

GEAR UP

Half-Yearly News Letter

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Department of Mechanical Engineering

GEMS Polytechnic College, Aurangabad, Bihar

E-Mail: mechhod@gempolytechnic.edu.in, Contact Number: +91 9618260773

Website: <https://gempolytechnic.edu.in>

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VISION OF THE DEPARTMENT

To empower the students in the field of Mechanical engineering by providing quality education and technical skills favorable for the development of the state and nation.

MISSION OF THE DEPARTMENT

The Department of Mechanical Engineering is committed, **M1:** To deliver fundamental and skill-based education in mechanical engineering through innovative practices in teaching and learning.

M2: To improve employability through Industrial interaction and collaboration.

M3: To inculcate ethical practices for social upliftment and to uphold human values.

PROGRAM EDUCATIONAL OBJECTIVES:

PEO1: To develop technically competitive diploma engineers in the challenging areas of design and manufacturing and its associated industries in the domain of mechanical engineering being involved.

PEO2: To motivate the diploma engineers to improve their academic career by involving in doing higher education and continuous learning.

PEO3: To Possess a professional attitude as an individual and as a team member with consideration for society, professional ethics and environmental factors.

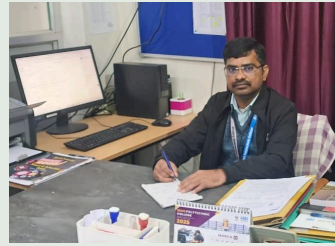
PROGRAM SPECIFIC OUTCOMES:

PSO 1: Ability to apply fundamental principles in Mathematics, Science and Engineering to solve basic problems in mechanical engineering.

PSO 2: Ability to apply fundamental principles of Design, Manufacturing, and Thermal Engineering to analyze, design, and fabricate basic mechanical components ensuring functional efficiency, manufacturability, and thermal performance using appropriate tools, materials, and processes.

PSO 3: Ability to apply modern CAD, Additive Manufacturing, CNC, and Advanced Manufacturing Skills for innovative product development across diverse industrial applications.

From the Desk of the HOD



Dear Mechanical Engineering Community,

I am happy to connect with you through this departmental newsletter. Our Mechanical Engineering Department

is steadily moving forward with a strong focus on quality education, practical learning, and overall student development.

During this academic year, our department has achieved many positive milestones. Faculty members have been actively involved in teaching, research, training programs, and industry-related activities. These efforts help us keep our curriculum relevant and aligned with current technological advancements.

Our students have shown excellent performance in academics, technical events, internships, workshops, and project work. Your hard work, curiosity, and enthusiasm are truly appreciated. We encourage you to actively participate in department activities, make effective use of laboratory facilities, and develop strong technical as well as professional skills.

The department regularly organizes expert talks, industrial visits, hands-on training, and skill development programs to help bridge the gap between classroom learning and real-world applications. We are committed to providing you with the right environment to learn, innovate, and grow.

I sincerely thank our faculty members and staff for their continuous support and dedication. I also appreciate the cooperation of our students, alumni, and industry partners in strengthening the department.

I encourage all students to stay focused, work with discipline, and aim for excellence in every activity you undertake. I wish you all great success in your academic and professional journey.

Dr. Kumarswamy, Ph.D.
Head of the Department
Department of Mechanical Engineering
GEMS Polytechnic College
Aurangabad, Bihar

Embrace the Journey: Inspirational Quotes

“Mechanical engineering is not just about machines; it is about using knowledge, creativity, and discipline to solve real-world problems.”

“A good mechanical engineer does not only understand how things work, but also imagines how they can work better.”

“From design to production, mechanical engineers turn ideas into reality through innovation and perseverance.”

“Success in mechanical engineering comes from strong fundamentals, hands-on practice, and a constant desire to learn.”

“Every machine you see is a reminder that engineering excellence begins with curiosity and dedication.”

