



*Today, the role of an institute is not only to pursue academic excellence but also to motivate and empower its students to be lifelong learners, critical thinkers, and productive members of an ever-changing global society. We provide an atmosphere to our students for multifaceted development, where children are encouraged to channelize their potential in the pursuit of excellence. This can only be possible in a holistic, student-centric environment.*

*Learning is not a progress limited to colleges only, nor does it end with conclusion of one's career. It is indeed a lifelong process. This institute is oriented to the total formation of a student and to adaptation of various methods suiting the dynamics of changing world in order to achieve common goals and objectives. It is further characterized by shared vision-responsibilities and above all, love and faith in God in order to achieve these goals.*

*Dear students, it is my message to you all that the people of fine character live by their values. They are honest and are committed to truthfulness, word and deed. True character thus encompasses the capacity for self-discipline.*

*Character creates self-respect, which in turn leads to high self-esteem. Maturity is reflected in all aspects of character-the decision we make, the friends we choose and the responsibilities we accept. Always remember to uphold the dignity of people. Be always ready to give preference to others. What you are is God's gift to you. What you become is your gift to God. Have something to live for. Bring out the best in you.*

**With Best Wishes,**

**Dr. Kamlakar Manikrao Bakwad**

**Principal,**

**Govt. Residential Women's Polytechnic, Latur**

**The Editorial Team**

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To become Centre of Excellence providing quality technical education and training to make self reliant and responsible citizens.



To provide conducive environment for quality education

To extend facilities and services for excellence in technical education.

To inculcate values and ethics for life long learning through curricular, co-curricular and extra curricular activities.

To enhance the skills of faculties and staff through quality improvement training programmes and higher education .



## Events Gallery

### 1. Expert Lecture on "Recent Trends in Medical Imaging" – MU Dept



The Medical Electronics department arranged an Expert Lecture on "Recent trends in medical imaging " on 02<sup>nd</sup> November, 2023. Mr. Chandrakant Shingade, a biomedical engineer and a notable Alumnus of Government Polytechnic, Miraj shared his expertise in various medical imaging techniques. Total 81 students of MU3I and MU 5I and all lecturers were present. Mrs. R. M. Sathe, Lecturer (MU) co-ordinated for all the arrangements of this lecture.

### 2. Indira Gandhi Jayanti & National Integration Pledge



Every year, November 19 is dedicated to remembering Indira Gandhi. Every year, November 19 is dedicated to remembering Indira Gandhi – the first female Prime Minister of India. Born on November 19, 1917, Indira Gandhi has been one of the most influential politicians India has witnessed. This year marks the 106<sup>th</sup> Birth anniversary of Indira Gandhi. As prime minister, Gandhi was known for her political intransigence and unprecedented centralisation of power. She also played an instrumental role in building economic reforms that helped pull people above the poverty line. The Institute paid tributes to this legendary leader.

All the faculty members offered floral tributes to the portrait of Indira Gandhi on the occasion. The 'National Integration Pledge' was read out to the staff members on the occasion. Wherein they reaffirmed their resolve 'to preserve and strengthen the freedom and integrity of the nation and to continue to endeavor towards settlement of all differences relating to religion, language or region by constitutional means'.

### 3. Constitution Day (Samvidhan Divas) Celebration



The Constitution Day (National Law Day), also known as Samvidhan Divas, is celebrated in the institute on 26<sup>th</sup> November every year to commemorate the adoption of the Constitution of India. On 26 November 1949, the Constituent Assembly of India adopted the Constitution of India, and it came into effect on 26 January 1950. The Government of India declared 26 November as Constitution Day on 19 November 2015 by a gazette notification. This year marks the 132<sup>nd</sup> birth anniversary of Dr Bhim Rao Ambedkar, who was the chairman of the drafting committee of the Constituent Assembly and played an important role in the drafting of the Constitution. November 26 marks the day when India adopted its constitution in the year 1949. The Constitution came into force on January 26, 1950. Dr. B. R. Ambedkar, was the head of the committee that finalised the draft of the Indian Constitution. The completion of the draft had taken 2 years, 11 months and 17 days. Mr. P. D. Jagtap, Lecturer (Electronics) and Mr. Nagapure, Librarian, made all the arrangements.

### 4. School Connect Programme



The MSBTE sponsored "School Connect programme 2023 - 24" was successfully organised & conducted between 08<sup>th</sup> December to 31<sup>st</sup> December, 2023 in Latur and Renapur taluka. All the faculties visited various schools for counselling, guiding and creating awareness among 10<sup>th</sup> class students and their parents about Technical education, various Diploma Courses, Scholarships, and their Scopes in future etc. which is helpful to the students for selecting right path (branch) for bright future.

