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*Approved by: All India Council for Technical Education (AICTE), New Delhi*  
*Affiliated to: Dr. A. P. J. Abdul Kalam Technical University (AKTU), Lucknow*

**Name of the Subject:** Operating System

**Faculty Name:** Mr. Shantanu Pant

**Innovation Practices:** Cloud-Based Labs

**Students Involved:** 4<sup>th</sup> Semester

Cloud-based labs are increasingly being adopted by faculty to enhance the teaching and learning experience in operating systems (OS) courses. This innovation practice allows students to interact with fully functional operating systems in virtualized environments hosted in the cloud. The goal is to provide a more accessible, scalable, and hands-on approach to learning operating systems, enabling students to explore real-world OS concepts and scenarios without the limitations of physical labs.

Key practices and features of cloud-based labs implemented by faculty in operating systems courses:

1. Virtualization of OS Concepts
2. Pre-configured Lab Environments
3. Cloud Integration for Distributed Systems

The use of cloud-based labs in teaching operating systems is a significant innovation that enhances the learning experience by offering flexibility, scalability, and hands-on practice. Faculty is leveraging cloud platforms to provide real-world simulations, foster collaboration, and offer immediate feedback. This approach not only makes learning more engaging but also prepares students with the practical skills necessary for modern-day computing environments, including cloud-native operating systems and distributed systems. The innovation continues to

evolve with advancements in cloud technology, ensuring that students are well-prepared for the challenges of operating system management and development in professional settings.

