January-April 2024

AYDTI NEWSLETTER

"TRUSTED TO DELIVER EXCELLENCE"

Mechanical Engineering Department

Approved by

Affiliated with

Managed By: The SSVMES, Surat.

About Institute:

A. Y. Dadabhai Technical Institute (AYDTI) is a premier polytechnic institute located in Kosamba, Surat District, offering top-notch technical education to students aspiring to excel in engineering and technology. Established under the management of The Suratee Sunni Vohra Muslim Education Society (Reg No: F-14), AYDTI is dedicated to fostering innovation, skill development, and academic excellence.

Institute Vision

To impart globally competitive education to all its students, enabling them to fulfill effectively the technological and socio-economic needs of society in a sustainable manner.

Department Vision

To groom self-esteem and creative human potential by enhancing their technical skills to make them market-ready in the field of mechanical engineering.

Institute Mission

- Develop technical human resources by imparting state-of-the-art skill-based training programs tailored to regional and global needs.
- Nurture innovation and entrepreneurship among faculty and students, creating opportunities for meaningful and long-term interaction with academia and industries.
- Ensure effective and transparent governance in all aspects of the institute's functioning to benefit its stakeholders.

Department Mission

- To educate and mentor students to excel as professionals by imparting them core knowledge of mechanical engineering.
- Nurture students with innovation and entrepreneurship skills to develop divergent thinking respond productively to the needs of the industries and society.
- Constantly strive to good governance in technical and soft skill, along with ethics and humanities.

Inside:

AYDTI NEWSLETTER
"TRUSTED TO DELIVER EXCELLENCE"
Mechanical Engineering Department

About Trust

"The Suratee Sunni Vohra Muslim Education Society"

The Suratee Sunni Vohra Muslim Education Society was established in 1947 by the elders of Vohra community who are visionary, well-wishers and think tankers. During the independence of India, the first priority was education which only can uplift the community.

From 1947, the society has made continuous progress, initially starting with providing monetary help to the poor and needy students in the form of education scholarship, now days the society is trying it's best for the various activities and charities under various heads.
With the great vision of our elders, initiative by JANAB AAZAMBHAI DADABHAI and huge donation in the form of Land at Kosamba (7 Vingha) by DR. G. I. MOTALA and his family the dream became true in the form of A.Y. Dadabhai Technical Institute, Kosamba.

A. Y. Dadabhai Technical Institute (Polytechnic) the First Muslim managed Polytechnic in Gujarat state start from August 2008, approved by A.I.C.T.E (All India Council for Technical Education) Government of India and affiliated with Gujarat Technological University, Ahmedabad.

AYDTI NEWSLETTER

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: Messages :

Mr. M. M. Dalchawal
Director
A. Y. Dadabhai Technical Institute

It gives me immense pleasure to congratulate the Diploma Mechanical Engineering Department on the launch of their inaugural newsletter. This is a truly significant and forward-thinking initiative for A. Y. Dadabhai Technical Institute.

In today's dynamic world, effective communication and knowledge sharing are paramount. This newsletter will serve as a vital platform to showcase the remarkable talents and innovative projects of our students and faculty.

This endeavor perfectly aligns with our institute's commitment to fostering a vibrant academic environment that encourages excellence, collaboration, and continuous learning.

look forward to seeing the impactful stories and achievements that will undoubtedly fill the pages of this newsletter. It's a testament to the growth and progress we continue to make here at A. Y. Dadabhai Technical Institute.

Dr. D V Patel
Principal
A. Y. Dadabhai Technical Institute

It fills me with immense pride and optimism to witness the inauguration of the Diploma Mechanical Engineering Department's newsletter. This is a commendable initiative and a significant step forward for A. Y. Dadabhai Technical Institute.

A newsletter isn't just a collection of articles; it's a vibrant chronicle of our collective journey, a showcase of talent, and a platform for sharing knowledge and innovation.

This newsletter will foster a stronger sense of unity and intellectual curiosity within our institute. It's a testament to the department's proactive spirit and commitment to excellence.

