Distance Learning: A Global Perspective

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International Conference on Promotion of Distance Learning and Service Networks for Development in China and Other Countries
Today we live in a knowledge age
The Most Valuable Natural Resources of a Country Lie Buried...

http://www.mountain-environments.ndirect.co.uk/
Between the Ears of Its Citizens!

http://www.essex.ac.uk.afm/postgraduate/smallgirl2-websave.jpg
Until Recently, what has been the Primary Technology For Teaching?
Chalk and blackboard...

from: http://home.earthlink.net/~mariko-usa/graphics/chalk2.jpg
What’s the Difference Between the Blackboard and Cave Drawings?

http://www.culture.fr/culture/arcnat/chauvet/en/gvpda-d.htm
The Eraser!!

Eraser dust marks from: http://www.leednet.com/eraserdust/
And the dutiful student sits passively listening to her lecturer

http://www.images.bham.ac.uk/im2011.jpg
http://www.millennium.scps.k12.fl.us/bariosstudent.jpg
Tomorrow’s Learning, Yesterday’s Teaching

Internet, PCs, Multimedia

Passive Listening Lectures
But,  
-- with technology --
the delivery and pedagogy of education are changing rapidly
Distance Learning Even Occurs on Campuses!

http://www.outreach.usf.edu/catalog/spring02/macgirls.jpg
Developing Countries Very Active in Distance Learning

- Mexico and Latin America
  - Monterrey Institute of Technology (ITESM), Mexico
- China
- Some New Entrants:
  - World Bank Global Development Learning Network
  - Pakistan, Uzbekistan, Tunisia, Algeria, South Africa, Jordan
Five Years of *The Internet and the University*

http://www.educause.edu/forum/ffpiu02w.asp?bhcp=1
E-Learning Perspectives from MIT

1) MIT's OCW (OpenCourseWare) program
2) MIT World (free video on demand)
3) Internet-based virtual laboratory experiments
4) PIVoT, an on-line video tutor
5) Singapore MIT Alliance (SMA)
6) MIT experience with the African Virtual University
7) Research in e-Learning
8) LINC, Learning International Networks Consortium
   - LINC's AITI, African Internet Technology Initiative
   - Working with Tsinghua School of Continuing Education
1) MIT OpenCourseWare

Educational Materials from 1,100 MIT Courses Up on the Web

This material may be used free of charge anywhere on Planet Earth and Beyond!

http://www3.sympatico.ca/yendred/mitocw.gif
Welcome to the MIT OpenCourseWare Information Home

This page provides updates on the progress of MIT OpenCourseWare (OCW). We invite you to bookmark it, and to check back frequently for the latest news.

- Project Updates
- OCW in the News
- OCW Release Dates
- A Brief Description of OCW

Project Updates

OpenCourseWare Executive Director Named

Anne Margulies, who has held administrative positions at Harvard and was a chief operating officer in the private sector, has been named the first executive director of the OpenCourseWare initiative, following an extensive search.

To read more, please see the MIT Tech Talk article, April 24, 2002
Courses
1.00-Introduction to Computers and Engineering Problem Solving
1.061-Transport Processes in the Environment
1.138J-Wave Propagation
1.203J-Logistical and Transportation Planning Methods

Civil and Environmental Engineering

The Department of Civil and Environmental Engineering is one of the oldest departments at MIT. Our mission is to educate the future leaders of the profession and to provide skills and foundations for lifelong learning and growth. Research to create new knowledge is an integral part of our education program and the continued renewal of the profession.

For more information, go to http://web.mit.edu/civenv/.
Logistical and Transportation Planning Methods
Urban Operations Research

Illustration by Elaine Chew, MIT PhD, 2000. Used with Permission

Highlights of this Course

This MIT subject includes a full 500+ page online textbook, Urban Operations Research, by Profs. Richard C. Larson and Amedeo R. Odoni. While that book was published in 1981, most of the material is still current and is referenced in the course reading assignments. To augment the book and to bring it up to date where necessary, there are lectures handouts, available here as PDF files. Interactive color animations bring to life some of the most interesting applied probability problems in Chapter Three of the book. These, too, are referenced in the reading
This site is a supplement to the course webpage.

