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Departmental Newsletter



**GHARDA FOUNDATION'S
GHARDA INSTITUTE OF TECHNOLOGY**

Approved by AICTE, New Delhi, DTE, Maharashtra State
Affiliated to University of Mumbai
First NAAC Accredited (A Grade) College in Konkan Region

ISTE Award 2023 for
"BEST PRACTICES-FOLLOWED"
DATA QUEST
(Ranking of the best 100 tech-enabled
Engineering Colleges in the Country)
Ranking
53 (All India), 42 (Private Colleges), 07 (West Zone)

**ACCREDITED WITH GRADE
A
NAAC**

DEPARTMENTAL NEWSLETTER - CHEMICAL ENGINEERING
VOLUME-4, Issue-01
(JULY - DECEMBER 2024)



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DEPARTMENTAL NEWSLETTER - CHEMICAL ENGINEERING
VOLUME-1 (JULY - DECEMBER 2024)
Academic Year 2024-25

Editorial Team

Student Editor: Miss. Vaishnavi Deshmukh

Faculty Editor: Prof. Nitish D. Galande

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Vision of the Chemical Engineering Department:

“Produce employable graduates through a multidisciplinary approach, equipping them with chemical engineering knowledge and research skills, for the welfare of society.”

Mission of the Department

M1: Impart knowledge and understanding of the diverse fields of chemical engineering profession through curriculum.

M2: Develop chemical engineering professional and research skills to become technically competent professionals.

M3: Inculcate the importance of social and life-long learning.

Program Educational Objectives (PEOs)

PEO1: Graduates of the program will apply chemical engineering principles in engineering practice.

PEO2: Graduates of the program will have technical or professional careers in chemical engineering or in the diverse fields of chemical engineering such as biochemical engineering, energy and environmental engineering etc.

PEO3: Pursue higher study and / or continuously upgrade the knowledge with Personal and professional growth for collective advancement of society.

Programme specific outcomes (PSOs)

POS1: Create Chemical Engineering solutions for problems and processes while taking into account separation operations, reaction kinetics, environmental issues, and waste treatment and, modelling and simulation.

PSO 2: Foster the industrial chemical production process through efficient design and modifications by applying the principles of Chemical Engineering.

PSO 3: Demonstrate responsible professional behaviour by integrating ethical considerations, promoting safety, communicating effectively, and engaging in lifelong learning for societal and Environmental well-being.

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Program Outcomes (POs) as per NBA

Program Outcomes (POs) are as follows:

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, and engineering fundamentals to solve complex chemical engineering problems.
2. **Problem Analysis:** Identify, formulate, and analyze complex engineering problems to reach substantiated conclusions using principles of mathematics, natural sciences, and engineering sciences.
3. **Design/Development of Solutions:** Design solutions for complex engineering problems that meet specified needs with appropriate consideration for public health, safety, and environmental concerns.
4. **Investigation of Complex Problems:** Conduct research-based investigations, including designing experiments, analyzing data, and synthesizing information to provide valid conclusions.
5. **Modern Tool Usage:** Select, apply, and adapt appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to solve complex engineering activities.
6. **The Engineer and Society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal, and cultural issues relevant to professional engineering practice.
7. **Environment and Sustainability:** Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics, responsibilities, and norms of the engineering practice.
9. **Individual and Team Work:** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and society at large through reports, presentations, and documentation.
11. **Project Management and Finance:** Demonstrate knowledge of engineering and management principles to manage projects in multidisciplinary environments.
12. **Life-long Learning:** Recognize the need for, and engage in, independent and lifelong learning in the broadest context of technological change.

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Message from the Principal



Dear Readers,

It is my pleasure to present **Volume 4, Issue 1** of the Departmental Newsletter for **July–December 2024**. This newsletter reflects the department's dedication to **academic excellence, research, industry collaboration, and student development**. The remarkable achievements of our faculty and students in **publications, technical advancements, and professional growth** highlight the progressive learning environment we strive to foster.

The department's continuous efforts in **innovation, sustainability, and industry-academia partnerships** are commendable. The various **MOUs, guest lectures, workshops, and student initiatives** featured in this issue demonstrate a strong commitment to holistic education and future-ready skills.

I sincerely appreciate the contributions of faculty, students, and the editorial team in making this newsletter a valuable record of our journey. May this platform continue to inspire excellence, collaboration, and innovation. Let us all work together toward achieving new milestones.

Dr. Pramod Patil

Principal

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Message from the Head of the Department



Dear Readers,

I am delighted to present **Volume 4, Issue 1** of our Departmental Newsletter for **July–December 2024**. This edition highlights the **remarkable achievements, research contributions, and industry collaborations** of our faculty and students. It is inspiring to witness the continuous efforts toward **academic excellence, innovation, and professional development** within our department.

Through various **guest lectures, MOUs, technical workshops, and outreach programs**, we are strengthening our commitment to **industry-academia partnerships and holistic learning**. Our students and faculty continue to push boundaries in **research, sustainability, and skill enhancement**, making a meaningful impact on the field of Chemical Engineering.

I sincerely appreciate the dedication of the editorial team, faculty, and students in curating this newsletter. Let us continue working together, striving for excellence, and shaping a brighter future for our department.

