



1 The procedure to practise

1. You have been given a set of spoken tutorials and files.
2. You will typically do one tutorial at a time.
3. You may listen to a spoken tutorial and reproduce all the steps shown in the video.
4. If you find it difficult to do the above, you may consider listening to the *whole* tutorial once and then practise during the second hearing.

2 Side-by-Side learning video (only for offline content)

1. Go to the folder named `spoken` on your machine.
2. Locate `index.html` file.
3. Open this file with either `Firefox` or `Chrome` web browser.
4. The Side-by-Side learning video will appear. This video will explain how to learn from the spoken tutorials.
5. Click on the Play button to play the video.
6. Note all the steps explained therein.

3 Scilab

1. Click on "Select FOSS" or "All FOSS Categories" drop-down and choose "Scilab".
2. Click on "Select Language" or "All Languages" drop-down and choose the language (English, Hindi, Marathi ...) in which you wish to learn.
3. Click on "Submit" button.
4. You will see a list of tutorials based on your selection.
5. Start with the first tutorial in the displayed list.

4 First 4 Tutorials

1. The first 4 tutorials in the displayed list, explain about Scilab, its benefits,

how to learn Scilab from spoken tutorials, Scilab Textbook Companion and Scilab Lab Migration activities.

2. It is recommended that you view these 4 tutorials one-by-one for a deeper understanding of Scilab and FOSSEE project's Scilab activities.
3. To view a tutorial, click on the Play icon which is located in the player.

5 Fifth Tutorial: Installing

1. Locate the topic "Installing" and click on it.
2. To view the tutorial, click on the Play icon which is located in the player.
3. Adjust the size of the browser in such a way that you are able to practice in parallel.
4. Refer to the `Installation Sheet` for additional instructions on installing Scilab.
5. Skip this tutorial if you already installed Scilab.

6 Sixth Tutorial: Getting Started

1. Locate the topic "Getting Started" and click on it.
2. To view the tutorial, click on the Play icon which is located in the player.
3. Adjust the size of the browser in such a way that you are able to practice in parallel.
4. Play-pause-practise all the commands shown in the tutorial.

6.1 Open Scilab on Linux OS

- (a) The tutorials are explained on the Linux OS.
- (b) It will be easy for the Linux users to follow as instructed in the tutorial.

6.2 Open Scilab on Windows OS

- (a) To open "Scilab" on Windows OS, double click on "Scilab" shortcut icon.
- (b) Else click on `Start>> All programs>>Scilab>>Scilab Console`.

- (c) This will open the "Scilab" console window.
- 5. At 5:34, pause the tutorial.
- 6. The `diary()` command stores the Scilab session in a file, **after** you issue the command and **not before that**.
- 7. At 5:34 - Change the directory to a destination where you have write access, preferably to a folder on the Desktop.

6.3 Instructions to practise

- (a) Create a folder on the "Desktop" with your "Name-RollNo-Component". (Eg. "vin-04-scilab").
- (b) Give a unique name to the files you save, so as to recognize it next time. (Eg. "Practice-1-vin").
- (c) Remember to save all your work in your folder.
- (d) This will ensure that your files don't get over-written by someone else.
- (e) Save your work from time to time, instead of saving it at the end of the tutorial.

6.4 Common instructions for Assignments

- (a) Attempt the **Assignments** as instructed in the tutorial.
- (b) Save your work in your folder.

6.5 Common instructions to use Code files

- (a) Click on the link "Code files" located near the player and save it in your folder.
- (b) Extract the downloaded zip file.
- (c) You will see all the code/source files used in the particular tutorial.
- (d) Use these files as per the instructions given in the particular tutorial.
- 8. Follow all the above instructions, till you complete the next 4 tutorials.
- 9. Once each tutorial is complete, choose the next tutorial from the playlist which is located near the player.

7 Eleventh Tutorial: Scripts and Functions

- 1. Locate the topic "Scripts and Functions" and click on it.

- 2. At 2:20 The video shows Load into Scilab. This is now changed to File with Echo.
- 3. At 3:25 pause the tutorial.
- 4. Type `pwd` to check the present working directory.
- 5. Change the directory using **Change Directory** shortcut icon, to the directory where you have saved the `helloworld.sce` file before using the `exec` command.
- 6. Now resume the tutorial.
- 7. Follow all the above instructions, till you complete all the tutorials in the series.

8 Thirteenth, Twenty-seventh, Twenty-eighth Tutorials: XCOS Introduction, Calling User defined functions in XCOS & Simulating a PID Controller using XCOS

For all Xcos tutorials, to add grids, legends, titles and borders, please type the following in the Scilab Console, after you have obtained the plot:

- 1. For grid, type: `xgrid`
- 2. For legend, type (if you have plotted two lines):
`hl = legend(["title for line 1", "title for line 2"]);`
- 3. For title, type: `xtitle("Title of graph");`
- 4. For borders, type: `a = gca(); a.box = "on";`

9 Twenty-fourth Tutorial: Digital Signal Processing

- 1. Pause the tutorial at 3:28
- 2. The video shows how to execute `dft` function. This function has been deprecated.
- 3. Instead of typing `dft`, type `fft`.
- 4. This will cause the 3rd term to NOT have the imaginary component, which has a magnitude of 10^{-16} .
- 5. Resume the tutorial.

10 Twenty-fifth Tutorial: Control System

- 1. At 11:58 The video shows a unit circle. In Scilab version 5.5.2 the unit circle is replaced by a line, which defines stability of the system.