Creating a MOOC to Teach Basic GIS

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NEARC Spring Meeting – UMass Amherst

A MOOC is a *Massive Open Online Class*

- Started by Academia's best and the brightest and now filtering down to the trenches of Academia

- People must sign up, so they know how many are in.

- Courses are, in general, free

- Courses award no credit………yet.

- Teachers do not interact with students

- Very much like Sunrise Semester of the 1960's (a 6 a.m. weekday TV series of college courses offered by NYU)
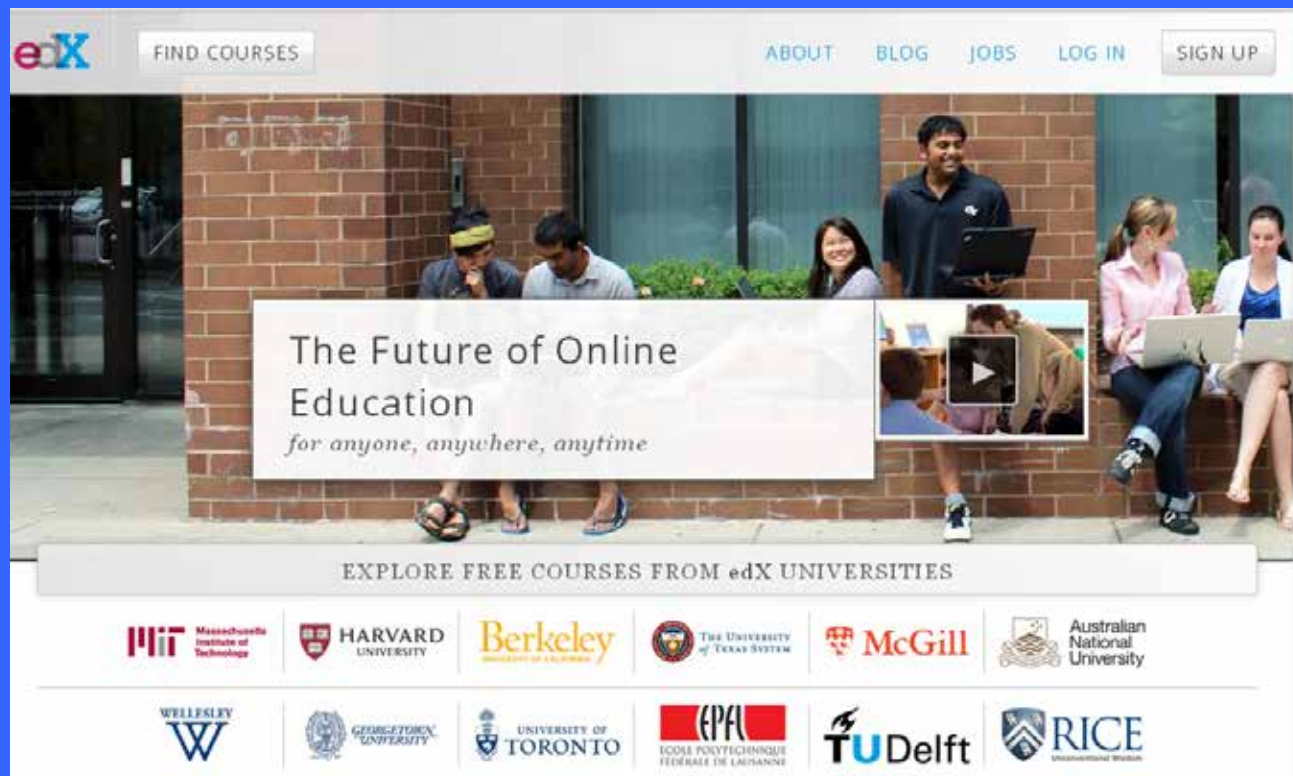
NYU and CBS between 1957 – 1982 – Sunrise Semester

- What was the Sunrise Semester model?

- Started in 1957 between CBS and NYU as part of the educational broadcasting movement.

- The majority of the 120,000 6 a.m. viewers watched it to enrich their lives

- Students paid $25 per point to get college credit (0.14% of viewers)

- Courses covered topics from literature to physics

- My father and brother watched physics when my brother was a student in my father's physics class.

- http://www.youtube.com/watch?v=5_Q-Mw6qH9k

- Lots of kids wound up watching it because early-morning cartoons followed it.