URBAN OPERATIONS RESEARCH
Logistical and Transportation Planning Methods

TEXTBOOK
Urban Operations Research
by Richard C. Larson
and Amedeo R. Odoni

LECTURES: Larson (Ppt Slides), Odoni (MSWord),
THE MORSE LECTURE 1998

EXAMPLES: Stick Breaking, Dropping Needle, Spinning Bottle,
Factory Location, Airline Yield Management

DISCUSSIONS: Webboard

TOOLS: OR-Objects
Urban Operations Research

Chapter 1
Introduction

Chapter 2
Probability

Chapter 3
Functions of Random Var

Chapter 4
Queueing Theory

by Richard C. Larson and Amedeo R. Odoni

Chapter 5
Spatial Queues

Chapter 6
Network Applications

Chapter 7
Simulations

Chapter 8
Implementation

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Our MIT Course, *Urban Operations Research*, has been taught for over 30 years!

- Contents now on MIT’s OpenCourseWare
- One of the top ten most visited OCW sites (*Wired* Magazine, Sept. 2003)
- Now available in three languages: English, Spanish and Portuguese
- Teachers: Professors Amedeo Odoni, Arnold Barnett and yours truly
Urban Operations Research

- Deals with urban operational problems
- Transportation
- Health care
- Public Safety
- Sanitation
- Repair and maintenance of infrastructure

http://www.davidm.net/photo/summer2002/prague/subway.jpg
Urban Operations Research

- OCW Site Contains Homework and Exam Problems

We are seeking partners in creating an online learning community around this course and around operational planning problems of cities.
Outcomes — Access data

Traffic by Geographic Region (in Web hits, since 10/1/03)

<table>
<thead>
<tr>
<th>Region</th>
<th>Hits Since 10/1/03</th>
<th>Hit %</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>182,601,460</td>
<td>43.4</td>
</tr>
<tr>
<td>East Asia</td>
<td>84,109,405</td>
<td>20.0</td>
</tr>
<tr>
<td>Western Europe</td>
<td>66,882,194</td>
<td>15.9</td>
</tr>
<tr>
<td>South Asia</td>
<td>25,722,236</td>
<td>6.1</td>
</tr>
<tr>
<td>Latin America</td>
<td>22,878,580</td>
<td>5.4</td>
</tr>
<tr>
<td>Eastern Europe and Central Asia</td>
<td>19,038,402</td>
<td>4.5</td>
</tr>
<tr>
<td>MENA</td>
<td>10,819,406</td>
<td>2.6</td>
</tr>
<tr>
<td>Pacific</td>
<td>5,436,272</td>
<td>1.3</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>3,258,812</td>
<td>0.8</td>
</tr>
<tr>
<td>TOTAL HITS</td>
<td>420,744,767</td>
<td></td>
</tr>
</tbody>
</table>
## Outcomes — Access data

Countries with most hits in April 2005 (*outside of U.S.*)

<table>
<thead>
<tr>
<th>Country</th>
<th>Web Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 China</td>
<td>2,139,951</td>
</tr>
<tr>
<td>2 India</td>
<td>1,222,719</td>
</tr>
<tr>
<td>3 Canada</td>
<td>1,039,254</td>
</tr>
<tr>
<td>4 South Korea</td>
<td>1,008,295</td>
</tr>
<tr>
<td>5 Taiwan</td>
<td>974,456</td>
</tr>
<tr>
<td>6 United Kingdom</td>
<td>776,755</td>
</tr>
<tr>
<td>7 France</td>
<td>529,660</td>
</tr>
<tr>
<td>8 Germany</td>
<td>486,608</td>
</tr>
<tr>
<td>9 Japan</td>
<td>422,402</td>
</tr>
<tr>
<td>10 Brazil</td>
<td>406,532</td>
</tr>
<tr>
<td>11 Turkey</td>
<td>380,605</td>
</tr>
<tr>
<td>12 Sweden</td>
<td>375,965</td>
</tr>
<tr>
<td>13 Italy</td>
<td>357,541</td>
</tr>
<tr>
<td>14 Australia</td>
<td>306,286</td>
</tr>
<tr>
<td>15 Spain</td>
<td>305,774</td>
</tr>
<tr>
<td>16 Singapore</td>
<td>301,704</td>
</tr>
<tr>
<td>17 Netherlands</td>
<td>244,064</td>
</tr>
<tr>
<td>18 Iran</td>
<td>215,478</td>
</tr>
<tr>
<td>19 Indonesia</td>
<td>210,760</td>
</tr>
<tr>
<td>20 Mexico</td>
<td>206,790</td>
</tr>
</tbody>
</table>
Visitors generally fit one of three user profiles:
- Educators are 15.3% of all MIT OCW traffic
- Students are 31.4%
- Self-learners are 48.2%
66% of visitors hold a bachelor’s or master’s degree
Visitors most frequently interested in courses in electrical engineering, business, physics, and mathematics
Visitors average 1.6 visits per month
Review average of 9.36 HTML pages per visit
2) MIT World

