

1. Introduction

IIT Bombay has conducted many large-scale teacher training workshops under the Train 10,000 Teachers (T10KT) programme, sponsored by the National Mission on Education through ICT (NMEICT), MHRD, Govt. of India, and trained over 2,00,000 teachers.

Another successful technology developed at IIT Bombay is Spoken Tutorial, using which about 50 lakh students have been trained on various ICT topics. The effectiveness of this method can be seen from the testimonials available here: <https://spoken-tutorial.org/testimonials/media/?foss=70> and the [TEDx talk](#). This project is funded by NMEICT, MHRD.

It is now proposed to offer the highly effective Spoken Tutorial based ICT training to a large number of teachers, across the country, through the T10KT methodology, with **Linux** training being taken up next.

Linux is one of the most popular Operating Systems used today. Linux refers to the family of Unix-like computer operating systems that use the Linux kernel. It can be installed on a wide variety of computer hardware, ranging from mobile phones, tablet computers and video game consoles to mainframes and supercomputers.

Linux is an open source software and the Linux kernel is released under the GNU General Public License and hence can be freely created, modified and redistributed.

Linux is actually just a kernel. Many people have put together distributions (often called flavors), that contain not just the kernel but also many other programming tools and utilities. Some well-known distributions include Red Hat Linux, Ubuntu, SuSE Linux, and Debian GNU/Linux.

The real power of Linux can be tapped by using its wide and powerful storehouse of commands that can be typed in the terminal. The reason behind this is the fact that Linux can trace its intellectual heritage, if not its source code, to the Unix OS. Unix was developed much before GUI environments were dreamt of. Thus, Unix (and hence Linux) provides a wide array of flexible text-mode commands.

Linux is now used in all major software projects undertaken by the Indian Government. Some of the examples are GST,

Aadhar, and NEFT. Naturally, the employment potential of students who are good in Linux is very high.

The FOSSEE project at IIT Bombay (<https://fossee.in>) has been promoting Linux, and other FLOSS (Free/Libre and Open Source Software), such as Scilab, Python, OpenFOAM, eSim, Osdag, OpenModelica, DWSIM, Drupal and R, and Open Source hardware, such as Arduino and OpenPLC. FOSSEE is also funded by NMEICT, MHRD.

The Linux workshop is organised by the Teaching Learning Centre (TLC) at IIT Bombay, funded by the *Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT)*, MHRD, Govt. of India. As Spoken Tutorial method offers hands on practice, with 100% active learning, those who undergo this training will be able to start using Linux immediately after the workshop. They will also be able to conduct Linux workshops for their students, using Spoken Tutorials, without requiring any help from anyone else.

The one day Linux workshop will be conducted on **Friday, 23 August 2019**, through the select [Remote Centres](#) of IIT Bombay. This will be a blended training programme that uses A-VIEW for live interactions and Spoken Tutorials to learn to use Linux. The medium of instruction for this workshop is English.

2. Methodology of the Large-scale Workshop

It will be a one day workshop, on **23 August 2019**. All participants will have to go to their chosen Remote Centre. They will learn Linux through the active method of reproducing every command demonstrated in the award-winning Spoken Tutorials. As learning happens through self-learning, the self-confidence of the learners is very high. Moreover, they can use the same method to train their students on the important topic of Linux, using Spoken Tutorials.

All the participants, from all the Remote Centres, will be able to interact with the Linux team at IIT Bombay, ask them questions, etc. through the video conferencing software A-VIEW. There will be about 4 to 5 hours available for Linux training and 2 hours for interactions.

A timed discussion forum <https://forums.spoken-tutorial.org/> will be used to answer the questions that the participants may have in different Remote Centres. One has to select the

Spoken Tutorial, and the exact time (minute and second) when the doubt arises. It will be answered immediately by one of the volunteers. Answers can also be provided by other participants in the same Remote Centre or in other Centres. These answers double as additional learning material. Course Coordinators at Remote Centres, already trained for this purpose, ensure that workshop goes through smoothly.

Using this approach, we have trained 3,500, 4,200, 4,300, and 5,300 teachers, respectively, on Koha, Moodle, Scilab, and Python, in the past 9 months.

