

September 2024

VOLUME: 14

MONTHLY E-NEWSLETTER

MACET MYSTICA



MAULANA AZAD COLLEGE OF
ENGINEERING & TECHNOLOGY



DIRECTOR'S MESSAGE

Welcome to MACET, an institution where innovations meets education, and where aspiring engineers shape their futures. As the Director of this esteemed institution, I am pleased to welcome you all to a place of learning, discovery, and excellence.

I am delighted to connect with you through this edition of our e-magazine, which showcases our engineering college's vibrant energy and creative spirit.

This publication is more than just a collection of articles; it is a showcase of the creativity, intellect, and dedication that our students and faculty invest in every edition of e-magazine.

As you explore the pages of this e-magazine, I hope you get inspired by the passion and talent that define our community. Let this be a reminder of the incredible potential that lies within each one of us to make a meaningful contribution to our world.

Thank you for being a part of our journey. Together, let us continue to strive to achieve excellence and innovation in all that we do.

Prof. (Dr.) Asim Kumar
DIRECTOR

EDITORIAL

In celebrating Independence Day, we must remember that the principles of freedom, democracy, and equality—on which our nation was founded—are not static achievements. They require continuous effort to maintain and strengthen. These ideals can erode when we forget the lessons of the past or neglect to protect the institutions and values that form the foundation of our democracies.

Today, our country is facing internal challenges that threaten the very fabric of the freedom they fought so hard to secure. Corruption, inequality, and social polarization are just a few of the issues that plague modern democracies. Independence Day should also serve as a time for reflection on how far we have come, and how far we still need to go in addressing these challenges.

Beyond national boundaries, the spirit of independence should inspire a global commitment to defending freedom and justice for all. In a world where conflicts still rage and millions live under oppression, it is critical that those who are free stand in support with those who continue to struggle for their rights. Independence Day, in this sense, is not just a national event, but a universal call to defend human dignity and freedom wherever they are under threat.

As we mark Independence Day, it is worth remembering that freedom is never guaranteed. It must be cherished, protected, and renewed with each generation. The sacrifices of those who came before us should not be taken for granted, nor should the struggles of those who still live under oppressive regimes. Independence is both a gift and a responsibility—a delicate balance that demands a commitment to the greater good.

So, as we wave our flags and celebrate with family and friends, let us also recommit ourselves to the ideals that make independence meaningful: justice, equality, and freedom for all. These are the values that truly honour the spirit of Independence Day and the people who fought to bring it to life.

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Leveraging Digital Twin Technology in Building Management Systems

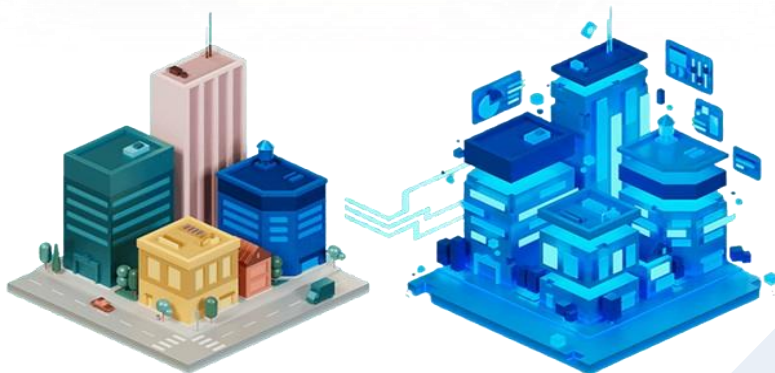
Md. Ehraz Akhtar, Asst. Professor, Department of Civil Engineering

A digital twin is an emerging technology that allows architectural and civil designers to overcome the abstract between what they think should be built and how it looks when constructed. It is a 3D model based on a computer-aided design (CAD) system. It blends the limits of many levels of design and construction activities without necessity to be precise about every aspect of the project. Digital twins provide multidimensional perspectives of an asset's design and performance such as tenant behavior, use patterns, space utilization, and traffic patterns. A digital twin allow to evaluate "what-if" situations like design alterations, weather disruptions, and security events. It captures a large amount of data in a single environment.

The development of the Digital Twin phenomenon has led to a significant shift in urban planning. It presents the city in virtual form as dynamic, including every aspect of the historic fabric, modern development, and public transportation in a single three-dimensional model. In essence, it is an excellent way of cautious urban planning that reduces stagnation and ensures the city's evolution.