Dr. Sunil Jayant Kulkarni

Head of the Department

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Message from the Faculty Editor



Dear Readers,

It is with great enthusiasm that I present **Volume 4, Issue 7** of our Departmental Newsletter for **July–December 2024**. This edition captures the **achievements, research contributions, industry collaborations, and academic milestones** of our faculty and students. Each article reflects the department's unwavering commitment to **excellence, innovation, and holistic education**.

I extend my sincere appreciation to all faculty members, students, and contributors who have worked diligently to bring this newsletter to life. A special thanks to the editorial team for their dedication in compiling and presenting this issue in an engaging manner.

I hope this newsletter serves as a source of inspiration, encouraging everyone to continue striving for **knowledge-sharing, professional growth, and research excellence**. Let's keep pushing boundaries and making meaningful contributions to the field of Chemical Engineering.

Prof. Nitish D. Galande

Faculty Editor

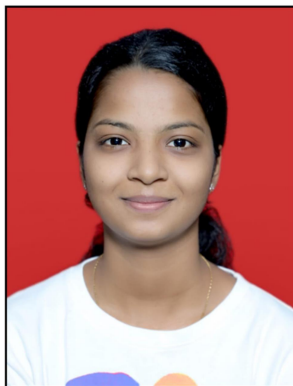
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Message from the Student Editor

Dear Readers,



It is an honour to present **Volume 4, Issue 1** of our Departmental Newsletter for **July–December 2024**. This edition highlights the **remarkable achievements, research innovations, and industry collaborations** that define our department's growth and excellence. It is truly inspiring to witness the dedication of our **faculty and students** in advancing knowledge and contributing to the field of Chemical Engineering.

Being a part of the editorial team has been a rewarding experience, and I sincerely appreciate the hard work of my fellow students, faculty members, and contributors in making this issue insightful and engaging. Their enthusiasm and efforts have played a vital role in shaping this publication.

I hope this newsletter serves as a source of motivation for all, encouraging continuous learning, innovation, and professional development. Let us keep striving for success and making meaningful contributions to our field!

Miss. Vaishnavi Deshmukh

Student Editor

Journal Publications

THE CHEMICAL ENGINEERING DEPARTMENT HAS MAINTAINED A STRONG RESEARCH OUTPUT WITH FACULTY AND STUDENTS PUBLISHING IN HIGH-IMPACT JOURNALS AND PARTICIPATING IN INTERNATIONAL CONFERENCES.

1. The Chemical Engineering Department has made significant contributions to high-impact research, with faculty members publishing in reputed **Scopus and SCIE-indexed journals**.
2. Dr. **Sandip H. Gharat**, along with co-authors **Julián Montero and Luis A. Pugnali**, published a research article titled "**Clogging Reduction by Addition of Small Particles of Various Material Densities**" in *Granular Matter* (July 2024, Volume 26:76, ISSN 1434-7636). This study explores innovative techniques to reduce clogging in granular flows, providing valuable insights into material transport and flow optimization.
3. Dr. **S.D. Ayare**, in collaboration with **S.P. Jadhav and J.V. Mapara**, has successfully published an article titled "**Experimental Investigation for Twisted Tape as an Augmentation Device in Plain Tube**" in *Sadhana, Springer*. The paper has been accepted for publication (Manuscript ID: SADH-D-23-03110R1) and is indexed in **SCImago, SCOPUS, and SCIE**, contributing to advancements in heat transfer enhancement techniques.
4. Dr. **S.J. Kulkarni** authored a research paper titled "**Bionanomaterials in Food Systems: Sources, Synthesis, Properties, and Opportunities**", which has been published in *Bionanoscience* (November 2024, Volume 15). The paper explores the role of nanotechnology in food processing, emphasizing sustainable and advanced materials for food preservation and safety. The article is available at [Springer Link](#) and is indexed in **Scopus and SCIE**.
5. Dr. **S.P. Jadhav** and **P.R. Gogate** are currently working on "**Hydrodynamic Cavitation-Induced Degradation of Brilliant Blue Dye Intensified Using Various Additives**" for the *Journal of the Indian Chemical Society*. The manuscript (ID: JINCS-D-24-01250) is in the **rebuttal stage**, addressing reviewer comments for final acceptance. This study focuses on sustainable wastewater treatment and dye degradation using advanced cavitation techniques.
6. These publications reflect the department's **commitment to high-quality research** and its contribution to **scientific advancements in chemical engineering**.

Book Publications and Conference Proceedings

Faculty members from the **Chemical Engineering Department** have made significant contributions to book chapters and proceedings, further strengthening the department's academic and research presence.