### 5. Sant Santaji Jagnade Maharaj Jayanti

The institute celebrated Sant Santaji Jagnade Maharaj Jayanti on 08<sup>th</sup> December, 2023. Sant Santaji Jagnade was a prominent Marathi saint. He was one of the 14 cymbal players employed by Shri Tukaram Maharaj. Sant Santaji Jagnade is well known for his abhangas, the abhangas composed by him called the fifth Vedas. Santaji's Abhangas have glorified verses which illustrate his literary skills and talents. Mr. P. D. Jagtap, Lecturer (Electronics) and Mr. Nagapure, Librarian, made all the arrangements.



### 6. 3D Printing Competition



Mr. P. P. Chilme, Lecturer (CO) was invited as the judge for 3D Printing Competition at Podar International School, Latur on 09<sup>th</sup> December, 2023. In this competition, std. 07<sup>th</sup> students showcased their skills with great zeal. Mr. P. P. Chilme guided the students with newer trends in 3D printing and recent advances in technical knowledge.

### 7. One Day e-office Online Training

All the teaching faculties and office staff completed one day online training programme on e-Office organised by Yashada, Pune on 21<sup>st</sup> and 27<sup>th</sup> December, 2023. This training comprised of different eFile modules and management of official work cycle.

### 8. Atal Bihari Vajpayee Jayanti

The institute celebrated the birth anniversary of former Prime Minister Atal Bihari Vajpayee on 25<sup>th</sup> December, 2023. 25<sup>th</sup> December is celebrated as Good Governance Day every year to create awareness of accountability in government among the people. His contribution to India is indelible and his leadership and vision motivate millions of people. Vajpayee served three terms as the prime minister of India, first for a term of 13 days in 1996, then for a period



of 13 months from 1998 to 1999, followed by a full term from 1999 to 2004. He was the first-ever leader from the Bharatiya Janata Party to have become the nation's Prime Minister. Mr. P. D. Jagtap, Lecturer (Electronics) and Mr. Nagapure, Librarian, made all the arrangements.

### 9. Veer Baal Divas



'Veer Bal Divas' was celebrated in the institute on 26th December, 2023 to pay tribute to the bravery of Sahibzada Jorwar Singh and Sahibzada Fateh Singh, the children of the 10th Guru of Sikhs, Sri Guru Gobind Singh. "Veer Bal Divas is a symbol of the never-say-die attitude for the protection of our land. This day reminds us that age does not matter when it comes to heights of bravery. Mr. P. D. Jagtap, Lecturer (Electronics) and Mr. Nagapure, Librarian, made all the arrangements.

### 10. Dr. Panjabrao Deshmukh Jayanti



The institute celebrated Dr. Panjabrao Deshmukh Jayanti on 27th December, 2023. Deshmukh was a saga of selfless service to the people of India. He was an eminent educationist, renowned social worker and selfless political leader. He was also very committed to the development of agricultural sector in the country. Above all, his humane approach to the problems affecting the people endeared him to all sections of our population. Mr. P. D. Jagtap, Lecturer (Electronics) and Mr. Nagapure, Librarian, made all the arrangements.



## Awards & Honours



# CONGRATULATIONS!

We are so proud of you!



Ms. Rutuja Rathod, Third Year DDGM won the award for Best Women Innovator at Latur District Level in the Maharashtra State Innovation Challenge, 2023 on 14<sup>th</sup> December, 2023. Her business proposal for Safety Jacket for Women won her Rs. One Lakh cash at District Level. This is a safety jacket designed for women's safety, to protect them from assaults. once a user activates the jacket, it gives an electric shock to anyone who touches the jacket. The user can press the panic button on the jacket which activates the boost electric shock circuit, emergency buzzer and gps-gsm module present in the jacket. Loud noise and electric shock act as a deterrent while current location of the user, in the form of a google-maps link, is sent to the phone numbers fed in the device.

The institute wishes her all the best for State Level Pitching Competition!!!



Women at  
#Work  
#Inspiration



**Mrs. Indra Nooyi**

Former Chairman &  
Chief Executive Officer,  
PepsiCo

**Indra Nooyi,**  
*former Chairman and Chief Executive Officer of PepsiCo (2006-2019); a Fortune 50 company with operations in more than 180 countries.*

In this role, Ms Nooyi was the chief architect of Performance with Purpose, PepsiCo's pledge to do what's right for the business by being responsive to the needs of the world around it. As part of Performance with Purpose, PepsiCo was focused on delivering sustained growth by expanding its portfolio to include more nutritious products, limiting its environmental footprint, and empowering its associates and people in the communities it serves. During her tenure, PepsiCo grew net revenue more than 80%, and PepsiCo's total shareholder return was 162% beating the S&P over the same period.

