GOVERNMENT ENGINEERING COLLEGE, PALANPUR

REPORT ON ONE-DAY WORKSHOP

"DRONE TECHNOLOGY, APPLICATIONS AND CAREER OPPORTUNITIES"

Date: 18 August 2026
Venue: Mechanical Seminar Hall, Government Engineering College, Palanpur
Organized by: Institute Innovation Council (IIC) & Student Startup and Innovation Policy (SSIP) Units, Government Engineering College, Palanpur
Participants: 93 students from Mechanical, Electrical and Civil Engineering Departments

Chief Patron

Dr. K. B. Judal
Principal, Government Engineering College, Palanpur

Patron

Dr. D. M. Patel
Professor & Head, Department of Mechanical Engineering
Government Engineering College, Palanpur

Coordinators

Dr. K. S. Banker, Assistant Professor, Mechanical Engineering
Dr. A. K. Patel, Assistant Professor, Mechanical Engineering

1. INTRODUCTION

The Institute Innovation Council (IIC) & Student Startup and Innovation Policy (SSIP) Units, Government Engineering College, Palanpur organized a one-day workshop on **"Drone Technology, Applications and Career Opportunities"** on **18 August 2026** at the Mechanical Seminar Hall.

The workshop was organized with the objective of exposing students to the rapidly developing field of unmanned aerial vehicle (UAV) and drone technology. The programme focused on fundamental technical concepts, drone design and manufacturing, industrial and societal applications, regulatory requirements, DGCA guidelines, pilot training and certification, and emerging career and entrepreneurship opportunities in the drone ecosystem.

The programme was designed as an interdisciplinary technical activity involving students from **Mechanical, Electrical and Civil Engineering**.

2. OBJECTIVES OF THE WORKSHOP

The major objectives of the workshop were:

1. Introducing students to the fundamentals and working principles of drone technology.

2. To familiarize students with major drone components, systems and design considerations.
3. To provide awareness about drone manufacturing and emerging technologies.
4. To explain the regulatory framework and relevant DGCA guidelines associated with drone operations.
5. To demonstrate the applications of drones in diversified engineering and industrial sectors.
6. To create awareness regarding drone pilot training and certification.
7. To expose students to emerging career opportunities in drone operations, manufacturing, services and entrepreneurship.
8. To provide practical exposure through a live drone-flying and hands-on demonstration.
9. To encourage interdisciplinary learning among Mechanical, Electrical and Civil Engineering students.
10. To promote innovation, lifelong learning and entrepreneurship in emerging technologies.

3. PARTICIPANTS

A total of **90 students** participated in the workshop.

Sr. No.	Particular	Participation
1	Mechanical Engineering	Included
2	Electrical Engineering	Included
3	Civil Engineering	Included
	Total Participants	**90**

The participation of students from three engineering disciplines made the workshop an effective **multidisciplinary technical-learning activity**.

4. RESOURCE PERSONS / EXPERTS

4.1 Dr. Mit Patel

Dr. Mit Patel, Quality Manager and DGCA Certified Drone Master Instructor from **Doctor Drone Industries Private Limited**, conducted the first technical session.

His professional profile, as presented in the workshop material, includes expertise in drone technology and design, drone manufacturing and components, industrial applications, DGCA guidelines and compliance, quality management systems, pilot training, live demonstrations, and career and entrepreneurship opportunities. The profile also identifies him as a DGCA Certified Drone Master Instructor with more than five years of experience in the drone industry.

4.2 Mr. Shyam Sharma

Mr. Shyam Sharma, Accountable Manager and DGCA Certified Remote Pilot from **Doctor Drone Industries Private Limited**, conducted the second technical session.

His profile includes expertise in UAV operations and management, drone manufacturing and systems, agri-drone applications, regulatory compliance and safety standards, training and capacity building, and drone-related technical consultancy. The workshop material also highlights his experience in DGCA-approved Remote Pilot Training Organization (RPTO) activities.

4.3 Mr. Rahul – Drone Flight Assistant

Mr. Rahul, Drone Flight Assistant, supported the practical/hands-on drone-flying session and assisted participants during the live demonstration.