3. Syllabus for the workshop

Depending on the level of the user, one can learn any/all of the topics mentioned below. If one cannot complete all the topics, one can complete them later on, through self-learning, as all required Spoken Tutorials are freely available.

Linux: Ubuntu Desktop, Desktop Customization, Installing software in Ubuntu Linux, Basic Commands, General Purpose Utilities, File System, Working With Regular Files, File Attributes, Redirection Pipes, Basics of System Administration.

Bash: Introduction to Bash shell scripting, Basics of Shell Scripting, Command line arguments and Quoting, Globbing and Export command, Array operations in Bash, More on Arrays, Conditional execution, Nested and multilevel if elsif statements, Logical Operators.

Linux for Sys Ads: Creating a user account, Assigning Groups on User Creation, User Password management, Modifying User Account, Group Password and Login, Administrating Group with gpasswd Command, Modifying and Deleting Groups.

A Linux Virtual Box and relevant tutorials will be made available to all learners at the chosen Remote Centre. More Linux tutorials are available at <https://spoken-tutorial.org>.

The FOSSEE team helps you migrate your labs

The FOSSEE team has taken up the effort to promote Linux in colleges all over India. We help you to migrate your CS/IT course labs to Open source software labs on the Linux Operating System. If interested, please write to us at info@fossee.in.

4. Teaching faculty

- **Prof. Kumar Appaiah**, Department of Electrical Engineering, IIT Bombay
- **System Administrators**, FOSSEE and Spoken Tutorial, IIT Bombay

5. Course Fee

Every participant has to pay Rs. **100** as the course fee to IIT Bombay at the time of online registration. On the day of the workshop, i.e., **on 23 August 2019**, they have to pay Rs. **400** to the Remote Centre that they would be attending, to defray the cost of organising the workshop, lunch, and coffee/tea. Please note that the registration fee once paid is neither refundable nor adjustable under any circumstances.

6. Who should attend?

As this workshop is not subject-specific, teaching faculty from all colleges (engineering, sciences, arts, commerce, management, law, medicine, etc.), polytechnic colleges, ITIs, and schools, can attend. Teachers registered in any Masters programme, and also all Research Scholars can also participate.

7. Criteria for issuing Certificates

E-certificate will be provided to the participants after successful completion of the workshop and filling up the feedback form.

8. Duration and Venue

The workshop will be conducted on **Friday, 23 August 2019 from 9.30 AM to 6.00 PM at Remote Centres of IIT Bombay**. This workshop will be conducted through a blended mode, using both live video conferencing facility (A-VIEW) and hands-on sessions using Spoken Tutorials. A detailed workshop schedule will be available soon.

9. How to apply?

Enrollment will be strictly online, and no other mode of application will be entertained. **The last date of registration**

is **22 August 2019, 12.30 pm**. The URL for registration is: <http://www.it.iitb.ac.in/nmeict/announcements.html>

Register on the Spoken Tutorial Website:

1. Before the workshop, participants should register on <https://spoken-tutorial.org/>
2. Fill up the registration form and submit.
3. An email will be received.
4. The account should be activated by clicking the link in the email.
5. The Username and Password should be noted. This is an extremely important step.
6. One needs the above information to post questions on the forum, explained from 8 to 9minutes 45seconds of [this video](#).

Note

- Neither IIT Bombay nor the Remote Centre will bear the travel expenses of the participating representatives. There shall also be no accommodation provided to the participants.
- All participants are required to bring **earphones**, as they will have to listen to video tutorials. Without earphones, the workshop will not at all be effective.
- Computers to practise Spoken Tutorials and to learn Linux will be available at the Remote Centres. But if they wish, participants can bring their own laptops with Linux installed.

10. Address for communication

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**One day Workshop
on
Linux**
Conducted by the
Teaching Learning Centre (ICT)

Funded by the
Pandit Madan Mohan Malaviya
National Mission on Teachers and Teaching,
MHRD, Govt. of India

Supported by FOSSEE & Spoken Tutorial

on

23 August 2019

Coordinated from
IIT Bombay



Linux Course Instructor

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