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Prof. Ashok Misra, Director, IIT Bombay

IIT Bombay is committed to enhancing the level of engineering education in the country.

Towards this goal, we disseminate our courses to the benefit of students and faculty in engineering colleges as well as to working professionals through continuing education programmes. The Centre for Distance Engineering Education Programme (CDEEP) was formed a few years ago to

take up these activities in a focused manner and to enhance them. I am very glad to see that CDEEP is bringing out a newsletter – *Reach Out*, which will be a good vehicle of communication between IIT Bombay and the recipient organizations of our courses. It is appropriately named since CDEEP is dedicated to reaching out to engineering colleges and to other organizations.

I wish *Reach Out* all success.



Prof. Kannan Moudgalya, Head, CDEEP

The Centre for Distance Engineering Education Programme, or **CDEEP** in short, has been established at

IIT Bombay to make available good quality courses to students of engineering colleges, faculty and working professionals.

The gap between supply and demand in engineering education is huge. Only 2.5% of any age group studies engineering in India. Only 1% of this select group gets to study in IITs.

During the past fifty years, IITs established excellent educational programmes. In contrast, most engineering colleges have been struggling in this regard, one of the reasons being the faculty shortage. Making IIT's courses available to the engineering colleges is a partial solution to this demand-supply gap.

CDEEP has three distinct activities:

1. Conducting educational programmes through live transmission.

2. Video recording of class room lectures and important seminars and making them available on media.
3. Development of web courses and web related activities, such as, webcasting.

We are now launching a newsletter of CDEEP called *Reach Out*. The name signifies our intent: we want to reach out to the potential recipients of our courses. In addition to the print version, we bring out a web version of this as well. Please refer to page 3 for details. The main objective of *Reach Out* is to provide the latest information on the course offerings through CDEEP. The other objective is to provide a forum for interaction.

We plan to highlight select activities of CDEEP in every issue of *Reach Out*. In this issue, we focus on live transmission and IIT Bombay's contribution to the NPTEL effort. The column Profiles introduces a faculty member, active in distance education at IIT Bombay. The column Bookshelf describes a book written by a faculty member of IIT Bombay.

NPTEL

The National Project for Technology Enhanced Learning (NPTEL) is one of the great initiatives of Ministry of Human Resources Development (MHRD), Government of India. The project essentially bridges the gap in higher engineering education system in India due to shortage of faculty. It is well known that in India top 20% of the high school students join the engineering program in various disciplines. In spite of these top ranked entrants to the engineering programme, the engineering impact of India is still below average in the global scene. This is primarily due to the inadequate technical exposure to the students during their college days. There is an acute shortage of qualified engineering teachers in our country.

MHRD correctly diagnosed the problem and initiated the NPTEL project in 2003. The objective of the project was to develop entire undergraduate engineering curriculum in classroom lecture mode in five major disciplines namely, civil engineering, computer science and engineering, electrical engineering, electronics and telecommunication engineering, and mechanical engineering. In addition, the courses were also to be developed in basic sciences and mathematics. All IITs and IISc together were entrusted with the responsibility of this curriculum development. In all about 400 faculty from all the IITs and IISc participated in this novel exercise. About



120 courses each were developed in classroom lecture mode in video and web formats. The web courses have already been deployed and are available free of cost to one and all across the globe. The video courses will be made available in due course of time after certain transmission issues are sorted out.

What is unique about this exercise is the procedure followed by the NPTEL Team.

The following are some of the steps involved: Identifying national level course coordinators and coordinators for each of the IITs and IISc, deciding the syllabus based on inputs from AICTE, development of courses according to framework and modification of the contents based on the reviews.

With great success of the NPTEL (now called phase I), MHRD is now in a process of initiating the phase II of the project with more engineering disciplines and larger content coverage for undergraduate and postgraduate students.

Prof. R. K. Shevgaonkar

Principal Investigator of NPTEL Project
Dean Resource Mobilization
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NPTEL WEB COURSES



The main objective of NPTEL is to enhance the quality of engineering education in the country by developing curriculum based video and web courses. This is being carried out by the seven IITs, IISc Bangalore and other premier institutions as a collaborative project. At IIT Bombay, the following courses have been developed.