5. INAUGURAL / OPENING SESSION

The workshop commenced with the **prayer of Goddess Saraswati**, seeking blessings for knowledge, learning and academic excellence.

This was followed by the **welcome address by the workshop coordinator**, Dr. K. S. Banker. The coordinators welcomed the dignitaries, experts, faculty members and participating students and briefly introduced the purpose and relevance of the workshop.

The **opening session address was delivered by the Patron, Dr. D. M. Patel**, Professor and Head of the Department of Mechanical Engineering. He emphasized the importance of acquiring practical knowledge and developing awareness of emerging technologies among engineering students.

Following the inaugural session, the programme was handed over to the technical experts for the knowledge-sharing sessions.




6. TECHNICAL SESSION – I

Drone Technology, Technical Concepts, DGCA Guidelines and Applications

The first technical session was delivered by **Dr. Mit Patel**.

The session provided students with an understanding of the fundamental technical aspects of drone technology. The expert explained the basic concepts associated with drones and their technological development.

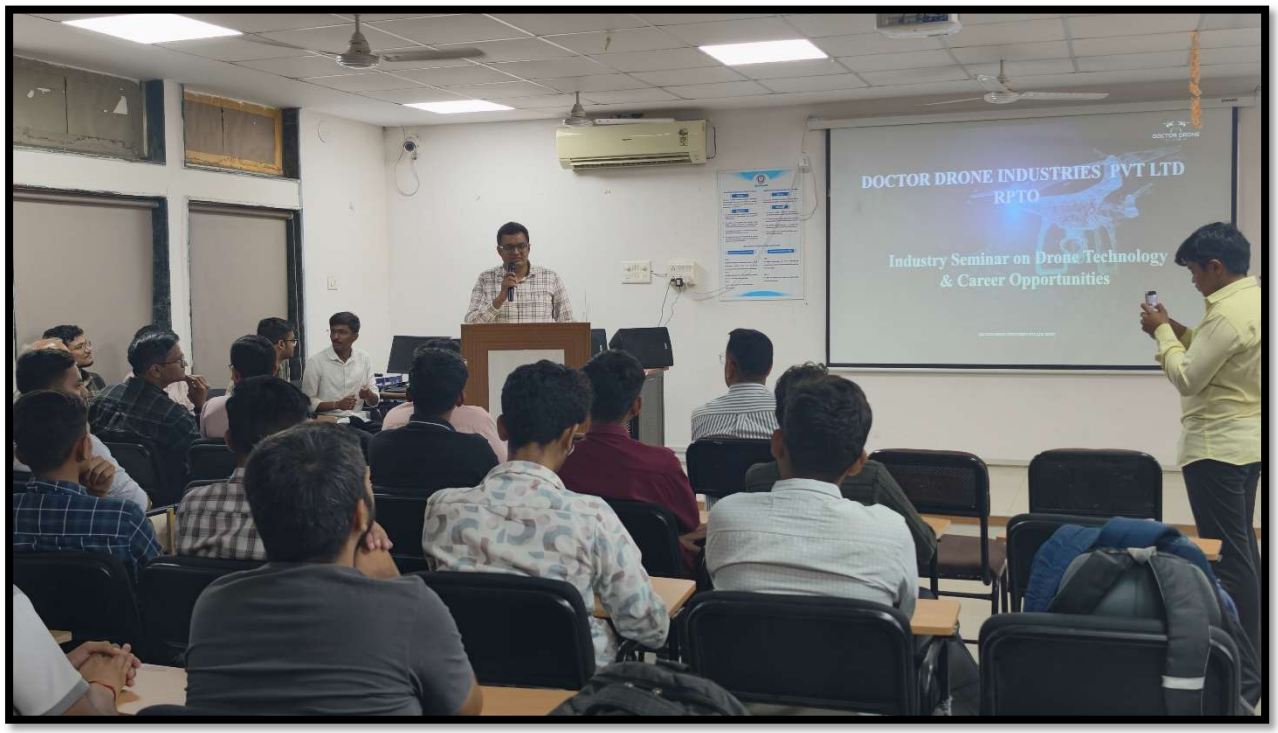
Major topics covered during the session included:

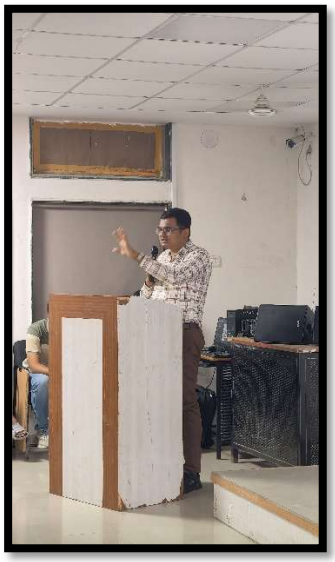
- Fundamentals of drone technology.
- Basic working principles of drones.
- Major components and systems of drones.
- Drone design and manufacturing concepts.
- Technical considerations associated with UAV systems.
- DGCA guidelines and regulatory requirements.
- Compliance and operational considerations.
- Industrial applications of drones.
- Applications of drones in diversified sectors.

- Importance of safe and responsible drone operations.
- Emerging opportunities in the drone ecosystem.

The session enabled students to relate theoretical engineering concepts with a rapidly emerging technological field.

The workshop material specifically identifies **Drone Technology & Design, Drone Manufacturing & Components, Industrial Applications, DGCA Guidelines & Compliance, Quality Management Systems, Pilot Training & Live Demonstrations, and Career & Entrepreneurship Opportunities** as key areas associated with the expert session.





7. TECHNICAL SESSION – II

Drone Applications, Manufacturing, Certification, Pilot Training and Career Opportunities

The second technical session was delivered by **Mr. Shyam Sharma**.

The session focused more extensively on the practical and professional ecosystem associated with drones.

The expert discussed:

- Applications of drones in different sectors.
- Drone manufacturing requirements and criteria.
- UAV operations and management.
- DGCA certification requirements.
- Remote pilot training.
- Pilot certification.
- Regulatory compliance and safety standards.
- Agri-drone applications.
- Drone manufacturing and service opportunities.
- Training and skill-development opportunities.
- Career opportunities in the drone industry.
- Entrepreneurship opportunities in the emerging UAV sector.

The session was particularly beneficial for students as it connected technical education with **employment, professional certification, entrepreneurship and future career pathways**.

The expert profile provided in the workshop material also highlights expertise in drone manufacturing, UAV operations, agri-drone applications, regulatory compliance, safety standards, training and workforce development.

8. FELICITATION OF EXPERTS

At the conclusion of the technical sessions, **mementos were presented to both expert speakers, Dr. Mit Patel and Mr. Shyam Sharma**, as a token of appreciation for sharing their technical knowledge and professional experience with the students.

A memento was also presented to **Mr. Rahul, Drone Flight Assistant**, in appreciation of his support during the practical demonstration and hands-on drone-flying activity.

