

NMEICT

NATIONAL MISSION ON EDUCATION THROUGH
INFORMATION AND COMMUNICATION TECHNOLOGY



MHRD
MINISTRY OF
HUMAN RESOURCE
DEVELOPMENT

सत्यमेव जयते

INTERACTIVE
MULTIMEDIA
E-CONTENT

HIGH SPEED
CONNECTIVITY

LOWCOST
ACCESS DEVICES

DTH
EDUCATIONAL
CHANNELS

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Introduction to NMEICT

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To know more about the Mission visit the NMEICT website at <http://www.sakshat.ac.in>



सत्यमेव जयते

MHRD
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HUMAN RESOURCE
DEVELOPMENT

01

NATIONAL MISSION ON EDUCATION THROUGH ICT (NMEICT)

National Mission on Education through ICT (NMEICT) is a landmark initiative of the Ministry of Human Resource Development (MHRD) to address all the education and learning related needs of students, teachers and lifelong learners. In Indian scenario where there is a vast disparity of educational facilities available in various regions across the country, the Mission envisages to bridge the gap by providing just- in- time quality educational resources and teachers 24×7 to learners irrespective of their social, economic and educational status. The National Mission on Education through ICT (NMEICT) was launched on February 3, 2009 at Tirupati, Andhra Pradesh as a Centrally Sponsored Scheme to leverage the potential of ICT in teaching and learning process.

The three cardinal principles of the Education Policy viz., access, equity and quality are to be served through three major components of the mission:

1. *Broadband connectivity to all colleges and universities*
2. *Low cost access & computing devices for students and teachers.*
3. *High quality e-content generation.*

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- *Broadband connectivity to all colleges and universities*
- *Low cost access and computing devices for students and teachers*
- *High quality e-content generation*

There are three guiding philosophies for this effort – [a] no talent of the country should be allowed to go waste, [b] all the services available through the content delivery portal Sakshat should be free and [c] freely available material on the web should be used so as to avoid reinventing the wheel.

The objectives of the mission are:

- Empowering and enabling students by ensuring equity and access to education through the use of ICT;
- Connecting over 400 Universities and 22,000 Colleges all over India through high-speed data networks;
- Improving faculty quality by using a unique synchronous training methodology;
- Ensuring equity by providing access to expensive equipment to students even in remote corners through innovative use of ICT; and
- Making available e-content and educational videos created by the best teachers

across all disciplines for UG and PG classes. The Mission provides an opportunity for all the teachers and experts in the country to pool their collective wisdom for the benefit of every Indian learner and, thereby, reducing the digital divide and reaching out hitherto deprived sections of the society in rural/under-developed areas of the country. Under this Mission, a proper balance between content generation, research in critical areas relating to imparting of education and connectivity for integrating our knowledge with the advancements in other countries is being attempted.

It is an endeavor through which MHRD is synergising the efforts taken by the educational institutions vis. IITs, UGC, NITs, CEC, IGNOU and other higher education institutions in the country to develop world class content and educational applications. Senior faculty members from different universities, research institutes and institutions of higher learning are contributing to the development of e-learning resources, virtual labs, open source applications etc.

SAKSHAT is envisaged as one stop education portal to facilitate lifelong learning of the students, teachers and those in employments or in pursuit of knowledge free of cost to them. The portal is expected to be the main delivery platform for the contents developed under the National Mission on Education through ICT (NMEICT). Sakshat integrates all the contents developed under the Mission and also provides Mission related information

and to facilitate public scrutiny, feedback and transparency for the projects undertaken by the Mission .

MHRD, Govt of India

Font Size: A- A A+

Select Language

NMEICT | DOCUMENTS | PROJECTS | NEWS & EVENTS | CONTACT US | LOGIN

W3C CSS

Sākshāt

Leverage powers of ICT
in Higher Education..

SAKSHAT REPOSITORY >>>

PICTURE GALLERY >>>

Sakshat SAARC >>>

WHAT'S NEW >>>

Ministry of Human Resource Development

Sakshat Classroom

NPTL

Online Information DTH

EDUCATION

Computer Projects Development

D-Source

e-PG Pathshala Learning Media Coverage

scholarship e-Library

Spoken Tutorial Knowledge

EDUCATIONAL CHANNELS e-content

National Mission on Education through ICT (NMEICT)

A landmark initiative of the Ministry of Human Resource Development (MHRD) to address all the education and learning related needs of students, teachers and lifelong learners.