No.	Course Name	Course coordinator	Discipline
1	Structural Mechanics II	Prof. R. S. Jangid	Civil Engg.
2	Foundation Engineering	Prof. D. Choudhury	Civil Engg.
3	Transportation Engg I	Prof. V. M. Tom	Civil Engg.
4	Design and Analysis of algorithms	Prof. A. Ranade, Prof. S. Vishwanathan	Comp. Sci & Engg.
5	Engineering Chemistry I	Prof. B. L. Tembe	Chemistry
6	Engineering Physics II	Prof. D Ghosh	Physics
7	Mathematics I	Prof. I. K. Rana.	Mathematics
8	Power System Protection	Prof. S. A. Soman	Electrical Engg.
9	Power System Operation & Control	Prof. A. M. Kulkarni.	Electrical Engg.
10	Optical Communication	Prof R. K. Shevgaonkar	Elect & Comm. Engg.
11	Signals and Systems	Prof. V. M. Gadre	Elect & Comm. Engg.
12	VLSI Design	Prof. A. N. Chandorkar	Elect & Comm. Engg.
13	Transmission lines and EM waves	Prof. R. K. Shevgaonkar	Elect & Comm. Engg.
14	Dynamics of Machines	Prof. P Seshu Prof. K. Kurien Issac, Prof. C. Amarnath	Mech. Engg.

EKLAVYA TECHNOLOGY CHANNEL



Eklavya channel was started on 26th January 2003, with the initiative of MHRD and IITs, and the technical support from IGNOU. This is a no-frill channel that is dedicated to technical education. It currently broadcasts video programmes

developed at different IITs. Eklavya epitomizes the true spirit of learning and dedication, so irrespective of the location, one will be able to share the educational resources available at IITs. Eklavya footprints practically the whole of India. The video programmes are complete courses and are broadcast as a series of one hour lectures that are either taught at IITs or are specially designed at IITs based on the AICTE and model curricula of some state universities. The courses are modular, so one can learn whatever one needs. Eklavya is a free-to-air channel, designed to carry video courses in different disciplines generated at various IITs on weekdays and special interest programmes on Sundays. All the programmes are repeated twice every day to take care of the need and availability of the user. On an average, about eight courses are run concurrently. More details about the courses and schedule can be found at <http://web.iitd.ac.in/eklavya>

The details of the down link are given below:

Through INSAT 3C Satellite on C band (74 degrees East), frequency 4165 MHz., Symbol rate 26.000 SPS, FEC 1/2, Polarization Horizontal.

One needs the following to receive this TV signal: a) 12 feet / 8 feet diameter perforated dish antennae, b) C-band LNBC, c) C-band feed horn, d) Low loss RF Cable Analog, e) Integrated receiver decoder (IRD) for Digital reception, and f) a Television set.

Prof. Kushal Sen
IIT Delhi
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LIVE TRANSMISSION ACTIVITY



Live Transmission is an important activity of CDEEP. It simulates a classroom environment of IIT Bombay and provides high quality education to a large number of participants through fifteen remote centres (RCs).

For a list of these RCs, please go to the link given at the bottom of this page. Through satellite terminals or video conferencing units, each RC establishes a two way interactive environment with our studio at IIT Bombay, from where, the lectures are delivered. The satellite broadcast is done through Ku Band satellite transmission at pre-determined time slots.

CDEEP offers courses in four modes, with different fee structures:

1. Credit Mode: Participants attend classes, interact with faculty, and are evaluated as per the norms set by the course faculty. A participant is awarded a credit certificate for the course with performance grade reflected on it.

2. Non-Credit Mode [Audit Mode]: Participants attend classes and interact with faculty. A participant may be evaluated but is not awarded grades. A certificate of participation is awarded subject to minimum attendance and satisfactory performance as per the norms set by the course faculty.

3. Teach-only Mode: This option is available for educational institutions upon request. The institutions pay a fixed fee per course to IIT after which their students can attend the classes. The individual participant is awarded a participation certificate on meeting the required criteria.

4. Virtual Class Mode: This novel model is offered for the first time. The entire video CDs of the course are made available with the RCs before the start of the semester. The CDs are played asynchronously at all RCs. The IIT faculty conducts regular live interactive sessions at pre-scheduled time slots.