- French in Action, by Yale's Pierre Capretz had 52 early-morning TV shows with accompanying materials. We watched it, videotaped sessions, accumulated many VCR tapes.

2012 was the "Year of the MOOC" in education

- There were several universities that had versions of publicly-available courses, either for or not for credit.

- The big players now are Coursera's, edX, Udemy, CourseSites

- Stanford's launched an Artificial Intelligence (AI) course on Coursera

- MIT, Harvard, UC Berkely, University of Texas and Georgetown provide edX, whicyh charges a base rate of $250,000 per course, then $50,000 for each additional time that course is offered.

•At Pace University, the new dean in the Computer Science school used Udemy.com to create his MOOCs.

•Udemy is free. Each person can make up to five courses.

Anybody can put up to five courses on Udemy.com. You can charge for your training.

Some people are "monetizing" their MOOCs on Udemy.

Teach a Course

Join thousands of passionate instructors who are building their brand, and making money, by teaching on Udemy.

Learn More

Udemy for Organizations

Create your company's own branded training library with Udemy's collection of 6,000 premium & free courses or create your own!

Learn More

Creating Responsive Web Design
Chris Converse
Designer and Developer at Codify Design...
3848 students ★★★★☆ (68) $150

CCNA 2013 On-The-Go Video Boot Camp With Chris Bryant
Chris Bryant
Boss Bulldog At The Bryant Advantage
3615 students ★★★★★ (208) $125

Social Media Marketing for Startups
Dan Martell
Online marketing, social media, technolo...
3609 students ★★★★☆ (21) $19

Ruby Programming for Beginners
Huw Collingbourne
Director of Technology, SapphireSteel So...
3492 students ★★★★☆ (21) $99

Raising Money for Startups
Dave McClure
Entrepreneur, Angel Investor, Founder o...
3259 students ★★★★★ (30) $19

Photoshop CS6 Crash Course
Jeremy Shuback
Professional Trainer to over 200,000 desi...
3107 students ★★★★★ (93) $40

Discover The 1 Thing You Were Born To Do In 5 Easy Steps!
Steve Olsher
Steve Olsher - America's Reinvention Exp...
2931 students ★★★★☆ (26) $99

Make iPhone and iPad games in 1 hour without programming
John Bura
Teacher at Udemy owner of Mammoth I...
2743 students ★★★★☆ (23) $249

This Is How You Make iPhone Apps - iOS Development Course
The App Dojo
Learn by doing
2642 students ★★★★☆ (35) $99

Pay

to

Learn

Blackboard offers CourseSites.

If a university decides to do a MOOC with CourseSites, it operates outside of the school's Bb site.

Blackboard has people who help get the course off the ground.

Their video platforms include Kaltura or YouTube. They are veering toward Kaltura as the better alternative for streaming video (free)

Blackboard is committed to free courses on CourseSites.

Pace is a good Blackboard customer, but that doesn't seem to be a deciding factor to get personal guidance in setting up a course.
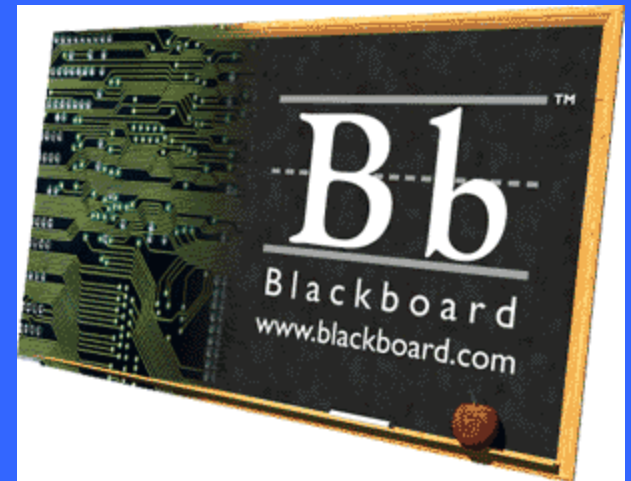
COURSEsites
by Blackboard

Move Your Courses Online Free

Introducing The New CourseSites

- Create up to 5 course websites, free.
- Engage students in social learning.
- Weave multimedia into class content.
- Assess performance and manage grades.
- Share Open Education Resources.
- Teach open courses or MOOCs.

