

## Introduction

IIT Bombay has been involved with distance synchronous education, since year 2000. We have trained over 1,00,000 teachers, in partnership with IIT Kharagpur, under the T10KT (Train 10 Thousand Teachers at a time) project sponsored by NMEICT. All training workshops so far, were on specific subjects of Engineering and Science Education, most of which are taught as core courses in our colleges and universities. The participating faculty has benefitted from these programs.

Online educational methodology, and flipped-classrooms with associated pedagogy of active learning, have quickly emerged as the mainstay of effective education in this century. However, most of our teachers lack skills and competencies for proper and effective use of ICT in education. It is thus an urgent national requirement that all our teachers, at least those teaching in our professional colleges, are empowered to use technology effectively, to enhance the quality of education.

To meet this requirement, IIT Bombay has specially designed a Faculty Development Program (FDP) on "Use of ICT in Education for Online and Blended Learning ". This FDP is designed as a MOOC (Massive Open Online Course), with some face-to-face sessions at Remote Centres. It will be conducted beginning from 2 May 2016. Completion Certificates will be awarded by IIT Bombay to those participants, who successfully complete all online assessments, meaningfully participate in face-to-face sessions, and submit the prescribed team- assignment.

## Teaching Faculty

**Prof. Deepak B. Phatak**, Dept. of CSE, IIT Bombay  
**Prof. Sridhar Iyer**, Dept. of CSE, IIT Bombay  
**Prof. Uday N. Gaitonde**, Dept. of ME, IIT Bombay  
**Prof. Sahana Murthy**, Dept of ET, IIT Bombay

## Course Content Modules

### 1. Devices for Information Capture, Storage, and Display

- Traditional PCs – Keyboard, Monitor, Printer, Webcams, Mouse, Hard disks, Software
- Tablets and Smart Phones Servers, Cloud, Storage Farms, CD/DVD, Pen Drive

### 2. The World of Internet and Web

- Basics of Connectivity, LANs and WANs, Wireless and Bluetooth
- Organization of Web, IP Address, Domain Names, DNS Servers
- Browsers and Plug-ins

### 3. Evolution and Spread of ICT in Education.

- Content management system Moodle and Learning Management Systems Drupal
- Real Time Classroom Assessment: Clicker Devices, Smart Phones
- Audio-Video Recording, Spoken Tutorial Methodology
- Academic Administration, Online Grade Submission,
- Cumulative Performance Index Computation

### 4. Using ICT for Effective Educational Communication

- Digital Content Creation: Word Processing, Change-Tracking, File-Formats
- Visual Communication, Design of Presentation Material
- Creating Handouts and Assignments for Online Usage

### 5. Online Courses

- History of Online Courses
- Introduction to Features of a MOOC Platform
- Designing and Developing a MOOC
- Conducting a MOOC
- Effective use of Discussion Forum
- Methods of Online Assessment
- Global and Indian Experience

## 6. Blended/Hybrid Education

- Need for Combining Online and F2F (Face-to-Face) Education
- The Flipped Classroom
- Pedagogy of Active learning, TPS (Think-Pair-Share), Group Discussions
- Collaborative Problem Solving, Peer Assessment
- Local Assessments, Evaluation of Reports and Presentations
- Recognition of Grades and Credits through MOOCs, in Regular Academic Programs

## 7. Adopting Online/Blended Education in Teaching-Learning Process

- Using Available Institutional Autonomy: Internal Assessment
- Encouraging Collaboration and Peer Review
- Factoring in Marks of Online Assessment in University Courses

## 8. Building and Nurturing Collaborative Communities

- Contribution to OERs (Open Education Resources)
- Creating Edited and Focused Content: Inviting and Recognizing Innovative Contributions
- Quality Assurance
- Curriculum and Taxonomy Standardization
- Lessons from Open Source Community-Evolving Leaders and Mentors
- Participation in Sectoral Communities

## Who Should Attend

As this FDP is not subject-specific, teaching faculty from any domain, including faculty from management institutes and polytechnics, can participate. Teachers registered in a Masters or a PhD program, during their employment as a teacher, can also participate.

## Duration and Venue

This four week FDP consists of three components as follows:

1. **Online work by individual participants:** Each participant is expected to access the online platform, using a PC at home or office, on any convenient day and time during the week, with an online test every week. Each participant has to spend 6 to 8 hours of efforts per week during this component of the FDP. This is equivalent to one day of work in a regular FDP. This activity will be spread over 10 calendar weeks: From Monday 2 May 2016 to Sunday 10 July 2016.

2. **Face-to-Face interaction:** Participants will have to physically attend these sessions at their chosen or designated Remote Centers (RCs), established across the country by IIT Bombay. Focused interactive sessions with the participating teachers, will be conducted by the faculty from IIT Bombay. The discussions and local tutorial sessions will be moderated by the Workshop Coordinators appointed at each RC. This activity will be conducted on 3 weekends: 14, 15 May; 4, 5 June; and 25, 26 June 2016.

3. **Team assignment:** Teams of 3 to 5 members will be formed from amongst the participants at each RC. Each team is required to create and review the assignment, and submit the same online. Here again, each participant has to spend adequate effort, albeit in a coordinated manner with other members of the team. It will be undertaken from Monday 11 July 2016, after completion of the 10 weeks of online activity, and will have to be submitted within four calendar weeks, before Friday 5 August 2016.

### Criteria for Certification

IIT Bombay will award certificates only to those participants who: successfully complete prescribed online tests with minimum 50% aggregate score, meaningfully participate in face-to-face sessions, and submit the team assignment of an acceptable quality. **AICTE has recognized this as a Four-week FDP.**

**Note** That this FDP is conducted under the T10KT project of IIT Bombay. Live recording of the course and other created content 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 or institution. All participants are required to sign a No Objection Certificate for such release of content contributed by them during and after the FDP. All contributors will be acknowledged.

### Course Fee

Each participant designated of the FDP will pay Rs.1000/- participation fee to the Remote Centers. This is primarily to cover the cost of conducting face to face component of the FDP. The food and accommodation charges if any, are to be borne by the participants, apart from the fee.

SAP/ (CSR activities) is partially funding this FDP, therefore there is no fee to be paid to IIT Bombay. In addition, it has been decided that 200 top performing participants, will be given an SAP fellowship award of Rs. 5,000 each. Further, they will also be offered an opportunity to participate as associate faculty (with an appropriate honorarium, of course), for conducting this FDP in future.

### Accommodation and other support

Remote Centers may at cost provide, tea/lunch on during the face to face interaction and accommodation, if available\*, for a limited number of outstation participants. Food and accommodation, are chargeable. The charges may vary from place to place, and are available in the online registration form. Please check the rates before you apply for these optional facilities. This cost is not included in the course fee.

### How to Apply

If you wish to attend this course, you should register online. The online registration will start from **Tuesday 19 April 2016. The last date of online registration is Friday 6 May 2016**

The URL for registration is

<http://www.it.iitb.ac.in/nmeict/announcements.html>

**Four Week AICTE approved FDP**

**by IIT Bombay  
on**

## **"Use of ICT in Education for Online and Blended Learning"**

**(This MOOC based FDP will be conducted in  
a blended mode over a longer period as  
explained in "Duration and Venue")**

**2 May to 10 July 2016**

Conducted by

**IIT Bombay**



**Course Coordinator**

Professor Deepak B. Phatak

Department of Computer Science & Engineering

**Indian Institute of Technology Bombay**

Mumbai - 400076