Massive Online Open Course (MOOC)
Take the world's best courses, online, for free.

What would you like to learn about?

Join 3,214,124 Courserians. Learn from 334 courses, from 62 universities. How it works »

Social entrepreneurship

Pedagogical foundations

Broad range of courses

Partnership with universities

Coursera
• 30 of the top 60 universities worldwide (Academic Ranking of World Universities)
• The #1 or #2 ranked university in 14 countries.
<table>
<thead>
<tr>
<th>Course Title</th>
<th>University</th>
<th>Start Date</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-learning and Digital Cultures</td>
<td>UNIVERSITY OF MARYLAND, COLLEGE PARK</td>
<td>Jan 28th 2013</td>
<td>5 weeks long</td>
</tr>
<tr>
<td>Introduction to Philosophy</td>
<td>UNIVERSITY OF EDINBURGH</td>
<td>Jan 28th 2013</td>
<td>7 weeks long</td>
</tr>
<tr>
<td>The Social Context of Mental Health and Illness</td>
<td>UNIVERSITY OF EDINBURGH</td>
<td>Jan 28th 2013</td>
<td>6 weeks long</td>
</tr>
<tr>
<td>Critical Thinking in Global Challenges</td>
<td>UNIVERSITY OF EDINBURGH</td>
<td>Jan 28th 2013</td>
<td>5 weeks long</td>
</tr>
<tr>
<td>Introduction to Computer Networks</td>
<td>UNIVERSITY OF EDINBURGH</td>
<td>Jan 28th 2013</td>
<td>10 weeks long</td>
</tr>
<tr>
<td>Grow to Greatness: Smart Growth for Private Businesses, Part I</td>
<td>UNIVERSITY OF WASHINGTON</td>
<td>Jan 28th 2013</td>
<td>5 weeks long</td>
</tr>
</tbody>
</table>
Entry level courses:

- 20+ entry level courses on Coursera
- Spanning broad base of topics: math, bio, writing, physics, psych, chem, CS, accounting
- Hosting 7 of 11 Gates funded entry-level MOOCs
- 5 ACE-accredited classes
Raul Coaguila  
Fulbright Scholar  
(CS Courses)

Achint Nigam  
Entrepreneurship Competitor  
(Gamification)

Jolene Campbell  
NGO Founder  
(Sociology 101)

3.3 million students
Sharon Watkins, Ohio
I grew a lot from answering the longer quizzes and wrestling with the complex essay grading rubrics... you are not only allowing autistic people to learn, but actually diminishing the severity of the illness itself. (Daniel Bergmann)
# users on site

Timeline

Course Begins

Real Course
In Lecture Interaction
Multiple choice

Which of these is a reasonable definition of machine learning?

- Machine learning is the science of programming computers.
- Machine learning is the field of allowing robots to act intelligently.
- Machine learning is the field of study that gives computers the ability to learn without being explicitly programmed.
- Machine learning means from labeled data.

Computer programs

```java
image = new SimpleImage("puzzle-copper.png");
for (pixel; image) {
    // your code here
    pixel.setRed(0);
    pixel.setGreen(pixel.getGreen() * 10);
    pixel.setBlue(pixel.getBlue() * 10);
}
print(image);
```

Short answer (regular expression)

Who discovered the theory of general relativity?

Albert Einstein

Math expressions

**Question 1**
What is the derivative of \( \frac{\sin(x)}{x} \) w.r.t. \( x \)?

\[
\left( x \cos(x) - \sin(x) \right) / x^2
\]

Your submission is equivalent to:

\[
\frac{x \cos(x) - \sin(x)}{x^2}
\]
For students of similar current performance, mastery-based score improvements correlate with future performance.


**Pros:** Part of being an advocate is thinking about what the main point of the paper is and putting it in the context. Does it describe and use novel methods or techniques that could paper generate or leverage novel data sets? **Please list the positive aspects of the manuscript as bullet points.**

- Honest about not achieving the goals for specificity

**Evaluation/feedback on the above work**

Please grade this answer based on the reviewer's guide above, and the answer key below:

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [ ] 6
- [ ] 7
- [ ] 8
- [ ] 9
- [ ] 10
- [ ] 11
- [ ] 12
- [ ] 13
- [ ] 14
- [ ] 15
- [ ] 16
- [ ] 17
- [ ] 18
- [ ] 19
- [ ] 20

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doi: 10.1016/j.cell.2012.04.024

**Mutational Processes Molding the Genomes of 21 Breast Cancers**


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Penn John Hogenesch
Analysis by:
Matthew Salganik & Mitch Duneier
Princeton University Sociology Dept.
Creative, open-ended assignments via peer grading

LaPtabel
laptop table

DuoSlim
portable device holder

Neo-WD
space-efficient workdesk

Ramaswamy Venkatachalam
Gujarat, India

Aranzazu Hurtado Ruiz
Madrid, Spain

Paul Mendoza
Manila, Philippines
Enables rich ecosystem of educational apps, with shared data model
- Physics simulators
- Multi-student games
- Note taking tools, student organization tools, ….
- Advanced auto-graders, adaptive learning software, ….