Re-Constituti

NPTEL

<http://npTEL.ac.in/>
National Programme on Technology Enhanced Learning

<http://epgp.infibnet.ac.in/about.php>
e-PG Pathshala

<http://cec.nic.in/Pages/Home.aspx>
Consortium for Educational Communication

EDUCATION BROADCAST

Tweets

NMEICT @nmeict 19 Sep 14
2 Typing text and basic formatting Bengali

Sakshat Website (<http://www.sakshat.ac.in>)

There are more than hundred forty projects ongoing under the NMEICT ranging from e-content development, access to e-resources, development of software tools etc. To know more about these projects visit the Sakshat website at <http://www.sakshat.ac.in>.

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MAJOR INITIATIVES OF THE MISSION



BROADBAND CONNECTIVITY TO COLLEGES AND UNIVERSITIES

Providing connectivity to the colleges, institutions and universities is a key component of the NMEICT. Around 60% of the Mission budget has been earmarked for the connectivity. Bharat Sanchar Nigam Limited-Mahanagar Telephone Nigam Limited (BSNL-MTNL) combine have been entrusted with the task of providing connectivity under National Mission on Education through Information and Communication Technology (NMEICT) Scheme.

The Mission aims to extend computer infrastructure and connectivity to over 26000+ colleges and 2000 polytechnics in the country including each of the department of 419 universities/deemed universities and institutions of national importance as a part of its motto to provide connectivity up to the last mile. Up to 400 nodes LAN on average is also being provided under the Mission. Connectivity to universities and colleges is in progress and as on date, 400 universities and nearly 26000 colleges in the country have been connected. For further details visit BSNL- NMEICT portal at <http://www.nme.bsnl.co.in/>.

Contacts:

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College Connectivity : Mr. P Baburaj, DGM, NOC Bangalore (bpbraj@gmail.com)

LOW COST
ACCESS DEVICE:
AAKASH TABLET



Even the best e-content cannot have a significant impact unless it reaches the vast majority of learners with ease, as and when they demand it. The Mission has funded the development of Ultra Low Cost Computing Devices to enable students, wherever they may be, access to education content. Initially the project was entrusted to IIT Rajasthan, which worked on the specification, design, tendering and procurement of the first version of the Aakash tablet. The Minister of Human Resource Development launched Aakash 1 on October 5, 2011.

Subsequently Indian Institute of Technology (IIT), Bombay took over the project pertaining to (a) Acquisition and Testing of Low Cost Access-cum-Computing Device and (b) Hardware and software optimisation of LCAD under the scheme of NMEICT.

The advanced version of low cost tablet called Aakash-2 was launched by the Hon'ble President of India on the occasion of National Education Day i.e. 11th November, 2012.

As compared to Aakash-1 launched in October 2011, this advanced version had a processor, which is about 3 times faster, memory twice as large, and capacitive touch screen as compared to resistive touch screen.

On these upgraded devices, R&D teams at IIT Bombay built a multitude of useful educational applications and content. Some important applications are:

- (i) *Interactive lesson building tool 'ProxyMITY'.*
- (ii) *'Clicker' application which permits quizzes to be conducted on-line in class rooms in realtime.*
- (iii) *Standard educational contents in pdf and HTML can now be easily stored and read on Aakash-2. As a demonstration, some school books available in digital format from NCERT, and a state board for school students have been ported.*
- (iv) *A 'Robot-Controller' as a demonstration of engineering control applications.*
- (v) *Spoken tutorials can be used on Aakash-2.*
- (vi) *Some educational animations have been built, and open source software tools are being developed and adopted for creating interactive animations to run on Aakash-2.*
- (vii) *Programming environment which permits students to use these tablets as a regular computer to write programs in C, C++, and Python.*

LOW COST

ACCESS DEVICE: AAKASHTABLET

>> contd.