AWARDS of EXCELLENCE winner!
TECH&LEARNING
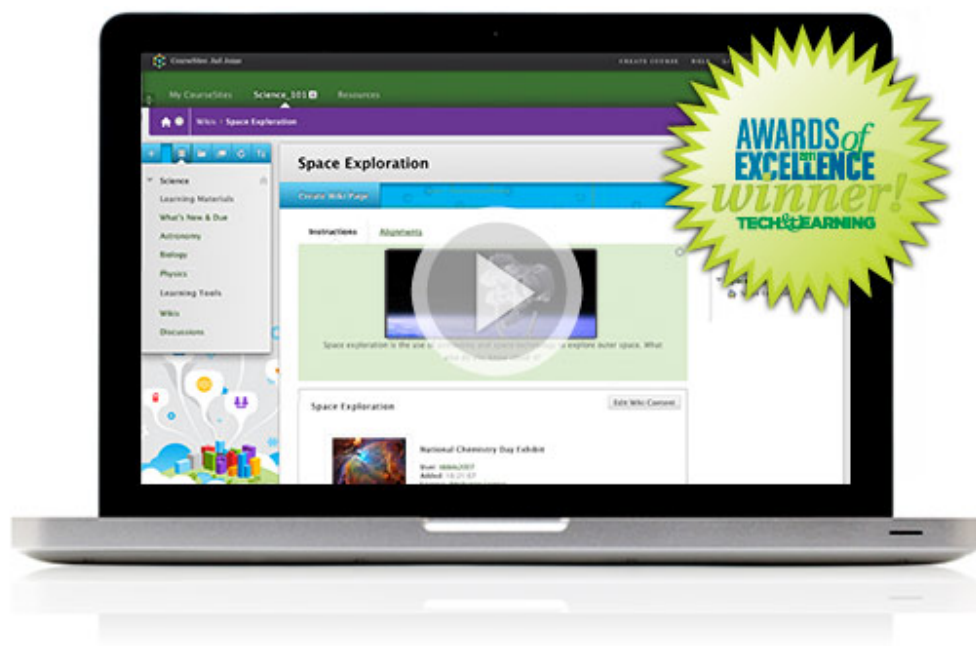
Launch Your MOOC Today

Educate.
Engage.
Free.

159 Countries

54,542 Instructors

12,573 Institutions

Get Started
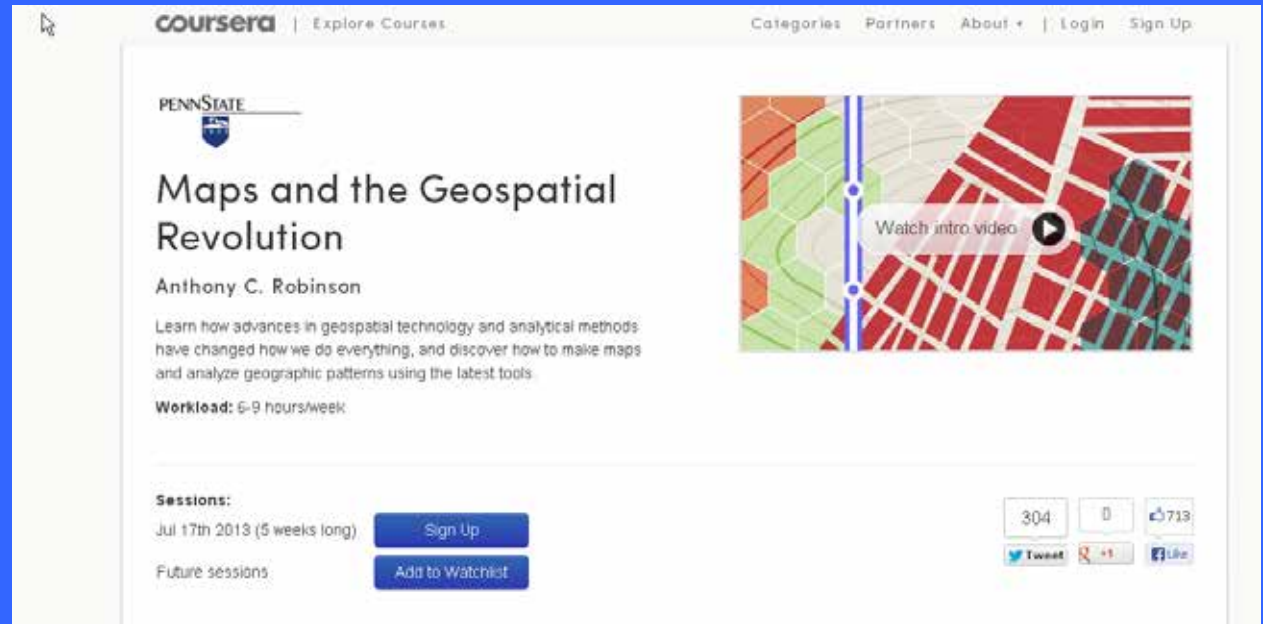
3 Quick steps to build your free course online