Prior to becoming CEO, Ms Nooyi served as PepsiCo's president and chief financial officer and was a member of the company's board of directors. She was responsible for corporate functions, including finance, strategy, business process optimization, corporate platforms and innovation, procurement, investor relations and information technology. Between 1994 and 2000, Ms Nooyi directed corporate strategy and development for the company.

Before joining PepsiCo in 1994, Ms Nooyi spent four years as Senior Vice President of Strategy, Planning and Strategic Marketing for Asea Brown Boveri, a Zurich-based company. She was part of the top management team responsible for the company's U.S. business as well as its worldwide industrial businesses, representing about \$10 billion of ABB's \$30 billion in global sales.

Between 1986 and 1990, Mrs. Nooyi worked for Motorola, where she was Vice President and Director of Corporate Strategy and Planning, having joined the company as the business development executive responsible for its automotive and industrial electronics group. Prior to Motorola, she spent six years directing international corporate strategy projects at The Boston Consulting Group. Her clients ranged from textiles and consumer goods companies to retailers and specialty chemicals producers. Ms Nooyi began her career in India, where she held product manager positions at Johnson & Johnson and Mettur Beardsell, Ltd., a textile firm.

Ms Nooyi served as a member of the PepsiCo Board of Directors from 2001 to February 2019. Ms Nooyi is now a member of the board of Amazon, where she chairs the audit committee. She sits on the supervisory board of Philips and is a member of the nominating and corporate governance committee. She also serves on the International Advisory Council of Temasek; is an independent director of the International Cricket Council; and a trustee at the National Gallery of Art. She is on the Dean's Advisory Council at MIT's School of

Engineering and serves on the boards of the Memorial Sloan Kettering Cancer Center and the Partnership for Public Service. She is also an advisor to several early-stage companies.

Between 2019-2022, Ms Nooyi served as the Class of 1951 Chair for the Study of Leadership at West Point where she worked with the Department of Behavioral Sciences and Leadership to fulfill the mission of character at the U.S. Military Academy at West Point. She was also co-chair of The Reopen Connecticut Advisory Group, developing recommendations and guidelines for reactivating the state's economy post-pandemic.

Nooyi is the author of the book *My Life in Full: Work, Family and Our Future*, a memoir that offers insight and a call-to-action on how our society can blend work and family — and advance women — in the 21st century. *My Life in Full* is a New York Times bestseller and available in multiple languages.

Ms Nooyi is the recipient of 15 honorary degrees. In 2007, the Government of India awarded her the Padma Bhushan, the country's 3rd highest civilian honor. In that same year, she was named an "Outstanding American by choice" by the US State Department. In 2019, her portrait was inducted into the Smithsonian National Portrait Gallery, and in 2021 she was inducted into the National Women's Hall of Fame. She is a member of the American Academy of Arts and Sciences, the Academy of Science and the American Philosophical Society. She is a revered role model for women and immigrants and celebrated for her empowering messages on inclusivity.

She holds a B.S. from Madras Christian College, an M.B.A. from the Indian Institute of Management in Calcutta, and a Master of Public and Private Management from Yale University. Ms Nooyi is married and has two daughters.



TRENDING

**3D Printing***The future of Construction Industry*

***3D printing technology, which has the potential to revolutionize the construction industry, offers unprecedented design freedom, reduces material waste, and significantly reduces construction time. It enables the creation of complex architectural forms that would be challenging to achieve with traditional methods.***

The construction industry is slow to embrace new technologies. In recent years, though, 3D printing has emerged as a promising solution to many of the industry's challenges.

3D printing, also known as additive manufacturing, is a process of laying down cross-sectional layers of material one after another until the complete object is built. This technique has been used for decades in the automotive and aerospace industries, among others. Its potential for construction, however, has only recently been explored. Technology has the potential to revolutionize the way we design and build structures, making construction faster, more efficient, and more sustainable.

***How is 3D Printing Technology Used in Construction?***

The 3D printing systems created specifically for construction are commonly known as "construction 3D printers." A construction 3D printing (C3DP) project typically starts with a 3D digital model of the structure that needs to be constructed. The model is virtually sliced into layers. The printing robot or gantry system then follows a pre-programmed path to deposit each layer of material, tracing the layer outlines and extruding material until it has completed the whole slice. Once one layer is complete, it begins the next on top of the first, and construction continues like this until the full structure is built. It may use materials such as concrete, metal, or polymers to form this 3D structure.