1. Dr. **S.J. Kulkarni** authored a chapter titled "**Environmental, Economic, and Social Sustainability and the Virtual World: Impact of Artificial Intelligence**" in the book *Green Metaverse for Greener Economies*, published by **CRC Press, Taylor & Francis** (August 2024, ISBN: 9781032638188). This work explores the role of artificial intelligence in sustainable industrial practices and digital transformation.
2. Another important contribution by Dr. **S.J. Kulkarni** is the chapter "**Biocatalysis in Organic Synthesis Using Microbial Enzymes—Latest Developments**" in *Enzyme Biotechnology for Environmental Sustainability*, published by **Academic Press, Elsevier** (August 2024, ISBN: 978-0-443-22072-2). This book highlights advancements in biocatalysis for green and efficient chemical synthesis.
3. In the field of **sustainable food production**, Dr. **S.J. Kulkarni** contributed to the book *Achieving Food Security Through Sustainable Agriculture*, with the chapter "**Role of Algae in Sustainable Food Production**", published by **IGI Global** (September 2024, ISBN: 9798369342404). This work discusses how algae-based solutions can improve food security and agricultural sustainability.
4. The research on **energy conservation** was enhanced with Dr. **S.J. Kulkarni's** chapter "**Application of Quantum Dots for Energy Conservation and Storage**", included in *Engineering Materials for Efficient Energy Storage and Conversion*, published by **IGI Global** (August 2024, ISBN: 979-8-3693-4936-6). This chapter explores the application of quantum dots in improving energy efficiency.
5. Dr. **S.J. Kulkarni** also co-authored "**Fruit Peel Waste Valorization Through Its Biosorptive Nature: Investigation for Heavy Metal Removal**", which was published in *Municipal Solid Waste Management and Recycling Technologies*, by **IGI Global** (August 2024, ISBN: 9798369340547). This work investigates how fruit peel waste can be used for heavy metal removal in wastewater treatment.
6. Furthering research in **nanomaterials**, Dr. **S.J. Kulkarni** contributed "**Micelles: Synthesis, Characterization Methods, and Applications**" to *Discovery, Disruption, and Future Implications of Nanomaterials*, published by **IGI Global** (July 2024, ISBN: 9798369343975). The chapter provides insights into the applications of micelles in drug delivery and nanotechnology.

7. Dr. **S.J. Kulkarni** also authored "**Active Antimicrobial Packaging Innovations: Safeguarding Food Quality and Consumer Health**" in *Revolutionizing Pest Management for Sustainable Agriculture*, published by **IGI Global** (August 2024, ISBN: 9798369330616). This research focuses on antimicrobial packaging as a means to enhance food preservation.
8. Lastly, Dr. **S.J. Kulkarni** contributed to *Biological and Hybrid Wastewater Treatment Technology: Recent Developments in India*, published by **Springer** (August 2024, ISBN: 9783031630453), with a chapter titled "**An Overview on Recent Developments in Biological and Hybrid Wastewater Treatment Technology in India**". The chapter examines emerging wastewater treatment technologies for industrial and municipal applications.

Faculty Achievements and Recognitions

- Dr. **S.J. Kulkarni** conducted a session on "**Vision and Mission in Chemical Engineering**" at **TKIET Warananagar**, emphasizing the importance of defining clear educational goals and objectives for engineering students.
- Dr. **S.J. Kulkarni** was invited to the **University of Mumbai** to assess **M.Tech students in Practical Oral Examinations on Modeling and Simulation** at the Kalyan Subcenter on **5th August 2024**.
- Dr. **S.J. Kulkarni** contributed as a **Reviewer Panel Member for Springer Nature**, reviewing research papers for the journal **Biomass Conversion and Biorefinery**.
-
- Dr. **S.P. Tekade** conducted a session on "**Basics of Process Safety and Safety Tools**" as part of **International Safety Week 2024** at **Gharda Chemicals Ltd.** on **6th December 2024**. The session was attended by **industry professionals from GCL Lote**, focusing on key safety measures and risk mitigation strategies in chemical industries.
- Dr. **S.H. Gharat** served as a **Reviewer for PLOS ONE**, a peer-reviewed journal published by the **Public Library of Science (PLOS)**, evaluating original scientific manuscripts submitted by researchers.
- Dr. **Sandip H. Gharat** applied for the Maharashtra State National Award for the best Research work done by teachers of Engg. Colleges instituted by Govt. of Maharashtra. On **22nd November, 2024**. The research area is **Granular flow in Silo**.

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- Dr. S.H. Gharat has applied for the SERB-SURE (Science and Engineering Research Board - State University Research Excellence) grant under File Number: SUR/2023/002890, with a proposed funding of ₹28,82,600 from SERB-DST. The research focuses on "Flow, segregation, and clogging of granular mixtures in a hopper: effect of size, shape, and density" for a duration of three years.

Memorandum of Understanding (MOU) and Industry Collaborations

The department strengthened its ties with industries and research organizations through MOUs.

1. An MOU was signed with **Rashtriya Chemicals and Fertilizers Ltd. (RCF)**, Mumbai, on **6th April 2024** to provide industrial training opportunities for students in the fertilizer industry. The agreement is valid from 6th April 2024 to 5th April 2025.
2. **Montage Chemicals Pvt. Ltd., Ambarnath, Mumbai**, has an ongoing MOU since **1st February 2021** to offer internships and major projects for students in the pharmaceutical sector.
3. **Vinati Organics Ltd., Mahad**, has an active MOU since **1st January 2021** to facilitate internships, placements, and student projects in the specialty chemicals and intermediates sector.
4. **GMS Valuers and Consultants, Mumbai**, signed an MOU on 18th January 2021 to support students through internships, project guidance, and guest lectures in the consultancy sector.
5. **Suyog Industries, Mumbai**, has an ongoing MOU since 22nd February 2021 to provide guest lectures, industry guidance, and project mentorship in metallic plastic coating and UV coating technologies.