- (viii) *The Scilab package has been fully ported on Aakash-2.*
- (ix) *Aadhar biometric authentication has been integrated with Aakash-2.*
- (x) *Linux Operating System has been ported on Aakash, which is being further optimized.*

A total of 1,00,000 tablets were received by IIT Bombay from Datawind. These were distributed among various remote center colleges across the country.



The Mission is now working towards the development of Aakash IV. To know more about the Aakash Project visit <http://aakashlabs.org/>.

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E-CONTENT DEVELOPMENT UNDER NMEICT



NPTEL Courses Resources FAQ Feedback

Self-study, anytime, anywhere

ANYwhere

"An investment in knowledge pays the best interest" - Benjamin Franklin

NPTEL ONLINE COURSES NPTEL LOCAL CHAPTER SPEECH TO TEXT

Featured News

Featured Courses

- Discrete Mathematics ... Prof. Aditi Gangopadhy... IIT Roorkee
- Advanced Complex An... Prof. T.E. Venkata Dalaji IIT Madras
- Ground Water Hydrolo... Prof. Anirban Dhar, Prof... IIT Kharagpur

NPTEL is a joint initiative of IITs and IISc funded by this Mission provides e-learning through online Web and Video based courses in engineering, science and humanities streams. The Mission of NPTEL is to enhance the quality of engineering education in the country by providing free online courseware.

922+ courses in Engineering, Technology, Science and Humanities are now available on the NPTEL portal.

Contact: Prof. Mangala Sunder Krishnan, IIT Madras
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Consortium of Educational Communication (CEC) is developing e-content for UG courses. generation. In phase-I, e-content for 19 UG subjects and in phase-II, for 68 subjects are being generated by the CEC in collaboration with its media centers.



The screenshot shows the CEC E-content Portal for Botany. The header includes the CEC logo, the text "Consortium for Educational Communication, India", the Government of India emblem, and navigation links for HOME and CONTACT. Below the header, there are tabs for OBJECTIVES, SUMMARY, VIDEO / AUDIO, TEXT, ASSIGNMENT, REFERENCE, DOWNLOAD, and BLOG. A search bar is also present. The main content area features a large image of various plants with the text "BOTANY Ist Year" overlaid. To the right, there is a sidebar with course details: Course Name: Botany, Paper No. & Title: Paper-II Cell Biology and Genetics, and Topic No. & Title: Unit-III DNA: The Genetic Material. The footer includes the slogan "Empowering through e-Education", the copyright notice "© CEC - UGC", and a "Credits" link.

CEC E-content Portal (www.cec-ugc.ac.in)

Contact: Prof. Rajbir Singh, Director CEC (director.cec@nic.in)

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E-CONTENT
DEVELOPMENT
UNDER NMEICT



University Grants Commission (UGC) is developing e-content for 77 PG subjects.

The screenshot shows the e-PG Pathshala website. At the top, there is a navigation menu with links: Home, Uploaded Content, Downloads, NME-ICT (MHRD), Registration, Search, Stats, Contact Us, and Feedback. The main banner features an open book with the e-PG Pathshala logo overlaid. Below the banner, there are three columns: 'e-PG Pathshala' with a video player, 'About' with a description of the MHRD project, and 'Subject Category' with a list of subjects: Arts, Humanities & Languages; Engineering & Technology; and Life Science. At the bottom, a statistics bar displays: 4600+ e-Text, 1200+ Video, 4000+ Experts, 12000+ Quiz, and 69/843 Subjects / Papers.

[e-PG Pathshala \(http://www.inflibnet.ac.in/epgp/\)](http://www.inflibnet.ac.in/epgp/)

Contact: Dr. Jagdish Arora, Director INFLIBNET (director@inflibnet.ac.in)



VIRTUAL LABS



To complement the NPTEL e-Content being provided to engineering colleges, Virtual Labs project has been initiated under NMEICT. This is a joint project of twelve participating institutes, being nationally coordinated by IIT Delhi. The basic aim of this project is to design and develop Virtual Lab in various areas of Science and Engineering in order to benefit maximum number of students. The Virtual Labs essentially comprises a user-friendly graphical front-end, working in synchronization with a backend, possibly consisting of a simulation-engine running on a server or actual measurement data or a remotely triggered experiment.

