

# Workshop on High Performance Computing (HPC) Technologies

**Venue:** SN Bose Kolkata

**Duration:** 3 days,

| D<br>A<br>Y<br><br>1 | Time (Hrs.)                   | Lecture / Lab Session   |
|----------------------|-------------------------------|---|
|                      | 09:30 – 09:45                 | Welcome Address and Overview of Training  |
|                      | 09:45 – 10:45                 | <b>Session:</b> Introduction to HPC and Computer Architecture   |
|                      | 10:45 – 11:00                 | <b>Tea Break</b>  |
|                      | 11:00 – 12:00                 | <b>Session:</b> Introduction to HPC and Computer Architecture ( <i>contd..</i> )                                |
|                      | 12:00 – 13:00                 | <b>Session:</b> System Organization and Administration  |
|                      | 🍴 <b>Lunch Break - 1 hour</b> |   |
|                      | 14:00 – 15:45                 | <b>Lab Session:</b> Basic Linux commands  |
|                      | 15:45 – 16:00                 | <b>Tea Break</b>  |
|                      | 16:00 – 17:30                 | <b>Session:</b> HPC Software Stack and Management Tools   |
| D<br>A<br>Y<br><br>2 | Time (Hrs.)                   | Lecture / Lab Session   |
|                      | 09:30 – 11:00                 | <b>Session:</b> Introduction to SLURM & Application Installation and Management using SPACK                     |
|                      | 11:00 – 11:15                 | <b>Tea Break</b>  |
|                      | 11:15 – 12:00                 | <b>Session:</b> HPC Application demonstration   |
|                      | 12:00 – 13:00                 | <b>Session:</b> Profiling tools demonstration   |
|                      | 🍴 <b>Lunch Break - 1 hour</b> |   |
|                      | 14:00 – 15:45                 | <b>Session:</b> Shared Memory Parallelism with OpenMP   |
|                      | 15:45 – 16:00                 | <b>Tea Break</b>  |
|                      | 16:00 – 17:30                 | <b>Lab Session:</b> Shared Memory Parallelism with OpenMP   |
| D<br>A<br>Y<br><br>3 | Time (Hrs.)                   | Lecture / Lab Session   |
|                      | 09:30 – 11:00                 | <b>Session:</b> Distributed Memory Parallelism with MPI   |
|                      | 11:00 – 11:15                 | <b>Tea Break</b>  |
|                      | 11:15 – 13:00                 | <b>Lab Session:</b> Distributed Memory Parallelism with MPI   |
|                      | 🍴 <b>Lunch Break - 1 hour</b> |   |
|                      | 14:00 – 15:45                 | <b>Lab Session:</b> Introduction to compiler flags for optimization and Python environment setup with Miniconda |
|                      | 15:45 – 16:00                 | <b>Tea Break</b>  |
|                      | 16:00 – 17:30                 | <b>Lab Session:</b> Introduction to GPU Architecture & Basics of Accelerated Programming                        |