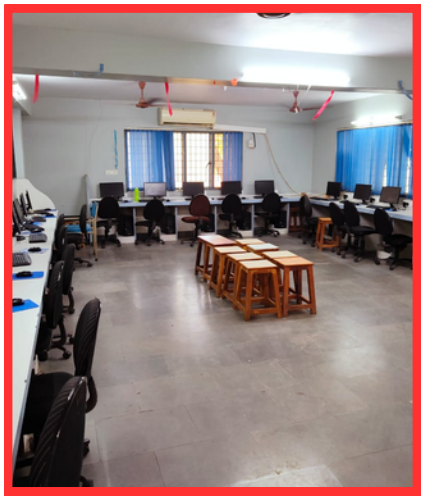
My heartfelt congratulations to the Head of Department, the faculty, and especially the students, for bringing this wonderful vision to fruition. I eagerly anticipate reading about your successes and insights on the issues to come.

Prof. K H Patel
Head of Department
Mechanical Engineering Department

It's with immense pleasure and pride that I announce the inauguration of our Diploma Mechanical Engineering Department's own newsletter. This initiative marks a significant milestone for us, providing a dedicated platform to showcase the remarkable achievements of our students and faculties, share departmental news, and highlight the exciting advancements in the field of mechanical engineering.

I believe this newsletter will foster a stronger sense of community within our department, encourage knowledge sharing, and inspire innovation. It's a testament to our collective dedication and hard work.

Congratulations to everyone involved in bringing this vision to life. I look forward to see our newsletter flourish as a vibrant hub of information and inspiration for years to come.



AYDTI NEWSLETTER
"TRUSTED TO DELIVER EXCELLENCE"
Mechanical Engineering Department

Co-Curricular Activities

Co-curricular activities play a crucial role in shaping well-rounded engineers at A. Y. Dadabhai Technical Institute. These activities, including technical clubs, workshops, competitions, and industrial projects, provide students with opportunities to apply theoretical knowledge in real-world scenarios. They enhance creativity, teamwork, and leadership skills, essential for success in the field of mechanical engineering.

1 Days Workshop on Abroad Study
Date: 21 August 2024

Result Analysis:

EXAM	SEMESTER	RESULT DATE	NO OF STUDENTS APPEARED	NO OF STUDENTS PASSED
Summer-2024	6th	06 July 2024	42	26
	4th	30 July 2024	40	14
	2nd	10 August 2024	32	8

AYDTI NEWSLETTER
"TRUSTED TO DELIVER EXCELLENCE"
Mechanical Engineering Department

Industrial Visits:

Industrial visits play a crucial role in bridging the gap between theoretical knowledge and practical application for Diploma Mechanical Engineering students at A. Y. Dadabhai Technical Institute. These visits provide hands-on exposure to real-world manufacturing processes, machining techniques, and modern engineering practices.

Sai Entreprize, Date: 24 August 2024

Vinayak Packaging, Date: 30 August 2024

AYDTI NEWSLETTER
"TRUSTED TO DELIVER EXCELLENCE"
Mechanical Engineering Department

Expert Lecture:

Expert lectures serve as a vital component of learning for Diploma Mechanical Engineering students at A. Y. Dadabhai Technical Institute. These sessions offer students an invaluable opportunity to gain insights from industry professionals, researchers, and academicians who bring real-world expertise into the classroom. By attending expert lectures, students stay updated with the latest advancements, industry trends, and innovative engineering solutions.

Expert Lecture on
"Photovoltaic Solar System"
by Mr. Jignesh Bajwala
Date: 31-08-2024

Celebration of International Yoga Day: 21 June 2024

The theme for this year, **"Yoga for Self and Society,"** serves as a reminder of the significant impact yoga has on improving people's lives and the community at large. This emphasizes the dual benefits of yoga, highlighting its positive impact on individual well-being and its contribution to a more harmonious society.

