

Marathwada MitraMandal's

**COLLEGE OF ENGINEERING, PUNE**

*Accredited with 'A++' Grade by NAAC,  
Recipient of " Best College Award 2019" by SPPU*  
**Department of Computer Engineering**

**Academic Year 2023-2024, Sem-II**

## **Report of Innovative Teaching Pedagogy**

### **Report of Flip Classroom**

**Class:** BE II

**Subject :** High Performance Computing

**Topic:** Principles of Parallel Algorithm Design: Preliminaries, Decomposition Techniques

**Date :** 13/02/2024 , **Time:** 11:15 AM to 12:15 PM

**No. of Participants:** 51/ 75

**Mode of Conduction:** Offline

**Co-ordinator:** Ms. Snehal H Kuche

#### **Topics given for study:**

Unit No. 3, Topic : Parallel Communication-Basic Communication: One-to-All Broadcast, All-to-One Reduction, All-to-All Broadcast and Reduction, All-Reduce and Prefix-Sum Operations, Collective Communication using MPI: Scatter, Gather, Broadcast, Blocking and non blocking MPI, All-to-All Personalized Communication, Circular Shift, Improving the speed of some communication operations.

#### Outcome of the session:

Participants are able to

1. Solve numericals based on communication technique
2. Enhance cognitive skills of learning

#### **Glimpses of the Session:**


## Flip Classroom

### Student Evaluation

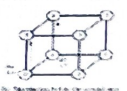
Example to solve How does Communication using MPI work?


Example of the Scatter Operation



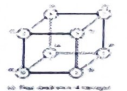
(a) Initial state of hypercube



(b) First step of the scatter operation

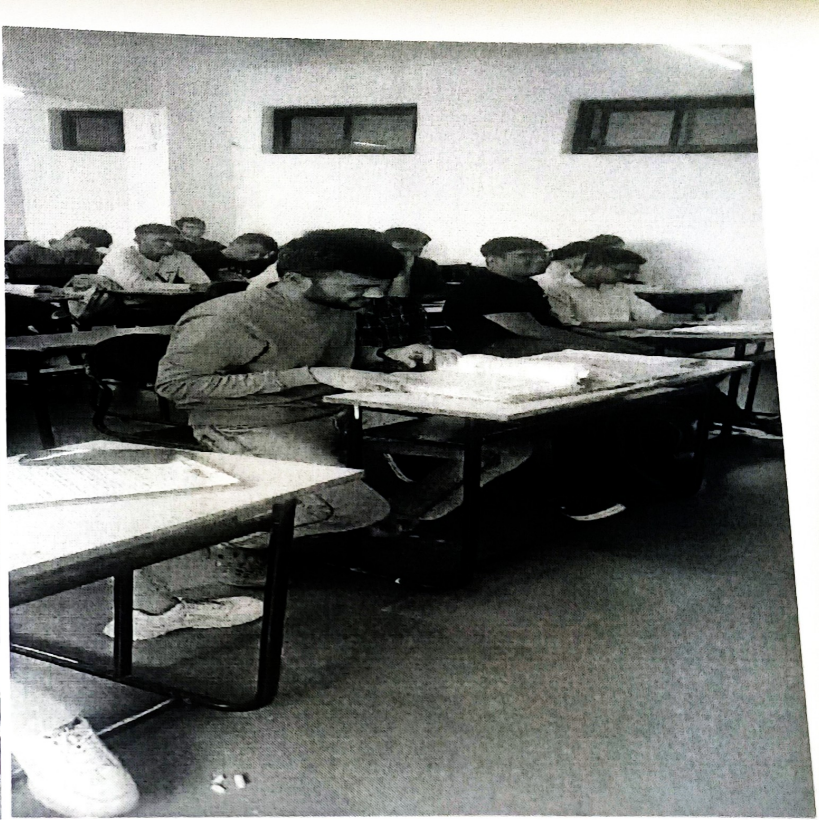
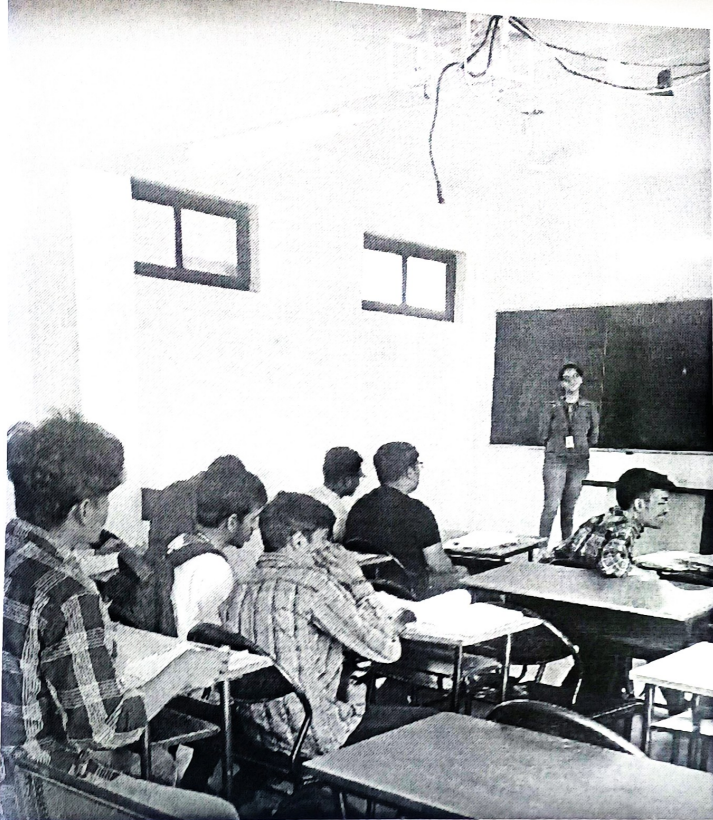


(c) Second step of the scatter operation



(d) Final state of the scatter operation

The scatter operation on an eight-node hypercube.



*Snehal H. Kuche*

**Ms. Snehal H. Kuche**  
**Course Coordinator**

*Dr. K. S. Thakre*

**Dr. K. S. Thakre**  
**HOD Computer Engg.**