Student Achievements and Activities

Placements Career Progression:

- The Chemical Engineering Department continues to achieve excellence in student placements, ensuring that graduates secure opportunities in leading industries, the department has successfully met the target of providing at least **one job offer per eligible student**.

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- Several students from the **2024-25 batch** have been placed in **top chemical industries**, securing competitive salary packages. **Gharda Chemicals Ltd., Lote**, recruited multiple students, offering an attractive pay package of **₹3.87 LPA**. The selected students include **Gurkha Siddhesh Rajendra, Pavankumar Vinodkumar Prasad, Kate Pranay Prakash, Chavan Prasad Ramakant, Chavan Mayuresh Santosh, and Gaikwad Vaibhav Santosh**.
- **Excel Industries Ltd., Lote**, also hired students with a salary package of **₹3.6 LPA**. The selected candidates include **Berde Vedant Sanjay and Radaye Pallavi Bablya.Eversafe, Mumbai**, recruited **Kamble Niraj Shailendra** with an annual package of **₹2.4 LPA**.
- Additionally, **Krishna Antioxidants, Lote**, selected **Panchal Rutik Ramesh and Nalband Musef Mansoor** for industry roles. These successful placements reflect the department's **strong industry connections, skill development programs, and commitment to student career advancement**.

Innovation and Beyond-Syllabus Activities

A. Idea Incubation and Startups

- **Student-led startup on bio-based adhesives** secured initial funding from the **Startup India Scheme**.
- **Innovation Cell supported five new student projects** focused on green chemistry applications.

B. Disaster Management and Safety Training

- **Mock drills on industrial safety protocols** conducted in collaboration with the **Fire Safety Department (October 2024)**.
- **Seminar on Process Hazard Analysis (December 2024)** conducted by **ONGC experts**.

C. FDP and STTP Organized in the Department:

The Chemical Engineering Department has successfully organized **Faculty Development Programs (FDPs) and Short-Term Training Programs (STTPs)** to enhance faculty knowledge, promote research collaborations, and provide industry-relevant skill development.

1. **A one-week FDP on "Role of Nanotechnology in Sustainable Development"** was conducted from **18th October 2024 to 22nd October 2024** under the sponsorship of **ISTE**. The event was coordinated by **Dr. S.J. Kulkarni and Dr. S.P. Tekade**, with participation from approximately **50 faculty members from Chemical Engineering and allied branches**.

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2. An FDP on "Chemical Engineering and Sustainable Development" is scheduled for **December 2024**. This **one-week program**, sponsored by **ISTE**, aims to explore the role of chemical engineers in advancing sustainable technologies. The faculty coordinator is yet to be identified, and the program expects **50 participants** from chemical engineering and related fields.
3. A six-day ATAL online FDP on "Towards Sustainability: Role of Granular Materials in Chemical Engineering" will be held from **20th January 2025 to 25th January 2025**. This program, coordinated by **Dr. S.H. Gharat and Dr. S.P. Tekade**, has been **applied for AICTE sponsorship**. It will cater to **100 participants, including faculty members, research scholars, and industry professionals**.

These initiatives reflect the department's commitment to **faculty development, interdisciplinary research, and sustainable engineering practices**. Let me know if you need any modifications!

Extracurricular Activities

A. NSS and Social Outreach

1. **Prof. V.D. Kamble**, serving as the **National Service Scheme (NSS) Program Officer**, has actively led multiple social awareness and community service initiatives under NSS at **Gharda Institute of Technology**.
2. On **11th October 2024**, he conducted a **teaching activity under "Saksharata Hi Seva"** at **ZP Primary School, Lavel, Khed**, benefiting **39 students** through educational engagement. Earlier, on **5th October 2024**, he organized a **Blood Donation Camp in memory of Padmashree Dr. K.H. Gharda** at the **Vocational Training Program Centre**, in collaboration with **Jankalyan Blood Bank, Mahad**, where **46 volunteers** donated blood.
3. Promoting environmental sustainability, he led the **Swachhata Hi Seva - Cleaning Campaign** on **26th September 2024** at the **temple premises near the college**, involving **41 participants**. Additionally, he arranged the **Ranbhaji Awareness Activity - Exhibition of Seasonal Vegetables** on **2nd September 2024** at **Vishwanath Vidyalaya, Lavel**, engaging **24 students** to highlight the nutritional benefits of traditional greens.
4. On the same day, he organized the **International Millets Day Celebration**, where **29 students** participated in a session emphasizing the importance of millets in food security and sustainable agriculture.