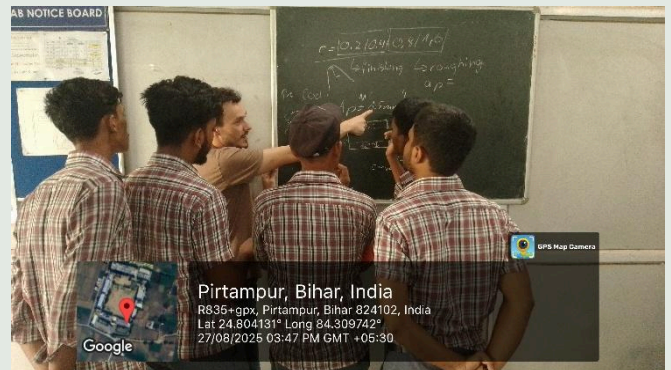
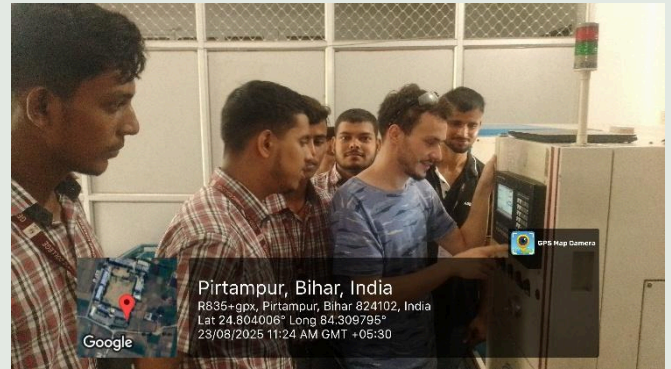
Department Activities

Fusion 360 Add On Courses:



An add-on course on **Fusion 360** was conducted for **Second Year Mechanical Engineering** students, with active participation from **26 students**. The program was delivered by **Mr. Himanshu Kumar** from **Bezalel Skilligence Pvt. Ltd.** The course aimed to introduce students to modern **3D modeling, design, and simulation tools** used in industry. Students gained hands-on experience in **parametric modeling and assembly design** using Fusion 360. Emphasis was placed on **practical design workflows** relevant to mechanical engineering applications. The sessions helped students understand **design intent and product development processes**. Real-time demonstrations enhanced conceptual clarity and engagement. The course strengthened students' **CAD skills and industry readiness**. Participants showed keen interest and active involvement throughout the program. Overall, the add-on course successfully bridged the gap between **theoretical knowledge and practical design skills**.

CNC Courses:



An add-on course on Computer Numerical Control (CNC) was organized for Third Year Mechanical Engineering students, with participation from 26 students. The program was conducted by Bezalel Skilligence Pvt. Ltd. The course aimed to provide practical knowledge of CNC machines and modern manufacturing practices. Students were introduced to CNC programming concepts, machine operations, and tooling basics. Hands-on sessions helped students understand G-codes and M-codes used in CNC machining. Emphasis was placed on precision, productivity, and safety in machining operations. Real-world industrial examples enhanced students' understanding of manufacturing processes. The training improved students' technical competence and confidence in CNC operations. Active participation and interest were observed throughout the sessions. Overall, the course significantly enhanced students' industry-oriented manufacturing skills.

Guest Lecture:



A guest lecture on “Expectations of Today’s Industry” was organized for **First, Second-, and Third-Year Mechanical Engineering students**. The session was delivered by **Mr. Rudi Stebner**, an industry expert with extensive professional experience. The lecture focused on current **industry requirements, skill expectations, and workplace standards**. Students were introduced to the importance of **technical skills, problem-solving ability, and adaptability**. Emphasis was placed on **industry-oriented learning and continuous upskilling**. **Mr. Rudi Stebner** highlighted the role of **internships, certifications, and hands-on experience** in career development. Communication skills and professional ethics were also discussed. Real-world examples helped students understand industry challenges and expectations. The session motivated students to align their academic learning with industry needs. Overall, the guest lecture

provided valuable insights into **career readiness and professional growth**.

ISTE Event:





An **ISTE event** was successfully conducted by the **GEAR UP Association** in association with **ISTE** for **First, Second-, and Third-Year students**. The event aimed to promote **technical knowledge, innovation, and competitive spirit** among students. A **Workshop Competition** was organized to enhance hands-on skills and practical understanding. Students actively participated and demonstrated creativity and technical competence. A **Quiz Competition** was conducted to test students' fundamental and applied engineering knowledge. The competitions encouraged teamwork, quick thinking, and problem-solving abilities. Participants showed great enthusiasm and active involvement throughout the event. Faculty members guided and motivated students during the activities. The event provided an excellent platform for peer learning and interaction. Overall, the ISTE event was successful in strengthening students' **technical and professional skills**.



