MACET MYSTICA

EDITORIAL

Entering college, is a significant milestone in a student's life. It marks the beginning of a journey filled with opportunities, challenges, and personal growth. As an educational institution, it's crucial to create an environment that not only welcomes new students but also motivates them to succeed.

The most important step in motivating new students is to ensure they feel welcome. A comprehensive orientation program is essential which includes campus tours, introductions to faculty and staff, and information about academic resources and support services. This sets the stage for a positive college experience.

Faculty, staff, and current students all play crucial roles in creating an environment where new students feel valued, supported, and inspired to succeed. It is important to ensure that the newest batch of engineering students embarks on a journey filled with enthusiasm, determination, and the confidence to overcome any challenges they may encounter along the way. Their success is not only their own but a tribute to the institution they will call home for the next few years.

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CONTENTS

Augmented Reality (AR) and Virtual Reality (VR):

Mazhar Eqbal, Asst Prof, Department of CSE

AR and VR, cutting-edge technologies, are transforming our digital and physical experiences, offering new dimensions to how we perceive and interact with the world.

Definition:

- AR: Enhances real-world environments by overlaying digital information seamlessly.
- VR: Immerses users in simulated, fully digital environments, often through specialized headsets.

Applications of AR/VR:

- **Gaming and Entertainment:**
  VR revolutionizes gaming, providing immersive experiences beyond traditional gameplay while AR enhances gaming by introducing virtual elements into the real world, creating interactive and engaging experiences.

- **Education and Training:**
  AR introduces interactive elements to traditional learning environments while VR facilitates immersive simulations for training purposes, offering realistic scenarios in a controlled environment.

- **Healthcare:**
  AR aids surgeries by providing real-time data overlays for surgical navigation while VR is utilized in therapeutic interventions, offering controlled virtual environments for mental health treatment.

- **Retail and Marketing:**
  AR enhances the retail experience, allowing customers to visualize products in their real-world settings before purchase while VR creates virtual showrooms, enabling remote exploration of products in a simulated environment.

Challenges:

Technological challenges include achieving realistic haptic feedback in VR and creating seamless AR interactions in real-world environments. Adoption hurdles include user comfort, privacy concerns, and the need for intuitive interfaces.

Future Outlook:

Integration with emerging technologies like AI, 5G, and IoT is essential for unlocking the full potential of AR and VR. Ongoing advancements promise increasingly seamless and immersive experiences, pushing the boundaries of what's possible.

Conclusion:

AR and VR signify more than technological advancements; they represent a shift in how we engage with reality. As these technologies continue to evolve, the line between the physical and digital realms blurs, opening up a realm of possibilities for enhanced, redefined experiences.

News Update

Inauguration of Student Induction Program 2023 (Day 1)

On 16th September, the Maulana Azad College of Engineering and Technology, Patna welcomed the new batch of 2023 students for their induction program. The event was graced by the presence of the college president Hon'ble **Dr. Ahmad Abdul Hai**, vice president **Mr. S.S. Mashhadi**, and other committee members. Vice chancellor of BEU PATNA, Hon'ble **Prof. Suresh Kant Verma** was the program's chief guest.

The program began with a welcome address by the college president. He congratulated the students on their admission and wished them a successful and fulfilling academic journey. He also emphasized the importance of hard work, dedication, and perseverance in achieving one's goals.

The vice president then addressed the students. He spoke about the importance of building a strong foundation in their chosen field of study. He also encouraged the students to participate in extracurricular activities and to get involved in the college community. Other committee members also spoke to the students about different aspects of college life such as academic support, student services, and career guidance. Later the Chief Guest himself introduced the students to the new achievements of BEU PATNA and concluded with his inspiring words.

News Update

Student Induction Program 2023 Cont… (Day 2 onwards)

Day 2 began with introducing the BEU (Bihar Engineering University) curriculum and syllabus and making students aware of credit system regulations, CGPA, Exams, and practical viva for the B.Tech course by the Dean Academics, Prof (Dr.) Masood Ahmad, MACET.

Then there was a brief introduction to SBTE (State Board of Technical Education), Bihar curriculum and syllabus along with the details of the credit system, CGPA, Exams, and Practical Viva for Diploma course by the Diploma Coordinator Dr. Tajuddin Ali Ahmad.