The digital twin concept is beneficial for both small- and large-scale building projects, and it has many uses. It uses real-time data to stay current and accepts human input to represent the physical area as a virtual model. With the aid of Digital Twin tools, one may simulate a building's performance and design, particularly with regard to its environment, infrastructure, road network, and usage. This allows efficient management when designing future projects. In order to construct digital models of buildings and environments based on photographic data, digital twins are usually created using 3D superimposition or photogrammetry techniques.

While having a digital twin is not a prerequisite to designing and engineering a building project, the benefits are clear. By delivering a fully connected, transparent, and robust experience, this new method of managing information can improve communication between all teams involved in the construction process. Moreover, it will provide performance data through diverse analytics, allowing engineers to develop intelligent, reliable, smart infrastructure. Ultimately, digital twins should enable owners to operate more efficiently and reduce costs overall.



Digital Twin Modelling Technology

Student Induction Program (SIP) 2024

Dr. Sana Firdos Khan, Asst. Professor, Deptt. of Sc. & Hum.

Students Induction Program 2024 (SIP) of Diploma students admitted in 2024 batch was held in the New Seminar Hall at MACET, Patna from 27.08.24 to 29.08.24.

The **Students Induction Program (SIP)** forms a mandatory part of AICTE which is conducted every year in the institution to mark the commencement of the new academic session. The purpose of the SIP is to help new students adjust and feel comfortable in the new environment and inculcate in them the spirit, ethos and culture of the institution, to help them build bond with other students and faculty members and expose them to a sense of larger purpose and self- exploration.

The three days inclusive Students Induction Program which commenced on the 27th of August, 2024 started with Tilawat-e-Quraan, the beautiful recitation of the verses from Qura'n by a student from Diploma Course. Thereafter followed the formal welcome note addressed by Prof. (Dr.) Asim Kumar Sir, Director of the institution. Introduction to the SIP was given by Dr. Sana Firdos Khan Assistant Professor, MACET who was the compere of the event.

The session proceeded further with Prof. (Dr.) Md. Masood Ahmad, the Dean Academic, MACET delivering a motivational speech on the holistic development of technical education and its prospects and advancement in global sphere.

With the help of power point presentation a virtual tour of the college campus was presented that virtually introduced the college campus, displaying various departments of the institution, their respective HODs, faculty members and other important information related to the various infrastructure, laboratories, department library, extracurricular activities, training and placement cell, etc. were briefed to the students to encourage them to utilize for maximum optimization of their skills in college.

After this virtual tour of college, the session was followed by an address by Prof. (Dr.) Tajuddin Ali Ahmed, Polytechnic In-Charge, MACET, to the students about the Importance of technical education and its relevance in today's world.

Events included Mentor- Mentee Interaction of respective branches who discussed the briefing of roles and responsibilities to their respective mentees which was followed by introduction of students and registration process and attendance by respective mentors of their branch. This session concluded successful as both the students and faculties (mentors and mentees) both had a fruitful, engaging and enlightening interaction.



Other highlights of the sessions were as follows:

The Day 2 of **Students Induction Program** was held on the 28th of August, 2024 at the Seminar Hall, MACET from 9:30 a.m. to 11:30 a.m. The highlights of this session were the introduction to SBTE (State Board of Technical Education Bihar) in which the curriculum and syllabus with regulations (credit system, CGPA, Exam, Practical, Term Work, Viva) for Diploma Course as per the New syllabus and curriculum were discussed by Dr. Tajuddin Ali Ahmed, In-Charge, Polytechnic Course, MACET and Mr. Raza, Assistant Professor, MACET. The students gathered were highly enriched by this session as they were made familiar about the courses and curriculum of their respective branches of study. This session was followed by a short recess of 30 minutes from 11:30 a.m to 12 noon.

The post lunch sessions constituted interaction of H.O.Ds from various departments with their respective department students. This session formally introduced the respective H.O.Ds of various departments to their students which will facilitate them to get familiar with the functioning of their respective departments.

The next session that followed was on getting familiar with NPTEL/SWAYAM/MOOC and e-learning portals. This session was presented by Mr. Rakesh Ranjan, SPOC, MACET.

Through this presentation the students were made aware about the various e-learning schemes, organization and online sources of learning. The students were introduced to these schemes and e-learning sources which will help them to avail the facilities by getting registered to enhance their academic career and success. This session concluded with the attendance of students by respective mentors of their branches.





