Sacred Heart College, Thevara

Department of Physics

Value Added Course on GNU Octave 2015-16

Course Code: 15PHYVAC01

AIM:

GNU Octave is a very powerful language used by researchers and engineers all over the world for computations, modelling, simulations, data analysis and processing, algorithm development, visualisation etc. This course familiarizes **GNU Octave** to students who have little or no experience in computer programming. Even though the course does not cover all aspects of GNU **Octave**, it can aid the students in approaching common problems encountered in Physics and Mathematics. On successful completion of the course, certificates are issued.

COURSE OBJECTIVES:

The main objective of this course is to give a foundation on **GNU Octave**. Once these foundations are well understood, students can deal with advanced topics and higher applications of **GNU Octave**.

Introduction - GNU Octave

• Module-1: Basics of **GNU Octave** (10 Hours)

GNU Octave windows, Command window, Arithmetic operations, Display format, Elementary Math Built – In Functions, Scalar variables, Useful commands for managing variables, Examples of **GNU Octave** applications

• Module-2: Arrays(10 Hrs)

Creating arrays, Mathematical operations with arrays, Examples

• Module-3: Programming and plotting in **GNU Octave** (10 Hours)

Programming, Two and three dimensional plots, Polynomials, curve fitting and Interpolation, Applications in numerical analysis **Text Book/ References:**

(1)   John Wesley Eaton, David Bateman, Søren Hauberg, GNU Octave: A High-level Interactive Language for Numerical Computations, Network Theory Limited, 2008.
(2)   Jesper Schmidt Hansen, GNU Octave: Beginner's Guide, Packt Publishing Ltd, 2011

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