

## **Introduction**

A new series of T10KT workshops/STTPs (Short Term Training Programs) under the aegis of ISTE, are planned by IIT Bombay to train teachers in mentoring students who are learning a subject using an online course. Participating teachers will receive training in using discussion forums, preparing illustrative examples, and arranging live interactive sessions for students in their own colleges, who take such Online Courses. Initially, such workshops will run concurrently with the corresponding MOOCs offered by IIT Bombay. Participants are expected to mentor the students of their own college, who have enrolled for the corresponding MOOC. They are expected to conduct short weekly sessions for students.

Participating teachers will get the usual ISTE certificate for a two week STTP. Please note that the physical duration of each such workshop/STTP, will be 10 to 12 weeks. Participating teachers will be required to put in an equivalent of one day's work (8 hours) per week. This work will include online and face-to-face components. The online activity will be in the form of assignments. The face-to-face component will have two parts.

1. The first part will be fortnightly A-View meetings with IIT faculty (2 hours).
2. The second will be local mentoring sessions with students from your own college (2 hours per week).

Also note that there is no Remote Centre involved in these workshops. Each participating teacher will have to work from one's own college. As such, there is no provision of any TA/DA to be paid.

### **Teachers will be trained and evaluated in:**

1. Becoming familiar with a platform for MOOCs (Massive Open Online Courses)
2. Preparing and posting responses in the discussion forums
3. Preparing supplementary examples on different topics
4. Translating allocated audio transcripts of video clips into a chosen Indian language

Providing face-to-face mentoring through discussion sessions (1 hour/week), and participating in interactive Q & A sessions with IIT faculty using A-View, for the benefit of those students belonging to the participants' colleges, who have also registered for the corresponding course.

Please read the registration/enrolment process given below. Note that these workshops/STTPs will require you to use the IITB NMEICT Moodle, as well as IITBombayX platform for your online activities.

## Course content

### **The workshop being announced is a continuation of the Previous Workshop i.e Effective Mentoring of Online Students in Signals and Systems -WEE210.1x**

The following topics will be taught to students in the MOOC (WEE210.2x). Teachers participating in this STTP are expected to know them well. All the assignments will be related to effective teaching of these topics.

- Introduction to Signals and Systems.
- Properties, Definitions and Examples of Signals.
- Continuous Time and Discrete Time Linear shift Invariant Systems.
- System responses, Fourier Series, Fourier Transform, DTFT and DFT.
- Laplace transforms, eigen functions, Poles and Zeroes.
- Z-transforms.
- State-space analysis, state transition matrix.
- Sampling Theorem.
- Application of Signals and Systems in Filtering and Communication.
- Advanced topics : Short-time Fourier Transform and Wavelets

All teachers participating in this T10KT workshop will have to submit their assignments in workshop Moodle and / or on IITBombayX platform as stipulated.

### **Teaching Faculty**

Prof. Vikram Gadre, Department of Electrical Engineering, IIT Bombay

### **Who Should Attend**

The participant must be a teacher currently working with any recognized college in India, teaching this subject. The participant should have attended the first part of this course i.e. WEE210.1x.

### **Duration and Venue**

The duration of this online course is **Ten weeks**. This course will be conducted online on IITBombayX website and it will start from 11th June 2015.

Participating teachers will get the usual ISTE certificate for a two week STTP. Please note that the physical duration of each such workshop/STTP, will be 10 to 12 weeks. Participating teachers will be required to put in an equivalent of one day's work (8 hours) per week. This work will include online and face-to-face components. The online activity will be in the form of assignments. The face-to-face component will have two parts.

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**LAST DATE FOR ONLINE ENROLLMENT: 18<sup>th</sup> June 2015**

## **How to Apply**

**Enrolment for a workshop:** Login to your account on IITB NMEICT website, and enroll for the desired workshop/STTP.

### **Registration Process on IITBombayX Website : ( [https:// www.iitbombayx.in](https://www.iitbombayx.in) )**

**If you have already created your account on IITBombayX website, then please do not create any new account.** You will be enrolled by our e-outreach team, for the workshop course on IITBombayX, corresponding to your chosen T10KT workshop.

**If you have not registered on the IITBombayX website earlier,** then you will have to do one-time registration on the: <https://www.iitbombayx.in> . **You must use the same email-id, which you have used for IITB NMEICT website.** After successful registration on the IITBombayX website, you will be enrolled by our e-outreach team, for the workshop course on IITBombayX, corresponding to your chosen T10KT workshop.

**LAST DATE FOR ONLINE ENROLLMENT: 18<sup>th</sup> June, 2015**

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