Lastly Day 3 of **Students Induction Program** was held on 29th of August, 2024 in the New Seminar Hall at MACET from 9:30 a.m. to 11:30 a.m. The sessions highlights comprised of the introduction of rules and regulations regarding maintaining the discipline inside the college premises by Mr. Aon Ahmad, Proctor, MACET. Through this session the students gained valuable insights regarding the mandatory protocol of discipline, rules and regulation to be maintained within the college campus. It was a thoroughly enriching session.

The next session which followed dealt with familiarization with different scholarship schemes (AICTE, Govt. aided CSR, State/ Central Dept., NGOs/ Private sector) undertaken by Mr. Ozair Ahmad, INO, MACET. Through this session the students were highly enriched as they were introduced to the various scholarship programs and schemes available to the students aided by various private and government organizations. This was an enlightenment session as students were made aware about the financial assistance that they could avail themselves with to enabling them to embark on a smooth and successful future.

The session also highlighted the different facilities cum rules and regulations of Central Library presented by Mrs. Danish Fatma, Head, Librarian, MACET. This was a thoroughly enriching presentation as students received knowledge and information regarding the facilities available to them to avail e-books, book bank and online textbook resources, registration process of the Central Library.

Next program was the screening of the science fiction motivational short clips that were displayed on the screen to help inspire and motivate the students through the struggle and suffering of the real life achievers. This session was truly inspiring and moral boosting to all. Then followed the recess of 30 minutes from 11:30 am to 12 noon.

Post lunch session was followed by various student centric activities like quiz and extempore. Through these activities the students gained knowledge, confidence and insights about the quiz and extempore. The students as well as respective faculty members displayed exuberance, zeal and enthusiasm alike.

Finally the feedback session was taken of the students. It was observed that the students thoroughly enjoyed the SIP and participated in the events. Hence the session concluded with a positive note where the students as well as the faculties of the institution had a learning insightful session.

The session concluded successfully with the group photo of the faculty with the students.





Independence Day celebrations

Independence Day celebrations in college go beyond a ritual they foster a deep sense of responsibility among the citizens. The act of standing under the tricolor serves as a powerful reminder that the freedoms we enjoy today were won through the sacrifices of countless individuals. It instils in us a sense of duty towards the nation – to uphold its values, to work towards unity, and to contribute towards its progress.

On the morning of August 15, the college campus is adorned with tricolours and festive decorations. Everybody gather together in the college grounds, ready for the unfurling of the tricolor. The atmosphere is electric with a mix of excitement and reverence.

The highlight of the celebration is the hoisting of the national flag, the tricolour, which holds deep symbolism. The saffron represents courage and sacrifice, the white signifies peace and truth, and the green embodies faith and chivalry. The Ashoka Chakra at the centre is a symbol of the eternal wheel of law and dharma.

The ceremony begins with the arrival of the Director, Dean Academics, distinguished guest, Sarpanch ,Neora, Deputy Mukhiya Gram Panchayat, Neora,,ex Mukhiya,Neora, HoDs of different departments, COE, TPO and other Faculties and staff. Independence Day celebration concluded with the singing of the National Anthem filling the air with a sense of pride and unity.



FDPs / Research Papers

Civil Engineering Department

Mr. Sumit Kumar Sudhanshu

1. Successfully completed 5 days online workshop on "Network security on Netwood.net" conducted from 12th February to 16th February 2024 by Jai Shri Infotech.
2. Successfully completed 3 days workshop on "Designing software stadd pro, Revit & 3D Max" conducted from 13th September to 15th September 2024 by Skyhooks Design & Construction Private Limited.

Mr. Md. Ehraz Akhtar

1. Successfully completed 5 days Online Teachers Training Program on "Positive Transformation into Agile Leader and International Teaching Opportunities" conducted from 26th August to 30th August 2024 by Association of Muslim Professionals in collaboration with Maulana Azad University, Jodhpur.
- Successfully completed 5 days Online Teachers Training Program on "Active and enquiry based Learning for continuous Improvement and high expectations of students" conducted from 23rd September to 27th September 2024 by Association of Muslim Professionals in collaboration with Al-Ameen college, Bangalore.

Computer Science & Engineering Department

Dr. Md. Sadruddin Ahmad

- Successfully completed 5 days National Level Online Teachers Training Program organized by Association of Muslim Professionals from 26th August to 30th August 2024



Maulana Azad College of Engineering & Technology

Affiliated to Bihar Engineering University, Govt. of Bihar

Approved by AICTE, New Delhi, Govt. of India

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