9. VOTE OF THANKS

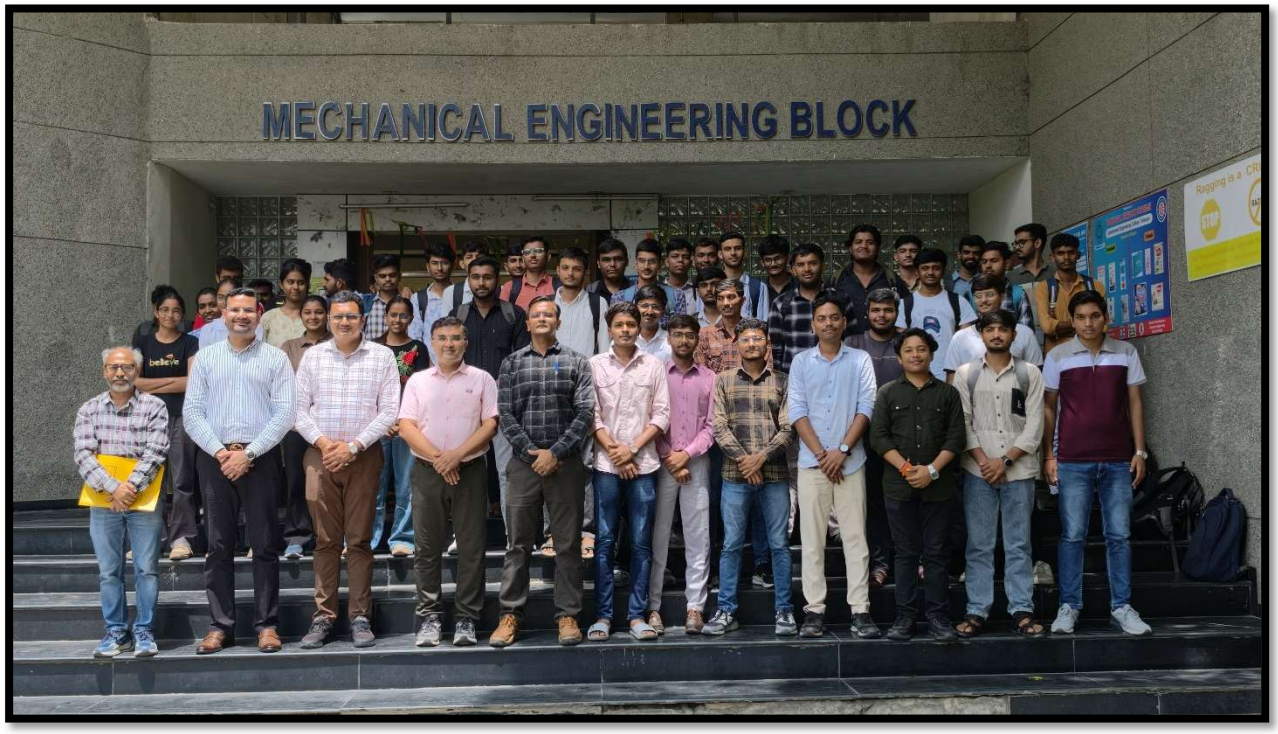
At the end of the theoretical sessions, the **Vote of Thanks was delivered by Dr. A. K. Patel**.

He expressed gratitude to the Chief Patron, Patron, invited experts, faculty members, supporting staff and all participating students for their contribution towards the successful organization of the workshop. Special appreciation was expressed to the resource persons for providing students with valuable technical knowledge, regulatory awareness, practical insights and informationabout career opportunities in the drone sector.

10. GROUP PHOTOGRAPH

Following the theoretical sessions and felicitation programme, a **group photograph was taken in front of the Mechanical Engineering Department**.

The group photograph captured the presence of the dignitaries, resource persons, coordinators, faculty members and participating students and serves as an important documentary record of the event.



11. HANDS-ON DRONE FLYING SESSION

After completion of the theoretical sessions, a practical **hands-on drone-flying session** was organized in the area in front of the college canteen.

The session provided participants with an opportunity to observe and experience the practical operation of a drone.

Approximately **15 students experienced drone flying** during the hands-on session. The participants were guided regarding basic drone operation and flying practices under the supervision of the resource team.

The practical session helped students bridge the gap between theoretical understanding and actual operation of a UAV.

Faculty members also participated in the hands-on activity and experienced drone flying, making the session beneficial not only for students but also for faculty members.

The hands-on component was particularly significant because the workshop was designed to provide practical understanding and live demonstration exposure in addition to classroom-based technical knowledge.

12. MAJOR OUTCOMES OF THE WORKSHOP

The workshop resulted in the following major learning outcomes:

1. Students developed basic awareness of drone technology and UAV systems.
2. Participants gained knowledge of major drone components and design considerations.
3. Students became aware of drone manufacturing requirements.
4. Participants gained awareness regarding DGCA guidelines and regulatory compliance.
5. Students understood the importance of pilot training and certification.
6. Participants learned about applications of drones in diversified sectors.
7. Students received information regarding career opportunities in the drone industry.
8. Participants were exposed to entrepreneurship opportunities in the emerging UAV sector.
9. Approximately 15 students gained direct hands-on exposure to drone flying.
10. Faculty members also gained practical exposure to drone operation.
11. The programme encouraged interdisciplinary interaction among Mechanical, Electrical and Civil Engineering students.
12. The activity promoted lifelong learning and awareness of emerging technologies.