Seamless integration
- Integration via APIs
- We help scale up from 1 to 100,000 students

Supports experimentation
- Instructors can build their own tools for their class

Coursera App Platform (coming soon)
Hilarious.
I found myself backing into the numbers that would give me the outcome I desired—a trip to the beach. I have learned from experience that my regrets are almost always for things not done, so I came up with numbers that would ensure my decision to go.

All this was pretty unconscious until I got the answer I wanted with a burst of realization that I had “intended” it from the beginning.

I understand that most decisions are made before we reason out their justifications, so why not skip the pretense of reasoning and just go with the gut from the start?
Open discussion around assignments
Peer Teaching in the Large

![Response time vs. number of active users graph]

- X-axis: Number of active users
- Y-axis: Response time (min)
Building a class community
Global Network of Communities

2490 Coursera communities
• Support small, closed study groups within a larger course:
  • On-campus class announcements
  • Closed forums
  • Notes and note-taking tools
  • Instructor access to grades for the students in the section
• Facilitate closer interactions between instructors, TAs and students
• … while benefiting from the richness of interaction in a larger community
Courses on Machine Learning

Last autumn, Stanford for the first time organized a MOOC (massive open online course) on machine learning (http://www.ml-class.org). The course has since become part of the offering of Coursera (https://www.coursera.org/course/ml) and seems to be offered at least a few times per year. (For instance, there is currently an on-going course.)

Similarly to last year, during this academic year (i.e. autumn term 2012 and spring term 2013), it will again be possible to obtain credits for taking the above course, and this can be used as a substitute for our department's own local course on the same topic, called Introduction to Machine Learning (http://www.cs.helsinki.fi/en/courses/582631/2012/sk/1).

Does not confer Stanford credit. Student identify not verified.
Earn a Verified Certificate.

Your Work, Your Identity
Link your coursework securely to your real identity using your photo ID and unique typing pattern.

Earn a Verified Certificate
Earn official recognition from Duke University and Coursera for your accomplishment with a verifiable electronic certificate.

Share Your Success
Share your course records with employers, educational institutions, or anyone else through a unique, secure URL.

Identity Verification & Signature Track
Over 1,000 applications accepted

• A physician from Egypt planning to teach *Nutrition for Health Promotion and Disease Prevention* in her village despite a disorganized Ministry of Health

• A Bangladeshi professional studying **Global Sustainable Energy** to improve the 53% access to electricity in Bangladesh

• A student from Chile taking *Neurons, Synapses and Brains* to prepare to apply for a PhD in Huntington’s disease research

• A young Pakistani working at a public policy think-tank applying **Model Thinking** concepts to understand the rise of political factions in Pakistan

Financial Aid
Wrong student answers
“These lessons have been much harder to focus on (at least for me), because there was no talking face.”
College is a place where a professor’s lecture notes go straight to the students’ lecture notes, without passing through the brains of either.

—Edwin Emery Slosson
• High-quality online content
• Produced locally or adopted from another institution

• High-touch interaction with local instructor
• Active learning, problem solving, personal attention to students

The Best of Both Worlds
A New Frontier for Education

- **Student Learning**
  - High
  - Low

- **Faculty Productivity**
  - Low
  - High

- **Office hours**

- **Traditional instruction**

- **MOOCs**

- **New frontier**

- **Old frontier**

- **improve learning**

- **decrease costs**

Terwiesch, 2012
• More interactive than lectures
• Immediate feedback & mastery
• Individual tailoring of flow and pace
• Less threatening environment for students
• Detailed analytics to improve courses

• **Time for meaningful engagement between students and faculty, students and peers**

Benefits to On-Campus Teaching
• Self-selected level of guidance
  – E.g. if a student is stronger in Math than English, she may elect to enroll in a lower-touch Math, but a higher-touch English
  – Students might pay according to the level of ‘touch’ they receive in the course

• Multi-campus or multi-section enrollment
  – One large course offers economies of scale, richer community
  – Smaller groups embedded within course allow individualized attention from instructor
  – Group composition can be based on location, ability, interests, …
• Incoming students prepared for the rigors of higher education
• Significantly increased enrollment capacity for high-enrollment GenEd and Gateway courses
• High, consistent quality of offerings in these required Gateway courses, enabling easy transfers
• Expansion of offerings of more advanced courses, especially in smaller campuses
• Ease of transferring credits within and across states
• Serving different student populations:
  – Open access courses for non-traditional learners, continuing education
  – Guided courses for on-campus students, high-school dual enrollment

A New Model for Higher Education
Lifelong Learning

- High School: 11.8%
- Associate: 5.2%
- Bachelor: 42.8%
- Master's: 36.7%
- Doctoral: 5.4%

Bachelors 42.8%
Master's 36.7%
High School 11.8%
Associate 5.2%
Doctoral 5.4%
Learning without Limits

North America: 35.2%
Europe: 28.2%
Asia: 21.4%
South America: 8.8%
Africa: 3.6%
Oceania: 2.8%