ABES
Engineering College
Estd. 2000
College Code-032

CRESCENT

Department of Mechanical Engineering

2023-24 Even Sem. | Volume 8, Issue II

Message from Director

Crescent as the most enhancing aspect for team motivation and healthy work culture.

Since many ages every functional department always disseminates information though a medium which shows the downpour of relevant progress for a particular department. We always feel elated when we ring the bells of our achievements among our peers. Our institute has always levied huge stress on all the aspects of research for the growth of its employees in all the domains of life. Excelling in the field of research is yet another persuasion which has brought the magnificent results in the field of research publications, patent filing & publishing and industrial consultancy for our conglomerate.

Wishing more coming successful editions in this regard and all the very best for my ME team in achieving more heights.

Prof. (Dr.) Devendra Kr. Sharma

Message from HOD

On behalf of all our faculty, staff and students, I present this newsletter "crescent" which shows our department prowess and enable us to further keep striving for the best. Crescent broadcasts the information of Mechanical Engineering and showcases the hidden talents of the students and staff. It encloses the activities such as FDP, conferences attended and paper published in International and National journals by faculty members and competitions won by the students and innovative projects carried out by them. I, take this opportunity to thank all the stakeholders for showing interest and continuous support. I extend my best wishes to all students in their chosen career path and I am sure the department will scale up to greater heights in the years to come and serve many more in the society.

Dr. Ravi Shankar Raman

Message from Editor

Dear Members of the Mechanical Engineering Community,

It is with great pleasure that I reach out to you today to share the latest edition of our biannual newsletter. As the editor, I am honoured to present a compilation of the department's recent achievements, groundbreaking research, and upcoming opportunities.

Over the past six months, our department has been buzzing with activity and innovation. From the laboratories to the classrooms, our faculty, students, and staff have been diligently working towards advancing the field of mechanical engineering and tackling some of today's most pressing challenges.

In this issue, you will find a diverse range of articles highlighting the outstanding work being done within our department. From faculty spotlights to student showcases, each piece offers a glimpse into the breadth and depth of talent within our community. I encourage you to take the time to explore these stories and celebrate the accomplishments of your peers and colleagues.

As we look ahead to the remainder of the year, there are many exciting events and initiatives on the horizon. Whether it's our annual research symposium, industry networking events, or student design competitions, there are ample opportunities for engagement and collaboration. I urge you to mark your calendars and get involved in these activities to further enrich your experience within the department.

I would also like to take this opportunity to extend my gratitude to everyone who has contributed to the newsletter. Your dedication to sharing knowledge and insights has been instrumental in making this publication possible. I am continually inspired by the passion and expertise of our community members, and I look forward to showcasing even more of your work in future editions.

As we continue on our collective journey of discovery and innovation, let us remember the importance of collaboration, curiosity, and perseverance. Together, we have the power to shape the future of mechanical engineering and make a positive impact on society.

Thank you for your continued support and participation in our departmental endeavours. I wish you all continued success in your academic and professional pursuits.

Warm regards,

Mayank Kushwaha

Sr. Assistant Professor (ME)

Vision

To create globally competent mechanical engineers capable of working in an interdisciplinary environment, contributing to society through innovation, entrepreneurship and leadership.

Mission

M1:To provide excellent teaching learning environment.
M2: To create supportive surroundings for innovative research, and develop capabilities to analyze interdisciplinary engineering problems.
M3: To inculcate ethical values and leadership qualities to produce successful professionals.
M4:To promote Industry-Institute relationship.

Program Educational Objectives (PEOs)

PEO1: To apply basic science and engineering knowledge, critical thinking across the disciplines, and emerging areas of Mechanical Engineering for higher studies, research, and employability and to handle the real-life problems.

PEO2: To inculcate communication skills, ethical conduct, and understand legal and cultural aspects to serve the society.

PEO3: To develop managerial skills, team spirit, leadership qualities, and engage in lifelong learning for a successful professional career.

PEO4: To strengthen their ability to adopt technological changes for developing innovative and sustainable solutions considering health, safety and environmental aspects.

PROGRAMME OUTCOMES (POs)

1. Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and 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 with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

Mechanical Engineering Program at ABESEC will be able to:

PSO1: Empower the students to apply their practical skills, knowledge in major streams such as thermal, design, manufacturing and industrial engineering.

