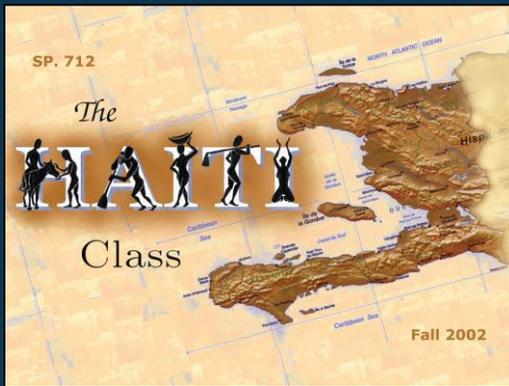




# D-Lab

## Fall 2009

Development through  
Dialogue, Design and Dissemination



## 2002-2003

- 2 classes
- 20 students
- 1 country

D-lab

SP. 712  
MWF 3-4:30 pm  
Room 2-142

for more information  
contact [mmadinot@mit.edu](mailto:mmadinot@mit.edu)  
[web.mit.edu/d-lab](http://web.mit.edu/d-lab)

Learn about international development and appropriate technology.  
Use your technical skills to help communities in developing countries.

## 2003-2004

- 2 classes
- 50 students
- 3 countries

D-lab

Fall: SP. 721  
Spring: SP. 722

Learn about international development and appropriate technology.  
Use your technical skills to help communities in developing countries.

for more information contact [mmadinot@mit.edu](mailto:mmadinot@mit.edu)  
[web.mit.edu/d-lab](http://web.mit.edu/d-lab)

## 2008-2009

- 8 classes
- 200 students
- 20 countries

# D-Lab Offerings

## Development

Introduction to  
Int'l Development

D-Lab I:  
Development

## Design

Prototyping and  
Product Development

D-Lab II:  
Design

D-Lab ICT

D-Lab  
Health

Wheelchair  
Design

Developing  
World  
Prosthetics

Cycle  
Ventures

## Dissemination

Implementation and  
Business Models

D-Lab III:  
Dissemination

Development  
Ventures

# Course Goals

- Gain awareness of third world communities and the technical challenges they face
- Learn about appropriate technologies for developing communities, their impact, and how they can be conceived, designed and implemented
- Understand the role MIT can play in helping and advancing developing communities throughout the world
- Learn the hands-on skills required to implement selected development projects
- Gain exposure to the culture, history, economic and developmental state of the host countries
- Work with community organizations to prepare projects for the IAP fieldtrips

# Fall Class Overview

- Lectures
- Guest Speakers
- Hands-on Labs
- Project Development
- Area Studies

# Topics Covered

- History of Development
- Appropriate Technology
- Participatory Development
- Co-creation
- Poverty Reduction
- Gender Issues
- Market Approaches
- Institutions of Development
- Cross-Cultural Skills
- Indigenous Knowledge
- Sustainability
- Agriculture
- Energy
- Water
- Information Technology
- Health
- Sanitation

# Toolkit of skills

- Water testing
- Charcoal making
- Solar lighting
- Peanut shelling
- Latrine building

# IAPT Trip Overview

- Time commitment...
  - 2 - 29 January
- Monetary commitment...
  - \$500
  - Living expenses
  - Visa and passport fees
  - Medicine and vaccines
- Personal commitment...
  - YES!!

# Where will we be working?



# What types of organizations will we be working with?

- Government
- Non-government
- Universities
- Peace Corp Volunteers
- Villages



Shelling corn by hand



Pedal-powered corn shellers at Maya Pedal in Guatemala



Talking to farmers in Tanzania



Working on the mobile maize sheller in D-Lab II



Training the technicians at T umaini workshop



The sheller in action!



Technology transfer: soymilk-making in Peru



Making soy milk



Drinking soy milk at the orphanage

# World Facts Quiz



What % of the world's population lives on less than \$ 1 per day?

~20%

India? 33.5%

Honduras? 14.9%

Zambia? 63.8%

How many people in the world do not have access to safe drinking water?

~1,100,000,000

*World Health Organization, 2007*

What is the leading cause of death in children under 5?

Acute respiratory infections caused by burning fuels and poor ventilation

*Smoke, the Killer in the Kitchen, ITDG Publishing*

What was the average life expectancy in Lesotho...

In 1990? 57

In 2002? 37

*World Bank Development Indicators, 2005*

How many deaths per 100,000 people were caused by HIV/AIDS?

US	5
Zambia	840
Ghana	131
Ecuador	12

*WHO Global Health Indicators, 2009*

How much does it cost to light a household for a year in the developed world?

\$82

*(Evan Mills, 2002)*

How much does it cost to light a household for a year in the developing world?

\$96

*(Evan Mills, 2002)*

# What is the energy use in:

US	7,768
Brazil	1,184
Guatemala	608
Tanzania	527

*World Bank Development Indicators, 2009*

What is the electricity use per capita in:

US	13,564
Brazil	2,060
Guatemala	628
Tanzania	59

*World Bank Development Indicators, 2009*

# What percent of energy comes from the combustion of biomass?

US	3.4
Brazil	29.6
Guatemala	51.5
Tanzania	91

*World Bank Development Indicators, 2009*

What percent of the population lives in urban areas in each of the following countries?

US	81
India	29
Brazil	85
Zambia	35

*World Bank Development Indicators, 2009*

What percent of the population works in the agricultural sector in:

US	2%
India	58%
Peru	28%
Sierra Leone	60%

*World Bank Development Indicators, 2006*

How many kilograms of grain are produced per hectare in:

US	6,683
India	2,294
Peru	3,084
Sierra Leone	1,014

*World Bank Development Indicators, 2009*

How many tractors are there per thousand agricultural workers in:

US	1,619
India	6
Peru	4
Sierra Leone	<1

*World Bank Development Indicators, 2005*

What percentage of crop yields are lost due to post-harvest storage issues?

~20%

What is the average daily caloric intake in:

US	3,754
India	2,417
Honduras	2,396
Tanzania	1,940

*UN Food and Agricultural Organization, 2003*

What portion of the average daily caloric is fat:

US	37%
India	19%
Ecuador	34%
Tanzania	15%

*UN Food and Agricultural Organization, 2003*

How many personal computers per 100 people are there in:

US	81
India	3
Honduras	2
Tanania	1

*World Bank Development Indicators, 2009*

How many telephones (land lines)  
per 100 people are there in:

US	54
India	4
Honduras	12
Tanzania	0

*World Bank Development Indicators, 2006*

How many telephones (mobile) per 100 people are there in:

US	85
India	20
Honduras	58
Tanzania	21

*World Bank Development Indicators, 2006*

How many researchers per million people are there in:

US	4,484
India	119
Honduras	78
Zambia	51

*World Bank Development Indicators, 2006*

# Some web resources:

- [www.gapminder.com](http://www.gapminder.com)
- [www.worldmapper.com](http://www.worldmapper.com)

MIT OpenCourseWare  
<http://ocw.mit.edu>

SP.721 / 11.025J / 11.472 D-Lab I: Development  
Fall 2009

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