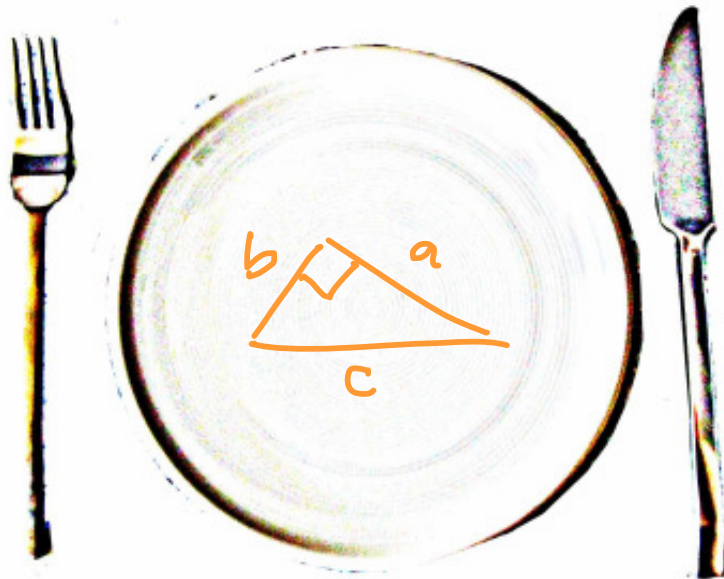


# **ONLINE UNIVERSITIES**

**Food for thought or  
an intellectual  
malnutrition epidemic?**

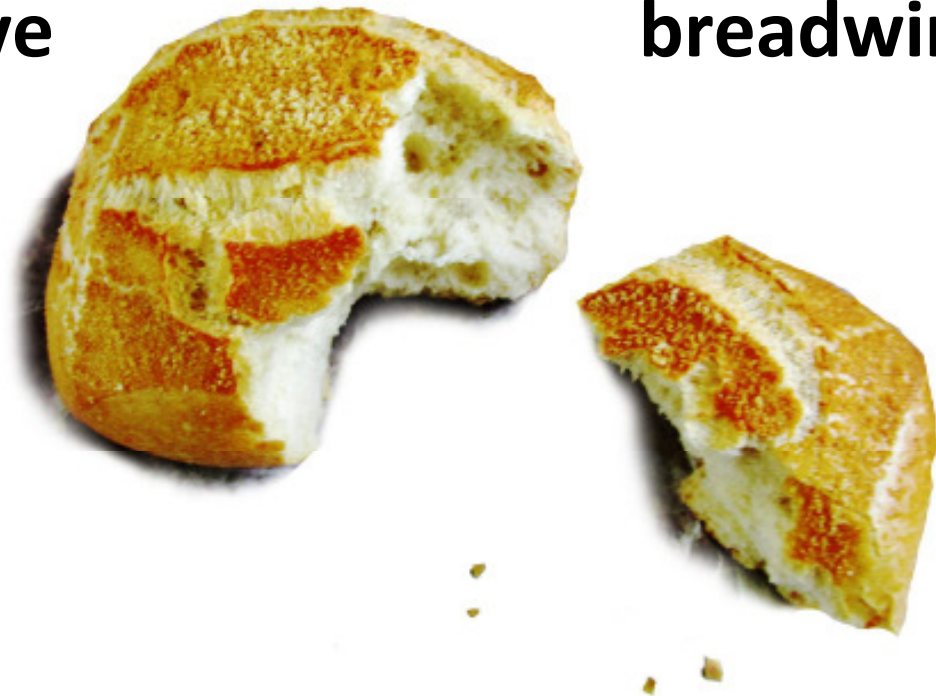
Jörn Loviscach  
& Sebastian Wernicke

# Food $\cong$ Education



**Eat to  
survive**

**Learn for  
breadwinning**

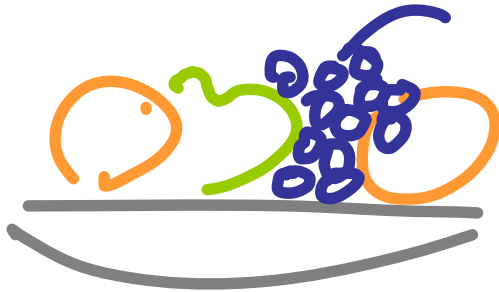


**Ingest  
vitamins**

**Grow  
your mind**



# Unequal Access



# Massive "Open" Online Course

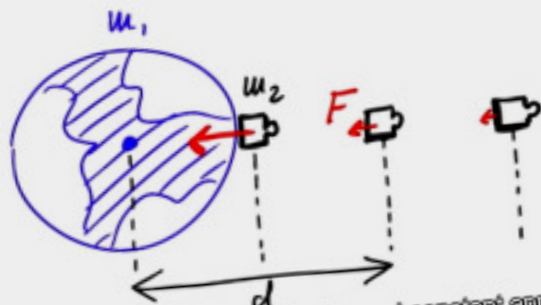
xMOOC

## Differential Equations in Action

Unit 1 - Houston We Have a Problem

Newtonian Gravity

## Newton's Law of Gravitation



$$F = G \frac{m_1 m_2}{r^2}$$

this universal constant appearing in front-

1:02 / 1:40

[See All](#)

## Instructor Notes

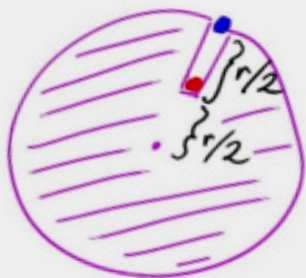
No additional notes for this section

Discussions

## Differential Equations in Action

Unit 1 - Houston We Have a Problem

CLASSROOM

Ratio of  
gravitational forces

● : ●

1 : 1

2 : 1

1 : 2

4 : 1

1 : 4



Force Ratio

Discussions

Rewatch Instructions



Search the forums

Search

Tags:

cs202

x1,870

STAFF

x1,152

ps3-2

x55

Asked: 10 Sep '12, 08:14

Seen: 207 times

Last updated: 18 Nov '12, 08:01

## Related questions

Hydraulic Breaking acceptance criteria

Time Out after 3 seconds

[closed] Technical Problems Acceleration during circular motion

[closed] Big problem in ps3-2 unit7-3

sign of the boost

python style collides with the goal of clarity in instruction

ps4-2 grader not

Unit 6-25

Edit

implies:

slip is between `low_slip` and `high_slip` the official solution:

```

else (i.e. if low_slip <= s <= high_slip):
    brake_change remains as it was, i.e. -1 or 1

```

I find this last part somewhat counter-intuitive. If `s` was, let's say, too low and has in this step only just surpassed `low_slip`, it already has some "inertia" (its derivative is positive). Then increasing the brake pressure further will make `s` overshoot `high_slip` with an even higher derivative. A symmetric argument can be made for `s` decreasing past `high_slip`. Therefore, I would argue for the solution