PSO2: Prepare the students for building their career in different industries or pursue higher studies in mechanical engineering and make them able to handle interdisciplinary problems with values and professional ethics.

PUBLICATION DETAILS

- **Dr. Ravi Shankar Raman**, "Comparison of Tribological Characteristics of LM13/B4C and LM13/Ilmenite Composites at High-Temperature Conditions", Journal of Tribology, 45313, 0742-4787, doi.org/10.1115/1.4063811
- **Manoj Kumar,** "Design and performance analysis of hydrogen-fueled micro
- combustion chamber with focus on back pressure minimization, Applied Chemical Engineering", 45627, 2578-2010, doi: 10.24294/ace.v7i1.3364
- **Manoj Kumar,** "Effect of vibration casting on the properties and
- microstructure of aluminium alloy castings, Innovation and Emerging Technologies", 25/01/2024, 2737-5994, https://www.worldscientific.com/doi/full/10.1142/S2737599423400108
- **Naman Jain**, "Fabrication of raw and chemically treated biodegradable Luffa aegyptica fruit fibre-based hybrid epoxy composite: a mechanical and morphological investigation, Biomass Conversion and Biorefinery", 45508, 2190-6823, https://doi.org/10.1007/s13399-023-04300-y
- **Naman Jain**, "Evaluation of mechanical and thermal properties of Thermoplastic polymer composites", 45597, 978-0-443-19009-4, https://doi.org/10.1016/B978-0-443-19009-4.00003-5
- **Naman Jain,** Effect of plasticizer, molecular weight, and cross-linking agent on glass transition temperature, 45597, 978-0-443-19009-4, https://doi.org/10.1016/B978-0-443-19009-4.00013-8

PATENT

S. No.	Application No	Date of Publishing	Date of Filing	Inventers Name	Product Name	Status
1	202411016313	5/4/2024	7/3/2024	**Mohd. Sahil, Dr. Pratishtha Mr. Manoj Kr, Mr. Dinesh Patharia**	SOLAR POWER-DRIVEN SELF-ILLUMINATING WALL/TABLE CLOCK	Published
2	202411016499	5/4/2024	7/3/2024	**Mr. Manoj Kr, Mr. Abhishek Saxena, Dr. Ravi Shankar Raman**	AUTOMATIC DRUG STORAGE CABINET	Published
3	202411018379	12/4/2024	13/03/2024	**Mr. Manoj Kumar, Dr. Ravi Shankar Raman**	LIQUID WASTE REMOVAL GARBAGE CONTAINER	Published

PTM

Department of Mechanical Engineering, ABES Engineering College, Ghaziabad organized the **Parent-Teacher Meeting** as per the timeline stated below. The parents of students and the faculty members of the ME Department will attend the meeting. The Meeting is open for all Student's parent but mandatory for the parents of students having less than 75% Attendance (list already shared).

Objectives:

The objectives of the meeting are as follows:

- To acquaint the parents about actual condition of their wards' performance.
- To familiarize the parents about the different initiatives taken by the Department for the overall grooming of students and to motivate students for more participation.
- To provide a platform for one-to-one interaction of parents with the faculty members.

STC / FDP conducted

1. Short term course on GREEN Manufacturing:

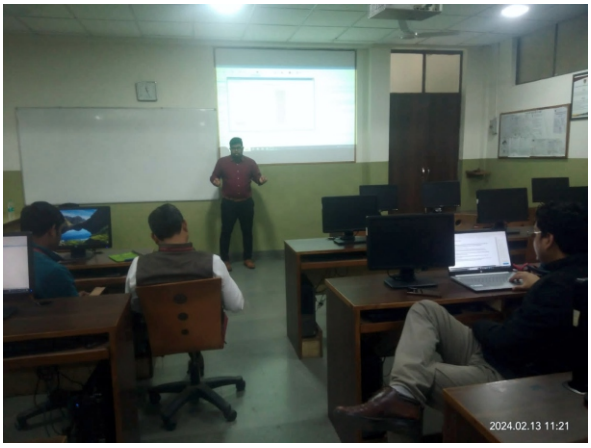
Department of Mechanical Engineering has successfully organized an STC program on **"GREEN MANUFACTURING",** from 29th January to 2nd February 2024. The STC program was in online mode and it was delivered by NITTTR-Chandigarh.