AYDTI NEWSLETTER
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Mechanical Engineering Department

Faculty Trainings:

FACULTY TRAINING: MAY to AUGUST (2024)

SR.NO.	Name of staff	FDP/SWAYAM/NPTEL Course	Organised Institute/Organization	FDP date
1	MR.SAURABH A. KAPADIA	VEDIC MATHS MASTERCLASS	SHALIN BHAGAT (INTERNATIONAL VEDIC MATHS TRAINER)	30-04-2024 TO 13-05-2024
2	MR. KAMLESH H. PATEL	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
3	MR. PRANAY. J. SURTI	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
4	MR.DEVEN I. SURTI	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
5	MR.MAULIK S. KHALASI	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
6	MR. UMANG S. DESAI	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
7	MR. VISHAL R. CHAUHAN	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
8	MRS. HIRAL K. SOLANKI	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
9	MISS. MAMTABEN R. VANSIYA	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
10	MR.SHAHID Y. PATEL	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
11	MR. BHARAT V. SHINDE	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
12	MR. MITESH A. PRAJAPATI	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
13	MR. ASHISH S. GHARIYA	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
14	MR. PRATIKSINH P. SOLANKI	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
15	MR.SAURABH A. KAPADIA	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
16	MR. YOGESH A. SAKPAL	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
17	MR.RITESH S. PATEL	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
18	MR. MAHESH G. KATARIYA	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
19	MAHAMMADTOSIF I. SHAIKH	ICT TOOLS FOR EFFECTIVE TEACHING AND LEARNING IN TECHNICAL EDUCATION	ISTE	28-06-2024 TO 29-06-2024
20	MR. KAMLESH H. PATEL	CHANGE THE LENS CHANGE THE LIFE	GTU & IPDC	05/08/2024
21	MR. PRANAY J. SURTI	CHANGE THE LENS CHANGE THE LIFE	GTU & IPDC	05/08/2024
22	MR. SAURABH A. KAPADIA	CHANGE THE LENS CHANGE THE LIFE	GTU & IPDC	05/08/2024

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Article: The Rise of Digital Twins in Modern Industrial Engineering:

Industrial Engineering (IE) is undergoing a rapid transformation, driven by advancements in data analytics, cloud computing, and the Internet of Things (IoT). A particularly compelling trend is the increasing adoption of Digital Twins: virtual representations of physical assets, processes, or systems. These digital replicas provide a dynamic and data-driven approach to optimization, prediction, and control across the entire product lifecycle.

What are Digital Twins?

At their core, Digital Twins are more than just 3D models. They are sophisticated, living simulations that continuously update with real-time data from sensors, actuators, and other sources connected to their physical counterparts. This data feeds into analytical models, enabling engineers to monitor performance, diagnose potential issues, and simulate various scenarios to optimize operations.

Impact on Industrial Engineering:

The integration of Digital Twins is revolutionizing key areas within IE:

- **Predictive Maintenance:** By analyzing sensor data and applying machine learning algorithms, Digital Twins can predict equipment failures before they occur, minimizing downtime and reducing maintenance costs.
- **Process Optimization:** Simulating different configurations and operating parameters within a Digital Twin allows engineers to identify bottlenecks and inefficiencies in production processes, leading to improved throughput and resource utilization.
- **Supply Chain Management:** Digital Twins can model the entire supply chain, enabling companies to anticipate disruptions, optimize inventory levels, and improve logistics efficiency.
- **Product Design & Development:** Digital Twins facilitate virtual prototyping and testing, allowing engineers to identify design flaws early in the development process, reducing time-to-market and improving product quality.
- **Training & Skill Development:** Digital Twins can be used to create immersive training environments for operators and technicians, improving their skills and reducing the risk of errors in real-world scenarios.

Future Directions:

Despite the numerous benefits, implementing Digital Twins presents certain challenges. These include the need for significant investment in sensor infrastructure, data integration, and analytical capabilities. Furthermore, ensuring data security and privacy is paramount.

Looking ahead, the future of Digital Twins in IE is bright. As technology continues to advance, we can expect to see more sophisticated and autonomous Digital Twins capable of learning and adapting to changing conditions. Integration with Artificial Intelligence (AI) and Machine Learning (ML) will further enhance their predictive capabilities and enable them to make real-time decisions. The expansion of 5G networks will facilitate the seamless transfer of data between physical assets and their digital counterparts, opening up new possibilities for remote monitoring and control.

Mr. S.A. Kapadia
Lecturer Mech. Dept.