

## **Five-day ISTE Workshop for Coordinators**

on

**Basic Electronics**

Under the

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

**(1<sup>st</sup> – 5<sup>th</sup> March 2011)**

### **Introduction**

An important initiative has been taken by IIT Bombay to work with Engineering Colleges in the country to enhance the teaching skills of our faculty colleagues in core Engineering and Science subjects. Under this project called '**Empowerment of Students and Teachers through Synchronous and Asynchronous Instruction**,' IIT Bombay conducts two-week ISTE workshops during the vacation periods in summer and winter. Participating teachers attend live lectures given by IIT faculty at remote centers close to their own colleges, and also attend tutorial and lab sessions conducted in the same centers. The lecture transmission and live interaction takes place in distance mode using the AVIEW technology through internet, at selected remote centers across the country. This initiative is part of the 'National Mission on Education through ICT,' which is supported by MHRD. Faculty coordinators are appointed at each remote centre to handle the technology infrastructure and other operational logistics. Additionally, for each workshop there is a workshop Faculty Coordinator for that subject, who helps in the conduct of labs and tutorials at each center.

We invite expert faculty from various remote centers to a **five-day 'Coordinators' training workshop'** which is held in IIT Bombay, at least two months before the main workshop. These Coordinators then act as Workshop Coordinators during the main workshop, liaising between the participants at their Remote Centers and IIT, from where the workshop is transmitted live. During the main workshop, the Workshop Coordinator at every center supervises the conduct of tutorials and labs. All the lectures and tutorial sessions are recorded at IIT Bombay. The final edited audio-visual contents, along with other course material will be released under Open Source. These contents can be freely used later by all teachers and students.

In the past, we conducted two-week ISTE workshops twice on 'Effective teaching/ learning of Computer Programming' in December 2009 and in June-July 2010. These workshops were conducted for over 1300 participating teachers across the country, at 36 remote centers. We also conducted a two-week ISTE workshop on 'Database Management Systems' from 13th to 23rd Dec. 2010, for over 1000 teacher participants at 32 remote centers.

The success of these earlier workshops has now led us to schedule another two-week ISTE workshop, this time in **Basic Electronics**, to be held in **June 2011**, in addition to the announced two-week ISTE workshop on 'Thermodynamics in Mechanical Engineering'.

## **Five-Day Coordinators' Workshop (1<sup>st</sup> to 5<sup>th</sup> March, 2011) for Basic Electronics**

The proposed Coordinators' Workshop & to support the above, is being conducted from **1<sup>st</sup> to 5<sup>th</sup> March, 2011** at IIT Bombay. This is to provide a complete orientation to the prospective Workshop Coordinators, on the methodology to be followed in this project. This will include the delivery of live lectures through the AVIEW mechanism of interaction with participants, and the local conduct of tutorials and labs. Since the final contents are meant to be adopted by most colleges across the country, this workshop will finalize the following for the subject of **Basic Electronics**:

- (a) Definition of common syllabus to be covered.
- (b) Graded coverage from simple to difficult levels for each topic and subtopic.
- (c) Nature of tutorials, keeping the above gradation and the typical examination pattern in mind; but leading to the typical advanced levels reached in such subject teaching at the top institutions of the world.
- (d) Discussion of laboratory environment and the experiments to be conducted.
- (e) Use of the learning management system, audio-visual equipment, editing tools.
- (f) Other logistic details for conducting the main workshop.

Tentative syllabus as followed in IIT Bombay for a course on "**Basic Electronics**," is given below:

- Semiconductor Devices: Diode, Zener circuits,
- BJT: simple biasing methods, Power supply
- OPAMP based circuits including Schmitt trigger and astable multivibrator.
- Feedback amplifiers, Oscillators, Boolean logic, basic gates, truth tables, logic minimization using K maps, combinatorial and sequential circuits, DAC and ADC.
- Introduction to Communication Engineering.

### **Duration and Venue**

**The duration of the workshop will be five days. It will start on Tuesday 1<sup>st</sup> March, 2011 and will end on Saturday 5<sup>th</sup> March, 2011**

**Venue: Seminar Hall, Van Vihar Guest House, IIT Bombay.**

### **Teaching Faculty**

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**Ms. M. Date, (Lab Sessions,)** Department of Electrical Engineering, IIT Bombay

## Who Should Attend

The workshop is likely to benefit faculty colleagues who are willing to be prospective **Center Coordinators** for the larger workshop to be held in June 2011. They should have taught a course on **Basic Electronics**, and should be familiar with the syllabi and examination pattern of their own college or university. It is preferable that they have some experience in conduct of ISTE, QIP workshops.

It is mandatory that the participant's Institute is well equipped to conduct the workshop through the internet, for a minimum of 30 participants.

## Note

Please note that this workshop is conducted under the 'eOutreach' project of IIT Bombay. 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 or institution. All participants are required to sign an undertaking for such release of contents contributed by them during and after the workshop. The recognition and citation will naturally be made for all contributors.

## Accommodation and other support

Shared Guest House accommodation with standard boarding will be provided free to the participants, depending on availability, from the evening of Monday 28th February, 2011 (arrival) to the morning of Sunday 6th March, 2011 (departure).

## Course Fee

Since the 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 <http://ekalavya.it.iitb.ac.in/>

Due to limited seats, registration will be on a first-come-first-served basis. Confirmation of registration will be sent by email. **Enrollment will be strictly online.**

**LAST DATE FOR ONLINE ENROLLMENT: 18<sup>th</sup> February, 2011**

Enroll here: <http://ekalavya.it.iitb.ac.in/>

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