All of the faculty members in the Department including selected Staff members were taken participants in the STC program. The following Content was covered by the program:

1. Recent advances in surface engineering and green technology.
2. "Green initiative to enhance process efficiency in laser forming process"
3. Efficiency in Green Manufacturing through reverse engineering approach.
4. Surface composites using friction stir welding – A sustainable manufacturing process.
5. Green Logistic Practice for Environmental and Economic Performance.
6. Regenerative supply chain management.
7. Metal Additive manufacturing process: Balance sustainability and innovation.

2. FDP on Modelling & Simulation of Mechanical System using ANSYS:

The Department of Mechanical Engineering is organizing an FDP on **Modelling & Simulation of Mechanical System using ANSYS** for the Faculty Members of Mechanical Engineering during 12th to 16th February 2024.
Resource Person: **Mr. Gokul Raj, Sr. Application Engineer- Structure, Entuple Technologies Pvt. Ltd., Bangalore**
Convener: Dr. Ravi Shankar Raman (Head - ME) Coordinator: Mr. Saurabh



Workshop organized

Emerging Trends and Future Scope of Drones

Department of Mechanical Engineering at ABES Engineering College, Ghaziabad successfully organized a workshop on **"Emerging Trends and Future Scope of Drones"** on June 28, 2024.

Outcomes of workshop:- This workshop was focused on:

- Knowledge about the latest advancements in drone technology, including improvements in flight capabilities, sensors, and AI integration.
- Identified various industry applications of drones, such as in agriculture, delivery services, surveillance, and disaster management.
- Provided a comprehensive understanding of the current regulatory framework and ethical considerations related to drone usage, ensuring responsible and legal operations.
- Able to foresee emerging trends and future innovations in the drone industry, preparing them for upcoming developments and opportunities.

Speaker : 1. Mr. Avinash Chandra Pal, CEO, DTOWN Robotics Private Limited

2. Mr. Lakshay Panchal, System Engineer, DTOWN Robotics Private Limited

Convenor : Dr. R. S. Raman (Head ME) Event Coordinator : Mr. Harvir Singh, Assistant Professor, ME

INDUSTRIAL VISIT

Tricolite Industries Limited, Manesar

Department of Mechanical Engineering for B.Tech. ME (II Year) students on July 5, 2024, to **Tricolite Industries Limited, Manesar**. 39 students, accompanied by faculty member Mr. Mohit Bansal (A.P.), participated in the visit.

The visit aimed to provide students with valuable hands-on exposure to a real-world manufacturing facility and enhance their understanding of the practical applications of their theoretical knowledge.

The experience proved to be highly enriching for the students. Dr. Sandeep (Plant Head) delivered an insightful "Sustainability and its relations with SDGs" session and a comprehensive factory tour. Students were particularly impressed by observing the Amada Laser Cutting Machine and the Powder Coating line in action.

Mitzvah India Air Curtain

Department of Mechanical Engineering for B.Tech. ME (II Year) students on July 5, 2024, to **Mitzvah India Air Curtain.**

All 3rd students were accompanied by faculty members **Mr. Ankur Dixit** and **Mr. Vineet Kumar Sinha**

The visit aimed to provide students with valuable hands-on exposure to a real-world manufacturing facility and enhance their understanding of the practical applications of their theoretical knowledge.

AP-EXPO

ME Department organizes Annual Project Exhibitions (AP-EXPO-2024) in the college campus to display student's projects. which includes learning of the skill sets to enhance employability of the students. Department of Mechanical Engineering organizing third series of AP EXPO-2024 on 5th June, 2024. Guests from various industries are available to evaluate the projects. The department has taken keen interest to promote “learning by doing-culture” among students. For this purpose, participation is encouraged for National and International conferences, Tech fests along with participation in project exhibitions.

