

Introduction of T10kT Short Term Training Programme (STTP)

Over 5 years ago, IIT Bombay started conducting ISTE Short Term Training Programme (STTP) for empowering teachers of engineering colleges. We first scaled up to engage 1,000 teachers at a time, in subject specific training STTPs of two week duration. In 2013 we scaled this program further, to train up to 10,000 teachers at a time (T10KT), using 344 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 STTP. Since December 2009, we have conducted several two-week ISTE STTPs on various engineering subjects. We have reached out to more than 65,000 teachers and helped them enhance their teaching skills in these subjects.

In order to run these STTPs at selected remote centers, we invite expert faculty from various remote centers to a One Week Coordinators' training programme which is held in IIT Bombay, typically two months before the main STTP. These faculty members then act as Workshop Coordinators during the main STTP 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 has launched 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 STTPs, partially using the MOOCs approach. We have already conducted workshops using blended model in Computer Programming and Computer Networking workshop. The third STTP on these lines will be conducted

for the subject "Pedagogy for Effective use of ICT in Engineering Education".

STTP overview

Educational technology is now ubiquitous; however, the potential of these technologies is lost without appropriate pedagogical strategies. Teachers not only need to have a knowledge of which ICT tools are relevant for education, but more importantly how to use them effectively. This training programme focuses on which pedagogical strategies are effective while using ICT tools in a given teaching-learning situation. In this training programme, participants will begin by articulating the objectives for their course, and explore tools appropriate for some pedagogical goals of engineering courses. Participants will learn effective strategies for teaching with these tools. The training programme will give participants several opportunities to apply these strategies to design materials and activities for their courses.

Teaching Faculty

Prof. Sahana Murthy

Inter-Disciplinary Programme in Educational Technology,
IIT Bombay
<http://www.et.iitb.ac.in>

Prof. Sridhar Iyer

Department of Computer Science and Engineering, IIT
Bombay
<http://www.it.iitb.ac.in/~sri/>

Duration and Venue

The duration of the STTP is 2 weeks, which consists of One week in face to face interaction through A-view video transmission at various remote centers; the second component is an online activity which has to be done by the participants. This one week duration of STTP is divided into two parts, i.e

- **The first part** of face to face interaction will be from **Monday January 05th 2015 to Wednesday January 07th 2015.**
- The **second part** will be from **Monday, January 19th 2015 to Wednesday 21st 2015. The timing of both sessions of the face to face STTP at the remote centers is from 09.00 hrs to 17.00 hrs**
- The One-week of equivalent full-time work in online mode will be from January 8th to 18th January 2015 and from 22nd - 31st January 2015.

Also, note that the participation certificate will be issued only to those participants who will fulfil all the criteria of completing both the component ie. Online activities and attending face to face interaction through A- View

STTP format

The STTP will be conducted in the blended-MOOC model. It will consist of the following parts:

1] Synchronous-remote-centre component, (SRC)-Part1:3 days + SRC-Part2: 3 days.

Participants will assemble in their college. Sessions will be conducted from IIT Bombay via A-view. The sessions will be conducted in a workshop mode with extensive interaction. Participants will work in groups to explore educational technology tools and design strategies for their courses.

2] Online component, "1-week equivalent".

Resources such as videos will be posted on Moodle, and homework will be assigned based on the resources. Participants will be required to complete the assignments and submit them on Moodle by the due-dates. Feedback and help will be provided via Moodle chat.

Throughout the training programme, participants will work on individual and group activities, participate in peer-reviews and be involved in creating resources for the engineering teaching community.

Who Should Attend

The faculty colleagues who are presently teaching in Diploma, Engineering and post graduate Science institutes are eligible to attend this training programme. Science (Physics, Chemistry, Maths, Biology) teachers should be teaching either PG courses (MSc Level) or UG Engineering courses (B.E/B.Tech). MCA teachers are also welcome to attend this. Faculty from Humanities (English, Economics etc) and Management are not eligible. **This training programme is only for Faculty.** Students are not entitled to attend the course.

Note

Please note that this STTP is conducted by the e-Outreach project of IIT Bombay, under the National Mission on Education through ICT. Live recording of the course and other created contents will be released under Open Source through a portal. The recorded CD/DVD of the course lectures will be available for distribution at cost, to any

individual/ institution. All participants are required to sign an authorization for such release of contents contributed by them during and after the STTP. Recognition and citation will naturally be made for all contributors.

Course Fee

Since the STTP is partly funded by the National Mission on Education through ICT (MHRD, Government of India), there is no course fee for participation.

Accommodation and other support

Remote centers are being funded to provide tea/lunch on each day of the STTP, and for accommodation, wherever available*, for a limited number of outstation participants. **Travel reimbursement up to Rs. 1000/- will be paid only to the outstation participants, if the distance travelled from their Institute to the Remote Center is more than 100 kms.**

*Accommodation is not guaranteed.

How to Apply

Those wishing to attend this course should register online at <http://www.it.iitb.ac.in/nmeict>

Enrollment will be strictly online, and no other mode of application will be entertained.

The online form contains a list of remote centers. From this list, please select a center close to your institute, where you wish to attend the STTP. The last date for enrollment and for submission of permission letter is 29th December 2014. A list of selected participants will be put up on this website on 30th December 2014. The selected participants will also be informed by an automated email.

LAST DATE FOR ONLINE ENROLLMENT:

29th December, 2014

Address for Communication:

Dr. Mukta Atrey

Sr. Project Manager,
Department of CSE,
Kanwal Rekhi Building,
Indian Institute of Technology Bombay,
Mumbai - 400 076
Tel.: +91-22-2576 4989
Fax: +91-22-2572 0022
Email: eoutreach@it.iitb.ac.in

Course Content

Topics in the Training Programme will include:

- 1] Course planning
 - a. Developing learning objectives – what, why, how
 - b. Hierarchy of cognitive levels for learning objectives
 - c. Concept maps for course planning and corresponding open-source tools
- 2] Writing effective assessment questions
 - a. Alignment of assessment to learning objectives
 - b. Writing higher order assessment questions (Apply, analyze, evaluate, and create levels)
- 3] Visualizing scientific content
 - a. Benefits of visualizations such as animation and simulation for engineering teaching & learning
 - b. How to find suitable visualizations for your course
 - c. How to effectively teach using visualizations
- 4] Creating an active-learning classroom
 - a. Why active-learning and how to achieve it
 - b. Specific active-learning techniques such as Peer instruction and Think-pair-share
- 5] Flipped classroom – what, why, how
 - a. The out-of-class part: videos, Spoken-Tutorials for content
 - b. The in-class part: activities for students based on above content
- 6] Promoting student collaboration
 - a. Benefits of promoting student interaction
 - b. Tools to promote student collaboration – blogs, wikis, and forums
- 7] Exploring other ET tools
- 8] Evaluating effectiveness of teaching strategies

TWO - WEEK ISTE Short Term Training Programme (STTP)

on Pedagogy for Effective use of ICT in Engineering Education

Under the

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

**Physical participation at Remote centers during
05th – 07th January and 19th - 21st January 2015**

**One- week equivalent of work to be completed online,
during
08th - 18th & 22nd - 31st January 2015**

Conducted by IIT Bombay



Course Coordinators

Prof. Sahana Murthy

Inter-Disciplinary Programme in Educational Technology

Prof. Sridhar Iyer

Department of Computer Science and Engineering,

Project Coordinator

Prof. D. B. Phatak

Department of Computer Science and Engineering

Indian Institute of Technology Bombay
Mumbai - 400076