```

if s < low_slip:
    brake_change = 1
elif s > high_slip:
    brake_change = -1
else:
    brake_change = 0

```

Indeed, the car stops in 3573 steps instead of 3725 with this solution.

One might however also argue against this solution: it should only work better if `a`, when "left alone" (`brake_change==0`) will shoot for `high_slip` very fast. In a different setting (or an analogous control problem), systemic forces might be pushing `a` (or its analogue) towards `0` in the `brake_change==0` case, making it linger around `low_slip` all the time, never achieving the ideal slip. However, I tried to get this effect by greatly increasing the admissible slip band to `[low_slip, high_slip] = [0.07, 0.33]` -- surprisingly, the advantage of "my" approach increased (3710 vs 4070 steps for the car to stop).

Any thoughts, comments? I must be missing or misunderstanding something about control systems.

cs202

ps3-2

STAFF

edit | close | delete | more ▼

add a comment

## 4 Answers:

15

3

1

✓

Yes, great thinking.

My idea was that the two threshold values are third rule. You final experiment indeed below that value, one can even get

Actually, the two threshold values increase in the end, but the two threshold values are below that value, one can even get



retained 18 Sep '12, 22:07  
Sergio  
13 ● 25



asked 10 Sep '12, 08:14  
Meja Trampus  
2 ● 25  
accept rate: 100%

# UNIVERSITY

## CERTIFICATE OF ACCOMPLISHMENT WITH HIGHEST DISTINCTION

This is to certify that

*an m m m*

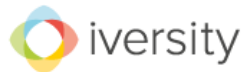
Has successfully completed

COMPUTER SCIENCE 101:  
Introduction To Computer Science  
Building A Search Engine

*David Evans*  
David Evans, Ph.D.

*Sebastian Thrun*  
Sebastian Thrun, Ph.D.