Virtual Lab Main Page (visit <http://iitd.vlab.co.in/index.php#> or www.vlab.co.in)

Sakshat Virtual Labs

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Developed @ IIT Delhi

Sponsors

This project is an initiative of Ministry of Human Resource Department under National Mission on Education through ICT. These experiments and labs will be hosted for open access through the main project website
<http://vlab.co.in>

Virtual Labs at IIT DELHI

- Biotechnology and Biomedical Engineering**
Biotechnology and Biomedical Engineering
- Civil Engineering**
Civil Engineering
- Electronics & Communications**
Electronics & Communications
- Computer Science & Engineering**
Computer Science & Engineering
- Electrical Engineering**
Electrical Engineering
- Mechanical Engineering**
Mechanical Engineering

The Philosophy

A virtual laboratory is a tool for distance learning and/or experimentation that allows people to share knowledge, data, voice, video, tools, and many other resources. It provides a suitable environment to extend, improve, integrate, refine, and assist the learning and/or experimentation process of many subjects, thus contributing to an increase of the effectiveness of scientific research and widening the use of scarce or costly equipments.
More>>

Salient Features

Lab courses richly rely upon new up-to-date content and various techniques that require a new synergy of knowledge and experimental implementation.
More>>

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Virtual Lab does not require any additional infrastructural setup for conducting experiments at user premises. One computer terminal with broadband Internet connectivity is all that is needed to perform the experiments remotely. Over hundred Virtual Labs are currently ready for use. These labs were dedicated to the nation on 23 February 2012. Over 50,000 students, (in approximately 150 colleges) have used the Virtual Labs and have provided user-feedback

Contact: Prof. Ranjan Bose, IIT Delhi (rbose.iitd@gmail.com)

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TEACHER'S TRAINING

Under Talk to a Teacher project sanctioned to IIT, Bombay, A-VIEW developed by Amrita Vishwa Vidyapeetham is being used as the collaboration tool for the National Teacher Empowerment Program. Prof. Deepak Phatak, IIT Bombay, leads the National Teacher Empowerment Program to train thousands of college teachers across the nation. More than 36,000 teachers have already been trained under this programme.

To know more about the project visit <http://www.co-learn.in>.

For more details on A-VIEW visit <http://aview.in/>.



Contacts:

Prof. Deepak B. Phatak, IIT Bombay (dbp@it.iitb.ac.in)

Prof. Kannan M. Moudgalya (kannan@iitb.ac.in)

Dr. Kamal Bijlani (for A-View), Amrita University (kamal1008@gmail.com)

SPOKEN TUTORIAL

A Spoken Tutorial is a ten minute audio video tutorial on open source software, created to train our students on important IT topics. Spoken Tutorials are created for self-learning, using the pedagogical methods developed at IIT Bombay. The spoken part of these tutorials are dubbed in all Indian languages, to help children who are weak in English. Using a series of such tutorials, one can learn even a complicated IT topic easily. The main objective of the Spoken Tutorial project is to improve the employment potential of our students. At present, there are about 500 spoken tutorials in English and 2,000 dubbed tutorials in Indian languages.



Spoken Tutorial Website (<http://spoken-tutorial.org/>)

The Spoken Tutorial team also conducts organised workshops using spoken tutorials. Any student or a faculty member from any college can conduct SELF workshops, free of cost. The Spoken Tutorial team at IIT Bombay has trained close to four lakh students through SELF workshops. These workshops have been conducted in LaTeX, Scilab, PHP, Python, ORCA, Linux, LibreOffice, Blender, Java, C, C++, GIMP, GeoGebra, OpenFOAM and Osdad.

The Spoken tutorial team also conducts online tests and give certificates to those who pass the test free of cost. For further information about this initiative visit <http://spoken-tutorial.org/>.

