Outline

- Introductions
- Things that interest me...
- What is this “Open” thing I keep hearing about?
- Let’s think about Open differently!
- What’s interesting in “Open” today?
- What does this all mean for you?
Outcomes

- A healthy discussion!
- Understand the scope of the Open landscape
- Understand current trends and implications of Open
- Identify something to take with you... (hopefully)
  - How will you adopt, produce, or encourage the use of Open?
  - What does Open mean for Tacoma Community College?
Introductions

Please introduce yourselves

- Name, department, role

And describe your expectations.
## Expectations

- All the newness, the change, would like faculty to be deeply involved
- Understand how to support for the long term
- Find the wealth of open resources
- Help to create their own
- Listen to perceptions about OER, engaging in using and creating open resources
- Institutional barriers—for example CTC not serving all the students they could, how can Open enable that
- Use library resources in courses, learn from courses to work with students and faculty
- How can we do more with OER
- Understand OER better, to help faculty and integrate into their courses
- Exploit everything we know about OER, how does OER improve the lives of the students
- How to help make project more successful
My bonafides...

- B.S. & M.S. in Mechanical Engineering
- Taught multimedia design and open education
- ~10 years developing educational digital libraries
  NEEDS/SMETE.ORG/MERLOT/NSDL
- ~8 years in Open education
- Worked at UC Berkeley, Cal State University Office of the Chancellor, COSL, MIT
- Work with lots of really smart people all over the world

- Four Letter Words...Been There, Done That
  - Learning Objects, Metadata, Digital Libraries
  - MIT (oh wait)
8 Things that interest me...
Things that interest me

1. Certification and micro-certifications
   - For courses, and for learning concepts
   - P2PU challenges, badges, and so on

2. Modularity and disaggregation of content

3. Content from non-traditional academic sources
   - TED-Ed, MIT+K-12 (Khan Academy collaboration), etc.

Collectively...
   - If publishers are being disrupted Open Textbooks
   - If faculty and non-faculty are producing OER
   - Might traditional certification / accreditation be next?
Things that interest me (cont.)

4. Moving from passive content to active experiences

5. Formative assessment embedded in content
   - Inline, not a separate system / experience
   - Automatically scored (adaptive and customized)
   - Not just for high-stakes testing (e.g., SAT, GRE)

   What intrigues me...
   - Giving control to students and faculty, moving to individual formative feedback
   - Building an assessment player / embedded assessment engine.
6. Streamlined content creation enabling content management on top of simple authoring
   - Workflow, and systems to produce and use materials
     (I really wish Tom would figure this out for me! :P )
What is this “Open” thing I keep hearing about?
What have you heard about “Open”?

- Free
- Shared
- Choices
- Ability to adapt
- Cost effective
- Ability to tailor & build your own
- Creative Commons
- Freedom of info and use
- Quality assurance
- Varied availability by disciplines
- Available to anybody
- Digital
- Often multimedia
- Accessibility—more accessible to some and less to others
Open... Education

- Source
- Content / Educational Resources
  - CourseWare / Courseware
  - Textbooks
  - Courses
- Educational Practice
- Access / Journals
- Knowledge
- Policy

We're going to focus on these items
What are some benefits and challenges of Open?

Benefits

Challenges
Let’s think about Open differently!
How do you define “Open Educational Resources”?
OER: l’innovation du jour?

- We’re going to talk about OER writ large.
- We’re not going to bore you with definitions! (Well, we’ll try!)
- We’re not going to get all religious about OERs!
OER: l’innovation du jour?

- I’d like you to think about OER as an entry to a conversation
  - A conversation about teaching, crafting courses, & more importantly sharing courses and course materials
  - A conversation about collaborating with peers, and even students

This doesn’t sound like it’s specific to OERs does it?
Poll: Do you...

☐ Talk about courses with peers?
☐ Borrow course materials, teaching techniques, sources?
☐ Share materials back with your peers?
☐ Provide attribution for what you've borrowed?
OER is all of these things!

