievement

- Placement Hiring
- Students Activity
- National Con-ference

MECH-a-BIT

~Newsletter of Mechanical Engineering Department~

Volume-3,Issue-3 January-2023

Placement Hiring

Heartly congratulation the following students for getting through Taxtron Technologies companies.students name Jyoti Prakash Sethi, Subhasis Behera, Bikram keshore Parida & Debendranath Tarai

4 th Year Students of mechanical Engineering are busy doing something new from the Waste plastics

Det. Mechanical Engineering organizing the National Conference on Recent Advances in Production Engineering and Engineering Design (RAPEED-2022)

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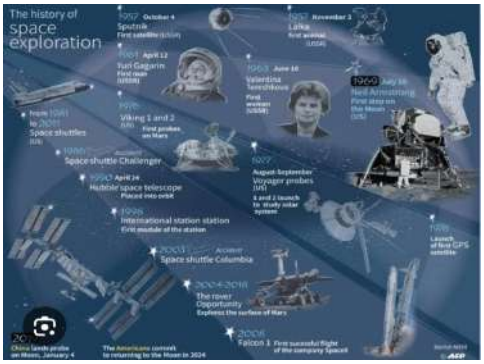
AJAY BINAY INSTITUTE OF TECHNOLOGY

Recent Advances in Mechanical Engineering

Aerospace and Space Exploration



Aerospace engineering and space exploration encompass the design, development, and exploration of aircraft and spacecraft, with space exploration focusing on the physical exploration of outer space, both by robotic and human missions

Aerospace Engineering:

Definition: Aerospace engineering is the branch of engineering that deals with the design, development, and operation of aircraft and spacecraft.

Application: Includes the development of technologies for air travel, satellite communication, space exploration, and defense systems .

Space Exploration:

Defination: The scientific endeavor of exploring outer space, including our solar system and beyond, using robotic and human missions .

Method: Involves using various types of spacecraft, such as fly-bys, orbiters, landers, and rovers, to study celestial bodies and the Univers.

Future Directions:

Continued exploration of our solar system and beyond

Development of new technologies for space travel and colonization

International collaborations in space exploration

Advantages:

Aerospace and space exploration offer numerous benefits, including scientific advancements, technological innovation, economic growth, and inspiration for future generations, while also potentially leading to solutions for global chal-

Department of
Mechanical Engineering

AJAY BINAY INSTITUTE OF TECHNOLOGY

Achievement

- Engineers Day Celebration
- Explore Laboratories
- Social Activity & Community Connect Cell

MECH-a-BIT

~Newsletter of Mechanical Engineering Department~

Volume-3,Issue-2 October-2022

Engineers Day –2022 celebration

Engineers Day –2022 celebration at mechanical Dept.. Mechanical Engineers idea and innovations have truly changed peoples lives.

Explore the state of the art laboratories of Department o mechanical Engineering.

Dept. of Mechanical Engineering organizing a workshop on role of technology in social sector in association with Thinkzone on 10th sept 2022

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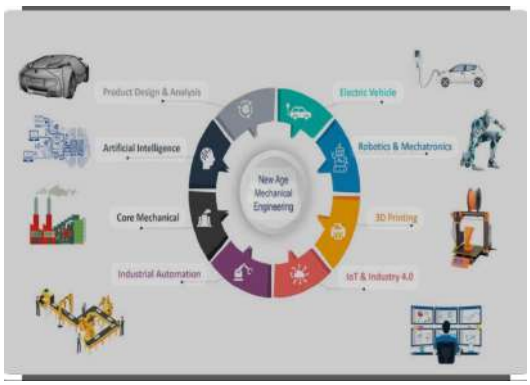
AJAY BINAY INSTITUTE OF TECHNOLOGY

Recent Advances in Mechanical Engineering

Internat Of Things in Mechanical System



IoT (Internet of Things) revolutionizes mechanical systems by enabling real-time data collection, analysis, and remote control, leading to improved efficiency, predictive maintenance, and optimized operations .

