

## QEEE Programme at JISCE during 2013-2014

Live classes via QEEE programme has been organized:

<u>QEEE Phase I</u> <u>July –Dec 2013</u>	<u>QEEE Phase II</u>
ECE 4 <sup>th</sup> Sem: EM Fields CSE 4 <sup>th</sup> Sem: Computer Organization CE 6 <sup>th</sup> Sem: Geotechnical Analysis CSE 6 <sup>th</sup> Sem: Operating Systems ME 4 <sup>th</sup> Sem: Engineering Fluid Mechanics.	CSE 3 <sup>rd</sup> Sem: Data Structure and Algorithms IT 3 <sup>rd</sup> Sem: Data Structure and Algorithms CSE 5 <sup>th</sup> Sem: DBMS ME 5 <sup>th</sup> Sem: Machine Design.

### Massive Open Online Courses

- (i) Design and Analysis of Algorithms: CSE 3<sup>rd</sup> Sem
- (ii) Basic Electrical Circuit: EE 3<sup>rd</sup> Sem
- (iii) Theory of Computation: CSE 5<sup>th</sup> Sem
- (iv) Computer Networks: CSE 5<sup>th</sup> Sem

# Reforms for Quality improvement in Technical Education

- Concerted effort to enhance the quality of Indian engineering education and bridge the quantity-quality gap through
  - Technological interventions
  - Empowering Teachers/educators
  - Suggesting policy reforms
- To follow on a three pronged approach targeting students, faculty and management
- An interim report in draft stage

# Approach

**Direct to student  
Program**

**Program on  
Teacher Training**

**Policy  
Recommendations**

# The Direct to Student program

- Goal: to utilise high quality pedagogical resources to enhance learning in a wider student community
- Integration of top quality resources in the form of instructors and multimedia resources into followed curriculum and methods of teaching
- Planned modules for this include Live classes, Tutorials, Virtual Labs, MOOCs and Vocational Augmentation Courses
  - to be delivered to 100 engineering colleges (mostly TEQUIP) in a pilot implementation form January 14

# Program on Teacher Training

- Tackling twin issues of faculty shortage and quality teacher-student interaction
- Two approaches
  - Driving best UG students to become teachers of tomorrow
    - Encourage bright UG students to “Teach and Earn” while you studying and to provide them with top class training providing them attractive teaching cum research career
  - Five-level Continuous Teacher Training programs and Certifications over ten years

# Teacher Training for 500 colleges

- Teachers training in ‘teaching pedagogy’ as well as ‘specific subjects’
  - mode of delivery to be a combination of in-person as well as technology-enabled
  - Workshops to be held for both kinds of training
    - Pedagogy training on technology enabled learning, verbal and written articulation abilities
    - Training on subjects through creation of training hubs to deliver training over vacations

# Policy Recommendations for reforms

- The committee has come up with preliminary recommendations on policy matters to be carried over to the larger realm of higher education in the country
- The themes covered under these include
  - Rating, Accreditation & Autonomy of Higher Education Institutions
  - Teacher Training
  - Administrative Capacity Building
  - IT-ERP for Education
  - Industry-Academia Relations
  - Strengthening of Management Systems
  - Private Sector Participation and Funding
  - Role of Government in Higher Education Reforms

## Program details

### **Program Modules**

#### **Live Classes:**

12 courses have been short listed from across engineering disciplines to be offered as a part of this program. The first 15 lectures from each of these courses would be delivered live by faculty from IIT's. The rest of the course lectures are to be handled by the local faculty.

[The shortlisted courses and their schedule can be found as an attachment\(QEEE Timetable\) with this email. The Live Classes program will start from Jan 20, 2014](#)

#### **Virtual Labs:**

A set of 5 virtual labs will be offered through this program, as given below

- Digital Signal Processing Lab
- Physical Sciences Lab
- Electrical Machines Lab
- Virtual Smart Structures and Dynamics Lab
- Micromachining Lab

Each lab will be assisted by pretrained local tutors as well as by remote tutors who will “look in” from time to time during the lab delivery. The labs will be scheduled Monday through Friday 2:00 PM – 5:00 PM (each lab will have one session per week), and run for 8 weeks. The labs will start on Feb 3, 2014. Colleges can decide on which lab to schedule on which day of the week, subject to a maximum of 20 colleges / lab/day.