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5. To encourage eco-friendly celebrations, he conducted an **Eco-Friendly Ganesh Idol Making Workshop** on **28th August 2024** at the **Vocational Training Program Centre**, attended by **41 students**. This was followed by the **distribution of eco-friendly Ganesh idols and appreciation certificates** at **Vishwanath Vidyalaya, Lavel**, on **29th August 2024**, with **21 participants**.
6. Focusing on sustainable practices, he led the **Notebook Making Awareness and Distribution Program** at **Vishwanath Vidyalaya, Lavel**, on **27th August 2024**, engaging **22 students** in recycling old waste paper. A similar **awareness session** on this initiative was conducted on **25th August 2024** at **Gharda Institute of Technology**, attended by **21 students**.
7. On **15th August 2024**, he organized the **Tiranga Rally** under the theme "**Azadi Ka Amrit Mahotsav**", with **25 participants**, fostering patriotism and national pride. A day earlier, on **14th August 2024**, he conducted a **Cleanliness Campaign** under the same theme, engaging **32 students**, followed by a **pledge-taking session and a discussion on the history of the Indian Flag**, attended by **38 students**.
8. Furthering environmental awareness, he coordinated a **Tree Plantation Activity under "Ek Ped Maa Ke Naam"** on **14th August 2024**, where **32 students** planted trees to promote sustainability. He also led a **rally on environmental awareness** under the same theme, with **38 students** participating. On the same day, he organized a **visit to a Solid Waste Management Plant**, providing **34 students** with practical exposure to waste recycling and disposal techniques.
9. To introduce students to NSS activities, he conducted a **one-hour awareness session for second-year students** on **5th August 2024** at **Gharda Institute of Technology**, with **44 students** learning about the objectives and benefits of NSS.

These activities reflect **Prof. V.D. Kamble's** commitment to **education, environmental sustainability, social outreach, and community service**, significantly benefiting students and the wider community.

B. Sports and Cultural Achievements

- **University-level Volleyball Tournament (September 2024):** The department team secured 2nd place.
- **Inter-college Chess Championship (October 2024):** First-year student **Parichay Kamble** won 1st place.

C. Awareness activities across various junior colleges and polytechnic institutes:

The **Chemical Engineering Department** actively conducted **awareness activities** across various **junior colleges and polytechnic institutes** during **November** -

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December 2024 to educate students about **career opportunities in Chemical Engineering** and its significance in industrial and research sectors.

- **Dr. S.P. Tekade** delivered an informative session at **Behare Jr. College, Lavel**, emphasizing the **scope, career prospects, and industrial relevance of Chemical Engineering** for aspiring students.
- **Prof. J.V. Mapara** conducted similar awareness sessions at **Sahajeevam College, Khed, and Navbharat College, Bharne, Khed**, encouraging students to explore the field for its **diverse career opportunities**.
- **Prof. S.P. Jadhav** inspired students at **Sati Jr. College, Chiplun**, highlighting **Chemical Engineering's role in sustainable industrial growth and technological innovations**.
- **Dr. S.D. Ayare** led interactive awareness programs at **Vidyamandir College, Poladpur, and Sanskardham College, Birwadi, Mahad**, focusing on **industrial applications, research possibilities, and higher education pathways** in the field.
- **Dr. S.H. Gharat** conducted a specialized talk at **IOPE Lonere (Dr. BATU Lonere, Raigad)**, guiding **Diploma Chemical Engineers** on potential **career pathways, further studies, and industry-driven learning opportunities**.
- **Prof. V.B. Sawant** addressed students at **Maharashtra Polytechnic, Mandangad, and Tatkare Polytechnic, Kolad**, providing insights into **advanced education, skill development, and job prospects** within the chemical industry.
- **Prof. N.D. Galande** delivered motivational sessions at **Satara Polytechnic, Satara, and PVPIT Polytechnic, Budhgaon**, emphasizing the **importance of Chemical Engineering in global industries** and inspiring students to pursue **higher education and research**.

These sessions played a crucial role in **raising awareness about Chemical Engineering as a dynamic and rewarding career choice**, motivating students to **explore higher education, research innovations, and industrial roles**, ultimately shaping them into future professionals in the field.

Industry Involvement in Partial Delivery of Courses

To enhance practical learning and industry relevance, the **Chemical Engineering Department** collaborated with **industry experts** who conducted specialized sessions as part of the curriculum. These expert-led lectures provided students with insights into **real-world applications, industry trends, and emerging technologies**.

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- On 23rd July 2024, Mrs. Natasha Gupte, a **Process Engineering Specialist from Burns & McDonnell India**, conducted a session on **"Role of Women in Chemical Engineering"** for **TE and BE students**. The session, attended by **50 participants**, highlighted the increasing contributions of women in the chemical industry and career opportunities in process engineering.
- On 7th August 2024, Mr. Sarjerao Doltade, a **Water Treatment and Cavitation Expert from Liqsure Systems, India**, delivered a lecture on **"Idea, Innovation, and Research in Chemical Engineering"** for **SE, TE, and BE students**. The session, attended by **68 students**, explored innovative approaches in chemical engineering research and industrial applications.
- On 17th July 2024, Dr. Ankur Chaturvedi from **Montage Chemicals** and Mr. Yogesh Pednekar from **Suyog Industries** conducted a **panel discussion** on **"Role of Chemical Engineers in Sustainable Development and Society"** for **SE, TE, and BE students**. With **40 students in attendance**, the discussion emphasized the crucial role of chemical engineers in addressing environmental challenges and implementing sustainable industrial practices.

