# Experimental High Energy Particle and Astro-particle Physics (EHEPAP 2026) School on Software Development

**Sunday, 15 February 2026 - Monday, 23 February 2026**

**Saha Institute of Nuclear Physics**

# Scientific Programme

Experimental High Energy Particle and Astro-particle Physics (EHEPAP 2026) School on
Software Development / Scientific Programme

Friday, 2 January 2026

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**Topics to be covered in Pre-School**

Introduction to Scientific Computing and computing environment.

Essential C++, Object-Oriented programming in C++, Generic Programming in C++ and the Standard Template Library (STL), Modern C++ (C++11 onwards).

Elementary Python, Python Data Structure, Functional, Programming with Python, Python Modules, Object Oriented Python.

Basic concepts of handling Root Files and Input/Output, Math Libraries, Histograms, Graphs, Tree based analysis, Basics of RooFit, Introduction to PyROOT/UpRoot.

Random Number Generator.

Git commands, software installation, etc.

**Topics to be covered in Main School**

A few pedagogical lectures on High energy Physics and Astroparticle Physics.

Statistical Methods for Data Analysis.

Introduction to Machine Learning Algorithms.

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Hands-on Sessions on data analysis of simple problems
in High Energy Physics and Astroparticle Physics.

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