Current Resources For GIS instruction

- ESRI has some instruction for the intrepid web searcher
- Some YouTube videos (hard to see the screen)
- Books have accompanying videos.
- ListServs help people solve GIS problems.
- Attendance-based GIS Basics Courses
- Penn State – Anthony C. Robinson - **Coursera**

This course is platform free and can be used for credit when a student enrolls in Penn State's GIS Certificate Program

13 credits ($736/credit)

ESRI provides tutorials

Tutorials for some actions are available at:

http://resources.arcgis.com/en/help/main/10.1/index.html#//00qn0000013t000000

What have I been doing? Making GIS videos since 2007

GIS Instructional Videos
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Pace University   May 2013 update

Amazon.com now has the 10.1 workbooks. Be sure to buy a new, unused copy so that the software license is intact (180 days). They should be available May 3. They are long delayed, so my students have been using the free trial version.

ArcGIS 10.1 Book 1, Fourth Edition by Wilpen L. Gorr and Kristen S. Kurland, ESRI Press 2013. ISBN: 9781589482593   2010   428 pages

A new deal is the "ArcGIS for Home Use." This is $100 for a year and might be perfect. It has all the extensions.

For the beginning of the course, we *downloaded a 60-day trial version* of the program from the ESRI site and used the tutorials that are available from here.
I'm going to give a presentation at the NEARC in Amherst on May 14 about creating a MOOC to teach basic GIS next academic year. This is thanks to the Verizon Corporation and their Thinkfinity grants.

(Go to the bottom of this page if you are interested in iTreeTools.)

GIS VIDEOS
ArcGIS 10.1 and 10.0 Videos. Scroll down for 9.3.1 videos, which sometimes work still in this edition (10.1)
There is a new video on how to use a camera with GPS capability down near the bottom.

Starting up. This is an introductory video for my class. It shows how to go to Westchester County's GIS data warehouse, download and unzip GIS data and then how to create a map of one town only and export it as a layered PDF file. (*skills: download, unzip, ArcCatalog, layout, make a layered PDF*)

Adding a base map. After you add in the first shapefile to set the projection on your map, you can go to File>Add Base Map and it will ask you what basemap you want add. This is equivalent to Adding the GIS server through the catalog, but may be easier.
Clipping ArcGIS 10.1 does it differently from 10.0. Simply, go to the top line, click geoprocessing>Geoprocessing Options>unclick "Enable running processes in the background." Instead of the little box on the bottom of your screen (as in 10), there will be a processing box in front of you. You can't do any other work while it does its thing. If you enable it, it *might* work. Try it both ways and do what works for you.
Making a PDF of your work. This will allow you to email your maps to others or upload them to the Internet (on Blackboard). The PDF allows the viewer to click on layers and to zoom in. There are some subtle things to do under "options" that allow the viewer to click on and off layers and labels. This is really helpful if you are making a map for non-GIS users.(*skill: a quick way to make a PDF with layers*)

PocanticoRiverWatershedMap Creation This shows my GIS students how to find data on the Internet, download it, unzip it, take it into ArcMAP. It also shows how to clip features to a polygon (a watershed, in this case). The finished map is sent out as a PDF. Then, we make a Publisher map, send it to someone and then use ArcReader to read the portable map. If you make a file geodatabase, it works better. But, if you use a personal geodatabase, it requires a different process. You just have to choose and be consistent.
Address Locaterers in 10.1   This may go away in 2013, but I've been able to use it. This tells you how to add in one of the reliable address locators that allows you to geocode a table.

Click here for page

Pace Center for Teaching and Learning Technology hosted a program to review where educational technology was going, focusing on the MOOC.

(Held right after a snow storm. Roads bad. Low attendance.)

Afterwards, the Provost included MOOCs as suitable topics for the last Verizon Thinkfinity Grants.