**FREE HLTHY LUNCH**

**DELIVRD BY**

**YOUR DOORSTEP**



# Four Course Dinner

# Study Program



# Snack

# MOOC



# Light-weight part-time study

10 % aged 60+

38 % have an academic degree

4 % are PhDs

27 % have a managerial function

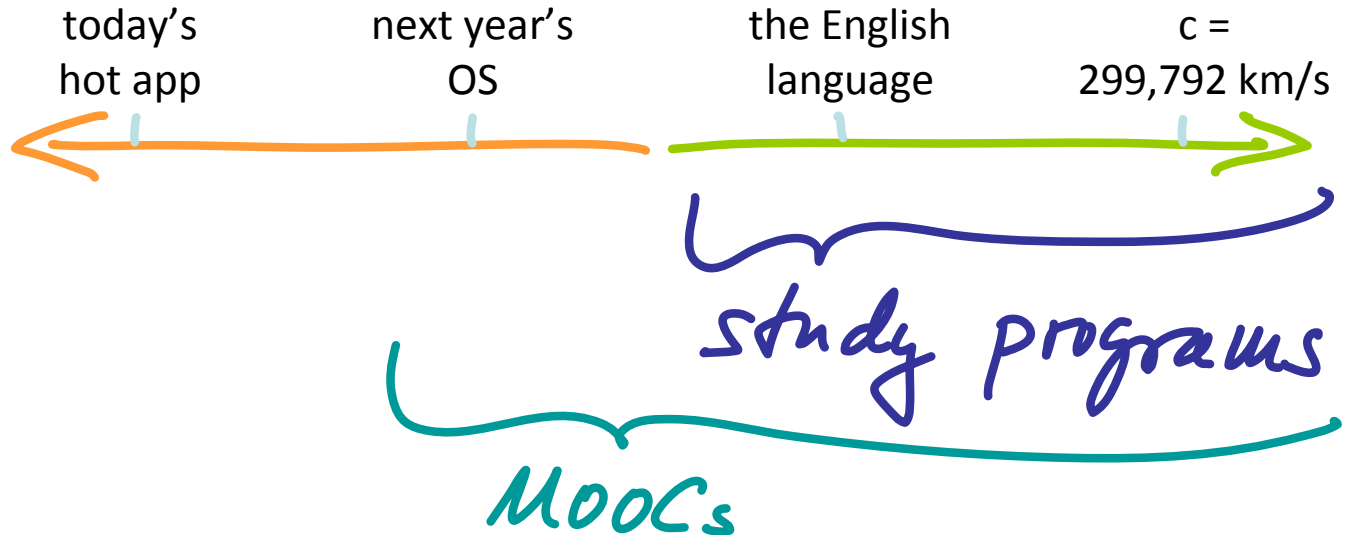
26 % have less than 5y of prof. experience

<http://www.hpi.uni-potsdam.de/presse/mitteilung/beitrag/hpi-umfrage-nutzer-offener-online-kurse-von-weiterbildung-beeindruckt.html>

**BEST BEFORE**  
**31 DEC 2013**



# Knowledge is Perishable



The image features several hand-drawn magenta lines. One line starts at the top right and curves downwards and to the left, ending near the word 'Controllata'. Another line starts below 'Denominazione' and curves upwards and to the right, ending near 'di'. A third line starts below 'di' and curves upwards and to the right, ending near 'Origine'. A fourth line starts below 'Origine' and curves upwards and to the right, ending near 'Controllata'.

# Denominazione di Origine Controllata

*[...] Company may devote part of its Services to Content provided by universities outside of North America, provided that such universities are limited to the generally regarded “top five” universities within any country [...]*

Contract between Coursera Inc. and the University of Michigan  
<http://chronicle.com/article/Document-Examine-the-U-of/133063/>

# Mass Production

**Coursera** | Explore Courses

Search by course name, category, university, or instructor

Categories P

☐ Starting Soon

Eligible For

☐ Signature Track

☒ All Languages

☐ English

☐ Spanish

☐ French

34

370

34

11

**OPERATIONS MANAGEMENT**

University of Pennsylvania

**An Introduction to Operations Management**

with Christian Terwiesch

*For this reason, we are temporarily suspending the “Fundamentals of Online Education: Planning and Application” course in order to make improvements.*

## Lecture 2 - The Lifeboat Case

### Video and Poll

#### Self-Test

Discussion Prompt: Do  
Numbers Matter?

Reading 1: The Queen vs.  
Dudley and Stephens (1884)  
(The Lifeboat Case)

Reading 2: Justice: What's the  
Right Thing to Do?



