



Lokmanya Tilak Jankalyan Shikshan Sanstha's
PRIYADARSHINI BHAGWATI COLLEGE OF ENGINEERING

Harpur Nagar, Umred Road (Near Bada Tajbagh), Nagpur-24
(Approved by AICTE, New Delhi, Govt. of Maharashtra
and affiliated to Rashtrasant Tukdoji Maharaj Nagpur University)
Email: principalpbcoe@gmail.com, Website: www.pbcoe.edu.in

NAAC Accredited



Department of Electronics & Communication Engineering
(Session 2022-23)

Name of Course: - Computer Architecture

Course code : BEEETC-604PE

Innovation in Teaching Learning Process

Title of the Innovation in TL Process: ICT-Enabled Pedagogical Activity “ Visualization of Instruction Cycle in Computer Architecture”

1. Name of the Faculty : Dr. D.M.Kate
2. ICT tools used : PowerPoint Presentation (PPT), YouTube Video (Instruction Cycle Visualization) (<https://www.youtube.com/watch?v=ByllwN8q2ss>), Projector & Computer System
3. Event venue : Classroom
4. Group Size : Individual
5. Students Participants : 32
6. Description :

An ICT-enabled pedagogical activity titled “Visualization of Instruction Cycle in Computer Architecture” was conducted using PowerPoint presentation, YouTube video, and simulation tools.

The activity focused on explaining the **Fetch–Decode–Execute cycle** of the CPU through:

- Animated PPT slides showing instruction flow
- YouTube video demonstrating step-by-step execution
- Simulation visuals representing CPU components like ALU, Control Unit, and Registers

Students actively participated by:

- Observing and analysing each stage of instruction execution
- Interpreting how instructions move within the CPU
- Engaging in discussions and solving conceptual problems

This approach helped transform theoretical concepts into **visual and interactive learning**, enhancing understanding of internal computer operations.

Outcome:

The ICT-enabled activity on “Visualization of Instruction Cycle in Computer Architecture” resulted in the following learning outcomes:

- Students gained a clear understanding of the **Fetch–Decode–Execute cycle** and how instructions are processed inside the CPU.
- Improved ability to **visualize internal computer operations** such as registers, ALU, and control unit.
- Enhanced skills in using **modern ICT tools** like PowerPoint, simulation software, and online learning resources.

- Developed **analytical thinking** by interpreting instruction flow and CPU functioning.
- Strengthened **teamwork and collaborative learning** through group discussions and interactions.
- Improved **communication skills** by explaining technical concepts effectively.
- Increased student engagement and interest in **Computer Architecture concepts**.
- Encouraged **self-learning and exploration** using digital platforms.

Activity Photographs :