Students Minor Projects





A minor project titled “Solistic Clock” was successfully completed by Second Year Mechanical Engineering students using 3D printing technology. The project focused on the design and fabrication of a functional clock based on innovative mechanical concepts. Students used 3D modeling tools to design the components before fabrication. Additive manufacturing techniques were applied to produce precise and lightweight parts. The project helped students understand the principles of **design, prototyping, and assembly**. Emphasis was given to creativity and practical implementation. Teamwork and problem-solving skills were enhanced during the project execution. The activity encouraged the use of modern manufacturing technologies. Students gained hands-on experience in **rapid prototyping**. Overall, the project strengthened students’ practical knowledge and innovation skills.

Mr. Abhishek Kumar 2022-2025 Batch

I



come from a **background where my behavior and attitude were not disciplined, and I lacked focus on my studies**. After joining **GEMS Polytechnic College**, my life began to **change positively**. The guidance and discipline of the institution helped me **improve my appearance, attitude, and mindset**. I learned the importance of hard work, responsibility, and self-control. The **faculty members continuously motivated me to focus on academics and personal development**. Over time, I developed confidence and technical knowledge in Mechanical Engineering. I successfully completed my Diploma in Mechanical Engineering. Today, I am proud to be working as a **Quality Engineer at MAHLE Pvt. Ltd., Pune**. My journey proves that the right guidance can transform any student. I am grateful to my institution for shaping my career and future.

Mr. Irshad Alam 2022-2025 Batch



Before joining **GEMS Polytechnic College**, I did not have a clear vision about my future in the mechanical engineering field. My journey at GEMS helped me understand the scope and opportunities in mechanical engineering. The institution played a key role in shaping my **career direction and technical interest**. I gained practical exposure to **3D printing technology, Fusion 360 software, and CNC machining**. These skills helped me build strong technical confidence. The guidance and support from faculty members motivated me to focus on hands-on learning. I successfully completed my **Diploma in Mechanical Engineering**. Today, I am proud to be working as a **Trainee at DRDO, Nashik**. My time at GEMS transformed my outlook towards engineering. I am grateful to the college for guiding me toward a successful career path.

Mr. Prince Pal

Alumni Experience and Journey

2022-2025 Batch



Before joining **GEMS Polytechnic College**, I did not have a clear vision about the mechanical field or the technical path to develop myself. Entering GEMS helped me understand how to choose my career in the right direction. The learning environment encouraged me to explore and improve in every possible area. Initially, I felt that I might not be capable of succeeding in this field. However, the continuous **motivation and guidance from the staff members** brought a great change in my life. Their support helped me build confidence and technical skills. I learned the value of discipline, dedication, and focused learning. I successfully completed my **Diploma in Mechanical Engineering**. Today, I am working as a **Trainee at DRDO, Nashik**. I am grateful to GEMS Polytechnic College for shaping my career and helping me shine.

Ms. Priyanka Kumari

2022-2025 Batch



As a female student, choosing the **Mechanical Engineering** field raised many questions about whether I could succeed. In the initial days of college, I felt unsure and even planned to discontinue my studies. However, the constant **encouragement from my department faculty members** changed my mindset. The support and cooperation of my **batchmates** gave me confidence and motivation. Gradually, I developed interest and strength in the mechanical field. I learned to overcome challenges with determination and hard work. The department helped me build both **technical skills and self-belief**. I successfully completed my **Diploma in Mechanical Engineering**. Today, I am proud to have joined **MAHLE Pvt. Ltd., Pune**. My journey proves that with the right guidance and support, every challenge can be turned into success.

Editorial Board

Editorial Role	Responsible Persons
Chief Editor	Dr. Kumara Swamy, PhD , Head of the Department / Mech.
Faculty Advisor	Mr. Arun Pandian, M.E. , Sr. Lecturer / Mech
Student Editors	1. Kishlay Kumar – 3 rd ME 2. Gajanan Rai – 3 rd ME 3. Srikant Kumar – 3 rd ME
Student Writer / Contributor	1. Raj Kumar – 3 rd ME 2. Rakesh Kumar – 3 rd ME
Design and Layout Specialist	Mr. Max Mark , Lecturer / Mech

For Contact:**Mr. Max Mark**

Lecturer, Dept. of Mechanical Engineering,
GEMS Polytechnic College,
Aurangabad, Bihar-824121.

Ph. No: +91 7764989755

Mail Id: maxmark@gemspolytechnic.edu.in