[https://www.edx.org/courses/HarvardX/ER22x/2013\\_Spring/info](https://www.edx.org/courses/HarvardX/ER22x/2013_Spring/info)

# Journals want this!

- The style guidelines for many journals explicitly instruct authors to write in the active voice. For example, *Science* magazine advises:
- "Use active voice when suitable, particularly when necessary for correct syntax (e.g., "To address this possibility, we constructed a λZap library ...")."
- (<http://www.sciencemag.org/site/feature/contribinfo/prep/res/style.xhtml>)

**But the audience will notice?!**





# **Yes, and everybody will abandon junk food, too?!**

- Shallow recipes instead of understanding
- No equations; little quantitative data
- Glitzy graphics instead of clear explanations

# Free Access for Everybody?



# Indigestive Online Education



- English?
- Broadband access?
- Time to invest?
- Mindset?



# Teaching the World

☐ Starting Soon

Eligible For

☐ Signature Track

☒ All Languages

☐ English

☐ Spanish

☐ French

☐ Chinese

☐ Italian

☒ All Categories

☐ Arts

☐ Biology & Life Sciences

☐ Business & Management

☐ Chemistry

☐ CS: Artificial Intelligence

☐ CS: Software Engineering

34

38

370

344

11

9

5

1

370

11

42

32

9

24



University of Pennsylvania  
**An Introduction to Operations Management**  
with Christian Terwiesch



Emory University  
**Citizenship and U.S. Immigration**  
with Polly J. Price

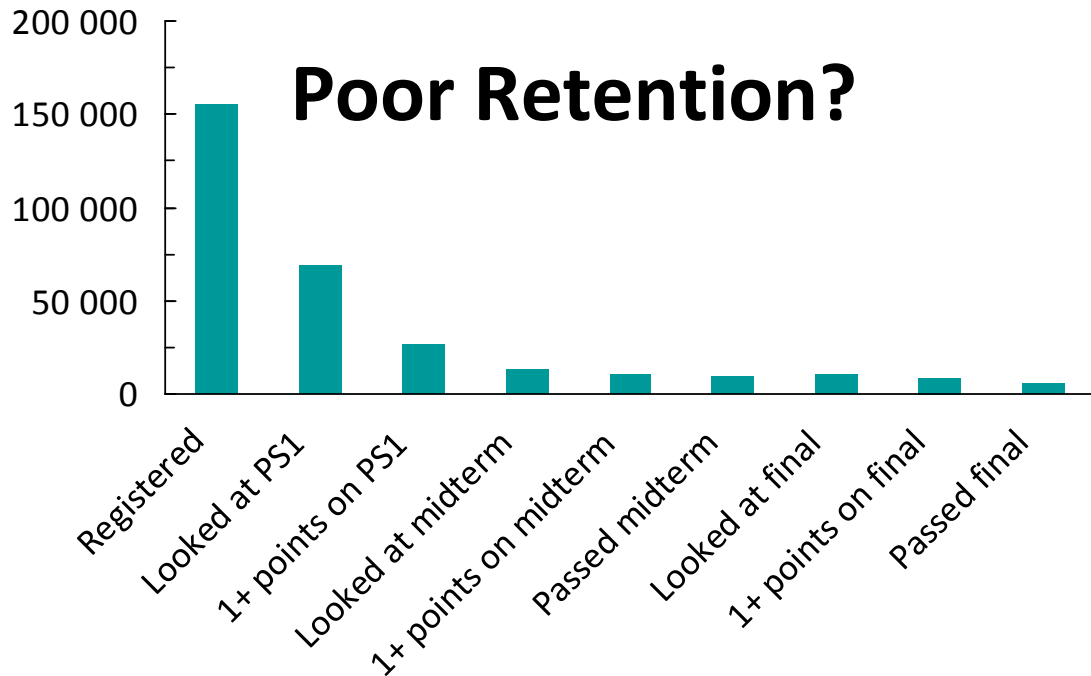


University of Pennsylvania  
**Design: Creation of Artifacts in Society**  
with Karl T. Ulrich

A MOOC  
on emergency medicine  
or on agriculture  
delivered in a dozen African languages  
and made available offline?

**For unto every one that hath  
shall be given,  
and he shall have abundance:  
but from him that hath not  
shall be taken away even that  
which he hath.**

Matthew 25:29



MITx 6.002x: Circuits & Electronics  
Data from <http://tech.mit.edu/V132/PDF/N34.pdf>

2x: Electricity and M

REGISTER FOR 8.02X

SIGN UP FOR edX

You must Sign Up or [Log In](#) to enroll.