[Details on the schedule can be found in the attachment\(QEEE Timetable\)](#)

#### **Vocational Augmentation Course:**

In addition to courses that form part of the curriculum, the program also offers certain vocational courses for students, in order for them to be industry ready. These courses will be offered to the students over the weekends. The following are the list of courses:

- Wi Fi Security and Management – This course will be conducted on 5 Saturdays, and will be delivered as a mix of on-site training by 2 pre-trained local tutors and live training by remote tutor. This course will have certain hardware requirements. The details of this course will be communicated in due course
- Sci Labs (Open Source software for numerical computation)
- GIMP (Graphics art and design software application)
- OSCAD (Open Source EDA tool for circuit design, simulation, analysis and PCB design)
- English for Employability



### **MOOCs (Massive Open Online Courses):**

These are courses designed to enable self paced learning supplemented by online quizzes and forums. The program will deliver MOOCs in subjects related to the engineering curriculum.

### **Tutorial:**

A tutorial course – Introduction to Computer Programming is planned. This will be scheduled over 10 sessions, and will be restricted to a maximum of 60 students per college (in 2 batches of 30 each). Each session will involve an external tutor signing into the college server to interact and tutor the batch of 30 students. This provides for increased levels of interaction and mentoring

### **Infrastructure**

To deliver these modules to all the participating colleges, certain infrastructural resources are called for.

[These are detailed in the attached document \(Infrastructure Specifications\)](#)

### **Workshop and Training**

Keeping in mind January roll out of the program, workshops have been planned for representatives from all participating colleges. This workshop will see participation from 2 members from each participating institute

- **‘QEEE Coordinator’** who should be a faculty representative for the program. The QEEE coordinators will be briefed on the various program modules (such as the live classes, labs, tutorials etc.) as well as trained on use of the software platform through which the program modules are going to be delivered
- **‘System Administrator’** who will be in charge of managing and maintaining the servers and systems at the institute level. They will be briefed on network and system related details necessary to run this program at their college level.

This workshop is planned to be conducted in 3 batches over the month of December in the following dates 6<sup>th</sup> and 7<sup>th</sup>, 13<sup>th</sup> and 14<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup>. Communication regarding the batches and agenda will be sent across shortly.



HOD CSE JISCE &lt;head\_cse.jisce@jisgroup.org&gt;

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**Fwd: thank you for participating in QEEE program**

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**Apurba Paul** <apurba.saitech@gmail.com>  
To: HOD CSE JISCE <head\_cse.jisce@jisgroup.org>

Tue, Feb 4, 2014 at 7:59 PM

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From: **ashok jhunjunwala** <ashok@tenet.res.in>  
Date: Tue, Feb 4, 2014 at 10:18 AM  
Subject: thank you for participating in QEEE program  
To: QEEE-Faculty Coordinator <qeee\_faculty\_coordinators@edureform.iitm.ac.in>  
Cc: Uma <uma.jalapathy@me.com>, gayathri g <gayathri@rtbi.in>, Smrithi <smrithi@tenet.res.in>, "G. Venkatesh" <gv@ee.iitm.ac.in>

Dear faculty coordinators of the participant colleges for QEEE program,

I wanted to personally thank you for your efforts in launching the live classes of the QEEE program. So far, the feedback has been extremely positive.

As you may be aware of QEEE is an ambitious and important program of the nation. India have had tremendous success in making headway in education in terms of quantity and equity. The sudden expansion has however meant weakness in terms of quality. The QEEE program is aimed to fix this lacunae and significantly enhance the quality especially in engineering education. The current program is being delivered to 100 engineering colleges and after the feedback, we wish to extend it to 500 colleges, other than IITs and NITs. The program consists of five parts, including (i) live classes, (ii) tutorials, (iii) remote labs, (iv) MOOCs and (v) Bridge courses.

You play an important role in this program. Live classes were started on January 27. In the week of January 10, we propose launching of tutorials, live labs, MOOCs as well as Bridge program. The team lead by Uma will convey you the dates.

There has been a few hiccups. I am told that about 60 colleges have been live now. Another 17 have the hardware and will get on-board in a day or two. The other colleges have still to get hardware. It is for you to push the vendor to supply the hardware at the earliest. We want all of you ON.

The evaluation of the program will be an important component. We need to get back to you on this. As I said, the program's success depends on you. Do write to me personally if you have any feedback / concerns.

Thanking you,

Ashok Jhunjunwala

IIT Madras

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Thanks and Regards,  
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