

## Introduction to the Workshops under T10KT project

Over 5 years ago, we started conducting ISTE workshops for empowering teachers of engineering colleges. We first scaled up to engage 1,000 teachers at a time, in subject specific training workshops of two week duration. In 2013 we scaled this program further, to train up to 10,000 teachers at a time (T10KT), using 337 established remote centers across India. IIT Kharagpur is our partner Institution. Together, we have a mandate through a funded project from the National Mission on Education using ICT (NME-ICT) of MHRD, to train 1,50,000 teachers in 15 such workshops.

Since December 2009, we have conducted several two-week ISTE workshops on various engineering subjects. We have reached out to more than 55,000 teachers and helped them to enhance their teaching skills in these subjects.

In order to run these workshops at selected remote centers, we invite expert faculty from various remote centers to a six-day Coordinators' training workshop which is held in IIT Bombay, typically two months before the main workshop. These faculty members then act as Workshop Coordinators during the main training workshop to be conducted later for 10,000 teachers, during which, the Coordinators supervise the conduct of tutorials and labs at their Centers. They liaise between the participants at their Remote Centers and IIT Bombay, from where the interactive lectures are transmitted live. All the lectures and tutorial sessions are recorded. The final edited audio-visual content, along with other course material, are to be released in Open Source. The content can be freely used later by all teachers, students and other learners.

IIT Bombay is launching Massive Open Online Courses (MOOCs) to global learners from July 2014, in partnership with edX. To help enhance the quality of engineering education multi-fold in India, IIT Bombay plans to offer a blended MOOCs model to students of Engineering Colleges in India. A paper on the proposed model is available at <http://www.it.iitb.ac.in/nmeict/pdfs/MOOCs.pdf>

To train teachers for adopting the use of MOOCs in general, and to empower them to use the blended model in particular, it has been decided to run some of the T10KT workshops, partially using the MOOCs approach. The second workshop on these lines will be conducted for the subject 'Computer Networking'. This will be a four week workshop, and will be conducted for over 10,000 teachers, in the months of June/July 2014. The participating teachers will complete the equivalent of two week full-time work online, spread over 6 physical weeks. They will then assemble at the selected RCs (Remote Centers), for a week of face to face interaction, discussions, and tutorial sessions, and will then complete a team assignment. This team assignment will be equivalent of one week full-time work, and will have to be completed online, within 3 physical weeks after completion of the main face to face portion of the workshop.

“**Computer Networking**” is the second such subject chosen for the blended MOOCs model of T10KT workshops.

The platform use for this MOOCs will not be edX but a new platform developed by Prof. Kameswari Chebrolu

### Two-Week Coordinators' Workshop

This announcement is for the Coordinators' Workshop, to support the above. The duration of this workshop will be two weeks. One week equivalent of full-time work is required to be done over 5 weeks of calendar time, from 02<sup>nd</sup> April to 04<sup>th</sup> May 2014, prior to one week of face to face interaction at IIT Bombay from 05<sup>th</sup> to 10<sup>th</sup> May 2014. This workshop will provide a complete orientation to the prospective Workshop Coordinators, on the methodology of MOOCs and Blended MOOCs. It will also provide training on other technical and logistics aspects, such as use of A-View, the lab environment required for the main workshop, funding and other support provided by the project, etc.

The content for the Computer Networks subject, to be covered by the blended model are:

- Introduction, history and Layering
- Physical Layer: Theory, Encoding techniques
- Link Layer: Framing, Error detection and recovery, Reliability, Multiple Access, Ethernet, Token Ring, Switching
- Network Layer: Addressing, Routing, IP
- Transport Layer: Reliability and Congestion Control
- Application Layer: DNS, Web/HTTP, Email, FTP, Peer-to-peer systems

### Teaching Faculty

**Prof. Kameswari Chebrolu**, Department of Computer Science and Engineering, IIT Bombay  
<http://www.cse.iitb.ac.in/silmari/chebrolu>

### Duration and Venue

The duration of the workshop is two weeks. One week of equivalent work is to be done online from 02<sup>nd</sup> April to 04<sup>th</sup> May 2014, from their own places of work/homes. One week of face to face interaction from 05<sup>th</sup> to 10<sup>th</sup> May, 2014, to be conducted in IIT Bombay.

### Who should attend?

The workshop is required to be attended by faculty colleagues who are willing to be prospective Workshop coordinators for the main workshop to be held in summer.

It is mandatory that the prospective coordinators should have taught Computer Networks at least three to four times at a comparable level (similar syllabus). The coordinators could belong to either Computer Science, Electrical or IT departments, but the course will be taught from a systems perspective (more geared

towards Computer Science). It is preferable if the coordinators have some prior experience in using networking tools (like tcpdump, wireshark, linux networking commands), network simulator (NS2) and socket programming. He/she should be familiar with the syllabi and examination pattern of their own college or university. It is also preferable that they should have at least 3 years of teaching experience with some experience in conduct or participation in ISTE, QIP, or similar workshops.

#### **Important Note:**

**It is mandatory that the participant's Institute is well equipped to conduct the main workshop through the NKN/ internet for a minimum of 30 participants.** For a remote center a primary requirement is provision of one computer per participant, with appropriate software (Licensed or Open source). This is for the laboratory component of the course.

**It is also mandatory that the participants bring a document from the Heads of their institutes to the effect that the institute is willing to be part of this project, it will provide the necessary infrastructure for conduct of the main workshop, and will release the participant for the complete duration of the face-to-face interaction during the coordinators' workshop, as also the main workshop.**

#### **Note**

Please note that this workshop is conducted under the T10KT project of IIT Bombay. Live recording of the course and other created content would be released under Open Source, through a portal. The recorded CD/DVD of the course lectures would be available for distribution at cost, to any individual/ institution. All participants are required to sign a No Objection certificate for such release of contents contributed by them during and after the workshop. All contributors will be acknowledged.

#### **Accommodation and other support**

Shared Guest House accommodation with standard boarding will be provided free to the participants depending on availability.

#### **Course Fee**

Workshop is funded by the National Mission on Education through ICT (MHRD, Government of India), there is no course fee for participation. Travel fare reimbursement will be made for up to A/C 2-tier or lowest return airfare, as per GOI entitlement.

#### **How to Apply**

Those wishing to attend this course should register online at [www.it.iitb.ac.in/nmeict](http://www.it.iitb.ac.in/nmeict)

Due to limited seats, only one registration from each remote center is allowed. Confirmation of registration will be sent by email. **Enrollment will be strictly online.**

**LAST DATE FOR ONLINE ENROLLMENT:**  
01<sup>st</sup> April, 2014

#### **Address for Communication:**

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## **Two Week ISTE Workshop for Coordinators**

on

### **Computer Networking**

Under the

***National Mission on Education through ICT  
(MHRD, Govt. of India)***

**One week work to be completed online, during  
02<sup>nd</sup> April to 04<sup>th</sup> May 2014**

**Physical participation at IIT Bombay during  
05<sup>th</sup> May to 10<sup>th</sup> May 2014**

**Conducted by IIT Bombay**



Course Coordinator:

**Prof. Kameswari Chebrolu**

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