The post-lunch session included the interaction of HODs with the respective departmental students. Then there was an Introduction session for newly admitted students.

Day 3 included a session on career upskilling by C-DAC Patna. Mr. Vishal Kumar (Senior Manager) and Mr. Ashish Kumar (Faculty coordinator) were the resource persons from C-DAC, Patna

Post-lunch session included a lecture on UHV (Universal Human Values) by Mr. Md. Taslim Raza, Assistant Professor, Mechanical Engg. Department, this was followed by getting familiar with the NPTEL /SWAYAM/MOOC e-learning portal conducted by SPOC Coordinator Mr. Rakesh Ranjan, Assistant Professor, CSE department, MACET

The fourth day began with an informative session on training and placement activities by Mr. Md. Nadeem Enam, TPO MACET.

News Update

Student Induction Program 2023 Cont… (Day 2 onwards)

Post lunch break students were made to practice yoga by Mr. Rakesh Ranjan, Assistant Professor, CSE thus emphasizing the importance of yoga in our daily life. Sessions were there for the students to get acquainted with various scholarship schemes, rules regarding discipline on the campus, and interaction with the Exam controller, COE Mr. Md. Reyaz Ahmad, MACET.

On Fifth day students were taken on an excursion trip to the Bihar museum, they had a great time reminiscing and recollecting the history of Bihar.

On the sixth day students geared up for some fierce competition in Painting, the theme for that being Chandrayaan 3 and the extempore, and last but not least the quiz competition.

News Update

MoU with CDAC

Maulana Azad College of Engineering and Technology, Patna signed an MoU with C-DAC Patna on 27th August 2023. This MoU was signed by the Director Prof. (Dr.) Asim Kumar and Mr. Ritwik Singh CEO, C-DAC (ATC) Career Foresight, Patna in the presence of Dean Academics   Prof.(Dr.) Md. Masood Ahmad and TPO, Mr. Md. Nadeem Enam. Signing an MOU with C-DAC will signify various forms of collaboration between the college and C-DAC, depending on the specific terms and objectives outlined in the agreement. The purpose of this Memorandum of Understanding is to support each other where both parties will recognize the importance of academic training and research collaboration to enhance the quality of education and training offered to students and will contribute to the advancement of research in the field of engineering and technology.

A Tribute to Bharat Ratan Sir M. Visvesvaraya

MD SARAFRAZ AKHTER, Asst. Professor, CE Department

I feel immensely honored and privileged to pay Tribute and reminisce about the experiences, achievements, and character of technical rishi Sir Mokshagundam Visvesvaraya.

Sir M. Visvesvaraya, as we call him affectionately, was born on 15th September 1860 at Muddan Halli village, chikballapur taluk in the Kolar District of Karnataka. His father Srinivasa Shastri was a Sanskrit Scholar and authority on Hindu scriptures, besides being an Ayurvedic practioner. His ancestors had migrated from Mokshagundam the Prakashan district of Andhra Pradesh to Mysore state perhaps three centuries ago but the family name still preserves the memory of their association with the village.

Visvesvaraya lost his father at the age of 15. He attended primary school at Chikballapur and high school at Bangalore. He obtained his B. A in 1st class in 1881 from Central College, Bangalore, and then studied Civil Engineering at the College of Science, Pune which is presently known as College of Engineering, Pune. He obtained the Engineering Degree, with Distinction in the whole Bombay Presidency. His professional career was started in 1884, when his appointed as Assistant Engineer in P.W.D of Bombay Government. The Krishna Rajasagara Project and the Bhadravathi scheme, which were both denounced at the inception, bear testimony to his constructive statesmanship. He started the Mysore Bank and the Sandalwood oil factory, in addition to the development of industries, Centers for Technical Education, and Railway Programmes, to give his unflagging attention to village reconstruction. He emphasized the importance of rural education and planned productivity and also emphasized that every agricultural family should have a subsidiary industry or occupation.