13. NBA / OUTCOME-BASED EDUCATION ALIGNMENT

The activity was designed in accordance with the Outcome-Based Education (OBE) philosophy followed by the NBA-accredited Mechanical Engineering programme of GEC Palanpur.

The following Program Outcomes were significantly addressed:

PO	Relevant Outcome	Contribution of Workshop
PO1	Engineering Knowledge	Understanding of drone engineering principles, components and systems
PO2	Problem Analysis	Understanding operational, technical and application-related challenges
PO3	Design/Development of Solutions	Exposure to drone design, manufacturing and application requirements
PO5	Modern Tool Usage	Practical exposure to drone technology and flying systems
PO6	Engineer and Society	Understanding societal and industrial applications and regulatory responsibilities
PO7	Environment & Sustainability	Awareness of technology-enabled applications with potential societal and environmental benefits
PO8	Ethics	Awareness of safe, responsible and compliant drone operation
PO9	Individual & Team Work	Participation in a multidisciplinary workshop and practical activity

PO10	Communication	Interaction with experts and participation in technical discussions
PO11	Project Management & Finance	Exposure to drone industry, manufacturing and entrepreneurship opportunities
PO12	Life-long Learning	Awareness of emerging UAV technology, certification and future learning opportunities

The Mechanical Engineering Department's officially published POs include engineering knowledge, problem analysis, design, modern tool usage, societal and legal responsibilities, sustainability, teamwork, communication, project management and lifelong learning.

14. PSO / PEO ALIGNMENT – MECHANICAL ENGINEERING

The workshop also supports the following Mechanical Engineering Department outcomes:

PSO-1

To apply knowledge and skill of Mechanical Engineering to solve real-life problems to meet the needs of society.

The workshop exposed students to real-world UAV applications and the engineering systems involved in drone technology.

PSO-2

To enable students to pursue their career as Professional Mechanical Engineers.

The session on drone manufacturing, operations, certification and career opportunities provided students with awareness of an emerging interdisciplinary career domain.

PEO-1

The workshop supports application of engineering knowledge in industry and entrepreneurship through exposure to drone manufacturing, applications and professional opportunities.

PEO-2

The multidisciplinary activity encouraged professional interaction, leadership, teamwork and awareness of technology for societal applications.

PEO-3

The workshop promoted lifelong learning and professional development through exposure to an emerging engineering technology.

The Mechanical Engineering Department officially identifies these PEOs and PSOs as part of its programme framework.

15. ALIGNMENT WITH GEC PALANPUR VISION AND MISSION

The workshop strongly supports the institutional Vision of Government Engineering College, Palanpur:

> **"To be a leading technical institute facilitating transformation of human resources into socially responsible engineering professionals for sustainable development."**

The institute's mission emphasizes academic excellence, innovation and entrepreneurship, contribution to industry and society, and enhancement of technical competencies through need-based training and quality improvement programmes.

Alignment Matrix

GEC Palanpur Mission	Contribution of Workshop
Academic Excellence	Exposure to emerging UAV technology beyond the conventional curriculum
Innovation & Entrepreneurship	Awareness of drone manufacturing, applications and entrepreneurship
Industry & Society Contribution	Industry-oriented expert sessions and awareness of real-world drone applications
Technical Competency Development	Technical sessions, regulatory awareness and hands-on drone flying
Sustainable Development	Exposure to technology with applications in agriculture, infrastructure and other societal sectors
Lifelong Learning	Awareness of emerging technologies, certification and future skill requirements

16. ALIGNMENT WITH MECHANICAL ENGINEERING DEPARTMENT MISSION

The workshop directly supports the Department of Mechanical Engineering's mission of providing quality technical education, developing industry linkages, promoting lifelong learning, innovation and entrepreneurship, and inculcating professional and ethical values.

The workshop therefore represents a practical example of:

- **Emerging technology exposure**
- **Industry interaction**
- **Hands-on learning**
- **Interdisciplinary education**
- **Innovation awareness**

- **Entrepreneurship orientation**
- **Professional skill development**

17. INTERDISCIPLINARY LEARNING

A significant feature of the workshop was participation from **Mechanical, Electrical and Civil Engineering students**.