Contact: Prof. Kannan M. Moudgalya (kannan@iitb.ac.in)

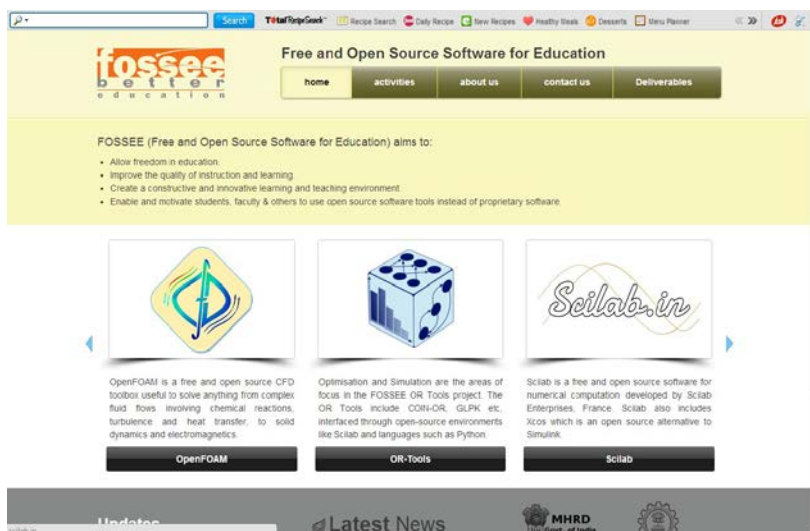
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FREE AND OPEN SOURCE SOFTWARE FOR EDUCATION FOSSE

The FOSSE project provides free support on FOSS (free and open source software) to eliminate the use of commercial/proprietary software in education. The project activities include:

- i) support for Self workshops on FOSS
- ii) Textbook Companion- to create documentation for FOSS through students,
- iii) Lab Migration activity to provide help in shifting from proprietary software based labs to FOSS.



The FOSSE team promotes:

- (a) Scilab to replace Matlab
- (b) Python, a scripting language.
- (c) OpenSCAD to replace ORCAD
- (d) OpenFOAM, a FOSS alternative to FLUENT
- (e) COIN-OR for optimisation.

Students and teachers from many colleges across India are participating in, and benefiting from, these activities. Visit <http://fossee.in> for more details.

Contact: Prof. Prabhu Ramachandran, IIT Bombay (prabhu@aero.iitb.ac.in)