- At its heart, OER is about doing these sorts of things!
- And, it’s about encouraging sharing of materials and practices...
- And, it’s **clearly communicating what others are allowed to do with the materials**...
Ok, let’s get a bit more formal
OER: A Definition

OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.


Unless otherwise specified, this work is licensed under a Creative Commons Attribution 3.0 United States license.
Going beyond “Traditional” OE“R”

- OERs are a part of Open Education
- OERs focus on resources
  - They have been getting a lot of attention at the federal and state levels
  - They are primarily course materials and open textbooks
  - Many have been developed by academics, colleges and universities
- But, Open Education is the bigger concept
  - Sharing, availability and access
Open Education in the Modern Era

“Open Educational Resources”
David Wiley
1998

“Open Content”
Coined By UNESCO
2002

OpenLearn
(Open University)
2006

OpenCourseWare
Consortium
2008

Open Course
Library
2010

2011
MITx

2009
Open High School of Utah
American Graduation Initiative
& $2B in funding
University of the People

2007
Cape Town Declaration

2005
William and Flora Hewlett
Foundation Support

Creative Commons
MIT OpenCourseWare

2001
Wikipedia

2000s

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Importance of Open Education

Potential for...

- Changing the nature of the educational experience
  - Smaller chunks, focused objectives
  - MOOCs, alternate credentialing
- Reigning in costs without sacrificing quality or access
  - Student and institutional
- Reclaiming control
  - From publishers, from static content
  - Enabling flexibility to mix and match

Open is a means to an end: Improved learning
Set them FREEEE

Creating an OER

Demonstration
Let’s make an OER

- Decide to Share
- Apply License, Citation, Metadata
- Share

Unless otherwise specified, this work is licensed under a Creative Commons Attribution 3.0 United States license.
Apply a license, citation and metadata

- Select and add a License
  - Select a Creative Commons license
  - Add Creative Commons logo and/or license statement to the slides
- Add a citation
  - Add to the title slide and final slide
- Add metadata
  - Add metadata to Presentation properties
With a Creative Commons license, you keep your copyright but allow people to copy and distribute your work provided they give you credit—and only on the conditions you specify here. For those new to Creative Commons licensing, we’ve prepared a list of things to think about. If you want to offer your work with no conditions attached, or you want to mark a work that is already free of known copyright restrictions in the public domain, choose one of our public domain tools.

When you choose a license, we provide you with HTML you can use to add the license information to your site and information on how to select a license on one of several free hosting services that have incorporated Creative Commons. This is not a registration and we do not retain a record of your selection.

Allow commercial uses of your work?
- Yes
- No

Allow modifications of your work?
- Yes
- Yes, as long as others share alike
- No

Jurisdiction of your license
- International

Additional Information

Tell us the format of your work: Other

Title of work

Attribution work to name

Attribution work to URL
This work is licensed under a Creative Commons Attribution 3.0 Unported License.
You are free:

- Share — to copy, distribute and transmit the work
- Remix — to adapt the work
- Commercial use of the work

Under the following conditions:

- Attribution — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

With the understanding that:

- Waiver — Any of the above conditions can be waived if you get permission from the copyright holder.
- Public Domain — Where the work or any of its elements is in the public domain under applicable law, that status is in no way affected by the license.
- Other Rights — In no way are any of the following rights affected by the license:
  - Your fair dealing or fair use rights, or other applicable copyright exceptions and limitations;
  - The author’s moral rights;
  - Rights other persons may have either in the work itself or in how the work is used, such as publicity or privacy rights.
Apply a license, citation and metadata

- Select and add a License
  - Select a Creative Commons license
  - Add Creative Commons logo and/or license statement to the slides
- Add a citation
  - Add to the title slide and final slide
- Add metadata
  - Add metadata to Presentation properties
Let’s make an OER

- Decide to Share
- Apply License, Citation, Metadata
- Share
Let’s make an OER  “That was easy!”
What's interesting in “Open” today?