Objective:

The Mechanical Engineering Project EXPO serves as an excellent platform for students to demonstrate their technical skills, creativity, and problem-solving abilities. It is an opportunity for them to present their projects to industry professionals, faculty members, fellow students, and esteemed guests. The Expo will feature a wide range of projects that cover various aspects of mechanical engineering, including but not limited to:

Automation and Robotics
Renewable Energy Systems
Sustainable Design and Manufacturing
Automotive Engineering
Materials Engineering
Thermal and Fluid Systems
CAD/CAM and 3D Printing

Guest:

Mr. Ranjan Adlakha (Director Uttum Sugar Mills)
Mr. Mitul Jain (Founder Director at Mitzvah)

Most Innovative: Design and Fabrication of Industrial Delta Pick and Place Robort
Student Name: Abhinav Chauchan Dhruv Ajit Jatin Kumar Piyush Kushwaha

Economical: Vapour Compression Test Rig with Dedicated Sub Cooler Cycle
Student Name: Ayush Ankit Kumar Anant Bharadwaj Deepanshu Tripathi

Sustainable: Design and Development of Cascade Refrigeration Test rig
Student Name: Deepak Kumar Yadav Jay Singh Aryan Vashaney



FRESHER'S PARTY

NavTarang 2K24 (Rangat-E-Naya) - Fresher's Party of ME 2023-27 Batch

The Fresher's Party for **ME** First Year students **"NavTarang 2K24 - A New Vibe" (Rangat-E-Naya)** was organized at Dr. S. Radhakrishnan Auditorium, ABES Engineering College on **18th January 2024.** The event started with Saraswati Vandana and the lighting of the lamp. Thereafter, the event was followed up with an encouraging and motivating address by the HOD-ME Dr. R.S. Raman. The event was followed with a series of events including dance, singing, monologue, poetry, ramp walk, and talent round. The results were declared and felicitation of all the Titles winners was done.

The Title winners at the event were:

Mr. Fresher :	**Lucky Dhasmana**	**Ms. Fresher :**	**Garima Sharma**
Mr. Handsome	**Harsh Choudhary**	**Ms. Beautiful :**	**Mansi Sharma**

FAREWELL PARTY

Department of Mechanical Engineering organized a Farewell "Ravangi" on June 6, 2024, for the ME (2020-2024) Batch. The Farewell event started with Lamp Lighting, followed by different cultural programs, Title Distribution, and Group Photography.

The Title winners of this Farewell event were:

Mr. Farewell : Shrey Vashisth Ms. Farewell : Mrinalini Singh

Mr. Mechanical: Piyush Kushwaha Mr. Technical: Ayush Mr. Talented: Paritosh Singh

Mr. Handsome: Naman Joshi Mr. Gym Freak: Malesh Raghuvanshi

PLACEMENT READINESS ACTIVITIES

Department of Mechanical Engineering organized the Fourth session of **"Placement Readiness Program"** series for Ghaziabad Precision Products Pvt. Ltd. for final year students of ME Branch.

The aim of this program is to aware our final year students about current Mechanical industry scenario, their strategy and future planning through their seniors, who are very well established in the industry. Purpose of such session is to get our students checked and make themself ready to know about way of preparation for clearing the selection process of such a Prominent organization.

Our resource person was alumni of Mechanical Engineering Department who in very short duration of their service have acquired a tremendous profile and make department and college proud.

RESEARCH GRANT

With a vision of benefitting the farmers with latest technological progress, department of mechanical engineering had applied for funding from National Coordinating Institute, IIT Delhi under the **Unnat Bharat Abhiyan 2.0 Program.**

We are delighted to share that funding of `1 Lakh has been approved and received for the project **"Farmer Welfare Program through Drone Technology"** under the category of Development. Project was Approved by **SEG- Capacity Building, Strategy for Convergence and Implementation of Various Govt. Schemes.**

Project was initiated by **Mr. Saurabh (Sr. Asst. Professor, ME)** and enthusiastic mechanical student's team of second year. Project documentation and communication is carried out under the mentorship of **Dr. Ravi Shankar Raman (HoD-ME)** and Dr. Rohit Rastogi, (Associate Professor, Deptt. of CSE, UBA Nodal officer).

Department of ME is also thankful for the extended support of Prof. (Dr.) Devendra Kumar Sharma (Director, ABESEC) and Prof. (Dr.) Sanjay Kumar Singh (Director-Admin, ABESEC) for UBA program.

ALUMNI ACHIEVEMENT

SHIVAM SHARMA

Sub Inspector Delhi Police
Alumnus Batch –2020, ME

KUMAR ADHISH

Engine Officer, Merchant Navy, Ministry of Waterways
Alumnus Batch 2020, ME

MAYANK YADAV

Sub Inspector, UP Police
Alumnus Batch 2020, ME

DEVANSH TYAGI

UX design Specialist, Amadeus Labs, London
Alumnus Batch 2022, ME

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