USEFUL LINKS

IIT Bombay homepage	: http://www.iitb.ac.in
Web address of CDEEP	: http://www.cdeep.iitb.ac.in
Web address of Reach out	: http://www.cdeep.iitb.ac.in/pages/reachout
Live transmission	: http://www.cdeep.iitb.ac.in/live
List of remote centers	: http://www.cdeep.iitb.ac.in/live/rc
Live video courses for the next semester	: http://www.cdeep.iitb.ac.in/live/nextcourses.html
List of recorded video courses	: http://www.cdeep.iitb.ac.in/live/pastcourses.html
Academic section of IIT Bombay	: http://www.iitb.ac.in/acad/index.html
Continuing Education Programme	: http://www.iitb.ac.in/~cep
Web address of NPTEL	: http://www.nptel.iitm.ac.in
Web address of Eklavya TV	: http://web.iitd.ac.in/eklavya
List of courses on DVD	: http://www.cdeep.iitb.ac.in/titles

Mining the Web Discovering Knowledge from Hypertext Data

- Soumen Chakrabarti

<http://www.cse.iitb.ac.in/~soumen/mining-the-web/>

Morgan-Kaufmann Publishers, 2002
352 pages, cloth/hard-bound
Original ISBN 1-55860-754-4
Indian reprint ISBN 81-8147-886-X

This book was the very first textbook in the area of Web mining, which was a nascent field when the book was published in 2002. Prof. Soumen Chakrabarti was already one of the leading researchers in the field, in spite of being barely a few years out of his PhD. Since then the area has taken off, and Web mining today affects every one of us. For example, Web mining is at work when we search on the web, looking for information on a topic, when a web site shows a personalized set of topics or books or that may be of interest to us, and even in the choice of what advertisements are shown to us when we visit a web site.

The book itself has become the standard text in the field, and is used at leading universities across the world, including Stanford, Princeton, CMU, Univ. Texas at Austin, Univ. of Michigan, New York University, Max Planck Institute at Saarbrücken, U. Muenchen, to name just a few.

This book did not merely ride a wave: it has attracted rave reviews from numerous readers. For example, as David Pennock, a senior research scientist at Overture said in a review on amazon.com, "This is a fabulous book, written with care and precision, easy to read yet covering in detail a wide variety of the most beautiful and promising developments in data mining and machine learning as it relates to the World Wide Web, including a prescient vision of where the field is headed in the future". Other reviews by leading researchers in the field have been equally effusive, and the book won a Honorable Mention from the American Academy of Publishers as an "Outstanding Professional, Reference or Scholarly Work of 2003" in the CS category.

Many people all over the world are eagerly awaiting the release of the next edition of the book.

Prof. S. Sudarshan

Prof. R. K. Shevgaonkar



Dr. R. K. Shevgaonkar received his B.E. degree in Electrical engineering from Jiwaji University, M.Tech from IIT Kanpur and PhD from IIT Bombay. He was a Scientist at the Indian Institute of Astrophysics and the Raman Research Institute. After doing his Post Doctoral fellowship at University of Maryland, he joined IIT Bombay. He occupied various positions at IIT Bombay, like Dean of Students' Affairs, Head, Department of Electrical Engineering, and Head, CDEEP. Presently he is Dean, Resource Mobilization and Professor of Electrical Engineering at IIT Bombay. He has been a Visiting Professor at University of Nebraska at Lincoln and ETH, Zurich.

Dr. Shevgaonkar has been an active researcher in the areas of Optical communication, Image processing, Antennas, Microwaves, Radio astronomy, etc. He has published more than 120 papers in international journals and conferences, and two books for Electrical Engineers. He has guided 12 PhD and more than 30 M.Tech. theses. He has developed video and web lectures on Electromagnetics and Fiber optic communication.

Dr. Shevgaonkar is a recipient of IETE award for his outstanding contribution to Optical communication, and the 'Excellence in Teaching' award of IIT Bombay. He is a Fellow of the following academies: Indian National Academy of Engineering, National Academy of Science, India, Institution of Electronics and Telecommunication Engineers and Optical Society of India. He is a senior member of IEEE and a member of International Astronomical Union and Astronomical Society of India. He has been a member of many international and national research and educational committees.

Web: <http://www.ee.iitb.ac.in/wiki/faculty/rks>

Email: rks@ee.iitb.ac.in

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Please send your comments or suggestions to :

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Q & A

1. Do I need to pay for registration of NPTEL Courses?

No. It is absolutely free of cost. The main objective of this programme is to enhance quality of engineering education in the country by developing curriculum based video and web courses.

2. Where can I get the information to participate in live transmission courses?

The information about the live transmission activity can be found in the home page of CDEEP under Live Transmission. Please refer to the useful links listed on page 3.