These industry interactions have played a vital role in **bridging the gap between academia and industry**, equipping students with **practical knowledge and industry-relevant skills**.

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Academic Performance

The **Chemical Engineering Department** takes immense pride in the **outstanding academic achievements** of its students. In compliance with **NBA Criterion 4.3**, the department has consistently produced university and institute toppers, demonstrating excellence in academics. Several students have secured remarkable **CGPA scores** across different semesters.

- In **SE Semester IV**, **Sahil Khasase** emerged as the **Institute Rank 1 holder** with a **CGPA of 8.49**, followed by **Siddhi Kharat**, who secured **Institute Rank 2** with a **CGPA of 8.40**. **Sahil Tambitkar** secured **Institute Rank 3** with a **CGPA of 8.07**.
- In **TE Semester VI**, **Malik Shagir Mulani** achieved **Institute Rank 1** with an impressive **CGPA of 9.98**, reflecting his academic excellence. **Ebrahim Abdyul Turuk** secured **Institute Rank 2** with a **CGPA of 8.96**, while **Hrushikesh Baban Salunke** attained **Institute Rank 3** with a **CGPA of 8.93**.
- In **BE Semester VIII**, **Divya Amol Sagvekar** stood out as the **Institute Rank 1 holder**, achieving a **CGPA of 9.56**. **Vedant Sanjay Berade** secured **Institute Rank 2** with a **CGPA of 9.26**, followed closely by **Pallavi Babalya Radaye**, who attained **Institute Rank 3** with a **CGPA of 9.24**.
- These outstanding academic performances reflect the **dedication and perseverance of the students**, as well as the **department's commitment to academic excellence and quality education**.

Women Development and Gender Sensitization Activities

- The **Chemical Engineering Department**, in collaboration with the **Women Development Cell (WDC)**, actively promotes **gender sensitization and awareness** through various initiatives. On **7th October 2024**, an **Induction Session for FE students** was conducted to introduce them to the **Internal Complaints Committee (ICC)** and **WDC**. The session was led by **Mrs. S.P. Jadhav** and **Dr. J.V. Khalkar**, both serving as **Assistant Professors** at **GIT, Lavel**. The induction aimed to create awareness about **women's rights, workplace safety, and gender equality policies** among all **First-Year Engineering (FE) students**.

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- Further activities under **WDC** are planned to ensure the continuous promotion of **gender sensitization, women empowerment, and inclusivity** within the institution.

Disaster Management Cell Activities

- The **Disaster Management Cell** of the **Chemical Engineering Department** actively engages in **safety training and emergency preparedness** initiatives to equip students with **critical safety skills**. The department ensures the **organization of at least one activity per semester**.
- On **20th September 2024**, a **Mock Drill on Fire Safety and Fire Extinguisher Handling** was conducted. The session provided students with hands-on training in **fire emergency response, extinguisher usage, and workplace safety measures**. The drill was aimed at **enhancing preparedness and ensuring that students and faculty members are well-versed in fire hazard management**.

These activities are integral to the **department's commitment to safety, risk management, and emergency response training**, ensuring that students develop essential life-saving skills.



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Club Activities – Nature, Music, Cultural, Manthan, Movie, and Sky Gazing Clubs

- The **Chemical Engineering Department** actively encourages **co-curricular and extracurricular engagement** by promoting various **student-led clubs**. These clubs play a crucial role in fostering **creativity, teamwork, leadership, and personal development**.
- The **Nature Club** conducted a **Tree Plantation Drive** on campus, emphasizing the importance of environmental conservation and sustainability. The **Music Club** organized an **inter-departmental music competition**, providing a platform for students to showcase their musical talents. The **Cultural Club** celebrated various festivals and organized traditional performances, enhancing cultural awareness and inclusivity. The **Manthan Club** hosted an **interactive debate competition**, encouraging students to express their opinions on social and technological topics. The **Movie Club** screened educational and thought-provoking films, followed by insightful discussions. The **Sky Gazing Club** conducted a **stargazing event**, where students learned about celestial objects and the fundamentals of astronomy.

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- Each club has been established with the **objective of enhancing student engagement, building interpersonal skills, and promoting holistic development.**