*E-mail\**

eg. yourname@domain.com

*Password\**

\*\*\*\*\*

*Public Username\**



# Open vs. “Open”

*You may not take any Online Course  
offered by Coursera or use any Statement  
of Accomplishment as part of any tuition-based  
or for-credit certification or program  
for any college, university,  
or other academic institution [...].*

# Open vs. “Open”

*MIT and Harvard aim to make much of the edX course content available under more open license terms that will help create a vibrant ecosystem [...].*

# Open vs. “Open”

*Udacity hereby grants you a license in and to the Educational Content under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 License [...].*

# Academic Foodchain

FIRST BLENDED MOOC COURSE SLATED FOR BUNKER HILL COMMUNITY COLLEGE (BHCC) AND MASSBAY COMMUNITY COLLEGE

CAMBRIDGE, Mass. – November 19, 2012 – edX, the world's leading online-learning initiative founded by Harvard University and the Massachusetts Institute of Technology (MIT), today announced an innovative blended massive open online course (MOOC) offering at Bunker Hill and MassBay Community Colleges, the first community

to work with edX to bring a new teaching model to the public/private initiative, community colleges to reform, connecting students with leading educators around the world.

These teaching methods have the potential to help community college students learn, both in and out of the classroom. Anand Agarwal, president of edX. "Our goal is to work with other community colleges to bring an innovative teaching model to the world."



Massachusetts Governor Deval Patrick and other dignitaries will be present at the event hosted by edX, the first blended massive open online learning initiative. The announcement was made at a press conference at Bunker Hill Community College on November 19. EdX announced that it will be offering a blended massive open online course (MOOC) at Bunker Hill and MassBay Community Colleges. The course will be a first in the world, as it will be the first community college to offer a blended MOOC. The course will be a first in the world, as it will be the first community college to offer a blended MOOC.

Left to Right

TUESDAY, JANUARY 15, 2013

Sebastian Thrun: Udacity Announces For-Credit Course Pilot with San Jose State University

Udacity is thrilled to announce a partnership with San Jose State University to offer a for-credit course pilot with the university's Entry-Level Mathematics, College Algebra, and Elementary Statistics courses. The course will be offered at an affordable tuition rate and for college credit. To date, the course has been offered for credit and purely online. The course is being offered by Sebastian Thrun, president and co-founder of Udacity, and Ellen Jann, president of San Jose State University. The course will be a first in the world, as it will be the first community college to offer a blended MOOC. The course will be a first in the world, as it will be the first community college to offer a blended MOOC.

<http://blog.udacity.com/2013/01/sebastian-thrun-udacity-announces-for.html>

<https://www.edx.org/press/gates-foundation-announcement>

# Tilling the Field

# Blend Online and Offline

**Thou shalt not leave the learner alone.**



Let the computer do  
what it does best.



Let a human instructor do  
what he or she does best.