Disrupting the status quo
OER Smörgåsbord

- Open as a conversation:
  Sharing, access, materials, practice

- Open as a continuum

  ![Diagram showing a spectrum from individual images and standalone modules to course materials and "Courses" with links to MIT OCW, Open Course Library, OpenLearn, Saylor.org, TED-Ed, MITx, Udacity / Coursera.]

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Open Moving Forward

Content  Snippets  Courses
## Comparing Open Content to Open Courses

<table>
<thead>
<tr>
<th>Content (Materials)</th>
<th>Snippets &amp; Courses+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syllabi, lecture notes &amp; videos</td>
<td>Complete learning experience</td>
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Unless otherwise specified, this work is licensed under a Creative Commons Attribution 3.0 United States license.
The Open Course Library is a collection of expertly developed educational materials – including textbooks, syllabi, course activities, readings, and assessments – for 81 high-enrollment college courses. 42 courses have been completed so far, providing faculty with a high-quality option that will cost students no more than $30 per course.
Extending Open Content

- Open (Creative Commons License) enables others to build upon the content
- Content: A portion of a course, the materials in a course
Saylor.org is a free and open collection of college level courses. There are no registrations or fees required to take our courses, and you will earn a certificate upon completion of each course. Because we are not accredited, you will not earn a college degree or diploma; however, our team of experienced college professors has designed each course so you will be able to achieve the same learning objectives as students enrolled in traditional colleges. More Information

To take a course, select an area of study.
Precalculus II continues the in-depth study of functions addressed in Precalculus I by adding the trigonometric functions to your function toolkit. In this course, you will cover families of trigonometric functions, as well as their inverses, properties, graphs, and applications. Additionally, you will study trigonometric equations and identities, the laws of sines and cosines, polar coordinates and graphs, parametric equations and elementary vector operations.

You might be curious how the study of trigonometry, or "trig" as it is more often referred to, came about and why it is important to your studies still. Trigonometry, from the Greek for "triangle measure," studies the relationships between the angles of a triangle and its sides and defines the trigonometric functions used to describe those relationships. Trigonometric functions are particularly useful when describing cyclical phenomena and have applications in numerous fields, including astronomy, navigation, music theory, physics, chemistry, and—perhaps most importantly—to the mathematician—calculus.

In this course, you will begin by establishing the definitions of the basic trig functions and exploring their properties and then proceed to use the basic definitions of the functions to study the properties of their graphs, including domain and range, and to define the inverses of these functions and establish the properties of these. Through the language of transformation, you will explore the ideas of period and amplitude and learn how these graphical differences relate to algebraic changes in the function formulas. You will also learn to solve equations, prove identities using the trig functions, and study several special theorems of these functions.
Learning Outcomes

Course Overview

Unit Outline

Unit 1: Trigonometric Functions of Angles

Imagine standing some distance from a building and trying to guess at its height. With some simple measurements and the tools you learn in this unit, you will be able to find the height of the building precisely. This is one of the many application problems you will be able to solve after your study of trigonometry.

In this unit, you will explore the properties of circles and use those properties to investigate angles within the circle. In particular, you will begin with a new definition of angle measure related to arc length in a circle. A review of the equation for a circle with radius r leads to a definition of the sine and cosine functions, and you will use these to define the remaining trigonometric functions and explore their basic properties and identities. These definitions will be used to derive similar definitions for right triangle trigonometry, which is precisely the tool needed to solve problems like the one mentioned above.