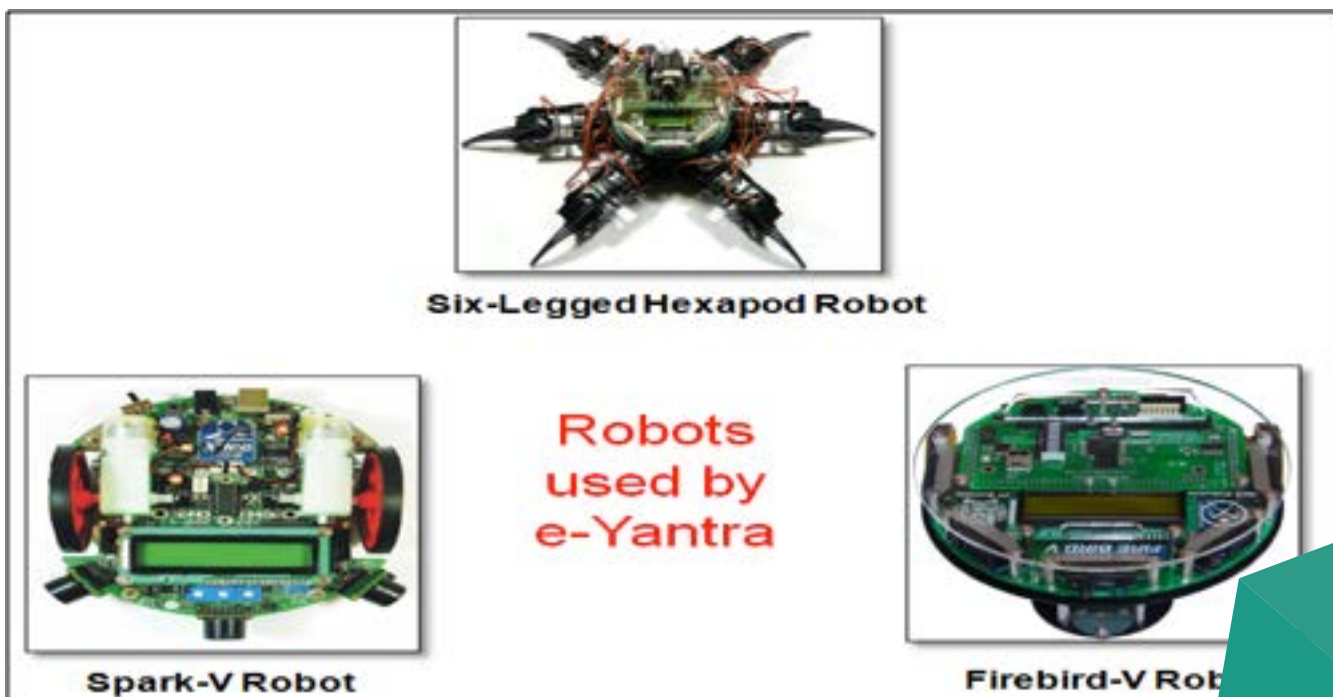
E-YANTRA ROBOTICS IN HIGHER EDUCATION



e-Yantra is an initiative to incorporate Robotics into engineering education with the objective of engaging students through exciting hands-on application of math, computer science, and engineering principles, in order to turn them into engineers who can support a rapidly growing economy. The goal of e-Yantra is to enable effective embedded systems and Robotics education across engineering colleges in India, by

- Providing training for teachers and students -- through workshops where participants are taught basics of embedded systems and programming;
- Engaging teachers and students in hands-on experiments with robots -- through competitions where participants are given robots to implement a solution; and
- Helping colleges to set-up Robotics labs/clubs -- by awarding a basic set of robots and expert advice to colleges, facilitating setting up of labs, in addition to training their teachers through workshops.

Visit www.e-yantra.org to know more about the project and access contents



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EDUCATIONAL RESOURCE PLANNING (ERP) MISSION

ERP mission with IIT Kanpur as lead institute in collaboration with other partners in this project AMU (Aligarh), AVV (Kochi), DEI (Agra), IGNOU (Delhi), IIT Roorkee, JMI (Delhi), NIT Hamirpur, and SMVDU (Jammu), proposes to build, deploy and manage web based software system for use of Indian academic institutes. IIT Kanpur has developed a learning management system (LMS) Brihaspati and the other modules of ERP system are being built around it. Major modules developed are- online admission system, e-portfolio, project management, general accounting system, payroll generation within a institute, purchase and inventory management, library automation, online election management and web hosting management system.

Visit http://202.141.40.218/~brihaspati/edrp_portal to know more about the project.

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PEDAGOGY PROJECT

This project envisages to systematically design and develop learner-centric curricula, suitable for outcome-based learning for 4 year degree programmes in six major engineering disciplines. Each curriculum document are primarily meant for students, telling them what knowledge, skills and attitudes they should be able to demonstrate on completion of each course, where to find the necessary learning resources (in addition to approximately 80 pages of in-built course notes) and also providing them with opportunities for self assessment (around 120–125 practice problems / assignments with solutions). Used innovatively, these documents can promote self and group learning. Also faculty members, in particular, those who may have to teach such a course for the first time, are likely to find these documents extremely useful.

PEDAGOGY

PROJECT

 contd.

Pedagogy Project Website

http://www.ide.iitkgp.ernet.in/Pedagogy1/pedagogy_main.jsp


The screenshot shows the main page of the Pedagogy Project Website. At the top, there is a navigation menu with links: HOME, COURSE DEVELOPMENT, COORDINATOR ACCESS, COURSEVIEW, INSTITUTE REGISTRATION, TRAINING, and CONTACT US. Below the menu is a header banner with the text: "Developing suitable pedagogical methods for various classes, intellectual calibers and research in e-Learning - Main Phase" and "National Mission Project on Education through ICT". The banner also features a logo on the left and the IIT Kharagpur logo on the right.

