

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Academic Year (2021-2022)

Department of Computer Science

Summary Report

1) Title of Programme	One week National Workshop on "Scilab"		
2) Name of Organizing Department/Unit	Department of Computer Science		
3) Name of Coordinator	Dr Renuka R Londhe		
4) Name of Co-Coordinator	Dr. A. A. Yadav Mr. Mahesh Wavare		
4) Date Of Programme	01 st May 2020 to 07 th May 2020		
5) Venue:	Department of Computer Science		
6) Target Group	Assistant/Associate Professors Across Indai		
7) Number of participants:	Male	Female	Total
	1330	772	2102
8) Names and Details of Resource Person if any:	-		
9) Total Expenditure for the Programme:	Nil		
10) Source of funding	Ministry of Human Resource Development (MHRD), Govt. of India		

Title: One Week Online Faculty Development Programme (COVID Lockdown 2020) on “Scilab”

Organizer: Dr. Mahadev Gavhane

Dr. A. J. Raju

Mrs. Vidya Kadam

Date: 01st May 2020 to 07th May 2020

Venue: (Online)

Introduction: A highly informative one week Faculty Development Programme on “Scilab” (Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching) was conducted. It is organized by Department of Computer Science in collaboration with the “Spoken Tutorial Project”, Indian Institute of Technology, Bombay.

- Scilab is Mathematical and Scientific calculation software, open source substitute for MATLAB, very useful for all science and engineering researchers, teachers and students in academics particularly.
- Scilab also provides many numerical methods and is very easy to use even for people without prior programming experience.
- Also Scilab is used for data analysis and computation, which is alternative for MATLAB as this is not open-source.

Objectives of the Programme/ issues addressed:

- To provide a platform to the participant to acquire detailed knowledge about Scilab.
- To provide platform to the participant to acquire knowledge about different tools in Scilab.
- For creating the Awareness about the use of Scilab tools for the research.
- Scilab includes optimization, statistics, maths and simulation, signal processing, application development, 2-D and 3-D visualization and the control system design and analysis.
- Scilab is a data analysis software that operates under the GPL license, allowing users and programmers to improve their overall system.

Details of Participants: There were total 2102 Participants for this one-week Workshop Faculty Development Programme on “Scilab”. All the Science, Commerce and Arts faculties and students of all the departments were participated in this workshop.

Brief Summary of Events/ Sessions:

- Professor Kannan Moudgalya explained introduction to Scilab and its benefits, various self-learning platforms through Spoken tutorials.
- Further he elaborated, How Scilab is reliable, Use of Scilab in CNES, Use of Scilab for space mission analysis and flight dynamics.
- Also explained Industrial application of Scilab, Matrix calculation in Scilab.
- Professor kannan explained Open source software problem, no good documentation for FLOSS, also provides the demo of Scilab on Cloud.
- He explained the installation of Scilab on Windows Operating System, and gives various vector operations.
- Prof. Kannan convened file handling, user defined input and output, Integration and solving Non-Linear Equations using Scilab.
- He further described various methods to solve linear equations such as Gussian Methods, Iterative methods.
- He also explained the interpolation concept which is the part of numerical methods, ODE Euler methods and its applications.
- Prof. Kannan described optimization using Karmarkar function, Digital Signal Processing, control systems, discrete systems, calling user defined functions in XCOS, simulating a PID controller using XCOS.

Conclusion:

- Scilab is a cross platform, free and open source numerical computational package and an easy to use, interpreted, high level, matrix based programming language with a versatile inbuilt mathematical library.
- Scilab includes hundreds of mathematical functions. It has a high level programming language allowing access to advanced data structures, 2-D and 3-D graphical functions.
- A large number of functionalities are included in Scilab such as control, simulation, optimization, signal processing and XCOS, the hybrid dynamic systems modular and simulator is provided with the platform.

- Scilab can be used for Graphical and data visualization, statistical analysis, fluid dynamics, linear algebra, numerical optimization.
- Xcos, graphical dynamic system used to model and simulate mechanical systems, hydraulic systems, electrical systems, chemical systems, biological systems and many more.