# DELHI TECHNOLOGICAL UNIVERSITY

(Formerly Delhi College of Engineering)
Shahbad Daulatpur, Main Bawana Road, Delhi-110042

## Two-week Training Program
on
## "High Performance Computing and its Applications in Materials Science (HPC-AMS)"

**CHIEF PATRON**

**Prof. Prateek Sharma**
Vice Chancellor, DTU

**PATRON**

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Registrar, DTU

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**Prof. Vinod Singh**
HOD, Applied Physics, DTU

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(Nodal Officer DTU-NSM), Professor,
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**Dr. Aditi Zear**
Dept. of CSE, DTU

**October 6th - 17th, 2025** | **Department of CSE, DTU**

*Organises by*

**Department of Computer Science & Engineering (CSE)**
*in collaboration with*
**Department of Applied Physics**

*Sponsored by*

**C-DAC under National Supercomputing Mission (NSM), Ministry of Electronics and Information Technology (MeitY), Govt. of India**

Delhi Technological University (DTU), through its established Nodal HPC Centre under National Supercomputing Mission (NSM), is committed to empowering academic and industry professionals by providing exposure to cutting-edge domains such as High Performance Computing (HPC), Artificial Intelligence (AI), and Data Science. In alignment with the objectives of the NSM—a flagship initiative of the Government of India, jointly steered by the Department of Science and Technology (DST) and the Ministry of Electronics and Information Technology (MeitY).

The NSM seeks to install and enable supercomputing infrastructure at academic and R&D institutions across the country, accessible through the National Knowledge Network (NKN). The mission also emphasizes the generation of indigenous expertise to address complex, multidisciplinary problems of national and global significance.

## ABOUT THE PROGRAM

This program offers numerous benefits to participants, equipping them with essential skills in computational modeling, parallel computing, and high-performance simulations. By gaining hands-on experience with advanced simulation tools commonly used in materials science, such as VASP, Quantum ESPRESSO, and LAMMPS, attendees learn to efficiently run large-scale simulations, thereby accelerating research processes and enhancing productivity. The program provides a deep dive into the interdisciplinary nature of materials science, where computational techniques merge with physics, chemistry, and engineering principles, fostering well-rounded problem-solving skills. Participants also acquire industry-relevant expertise in programming languages, parallelization techniques, and job scheduling, which significantly boosts career prospects in both academia and industry. Moreover, the training helps build a network of professionals and researchers, encouraging future collaborations and mentorship. By gaining exposure to national supercomputing facilities, participants are empowered to tackle complex scientific problems and contribute meaningfully to technological advancements in materials innovation, energy, and sustainability.

***TOPICS TO BE COVERED:***

**HPC Introduction and Parallel Programming Models, Density Functional Theory, Quantum Materials, Energy Materials, Battery Technology, ML Guided Materials Discovery, etc.**

**AUDIENCE**
Faculty members and Research Scholars (Pursuing PhD or M.Tech) of all Engineering/Sciences Backgrounds

**REGISTRATION FEE**
NIL

**NUMBER OF PARTICIPANTS EXPECTED**
50

**COURSE DATES**
October 6th - 17th, 2025

**COURSE DURATION**
Two week

**VENUE :**
Department of CSE, DTU

**MODE**
Physical Mode

**ACCOMMODATIONS**

Limited accommodations will be available for outstation participants on a *"first-come first-served"* basis.

***For Registration Scan QR Code***

***For Registration :***
**https://forms.gle/gyx5DoBxYzx3DkLQ6**

***Last date of application:***
**September 25, 2025**

***For any query please email at***
**hpcams2025@gmail.com**