

# INSTITUTE INNOVATION COUNCIL

## Pt. Ravishankar Shukla University, Raipur [C.G.] 492010

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### Report-Three Days Hands-On Workshop on PCB Designing and Prototyping For Semiconductor Manufacturing

The three-day Hands-On Workshop on PCB Designing and Prototyping For Semiconductor at IDEA Lab, SSIPMT, Raipur, organized by Institute Innovation Council, Pt. Ravishankar Shukla University, Raipur. It successfully provided students of M.Sc. in Electronics, S.o.S. in Electronics and Photonics & B.Voc. Students of Institute of Renewable Energy Technology & Management, PRSU with knowledge and practical skills in PCB design and prototyping, 3D printing, and drone technology. The camp aimed to familiarize students with new technologies, enhancing their technical skills and readiness for future challenges. The event concluded successfully, achieving its objective of imparting valuable technical knowledge to the participants.

Dr. Dilendra Nishad and Dr. Arun Kumar (Technical Incharge, IDEA Lab) and Dr. Naveen Jain (IIC-Mentor) were the speakers. On the first day, participants were introduced to the fundamentals of PCB (Printed Circuit Board) design. The session covered what a PCB is and its various applications. Following this, students were taught the process of designing a PCB. They were introduced to various software tools essential for PCB design, with a focus on hands-on sessions where students practiced designing using these tools.

Specifically, training was provided on the "Proteus" software. Students learned to create schematic diagrams and convert them into PCB layouts. They were also taught how to connect components on a PCB, create circuit diagrams, and check component packaging.

The second day was dedicated to converting the PCB designs created on software into physical prototypes. Students learned about the process of printing PCB designs, etching, and removing unnecessary copper. They were given copper boards to apply these techniques practically. Furthermore, students were taught how to assemble components on the PCB and bring it into working condition, learning to troubleshoot issues along the way.

On the final day, the focus shifted to 3D printing and drone technology. Students were taught to design 3D models using "Onshape" software. The session included guidelines on key considerations for 3D design, saving designs, and using 3D printing machines. They learned about different materials used in 3D printing and safety precautions while handling these technologies.

Additionally, students were introduced to drone technology. They learned how to design and fly drones, with hands-on experience in creating and operating a drone prototype. Information was

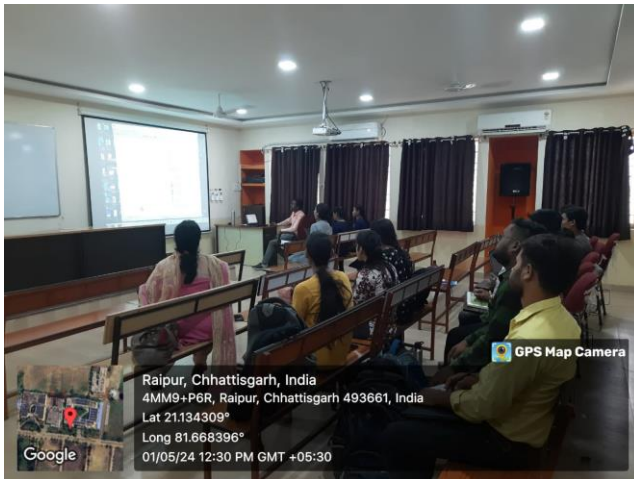
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provided on the various types of drones, their applications, and future potential.




A  
**Three Days Hands-On Workshop On  
"PCB Designing and Prototyping  
For Semiconductor Manufacturing"**  
**01 to 03 May, 2024**  
by  
**Institute Innovation Council - Pt. Ravishankar Shukla University, Raipur**  
In Collaboration With Innovation Ambassadors  
**SSIPMT Raipur - AICTE IDEA Lab**