Sir M. Visvesvaraya joined the Mysore service as Chief Engineer and Secretary, P.W.D. in November 1909. He came to an understanding with the Government that he should be given scope to promote industries and higher technical education given little attention by the administrators, which were needed to improve the economic condition of the country.

Sir M. Visvesvaraya gave his four-point program for the national reconstruction of India.

- Progressively harder work
- Periodically planned and disciplined work
- Increasing efficient work
- Courtesy towards fellow workers and

The entire philosophy of his life be summed up in one word, It would be work. Dr. M. Visvesvaraya has been greatly admired all over the country for decades and has been the recipient of academic and professional honors such as Doctor of Science (D.Sc) and Doctor of Law (L.L.D). The highest of civilian honors, "Bharat Ratan "was conferred on him by the President of India in 1955. There could be no greater proof of how this great man has spent more than 100 years on this planet.

In a life full of service to his people, loyalty to his superiors, devoted service to his country, and joy in the great work that he had done. After a brief illness, he left his world forever at 6:15 A.M. on 14th April 1962 at Bangalore at age 101 years leaving the entire nation bereaved. The British also knighted him for his myriad contributions to the public. Every year, 15th September is celebrated as the Engineer's Day in India in his memory.

FDPs / Research Papers

ECE Department

Mr. Md. Nadeem Enam

Participated in Webinar on "*Applications of big data technologies*" C-DAC Noida, held on 29th August 2023.

- Participated in IEEE CIS Kolkata Lecture Series on *Artificial Intelligence & Evolving Intelligent systems* organized by IEEE Computational Intelligence Society, Kolkata Chapter on 31st August 2023.
- Successfully Completed "*Create apps, chatbots, flows and more with Microsoft Dataverse and Teams* " conducted by Microsoft, on 1st September 2023
- Successfully Completed "*Introduction to Microsoft Power Platform security and governance*" conducted by Microsoft, on 1st September,2023.
- Successfully Completed " *Get Started with security roles in Dataverse* " conducted by Microsoft, on 1st September 2023.
- Successfully Completed "*Get Started with AI Builder* " conducted by Microsoft, on on 1st September 2023.
- Successfully Completed 5 days "*National level Online Teachers Training Program* " organised by the Association of Muslim Professionals in collaboration with Maulana Azad University, Jodhpur from 6th July – 10th September 2023**.**

Mr Shahid Aziz

- Paper titled "*Studying the Effectiveness of Data Augmentation and Frequency-Domain Linear Prediction Coefficients in Children's Speaker Verification under Low-Resource Conditions*" has been accepted for publication at the 25th International Conference on Speech and Computer SPECOM 2023, jointly organized by IIT Dharwad and IIIT Hyderabad.

- Received an invitation for Technical Reviewer from the prestigious IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2024), slated to be organized in Seoul, Korea.

Mrs. Meena Prasad

- Attended a one week National level online FDP on *'Cloud Infrastructure (AWS)'* organized by JNTUK University College of Engineering, AP between 21st to 25th August 2023.

Computer Science & Engineering Department

Mr. Rakesh Ranjan

- Participated in 5 Days Online FDP on "*Future of AI and ML in Cyber Security*" organized by NIT, Patna from 04th Sept.-2023 to 09th Sept. 2023.

Mr.Zaffar Abbas

- Participated in 5 Days Online FDP on "*Cloud Infrastructure (AWS)*" organized by JNTUK University College of Engineering Narasaraopet, Andhra Pradesh in collaboration with Brainovision and from 21st August to 25th August 2023.

FDPs / Research Papers

Mechanical Engineering Department

Successfully completed One week online FDP Course on "*Air Water Pollution and Health*" organized by NITTTR, Kolkata from 31st July to 01st August, 2023 by:

- Dr. Syed Shahbaz Anjum
- Mr. Md Shabbeer Ansari
- Dr. Naushad Hasin Khan
- Mr. Kashif Faridi
- Mr. Md Taslim Raza
- Mr. Firoz Alam

Successfully Completed One week online FDP Course on "*Polymer Composites & Nanocomposites*" organized by NITTR, Kolkata from 07th to 11th August 2023 by:

- Mr. Ali Nezam
- Mr. Md. Irshad Alam Ansari
- Mr. Firoz Alam
- Mr. Md. Mojahid

Civil Engineering Department

MD SARAFRAZ AKHTER

- Attended One week online FDP Course on "*Polymer Composites and Nano composites*" organized by NITTR, Kolkata from 7th August 2023 to 11th August 2023

Student's Corner

Green Technology

Ahsan Raza, CE, 2021 Batch

What is Green-Technology?