No stipends for faculty, but hardware, software and student employment were granted. Stipends were removed at the last minute to fund more projects.

All funds have to be spent by August 31. Course has to be ready for fall offering.

THE PLAN

Adapt my current set of instructional videos. There are ~60 videos, constantly changing, sometimes in response to student problems or to help me remember how to do something.

Companies are constantly changing their online offerings, so I have to be vigilant about keeping an eye on how processes change

(e.g., USDA site for seamless or NLCD imagery for land uses)

ESRI changes small things that invalidate last year's video.

Tasks before a launch:

• Define the list of topics to cover

•Develop the time frame for the course (along semester lines now)

•Develop/revise videos of operations

• Make talking head (mine or a guest) to talk about the week's work.

• Online students don't like to read long lectures.

• Links to resources – state, local data

• Try to make the course adaptable to each student's region and specific interest.

• Points of diversion (route A, route B) within topics.

What would be good topics for "Basic GIS?"

Ways of looking at Earth, big view and small view
Where to buy book – installing the program
Setting up your computer to store data and find it easily
Finding data for your own area online – or Westchester
Unzipping data, storing data
Ways to add data to your map
Shapefiles vs. Geodatabases
Make a Map, learn how to zoom in, out, pan, zoom to feature
Bookmark
Base maps or using ArcGIS services
The attribute table, get to see what it holds, adding a new field
Adding onlline services for various reasons..
Symbolizing data – colors, symbols, effects
Toolbars and Extensions
Labeling, setting extents for labels to show.
Geocoding addresses in a Excel spreadsheet – your data
Address locator of your own
Using Lat/Lon to locate places on a map
Layouts and Map Annotation, switching from Layout to Map views
Make PDFs with layers
Maps made by student in the past – projects completed

- Clipping features to map one area (e.g., one town in a county or state)
- Adding a basemap and adding GIS services
- Creating a new shapefile - point, polygon, line based on aerial images
  Adding fields, calculating geometry
- Editing a feature
- Measuring how Features Interact with the Selection tool, different ways to select
- Spatial queries
  Georeferencing, getting old paper maps onto your system (examples)
- Using GPS to map features, routes,
- Find some favorite type of thing and map all of them.
- Exporting files to Google Earth and why it is useful.
- Orthophotos
- Converting Garmin GPS data, if it works
- Camera with GPS - integrating
- Hyperlinking Photos, documents and video to spots on the map, making a new field
- Working with USGS seamless data
- Downloading DEMS from USGS seamless
- Draping aerial photos over DEMS
- Making a TIN from a DEM, if needed
- Clipping rasters with spatial analyst
- ArcScene for 3D analysis
- Extruding features in ArcScene
- Mapping a watershed in 3D in ArcScene
- Using Processed LiDAR as basis for ArcScene features
- Making a map for ArcReader with Publisher
  Downloading and using ArcReader by your "client."
- Changing the projection of your shapefiles (why and how)
- Merging shapefiles
- Joining tables based on common attributes
- Using file geodatabases for aerial photo mosaics

OTHER TOPICS

Target audience:

- People in organizations that need to learn GIS PDQ

- Land trust volunteers

- Scouts - Are there badges for GIS?

- Conservation Commission members in towns

- People working with historical aspects of towns

- CERT volunteers

- Alumni association volunteers

- Neighborhood crime watches

- Tree groups in towns

- Watershed associations

- New college grads seeking employment

- Teachers at other institutions

Questions that are getting batted around at Pace?

• Why offer free courses for no credit?

• How to answer questions from students

• How to create interplay?

• How to establish a system for students to contact the instructor (about errors)

• How can you establish a peer-to-peer evaluation system (discussion boards)

•How do we recognize that someone has done all the work successfully?

• How can you provide for a system whereby a student can get credit for knowledge or proficiency gained through a course? (Tokens?)

• Should courses be CLEP-able?

• Should the course change from term to term

• Is there any point to competition in this enterprise?

• Should the instructor be paid? By whom? For what? (This is big for faculty.)

Technical Issues:

- not good on a phone or tablet. Laptops can be frustrating.

- Screen real estate important.

- computer screen is visible and not muddied

- teacher is clear, uses no bad words.

- not too much information at once.

- easy to skip back in a video to repeat a process

- at least one map should be produced every week in a shareable format.

- leaders should emerge who can monitor discussions

- peer evaluation and provide helpful comments on maps posted