

Xcos

Xcos is equivalent to Simulink in Matlab. Xcos is a graphical editor used to design hybrid, dynamical systems models with the help of standard palettes and blocks. It is used for signal processing, control systems, and in studying physical and biological systems by designing, compiling and simulating models. It also provides functionalities for modeling mechanical systems, etc.

Advantages of Xcos

- **Freely available** with Scilab
- **Easy to learn**
- **Creating one's own block and code structure** or customise the existing blocks and codes structures in C, Fortran or Scilab language
- Helps simulate digital communications systems with **Xcos-ModNum**
- Helps control hardware device connected in loop (HIL configuration) with controller implemented in Scilab/Xcos.
- It offers stable and efficient solutions to not only **academic** needs but also to **industrial** problems.

Assistance Offered

- **Spoken Tutorials:** A user new to Scilab may learn Scilab using spoken tutorials available on the website:

http://spoken-tutorial.org/Study_Plans_Scilab

A Spoken Tutorial explains the steps involved in carrying out a computer based activity - such as using the features of some software - with the help

of a screencast and narration. A screencasting software captures all the activities on the screen along with the narration and plays it back as a movie. This movie, typically 10 minutes long, is called the Spoken Tutorial. The Spoken Tutorial serves as a valuable self-study tool.

- **Workshops:** FOSSEE team conducts Scilab workshops in institutes to help users pick up various features of **Scilab** as a programming language.

A recent development worth taking a note is that the Project Approval Board (PAB) of the MHRD has asked AICTE and all Central Educational Institutions (and their affiliated institutions) to make "the use of SCILAB and other Open Source Software products". Furthermore, institutions have been asked to "explore Open Source Software Solutions before adopting propriety software products for their academic, administrative and financial needs".

A Related Project

The Textbook Companion Project aims to port worked out examples and selected exercise problems from standard textbooks using an open source software system, such as Scilab. For more details about this project please visit the website:

http://www.scilab.in/Textbook_Companion_Project

**For more information
please visit**

<http://www.scilab.org>

http://scilab.in/Lab_Migration_Project

http://spoken-tutorial.org/Study_Plans_Scilab



A
FOSSEE
(Free and Open source Software for
Science and Engineering Education)
Initiative
of IIT Bombay under
National Mission on Education through
Information and Communication Technology,
launched by the
Ministry of Human Resource Development,
Government of India

<http://www.scilab.in>

LAB MIGRATION

Objective of Lab Migration

- It is in the fabric of the whole idea behind education to raise the overall awareness and knowledge of masses surpassing boundaries of all kinds.
- A major obstacle to that end, especially in a large country, comes in the form of inequitable distribution of monetary resource.
- It is, therefore, in the interest of human intelligence that we build an environment of 'free' education by taking a cue from the technological environment already existing around us.

We, as a part of the FOSSEE team at IIT Bombay, request you to lend a hand in our mission to inculcate a culture of building and sharing **free and open**, computational software products for academic purposes, such as **Scilab**.

Lab Migration

The 'Lab Migration' team looks forward to help laboratories of your institution in migrating from paid and proprietary software products, such as Matlab to a free and open software, Scilab. To help overcome problems labs may face in migrating to Scilab, we offer our assistance.

- Users may fill in the details and upload the relevant files on the site:
http://scilab.in/lab_migration/proposal
- We will respond as soon as possible.
- We can also be reached directly at contact@scilab.in.

It needs mentioning that it is not just your institution alone that stands to gain with this changeover– the overall academic environment of India will benefit from your little step forward! Your company on the journey to the world of free knowledge is highly valued.

Migrated Labs

We have successfully migrated following Labs from Matlab to Scilab:

- **Delhi University**
 1. Signals and Systems Lab
 2. Numerical Methods Lab
- **Sastra University**
Signal Processing Lab
- **K. J. Somaiya College of Engineering**
Control Lab

For more details please visit the website:
http://scilab.in/lab_migration/labs

Scilab

Scilab is a free and open source, numerical and computational package, and an easy-to-use high level matrix based programming language with a versatile in-built mathematical library. It is supported on all the widely used platforms viz Microsoft windows, Linux and Macintosh on both basic hardware configurations and high-end servers.

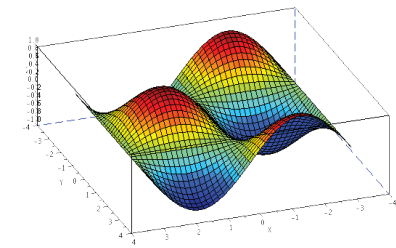
Scilab can be used for:

- Graphing and Data Visualizations
- Control, Signal Processing
- Modeling and Simulation of Dynamical Systems

- Image Processing
- Fluid Dynamics
- Linear Algebra
- Statistical Analysis
- Numerical Optimization and a variety of other engineering, mathematical and scientific purposes.

Advantages of Scilab

- Available **free of cost** and no periodic maintenance charge of any kind
- **Source code is available** for tweaking and modification as per user's needs
- Significantly **small memory and CPU usage**; can comfortably run on systems with not-so-advanced processors
- Users may download complex **toolboxes** developed by others or share their own using various portals
- Capability to communicate with **Data Acquisition Systems** and offers real-time processing of data
- **Easy to learn**
- Can plot various types of **2D and 3D charts**.



- Easy interfacing with **Fortran or C programs**
- Usage of software for **any kind of purpose is permissible**
- Provides accurate numerical solutions