



**FDP Sponsored by National Supercomputing Mission (GOI)**



## High Performance Computing and Artificial Intelligence



### National Supercomputing Mission Sponsored Faculty Development Program on “High Performance Computing & AI”

Organized by,  
Department of Artificial Intelligence and Data Science,  
MET's Institute of Engineering, Nashik &  
Walchand College of Engineering, Sangli.

*Under the aegis of National Supercomputing Mission,  
Government of India, In association with CDAC, Pune.*

**Dates: 18<sup>th</sup> August to 23<sup>rd</sup> August 2025**

#### Patrons:

Hon. Pankaj Bhujbal (Trustee, MET's BKC, Nashik)  
Hon. Sameer Bhujbal (Trustee, MET's BKC, Nashik)  
Hon. Dr. Shefali Bhujbal (Chief Administrator, MET's BKC, Nashik)

#### Advisors:

Prof. (Dr.) V. P. Wani, Principal, MET's IOE, Nashik  
Dr. U. A. Dabade, Director WCE, Sangli  
Mr. Ashish Kuvvelkar, Senior Director, CDAC Pune

#### Convenors:

Prof. (Dr.) S. V. Gumaste, MET's IOE, Nashik  
(Head, Department of Artificial Intelligence and Data Science)  
Prof. (Dr.) D. B. Kulkarni, WCE Sangli  
(Head, NSM Nodal Centre WCE Sangli)

#### Coordinators:

Mrs. N. S. Ambekar, Assistant Professor, MET's IOE, Nashik.  
Ms. A. S. Pawar, Assistant Professor, WCE, Sangli

#### About Host Institute

Mumbai Education Trust's 'league of colleges' has shaped countless professionals who have made notable contributions both in India and abroad. Upholding its dedication to providing top-quality education, MET established the advanced Bhujbal Knowledge City (BKC) in Nashik. This innovative campus is designed to keep pace with the changing needs of the modern world. Nestled in the peaceful area of Adgaon, Nashik, the campus features wide green spaces and extensive, well-developed facilities that foster learning and growth. The institute offers programs in disciplines such as Artificial Intelligence & Data Science, Computer, Information Technology, Electronics & Telecommunication, Electrical, Mechanical, Civil, and Electronics & Computer Engineering. It also offers PG courses like ME (Computer), ME (CAD/CAM), and MCA with research centers in Computer and Mechanical Engineering. The institute is NAAC accredited and has NBA accreditation for five key departments, showcasing its focus on academic quality.

#### About Course

The program will introduce several parallel programming models, including Open Multiprocessing (OpenMP) for shared memory machines, Message Passing Interface (MPI) for distributed memory machines, and Compute Unified Device Architecture (CUDA), a parallel computing platform developed by NVIDIA for exploiting GPU. It will also include hands-on practice on these programming models. It is primarily intended for professors who presently teach or plan to teach HPC-related courses. Researchers who use or plan to use parallel programming are also welcome to attend. The program will also cover the role of High-Performance Computing (HPC) in AI, including how parallel programming accelerates deep learning and large-scale AI model

## About collaborators

Centre for Development of Advanced Computing (C-DAC) is implementing the National Super-computing Mission (NSM), a capacity building initiative of Ministry of Electronics and Information Technology (MeitY), Government of India.

Walchand College of Engineering Sangli (WCE) is one of the nodal centre for conducting NSM activities. It is a state government aided oldest and autonomous premiere engineering institute in Maharashtra with a beautiful campus of over 90 acres. WCE offers UG, PG and PhD programs in engineering education.

## Course Objectives

- To introduce the fundamentals of parallel computing including parallel architectures, programming models and commonly used parallel programming constructs/libraries/ languages.
- To deliver hands-on sessions to provide experience applying HPC tools on both CPU and GPU platforms.
- To educate faculties on Integrating HPC course into the curriculum.

## Course Contents

- Understanding Multicore and Manycore architectures
- Shared Memory Parallelism with OpenMP
- CUDA Programming
- Distributed Memory Parallelism with MPI
- Parallel Computing Patterns: Reduction, Matrix multiplication, convolution etc.
- Profiling sequential and parallel codes
- Performance measures in Parallel Computing HPC in AI

## Target Audience

The workshop is open to all faculty members and research scholars from the departments of Computer, Electronics and Allied branches in universities and engineering colleges across Nashik, Pune, and the wider Maharashtra region. Priority will be given to applicants from institutions located in proximity to MET's Institute of Engineering, Nashik. Registrations will be accepted on a first-come, first-served basis

## Important Dates

**Registration Open:** 28th July 2025

**Last Date of Registration:** 10<sup>th</sup> August 2025

**Course Duration:** 18,19,20,21 August 2025 (Online) and 22,23 August 2025 (Offline @MET's IOE)

**Mode :** **Online from 3:00 pm to 5:00 pm and 7:00 pm to 9:00 pm**  
**Offline from 10:00 AM to 5:30 PM**

**Registration Fees:** ₹ 500/- (Refundable after successful completion and certification)

**Registration Link:** <https://forms.gle/DcSAqv9iC7LiiMUj7>

## Program benefits

- Interaction with eminent speakers from industry and academia
- **NVIDIA Industry certifications of worth 21,000/- for FREE**
- Access to HPC resources during the FDP
- Breakfast and Lunch will be provided in campus during sessions

## Speakers

Dr. D. B. Kulkarni, Head, NSM Nodal Centre, WCE, Sangli  
Dr. U. B. Chavan, WCE Sangli  
Dr. M. A. Shah, WCE, Sangli  
Dr. Nilesh Pikale, IIIT Nagpur  
Ms. A. A. Pawde, WCE, Sangli  
Mr. S. S. Patil, WCE, Sangli  
Ms. A. S. Pawar, WCE, Sangli  
Plus  
Distinguished speakers from reputed institutions

## Institute Level Organising Team

- Dr. Nisha Patil
- Mrs. Deepali Suryawanshi
- Mr. Prashant Rewagad
- Mr. Ganesh Gaikwad
- Mrs. Shital Bedse
- Mrs. Jayshri Kandekar
- Mrs. Sonali Jadhav
- Mr. Nitin Dhamale
- Mrs. Radha Sali
- Mr. Nilesh Ahire

## Contact Details

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**For Registration you can scan the QR code**