Idea Incubation Cell Activities

- The **Idea Incubation Cell** of the **Chemical Engineering Department** actively fosters **entrepreneurial thinking, innovation, and research-driven projects.** The department is working towards the establishment of a **centralized incubation center** to support students in **transforming innovative ideas into viable solutions.**
- On **31st July 2024**, a **Guest Lecture on Idea, Innovation, and Incubation** was conducted by **Dr. Gajamal, Dean of the Idea, Innovation, Incubation & Entrepreneurship Cell** at Gharda Institute of Technology, Lavel. The session, coordinated by **Prof. V.B. Sawant**, was attended by **54 students**, who gained insights into **startup incubation, funding opportunities, and innovation-driven entrepreneurship.**
- On **7th August 2024**, a **Guest Lecture on Idea, Innovation, and Research in Chemical Engineering** was delivered by **Dr. Sarjerao Doltade, Director** at **LiqSure Systems Pvt. Ltd., Solapur, Maharashtra.** Coordinated by **Dr. N.Y. Ghare**, the session was attended by **68 participants**, focusing on **research-based innovations and technological advancements in chemical engineering.**
- On **17th July 2024**, a **Panel Discussion on the Role of Chemical Engineers in Sustainable Development and Society** was conducted, featuring esteemed experts **Dr. Ankur Chaturvedi, Dr. Ajay Goswami, Dr. Santosh Walke, Mr. Yogesh Pednekar, Dr. Sarjerao Doltade, and Mrs. Pratiksha Sondekar.** The discussion, coordinated by **Dr. S.J. Kulkarni**, highlighted the **responsibility of chemical engineers in addressing sustainability challenges and industrial innovation.** The session was attended by **40 students.**
- On **23rd July 2024**, a **Guest Lecture on the Role of Women in Chemical Engineering** was delivered by **Mrs. Natasha Gupte, Principal Process Engineer** at **Burns & McDonnell India, Mumbai.** Coordinated by **Prof. S.P. Jadhav**, the session was attended by **50 students**, emphasizing the **contributions of women in the chemical industry and career growth opportunities.**

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- These initiatives reinforce the **department's commitment to fostering entrepreneurship, innovation, and professional development**, equipping students with **the skills and knowledge required for future success**.
-

Entrepreneurship and Start-up Activities

- The **Chemical Engineering Department** is committed to fostering **entrepreneurial thinking and innovation** by organizing regular sessions in compliance with **NBA Criterion 9.6**. The department ensures **at least one session per month** to provide students with **insights into startup incubation, research commercialization, and industry-driven innovations**.
- On **31st July 2024**, a **Guest Lecture on Idea, Innovation, and Incubation** was conducted by **Dr. Gajamal, Dean of the Idea, Innovation, Incubation & Entrepreneurship Cell at Gharda Institute of Technology, Lavel**. Coordinated by **Prof. V.B. Sawant**, the session was attended by **54 students**, focusing on **entrepreneurial strategies, funding opportunities, and incubation processes**.
- On **7th August 2024**, a **Guest Lecture on Idea, Innovation, and Research in Chemical Engineering** was delivered by **Dr. Sarjerao Doltade, Director at LiqSure Systems Pvt. Ltd., Solapur, Maharashtra**. The session, coordinated by **Dr. N.Y. Ghare**, was attended by **68 students** and covered **technology-based innovations, research commercialization, and industry collaboration**.
- On **17th July 2024**, a **Panel Discussion on the Role of Chemical Engineers in Sustainable Development and Society** was conducted, featuring esteemed industry experts **Dr. Ankur Chaturvedi, Dr. Ajay Goswami, Dr. Santosh Walke, Mr. Yogesh Pednekar, Dr. Sarjerao Doltade, and Mrs. Pratiksha Sondekar**. The discussion, coordinated by **Dr. S.J. Kulkarni**, was attended by **40 students** and emphasized **the impact of chemical engineers on sustainability, industrial advancements, and economic development**.
- On **23rd July 2024**, a **Guest Lecture on the Role of Women in Chemical Engineering** was delivered by **Mrs. Natasha Gupte, Principal Process Engineer at Burns & McDonnell India, Mumbai**. The session, coordinated by **Prof. S.P. Jadhav**, provided insights into **the contributions of women in the chemical industry, leadership roles, and career growth opportunities**.

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- These initiatives are designed to **equip students with the necessary skills and knowledge to become future entrepreneurs, industry leaders, and innovators in the field of chemical engineering.**

Self-Learning: Skilling, Training, Add-On Courses, and Certifications

The **Chemical Engineering Department** encourages students to actively participate in **self-learning initiatives** through **SWAYAM, MOOC, and NPTEL certifications**. In compliance with **NBA Criterion 9.4 and NAAC Criterion 1.2.3**, the department ensures that students complete **at least one certification course per semester per program** to enhance their technical skills and industry readiness.

During the **July - October 2024 session**, several students enrolled in **NPTEL-SWAYAM** courses to gain advanced knowledge in core chemical engineering subjects. **Malik Shagir Mulani, Aryan Anil Mohite, and Hitesh Rajendra Shelar** registered for the **12-week NPTEL course on Chemical Process Control and Chemical Process Safety**, equipping themselves with essential process control and safety management skills.

Aditya Sonawane, a student from **SE-III**, enrolled in the **NPTEL course on Thermodynamics**, which provides a strong foundation in energy systems and equilibrium concepts.

Several students, including **Vedant Anant Ambre, Apurva Anil Shinde, Atharva Pramod Bahutale, and Sarvesh Sunil Chavan**, participated in the **NPTEL course on Heat Transfer**, which focuses on conduction, convection, and radiation principles crucial for chemical engineers. **Sahil Santosh Khasase** successfully completed this course with an **80% score**, demonstrating a high level of competence in the subject.

These certification programs play a critical role in **bridging the gap between academic learning and industry expectations**, equipping students with the necessary skills to excel in their careers.

Guest Lectures, Panel Discussions, and Industry Visits:

The Chemical Engineering Department organized several expert sessions, panel discussions, and industrial visits to enhance students' knowledge, industry exposure, and professional development. These initiatives provided valuable insights into emerging technologies, ethical practices, and research innovations.

