Hansraj College

Student Learning Centre

Hansraj College is one of the most prestigious College of University of Delhi. With over 3,000 students in undergraduate courses, it is one of the largest constituent College of the University of Delhi. For years Hans Raj College has been ranked among the Top-10 colleges of India in all three disciplines with **NAAC Grade as A+ and NIRF # 9**. Hansraj College offers its students a unique blend of modern education anchored in hallowed Vedic values. The College is guided in its mission of combining the best of tradition and modernity by the vision of Mahatma Hans Raj. The **IQAC** of the College in line with this spirit is committed to enhance student learning activities and equip them with additional knowledge. With this aim "Student Learning Centre' has come up and is launching its first online course entitled *"Introduction to Computer Algebra System (CAS): Maxima (An Open Source Software)"*.

Organising Team:
- Dr. Rama: Patron (Principal), Hansraj College)
- Dr. Mona Bhatnagar: Programme Convenor (Director, IQAC), Hansraj College
- Dr. Preeti Dharmarha: Course Convenor Hansraj College
- Dr. Dhiraj Kumar Singh: Co-Convenor Zakir Husain Delhi College
- Mrs. Bhawna Gupta: Tutor Hansraj College
- Mr. Dasharath Meena: Tutor Hansraj College
- Dr. Pankaj Sharma: Tutor Zakir Husain Delhi College

Resource Person:
Dr. Gurpreet Singh Tuteja
Zakir Husain Delhi College

About the Course:
SLC Course01-**Introduction to Computer Algebra System (CAS): Maxima (An Open Source Software).**

The aim of this course is to give hands-on practice to the Maxima software and demonstrate its numerical and symbolic capabilities to solve mathematical problems. Many applications in calculus, linear algebra, number theory and optimizations will also be covered.

Eligibility:
Participant must have studied at least one paper of Mathematics at UG/Senior Secondary level.

Who can apply?
Faculty, Research Scholars, UG and PG Students (including First Year) are eligible.

Seats are limited.

Registration:
Registration form is available online at http://www.bit.do/HRMaxima

The last date for registration is **June 25, 2020**.

The selected candidates will be informed latest by **June 26, 2020**

Registration Fee: Free

Contact: slccourse01@hrc.du.ac.in

Week-wise Planner:

Week 1
Introduction and Installation of Maxima software, Introducing wxMaxima, Basics of wxMaxima and Maxima. Basic Arithmetic, Introduction to Programming, Defining Sets and Functions, Writing Programs for well known functions, Plotting 2D functions, Multiple functions and Plotting 3D functions

Week 2
Polynomials, Solutions to Equations, Logarithmic & Trigonometric Expressions, Defining Matrices, Determinant, System of Linear Equations, Characteristic Roots and Characteristic Vectors of a Matrix, Limit and Continuity, Differentiation & Applications of Derivatives, Taylor's Series & Maclaurin's Series

Week 3
Partial Differentiation, Integration, Numerical Integration, Applications of Derivatives, Differential Equations, Some Practical Examples

Each session will be followed by a quiz, weekly assignments and a final project.

Award of Certificate:
Certificate will be awarded only to those participants who will complete 80% of attendance subject to passing of a final test (overall 60%) and satisfactory performance in the final project.