Green technology is a broad word that refers to the application of science and technology to generate environmentally sustainable products and services. It is connected to cleantech, which refers to goods or services that increase operational performance while lowering costs, reduce energy usage and waste, or decrease negative environmental effects.

Green technologies cover a wide range of technologies that assist in reducing human influence on the environment and fostering long-term growth. The fundamental parameters for green technology are social equitability, economic feasibility, and sustainability. India's current push for renewable energies and green technology, such as solar, wind, and nuclear power, can go a long way in aiding the country's success story.

Goal of the Green Technology:-

The goal is to safeguard the environment, heal past environmental damage, and conserve the Earth's natural resources.

Top 10 green technology innovations:-

1. Green Architecture :-

Due to the sheer scale of the built environment, difficulties arise around the sustainability of urban living. As buildings are getting taller and cities more compact, innovation is taking place to ensure that new buildings meet climate requirements, but are also capable of generating energy, sequestering carbon, and fitting aesthetically within local landscapes. Initiatives also consist of planted roofs and walls, adding to the carbon reduction footprint.

2. Recycled Plastic Road Surfacing :-

In 2021, Coca-Cola announced its road surfacing project in Pakistan as it encourages a circular economy of waste materials. Plastic-based road materials have been adopted as an initiative that not only utilises recycled plastic bottles, but also develops in the community in the surrounding area.

3. Waste Water Electricity Generator :-

The circular economy can be applied beyond recycling man-made materials. Oregon State University developed a hybrid electricity generator, which uses microbial fuel cells and reverse electro dialysis. These technologies combined enable the use of waste water to create electricity. Alongside the solutions contribution to mains grid power generation, the technology is also capable of powering the treatment of water as it comes full circle.

4. Nuclear Energy Technology :-

Although controversial based on its potential to disrupt cities (an example being the Chernobyl nuclear reactor), technology is being developed to make the most of nuclear materials to produce clean energy at scale. Current technicians are only able to utilise uranium supplies to around 1% of their full potential, making nuclear a contender for widespread green energy.

5. Electric Vehicle Propulsion:-

One of the most visible forms of renewable technology is electric vehicle (EV) propulsion. Range anxiety plays a role in the adoption of EVs as the current charging infrastructure and energy grids are not capable of supporting a fully-electric future, yet.

6. Carbon capture and storage:-

One of the most innovative solutions for eliminating atmospheric carbon dioxide, carbon sequestration, is going beyond human efforts to plant more trees and reduce carbon output. New technologies will be leveraged in years to come to actively remove carbon emissions from the atmosphere. However, according to the International Energy Agency (IEA), current carbon capture alone will not be enough to deliver the 1.7 billion tonnes of activity required.

7. Smart meters:-

While they don't actively reduce emissions, smart meters installed in homes allowed consumers to reduce their energy consumption, which is an indirect way of reducing overall housing emissions. Individuals are able to save on their household bills while companies have more energy in the pipeline to supply to other buildings.

8. Artificial photosynthesis:-

Speaking of mimicking plants, scientists and technologists are working together to mimic the effects of photosynthesis through technology. The solutions are expected to amalgamate both sunlight and carbon dioxide to create usable energy—a form of carbon capture that will provide further resources.

9. Molten salt energy storage:-

Heat is one way in which energy can be stored, meeting a gap in the energy sector that must be filled to reach a renewable energy future. It has been noticed that salt has particularly good characteristics for heat storage, making it a great base for capturing and holding energy.

10. Biomimicry:-

Mimicking plants and the natural environment is a method of sustainability that is only dreamt of. Scientists are working to capture the regenerative functions of plants and animals, similar to healing a wound or sealing a cut made when pruning a plant. This technology could be used in fibres to enable cuts to patch up minor holes and tears.

Maulana Azad College of Engineering & Technology

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