



# Gyanmanjari Innovative University

Report on

## Exper Talk on 3D Printers

Date: 14/10/2024

Time: 12:15 pm

Venue : SF39

<b>No. of Student</b>	37
<b>Department</b>	Mechanical Engineering
<b>Semester</b>	1-3-5(Diploma & Degree)
<b>Faculty Co-Ordinator</b>	Prof. Deepak S. Jani/ Prof. Jigar K. Andharia/ Prof. Dhaval R. Baraiya

## Objective

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An expert talk for engineering students should aim to bridge the gap between academic knowledge and real-world applications, offering students valuable insights into current industry trends and innovations. By highlighting the practical applications of theoretical concepts, the speaker can demonstrate how the knowledge gained in the classroom translates to impactful solutions in the field. Such talks also play a crucial role in guiding students on career pathways and skill development, helping them understand the essential technical and soft skills that are valued in today's job market. Beyond technical knowledge, expert talks encourage interdisciplinary awareness, fostering an understanding of how collaboration across fields can solve complex engineering challenges. Additionally, students gain exposure to the importance of sustainable practices and ethical responsibilities, reinforcing the role of engineers in addressing environmental and societal issues. By inspiring students to think critically, innovate, and embrace lifelong learning, expert talks prepare them to adapt and thrive in the ever-evolving engineering landscape.

## About Activities:

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Prof. Jignesh introduced engineering students to the world of 3D printing, a technology that is shaping modern manufacturing and engineering practices. Starting with a thorough explanation of additive manufacturing, he provided insights into the mechanics of 3D printers, including how these machines build objects layer by layer from digital blueprints. Prof. Jignesh explained the variety of materials available for 3D printing—such as plastics, resins, and metals—and discussed how material choice impacts the properties of the final product, such as strength, flexibility, and durability.

The session then moved into a live demonstration, where Prof. Jignesh guided students through the entire printing process, from model preparation in software to the physical printing on the machine. He covered practical aspects like calibration, material loading, and maintenance, giving students a hands-on understanding of the operational details. By showcasing the intricacies of preparing a model for print—adjusting layers, speed, and infill settings—students saw how small adjustments could significantly affect the quality and functionality of the output.

To highlight 3D printing's real-world applications, Prof. Jignesh discussed its critical role in industries such as automotive, aerospace, and healthcare. For example, he explained how engineers use 3D printing for rapid prototyping, which accelerates product development cycles by allowing companies to create, test, and refine designs quickly and cost-effectively. In healthcare, he showed how the technology is used to produce customized medical implants and prosthetics tailored to individual patients. By examining these applications, students could see the potential impact of 3D printing on various fields, making the technology's significance tangible.

Prof. Jignesh encouraged students to create their designs, turning ideas into reality through 3D modeling software and printing. This activity allowed them to experiment, troubleshoot, and refine their designs, offering an interactive and educational experience. The session concluded with a discussion on the future of 3D printing, such as advancements in multi-material printing, eco-friendly filaments, and how additive manufacturing could evolve to meet global sustainability goals. This session not only enriched students' technical skills but also inspired a forward-thinking mindset, preparing them to harness the power of 3D printing in their future engineering careers.

# Photographs

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