On the left side, there are two main sections:

- All Document** (highlighted in red):
 - Developer Guide
 - Reviewer Guide
 - Outcome-based Curriculum Design
- Partner Institutions in Main Phase** (highlighted in red):
 - IIT Kharagpur
 - IIT Delhi
 - BESU
 - IIT Roorkee
 - IIT Guwahati
 - NIT Durgapur
 - NIT Rourkela
 - Jadavpur University
 - BIT Mesra
 - IIT Bombay
 - SVNIT Surat
 - Sastra University

In the center, there is a blue box with instructions:

- * If you want to develop your own Institute courses in pedagogical framework, please register your institution here--> [INSTITUTE REGISTRATION](#)
- ** If you want to develop your own course in pedagogical framework, please register here--> [TRAINING](#)
- *** To view the develop courses please visit [COURSEVIEW](#) page

Below this is a yellow box titled "Project Outline" with the sub-heading "A collaborative project". The text describes the project as an experiment to systematically design and develop learner-centric curricula for 4-year degree programmes in six major engineering disciplines. It mentions that each curriculum document is expected to include around 80 pages of course notes and 120-125 self-assessment problems and solutions. All development and review activities will be carried out collaboratively using a specially designed web tool. A large number of motivated and experienced faculty members trained in pedagogy of teaching-learning, drawn from a diverse range of institutions across the nation are expected to participate in the development and the review process. The decision to involve such a wide section of faculty

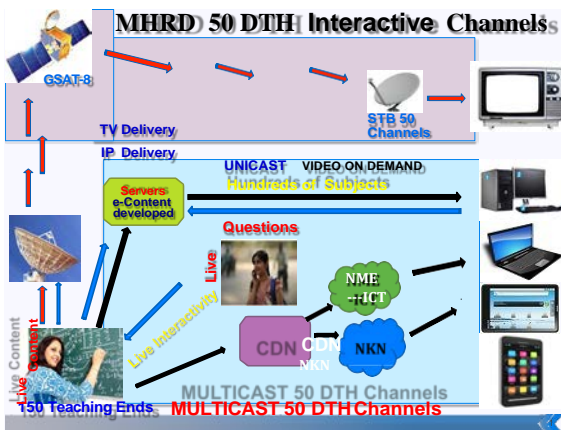
Contact: Prof. Anup Kumar Ray, IIT Kharagpur (akray@cet.iitkgp.ernet.in)

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DTH PROGRAMME

MHRD is poised to launch the most ambitious programme, 50 DTH educational channels' on 24X7 basis under NME-ICT, to generate and deliver structured education content to reach homes, the most cost effective way. It aims to achieve composite goals of ensuring 'Access, Equity and Excellence' and bridging the digital divide in higher Education. The MHRD DTH programme has the potential to be watched by 67% homes in India. Under this programme Teacher's/SME's shall be delivering 8 hours of live lectures a day/channel and the same will be repeated twice a day to benefit those who miss out the live sessions. The students can seek answers to their queries instantaneously from the teacher during the live transmission or asynchronously if they are viewing recorded lectures. The live telecast will be Multicast to enable access through other devices like computers, tablets, and smart phones. The content delivered are to be converted into e-Contents so that viewers can benefit from watching the content on demand at their convenient time, place and pace.



DTH Structure



MoU signed with Prasar Bharti for DTH program

An MOU has been signed between Secretary, HE, MHRD and CEO, Prasar Bharti on November 19, 2013 to partner the MHRD DTH programme.



SWAYAM INDIA MOOCS

The Ministry of Human Resource Development of Government of India, is planning to launch its ambitious India MOOCS programme under the Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) platform specifically designed to benefit students from remote area, working professionals as well as college dropouts. Students will get 'Verified Certificate' after successful completion of courses and qualifying examination.

Some work in this direction has already been done under the NMEICT. IIT Madras has been offering MOOCs courses since March 2014 and have at present completed/ ongoing around 93 courses. IIT Bombay has launched 6 MOOCs courses. Many other higher education institutions in the country are proposing to develop MOOCs to deliver online courses in a mass scale. It is expected that by April 2016 around 2000 MOOCs courses are to be launched on the SWAYAM platform.



NATIONAL DIGITAL LIBRARY (NDL)

The National Digital Library (NDL) under the NMEICT has taken up a mammoth task of collating and harvesting all the digitized and digital content available across the educational institutions in the country and indexing and hosting them in the National Digital Library Server to facilitate search and access to open content through a single window.

KEY CONTACTS

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MHRD
MINISTRY OF
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