The World’s Largest Freely Available Video-on-Demand University Site for Public Lectures.
In Charlie’s Vision: The Future of Engineering at MIT
James A. Champy, Chairman of Consulting Perot Systems Corporation
MIT Host: Engineering Systems Division

Play Now

(eco)Logical: Greening the 21st Century City
Richard M. Daley, Mayor, City of Chicago
Ken Greenberg, Principal, Greenberg Consultants Ltd.
Hillary Brown, Architect and Principal, New Civic Works
Robert Campbell, Architecture Critic, The Boston Globe
Douglas I. Foy, Secretary of the Office for Commonwealth Development State of

Play Now

Future Automotive Technology and Fuels: The Options and Their Impacts
John B. Heywood, Sun Jae Professor of Mechanical Engineering
MIT Host: Alumni Association

Play Now

Oil, Security, Environment, Technology
Ernest J. Moniz, Professor of Physics and Engineering Systems
Director of Energy Studies
MIT Host: Alumni Association

Play Now

The Segway Alternative
Dean Kamen, Chairman of Segway, LLC
Founder of For Inspiration and Recognition of Science and Technology (FIRST)
MIT Host: Alumni
MIT World Usage Profile

- North America 51.46%
- Asia 24.73%
- Western Europe 15.45%
- Eastern Europe 3.51%
- South America 2.59%
- Australia 1.36%
- Africa 0.88%

China ranks #2 country, after USA, with 7.32%
3) Designing New Learning Environments

http://www.xmaonline.co.uk/Images/Dorrington.jpg
8) MIT-Based Consortium for Global Learning

**LINC:** Learning International Networks Consortium

- LINC's AITI, African Internet Technology Initiative
- Working with Tsinghua School of Continuing Education
Learning International Networks
Consortium: Key Purposes

- To empower organizations within countries to design, create and operate top quality higher-education e-learning systems.
- To share educational materials, exercises and courses for the mutual benefit of learners across all participating countries.
- To become the top tier community of scholars and practitioners whose focus is technology-leveraged higher education internationally.
**Learning International Networks Consortium (LINC)**

2nd Annual International MIT LINC Symposium & Workshop

“Creating and Sustaining Learning Communities”

Massachusetts Institute of Technology
Cambridge, Massachusetts USA

**SYMPOSIUM: Tuesday and Wednesday, March 23, 24, 2004**

**WORKSHOP: Thursday and Friday, March 25, 2004**

LINC is a community of individuals and organizations focusing on tertiary education in developing countries [http://ken.mit.edu/linc/](http://ken.mit.edu/linc/). By leveraging technologies of distance learning, LINC seeks to help these countries increase accessibility to quality university education. LINC offers an annual symposium plus various programmatic initiatives. This year’s theme is “Creating and Sustaining Learning Communities”.

From 12 countries, we have over 20 outstanding speakers participating in our panels, including:

- Prof. Abdel-Elah Al-Ayyoub, Arab Open University, Amman, Jordan
- Dr. Tajul Arus, Provost, Malaysia University of Science and Technology (MUST)
- Dr. Reuven Aviv - Open University of Israel, Tel Aviv, Israel
- Dr. Ahmed Bawa - Ford Foundation Education Office, South Africa
- Prof. Abdeldjebbar Lemnouar - Recteur de l’Université de la Formation Continue, Algeria
- Prof. Sandy Pentland - Co-founder, M.I.T. Media Laboratory’s Digital Nations Consortium
- Dr. Milad Fares Sebaaly - Rector, Virtual University of Syria, Damascus
- Dr. Honorio Silva - VP, Pfizer, Medical & Regulatory, Japan/Asia/Africa/MiddleEast/Latin America
- Prof. Jack Wilson - (Acting) President of University of Massachusetts, Boston, Massachusetts
- Dr. Etienne Wenger - International Expert in On-Line Communities of Practice

The hands-on training workshops will focus on four topics:

- Web-based Technologies for Distance Learning - i.e. course management systems
- New Pedagogical Models for Distance Learning
- Achieving Competitive Advantage with Knowledge Ecosystems
- Exemplary case study: Mexico

We invite you to attend and to bookmark the following URLs:

LINC website and event information: [http://ken.mit.edu/linc/](http://ken.mit.edu/linc/)


Contact: Ms. Carol Sardo linc2004@mit.edu
E-Learning in Rural China
Photo by Mr. LIU Fuchen
LINC Welcomes New Members!
Thank You!

Richard C. Larson
<rclarson@mit.edu>