Unit 1 Time Advisory

Unit 1 Learning Outcomes

1.1 Circles

- Reading: Lippman and Rasmussen's Precalculus: An Investigation of Functions, "Chapter 5: Trigonometric Angles of Functions"

1.1.1 The Pythagorean Theorem

Note: This topic is covered in the reading under unit 1.1. To learn about the Pythagorean Theorem please focus on the material on page 297.
MA003: Precalculus II

Back to Sakai.org
MA003 Final Exam
Review of attempt 1

1 Mark: 1

<table>
<thead>
<tr>
<th>Mark</th>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$\sin\theta = \frac{3}{5}$ and $\cos\theta = -\frac{4}{5}$</td>
<td>A. $\cos\theta = -\frac{3}{5}, \tan\theta = \frac{4}{3}$ &lt;br&gt; B. $\cos\theta = -\frac{3}{5}, \tan\theta = \frac{3}{4}$</td>
</tr>
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</table>

Correct: A

 Marks for this submission: 0/1

2 Mark: 1

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<td>2</td>
<td>Find the reference angle for an angle of measure $\frac{11\pi}{6}$</td>
<td>A. $\frac{\pi}{6}$ &lt;br&gt; B. $\frac{\pi}{4}$ &lt;br&gt; C. $\frac{\pi}{3}$</td>
</tr>
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Correct: A

 Marks for this submission: 0/1
Non-traditional producers of OER

☐ Have you heard of TED?
☐ Have you seed TED-Ed?

http://education.ted.com
Peter Donnelly shows how stats fool juries

Watch

Quick Quiz

Think

Dig Deeper
Donnelly's coin toss experiment demonstrates which of the following?

A. On average, it takes more coin tosses to see the HTH (head-tail-head) pattern than it does to see HTT.
B. The HTH pattern, on average, requires more coin tosses than HTT.
C. The average number of tosses to get HTT is the same as the number to get HTH.
D. There are people out there with a lot of coins and a lot of time.
Peter Donnelly shows how stats fool juries

Let's Begin...

Select or deselect questions.

Watch
Quick Quiz
Think
Dig Deeper
...And Finally

Create: TED Conferences, LLC. Get started. Terms of Use.
## Comparing Open Content to Open Courses

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Circuits & Electronics
6.002x

About 6.002x

6.002x (Circuits and Electronics) is designed to serve as a first course in an undergraduate electrical engineering (EE) or electrical engineering and computer science (EECS) curriculum. At MIT, 6.002 is in the core of department subjects required for all undergraduates in EECS.

The course introduces engineering in the context of the lumped circuit abstraction.

6.002x on MITx

If you successfully complete the course, you will receive an electronic certificate of accomplishment from MITx. This certificate indicates that you earned it from MITx’s pilot course. In this prototype version, MITx will not require that you be tested in a testing center or otherwise have your identity certified in order to receive this certificate.

The course uses the textbook Foundations of

About the Course Staff

Anant Agarwal
Director of MITx’s Computer Science and Artificial Intelligence Laboratory (CSAIL) and a professor of the Electrical Engineering and Computer Science department at MIT. His research focus is in parallel computer architectures and cloud software systems, and he is a founder of several
Course tracks the materials I’ve seen.

Course materials structured/arranged by week, by small chunks. Lets me pick up where I left off.

Video “lecture”, speed up/slow down, transcript.
Week 1 Lab
Add resistors apply current and evaluate the circuit.
Week 1 Lab
Add resistors, apply current, and evaluate the circuit.
Is it innovative? Or is it the right time?

- Is it a typical online course?
- Video + transcript (not caption)
- Online, self-scored...
  - Homework, customized questions
  - Online labs, customized
- Open to the world
  - Class size 150,000 students (20,000 persisting)
  - Two faculty & 4 TAs
- Certificate upon successful completion
What does this all mean for you?
What does this all mean for you?

- What are your unique contributions?
- What does a move from content -> courses mean?
- What could you do to build upon / take advantage of the open courses that are being developed?
- What does a modular curriculum look like for you? What does it mean to produce small chunks of material and weave them together?
Citation: Muramatsu, B. (2012, April). OEx. Invited Presentation at Tacoma Community College, April 27, 2012. Unless otherwise specified, this work is licensed under a Creative Commons Attribution 3.0 United States License.

This work builds upon these two presentations, both licensed