Drone technology inherently integrates multiple engineering disciplines:

Mechanical Engineering:
Structure, frame, propulsion, aerodynamics, manufacturing and mechanical design.

Electrical Engineering:
Motors, batteries, power systems, controllers, sensors and electrical integration.

Civil Engineering:
Surveying, mapping, infrastructure inspection, land assessment and construction-related applications.

Thus, the workshop provided an effective platform for **multidisciplinary and collaborative learning**, consistent with the OBE emphasis on teamwork and multidisciplinary environments.

Summary of the workshop

The **One-Day Workshop on "Drone Technology, Applications and Career Opportunities"** conducted on **18 August 2026** was successfully organized by the Institute Innovation Council (IIC) & Student Startup and Innovation Policy (SSIP) Units, Government Engineering College, Palanpur.

With the participation of **90 students from Mechanical, Electrical and Civil Engineering**, the programme provided a valuable interdisciplinary platform for learning about drone technology, design, manufacturing, applications, DGCA guidelines, pilot training, certification, career opportunities and entrepreneurship.

The expert sessions by **Dr. Mit Patel** and **Mr. Shyam Sharma**, supported by **Mr. Rahul**, provided students with a combination of technical knowledge, regulatory awareness, industry insights and practical exposure.

The subsequent hands-on drone-flying session allowed approximately **15 students** to experience actual drone operation, while faculty members also participated in the practical activity.

The programme is strongly aligned with the **Vision and Mission of Government Engineering College, Palanpur**, particularly in the areas of sustainable development, technical competency enhancement, innovation, entrepreneurship, industry orientation and lifelong

learning. It also supports the OBE framework of the **NBA-accredited Mechanical Engineering** programme through its contribution to relevant POs, PSOs and PEOs.

Overall, the workshop successfully fulfilled its objective of **empowering students with knowledge of emerging technology, providing practical exposure and creating awareness of future career and entrepreneurship opportunities in the drone sector.**

Government Engineering College, Palanpur

Title: - Workshop on Drone Technology, Applications and Career Opportunities

Workshop Schedule — 11:00 AM to 02:35 PM

Time	Duration	Programme / Session
11:00 – 11:05 AM	5 min	Welcome & Registration Confirmation
11:05 – 11:10 AM	5 min	Preyer, Welcome Address & Introduction of Experts
11:10 – 11:15 AM	5 min	Inaugural Remarks by HOD / Patron
11:15 – 11:25 AM	10 min	Introduction to Drone Technology
11:25 – 11:45 AM	20 min	Drone Design, Components & Manufacturing
11:45 AM – 12:05 PM	20 min	Industrial Applications of Drones
12:05 – 1:05 PM	60 min	DGCA Guidelines, Regulations & Drone Operations
01:05 – 01:30 PM	25 min	Career & Entrepreneurship Opportunities in Drone Sector
01:30 – 01:35 PM	5 min	Q&A, Vote of Thanks
01:35 – 2:35 PM	60 min	Live Drone Demonstration & Hands-on Exposure

23. ACKNOWLEDGEMENT

The Department of Mechanical Engineering expresses its sincere gratitude to **Dr. K. B. Judal, Principal and Chief Patron**, for his continuous support and encouragement.

The department also conveys its sincere appreciation to **Dr. D. M. Patel, Patron**, for his valuable guidance and support in organizing the programme.

Special thanks are extended to the resource persons **Dr. Mit Patel and Mr. Shyam Sharma** for sharing their expertise and practical industry experience, and to **Mr. Rahul, Drone Flight Assistant**, for supporting the hands-on flying session.

The department appreciates the active participation of all **90 students from Mechanical, Electrical and Civil Engineering**, as well as the faculty members and supporting staff who contributed to the successful execution of the programme.

Prepared by:
Dr. K. S. Banker
Assistant Professor, Department of Mechanical Engineering
Government Engineering College, Palanpur

Co-coordinator:
Dr. A. K. Patel
Assistant Professor, Department of Mechanical Engineering
Government Engineering College, Palanpur