# Rethink Courses

Videotaped lectures → KSVs

A quiz every 20 minutes → A quiz every minute

Too hard, too simple → Challenge, achievement

Shallow recipes → True mastery

Encyclopedia → Story

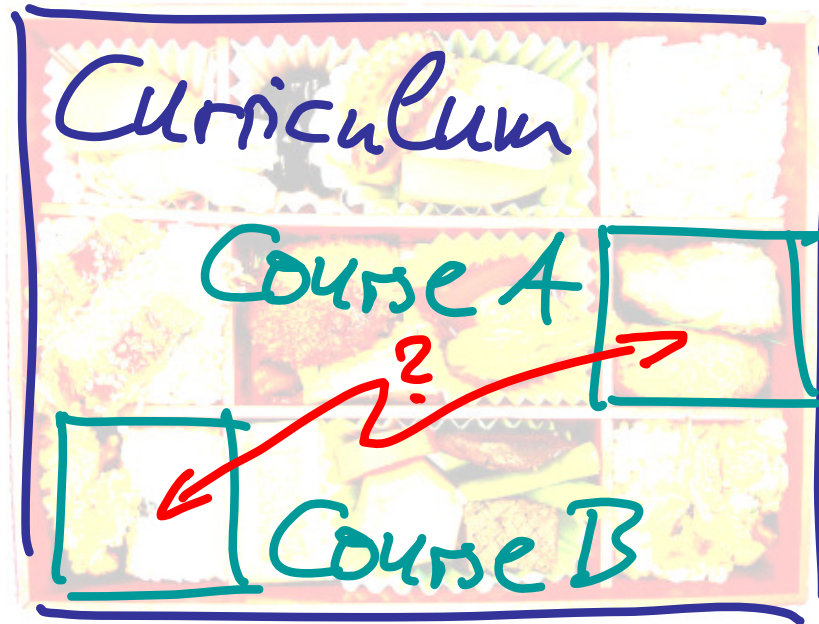
# Rethink the University



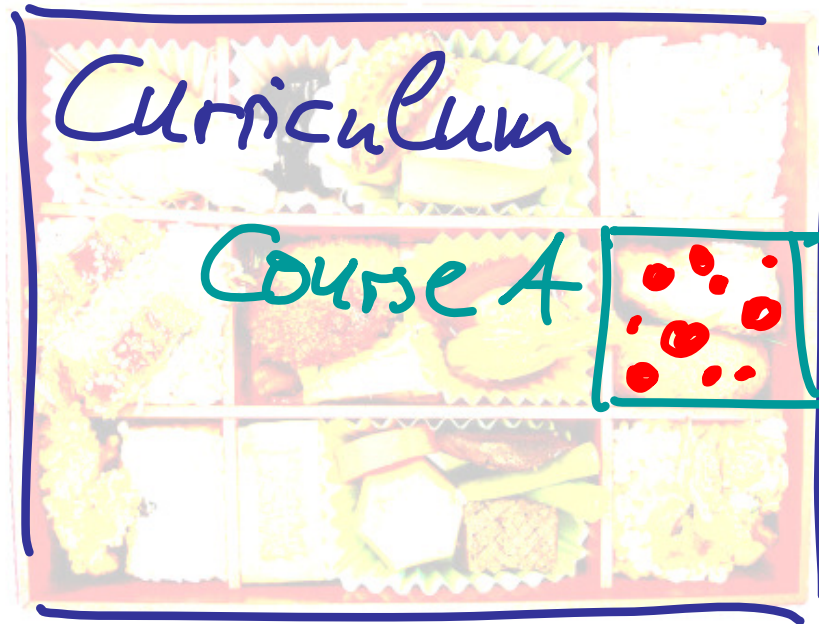
Taijo Fujii, CC BY 2.0 (image manipulated)  
[http://www.flickr.com/photos/t\\_trace/2324550892/](http://www.flickr.com/photos/t_trace/2324550892/)



# Rethink the University

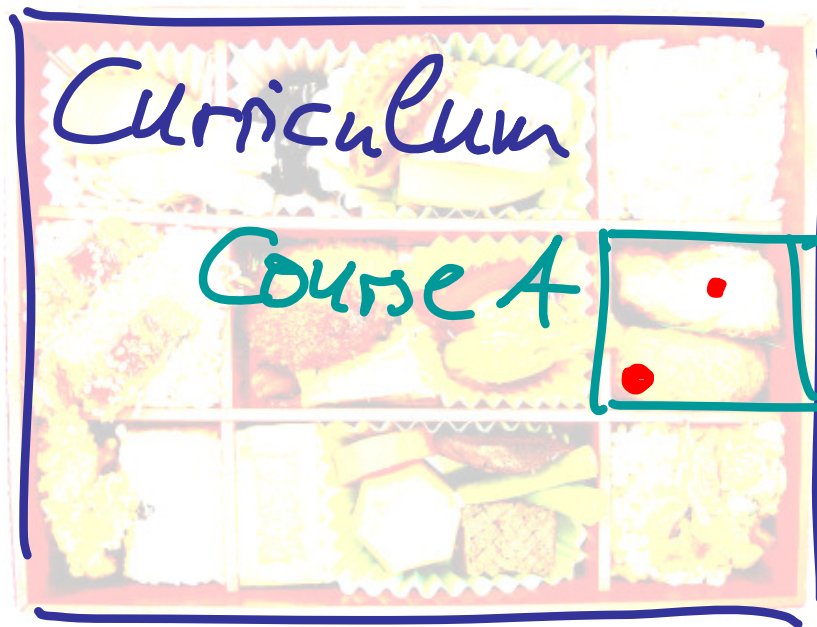


# Rethink the University



Facts  
&  
Factoids

# Rethink the University



What  
survives

# Rethink the University



What's  
really  
important?

# Rethink the University

Are we “optimizing” on the wrong end?

www.j3L7h.de