The most common 3D printing technology for construction involves a robotic arm that extrudes concrete while moving back and forth. Powder binding and additive welding are other methods used for 3D printing in construction. Powder binding involves the solidification of powder layers to create the desired object. Additive welding was demonstrated in Amsterdam with the printing of a functional, full-scale metal bridge. To date, 3D printing has been used to print houses, offices, and other structures.

***Why 3D Printing Technology Benefits Construction Companies***

The construction industry can benefit from 3D printing technology in several ways. Firstly, it allows parts and components to be tailored to a specific project, offering greater design flexibility and improved functionality. Secondly, it can significantly reduce waste by using only the amount of material needed to create a structure, leading to cost savings and improved sustainability. Beyond that, it can speed up the construction process

since parts and components can quickly be made on-site, ultimately leading to faster project completion. Printing can also improve safety by reducing the number of dangerous tasks undertaken by workers. Lastly, while the initial investment in 3D printing technology can be significant, its efficiency and other advantages lead to cost savings over the equipment's lifetime. Overall, the potential benefits of 3D printing make it a promising technology for the construction industry as a whole.



### ***What Are the Advantages of 3D Printing for Construction?***

3D printing technology provides numerous benefits to the construction industry that traditional manufacturing processes cannot. These advantages include the following:

**Flexible Design and Innovation:** Complex shapes and designs are far more possible through 3D printing than with traditional manufacturing processes. Unlike older methods that rely on reusing plans and templates, 3D printing enables you to create customized solutions. With

the help of new software, architects can design innovative printable buildings. For instance, if clients request specific designs or unconventional shapes for their homes or offices, the models can be easily modified in the software and printed to match. This process has minimal impact on cost and requires less human effort than traditional construction methods.

**Rapid Production:** 3D printing technology can produce parts within hours, accelerating the prototyping process. Done this way, each stage of the design process can happen quicker and cheaper than it would if the items were machined. The automation (or at least partial automation) of this technology means houses or structures can be built in a few days. Automated printers can work through nights as well and sometimes even in bad weather, so your downtime is minimized.

**Minimizing Waste:** Construction sites are infamous for creating a lot of waste. However, 3D printing technology uses only the materials needed for each part, resulting in little to no wastage.

**Recycled Materials:** Another benefit of 3D printing is that printers can use recycled materials. This benefits both your company and the environment. 3D printers typically create lattice patterns so recycled plastic, for example, can form the basis of a sturdy structure. The construction industry also benefits from recycled concrete and other recycled materials.

**Long-Term Cost Effectiveness:** 3D printing technology can take the place of multiple manufacturing machines, so your equipment costs will be more reasonable. The reduced wastage and less downtime also result in added cost savings.

**Less Human Error:** 3D printing technology can significantly decrease the occurrence of errors during construction. High-quality 3D-printed structures help prevent construction accidents and deliver top-notch results to clients. With the ability to operate around the clock, 3D printers can also minimize the need for human labor, with workers primarily serving in supervisory roles.

### ***What Are the Disadvantages of 3D Printing for Construction?***

Though there are many pros associated with 3D printing in the construction industry, there are also some drawbacks. Some of these include:

**High Investment Costs:** Buying or even renting a 3D printer can be very expensive. There are also the logistical challenges of transporting large 3D printers to work sites. In addition to the initial cost of the printers, ongoing expenses for materials and maintenance must also be taken into account. As a result, many construction professionals find it challenging to justify the cost of 3D printing technology when weighed against its potential benefit.

**Labor Shortage:** The construction industry is experiencing growth but there is a shortage of skilled workers. 3D printing demands an even more specialized set of skills, which could be difficult to source from an already narrow and specialized pool of candidates. As a result, labor scarcity will likely continue to be a problem for the foreseeable future.

**Quality Control:** While 3D printing technology is capable of producing complex structures and customized designs, the final product's quality can be challenging to maintain. In traditional construction, supervisors check their workers' work for quality issues or errors. But since the 3D printing process is automated, construction relies on the printer's accuracy and precision. Additionally, raw material quality can also impact the final product's quality. The construction industry has strict standards for building materials, and ensuring that 3D printing materials meet these standards can be a challenge. As yet there are no universal quality control measures by which to judge printing materials.

**Regulation Challenges:** The regulatory framework for 3D printing in the construction realm is currently unclear. This lack of government oversight is a significant obstacle to the rapid adoption of the technology. Integrating 3D printing technology into the traditional construction project management process will also be a challenge. It takes considerable time and political will to update building codes to reflect new technology. Ultimately, the aim will be to establish a consistent construction 3D printing building code that applies throughout all municipalities.