How IoT Transforms Mechanical Systems ?

Real-time Data and Monitoring: IoT allows for the continuous monitoring of mechanical systems using sensors that collect data on temperature, pressure, vibration, and other critical parameters .

Predictive Maintenance : By analyzing the data collected by IoT sensors, engineers can predict potential failures and schedule maintenance proactively, reducing downtime and costs .

Remote Control and Automation : IoT enables remote control and automation of mechanical systems, allowing for efficient operation and management even from distant location .

Improved Communication and Collaboration : IoT facilitates communication and collaboration between different parts of a mechanical system, as well as between engineers and operators, leading to better coordination and problem-solving .

Advantages of IoT in Mechanical Engineering :

More output is generated within less time with the implementation of modern technology. As a result, it increases machine performance and overall production. Smart sensors attached with machineries would successfully detect recent.

Future Scopr: The integration of IoT into mechanical systems promises a future of enhanced efficiency, predictive maintenance, and smart, interconnected factories, driven by real-time data analysis and automation.

Department of
Mechanical Engineering

AJAY BINAY INSTITUTE OF TECHNOLOGY

Achievement

- Placement Hiring
- Students Activity
- Alumni Talk

Editorial Board

Faculty Editors
1. Er. Dipak ku. Jesthi
2. Er. Biswa rn. Rout

Student Editors
1. Rajnandini Sahoo
2. Jyoti Prakash Sethy

MECH-a-BIT

~Newsletter of Mechanical Engineering Department~

Volume-3,Issue-1 July-2022

Placement Hiring

Heartly congratulation the following students for getting Placed Through Various Reputed Companies.

2nd year students of Mechanical Engineering are busy giving second life to discarded tyres of all sizes. 21 Days,21tyres and finally they have made itpossible. Many more things are yet to come.

Dept. Of Mechanical Engineering organizing the Alumni talk at our alumna Er. Soumya Mohanty for sharing her valuable time and suggestions with us their skills and explore their employability capabilityes.

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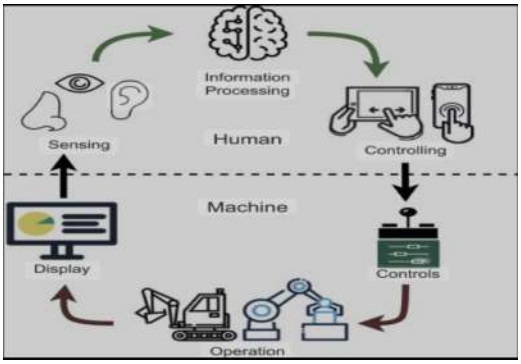
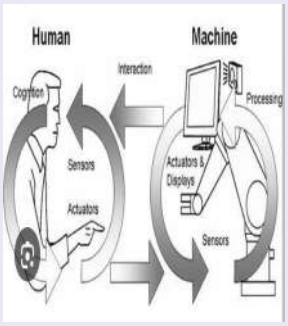
Human– Machine Interaction



Human-machine interaction (HMI), also known as human-computer interaction (HCI), is the study of how humans interact with machines and automated systems, focusing on designing user interfaces that are intuitive and efficient

Definition: HMI/HCI encompasses the design, evaluation, and implementation of interfaces that allow humans to interact with machines, computers, or other technologies.

Importance: As technology becomes increasingly integrated into daily life and workplaces, HMI/HCI plays a crucial role in ensuring that these systems are user-friendly, safe, and effective.



Collabration: HMI/HCI also considers how humans and machines can work together effectively, such as in manufacturing or other collaborative task

Advantages of Human– Machine Interaction;

Human-machine interaction (HMI) offers numerous advantages, including enhanced productivity, intuitive interfaces, improved safety, and efficient data management, making it crucial for modern industrial processes and beyond .

Future Scope:

The future of human-machine interaction (HMI) promises seamless integration of humans and machines, driven by AI, VR/AR, and natural language processing, leading to more intuitive and personalized experiences across various industries .