

School on High Energy Particle & Astroparticle Physics (HEPAP-DAS 2023)

Tuesday, 5 December 2023 - Saturday, 9 December 2023

Saha Institute of Nuclear Physics

Scientific Programme

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.

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