Panel Discussions

1. Panel Discussion on "Role of Chemical Engineers in Sustainable Development and Society" was held on 17th July 2024, from 10:00 AM to 12:00 PM at the Chemical Engineering Department, Gharda Institute of Technology, Lavel. The panel featured esteemed speakers, including Dr. Ankur Chaturvedi, Dr. Ajay Goswami, Dr. Santosh Walke, Mr. Yogesh Pednekar, Dr. Sarjerao Doltade, and Mrs. Pratiksha Sondekar, who discussed the crucial role of chemical engineers in sustainable development.

Guest Lectures

1. "Role of Women in Chemical Engineering" – A guest lecture by Ms. Natasha Gupte (Burns and McDonnell) was conducted on 23rd July 2024 at 2:00 PM, emphasizing the contributions of women in the chemical industry and career growth opportunities.
2. "Innovation, Incubation, and Startup Initiatives" – Dr. S. Gajmal (Dean, IIE) delivered an insightful lecture on 31st July 2024, covering entrepreneurship and incubation strategies for aspiring student innovators.
3. "Idea, Innovation, and Research in Chemical Engineering" – An online guest lecture by Dr. S. Doltade was conducted on 7th August 2024, discussing the importance of research-driven innovations in the chemical industry.
4. "Guru Purnima Lecture on Ethics and Behavioral Approach" – A motivational session by Mr. O.A. Jarali was held on 22nd July 2024, focusing on ethical values and professional conduct for students.
5. "Corporate Ethics and Behavior – Role of Students" – A session by Mr. Tirupati Ilpatwar on 15th September 2024, aimed at educating students about corporate culture, ethical behavior, and workplace professionalism.
6. "Awareness Program for IChE Membership" – An interactive session between the HOD and IChE Coordinator was conducted on 25th July 2024,

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encouraging students to explore membership benefits and professional networking.

7. **"Process Calculation – Lifelong Learning with Real-Life Examples"** – A guest lecture by **Dr. A.B. Marathe** was conducted on **19th September 2024**, demonstrating the practical applications of process calculations in industries.
8. **"Fluid Flow Operations – Lifelong Learning with Real-Life Examples"** – Another insightful lecture by **Dr. A.B. Marathe** took place on **21st September 2024**, emphasizing core concepts in fluid mechanics and its industrial applications.

Industrial Visit

Visit to ICT Mumbai for World Entrepreneurship Day STARTUP EXHIBITION 2.0 – On **22nd August 2024**, students visited **ICT Mumbai** to participate in **Startup Exhibition 2.0**, gaining exposure to cutting-edge innovations, entrepreneurial strategies, and networking opportunities with industry experts.



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Certifications (MOOC/NPTEL/ATAL) – Faculty Achievements

The faculty members of the **Chemical Engineering Department** have actively participated in **MOOC, NPTEL, and ATAL** courses, aligning with **NBA Criterion 9.4 and NAAC requirements**. These certifications enhance subject expertise, teaching methodologies, and research capabilities.

1. **Prof. J.V. Mapara** successfully completed the **NPTEL course on "Petroleum Technology" (8 weeks, 2023-24)** with a commendable **score of 78%**.
2. An NPTEL-certified 12-week course on **"Physico-Chemical Processes for Wastewater Treatment" (2023-24)** was completed with an **80% score**.
3. **Dr. S.P. Jadhav** completed the **NPTEL-SWAYAM course on "Chemical Process Safety" (12 weeks, 2023-24)** with a **75% score**.
4. **Dr. S.D. Ayare** completed the **NPTEL-SWAYAM course on "Heat Transfer" (12 weeks, 2024-25)** with an **83% score**.
5. **Dr. S.H. Gharat** achieved a **91% score in the NPTEL-SWAYAM course on "Fluidization Engineering" (12 weeks, 2024-25)**, earning **3 credits**.
6. **Dr. S.J. Kulkarni** completed an **8-week course on "Accreditation System and Ranking Framework" at the National Institute of Technical Teachers' Training and Research, Bhopal (2024-25)**, concluding on **15th December 2024**.

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These certifications contribute to the **professional growth of faculty members** and ensure **continuous upgradation of knowledge**, ultimately benefiting students and academic research.

Industrial Tour and Field Visit Report

The **Chemical Engineering Department** successfully organized two **industrial visits** for **BE students** on **11th October 2024** to **Krishna Antioxidant, Lote MIDC**, a well-known process industry.

- **First Visit – Hazard and Safety Analysis:**
Under the guidance of **Prof. Nitish Galande**, students learned about **safety protocols, risk assessment, and accident prevention** in industries.
- **Second Visit – Energy Audit and Management:**
Students explored **energy efficiency, process optimization, and sustainability practices** in chemical industries.

Both visits gave students **practical exposure** to real industrial operations, connecting **academic knowledge** with **real-world applications**. A total of **25 students** actively participated in each session.

The first half of the academic year has been filled with remarkable achievements in research, industry collaborations, and student development. The department remains committed to excellence and continuous growth. We look forward to an even more productive semester ahead!

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Academic Year 2024-25.