

Building Capacity for Health and Engineering Education

Open Educational Resources(OER)
April 12 2017



Dr. Khakaf Hajim Al Tell
Ministry of Manpower-Oman
Technological Education
dr.khalaf.oman@hotmail.com
Khalaf.hajem@manpower.gov.om



البرنامج

١- مقدمة في الموارد التعليمية المفتوحة :ساعة 8:30-9:30

٢- البحث عن الموارد التعليمية: المكتبات الرقمية الجامعية والمستودعات
الرقمية- ساعة 9:30-10:30
استراحة ١٠:٣٠-١٠:٤٥

٣- الدلائل الرقمية والمواقع الجامعية المتخصصة -ساعة ونصف ١٥:١٢-
١:٤٥
غداء بسيط -١:٤٥-٢:١٥

٤- المحاكاة والحركية والفيديوات التعليمية المفتوحة ، الكتب الدراسية
المفتوحة-ساعة ونصف ١٥:٢-٣:٤٥
مناقشة ٣:٤٥-٤:٠٠



Your Task

Work as a team if you can

- 1-Select a course that you are teaching and not very happy with its content.
- 2-Working on the Learning Objectives(LO) of your course ; Find OER content that align with your LO.
- 3-Find OER content in multi format(Text, Video, Simulation...) to best suit your students.
- 4-Compare and contrast your course content with other universities.
- 5-Find a suitable open textbook for your course. Compare and contrast the open text book with the textbook you are using at your course.
- 6-Design a new course delivery method (Student Centered) Using e-learning,

A reward will be given to top results

Session 1

OPEN EDUCATIONAL RESOURCES (OER)

The most visible impact of the Internet on education to date has been the Open Educational Resources movement ([OER](#))

Minds on Fire: Open Education, the Long Tail, and Learning 2.0

by [John Seely Brown](#) and [Richard P. Adler](#)

knowledge is a public good





The Big Bang of OER: MIT Open Courseware

In **2001**, the Massachusetts Institute of Technology (**MIT**), in an unprecedented move, announced the release of nearly all its courses on the internet for free access.

As the number of institutions offering free or open courseware increased, **OCW** UNESCO organized the [1st Global OER Forum in 2002](#) where the term Open Educational Resources (OER) was first adopted to describe OERs as:

“teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.”

**OER
2002**



Creative Commons



OER Khalaf by Khalaf AlTell is licensed under a [Creative Commons Attribution 4.0 International License](#).

Open Educational Resources (OER):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 and 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."

Definition taken from [The William and Flora Hewlett Foundation](#)

SO : What are Open Educational Resources ?



Any kind of teaching materials, textbooks, syllabi, lesson plans, videos, exams assignments, lecture notes.....



Are free (garneted by an **Open license**) to anyone to access and,



Include free permission to engage in the **5R** activities



Include digital tools to engage, deliver, facilitate , license and manage OER.

Open is a scale from OPEN to OPEN.
Identified from the open license

5Rs: The Powerful Rights of “Open” In OER

Retain

Make, own, and control your own copy of the content

Revise

Adapt, adjust, modify, improve, or alter the content

Redistribute

Share your copies of the original content, revision, or remix's with others

Remix

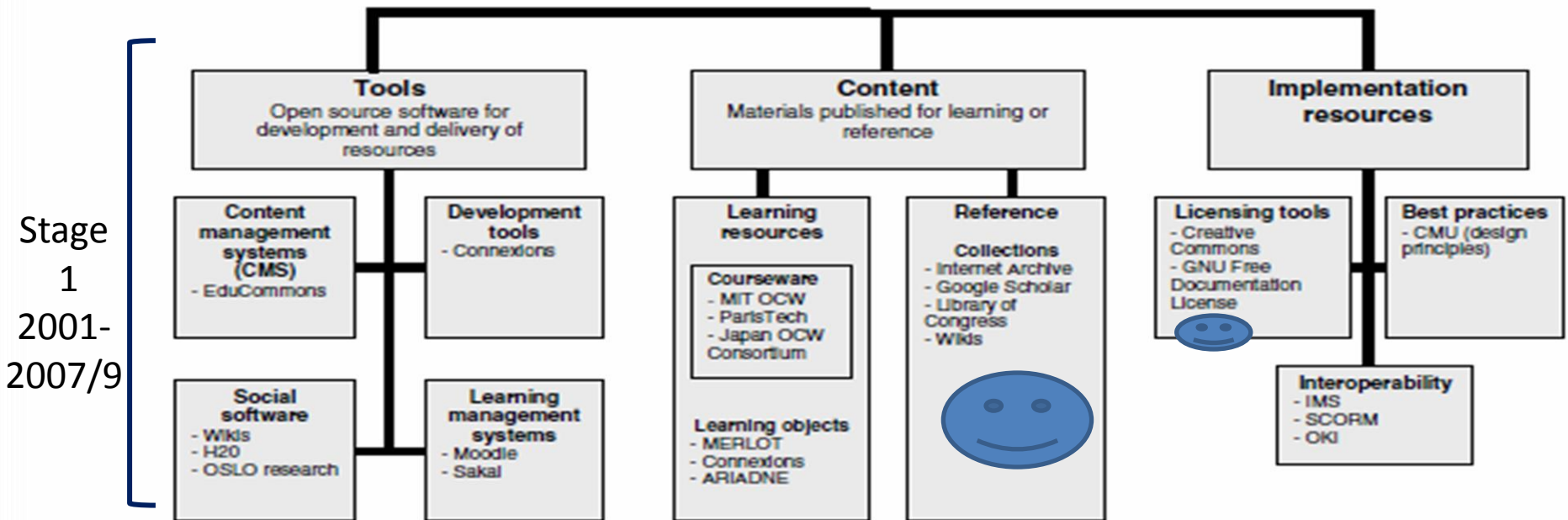
Combine the original or revised content with other OER to create something new

Reuse

Use the content in its unaltered form

Conceptual Map

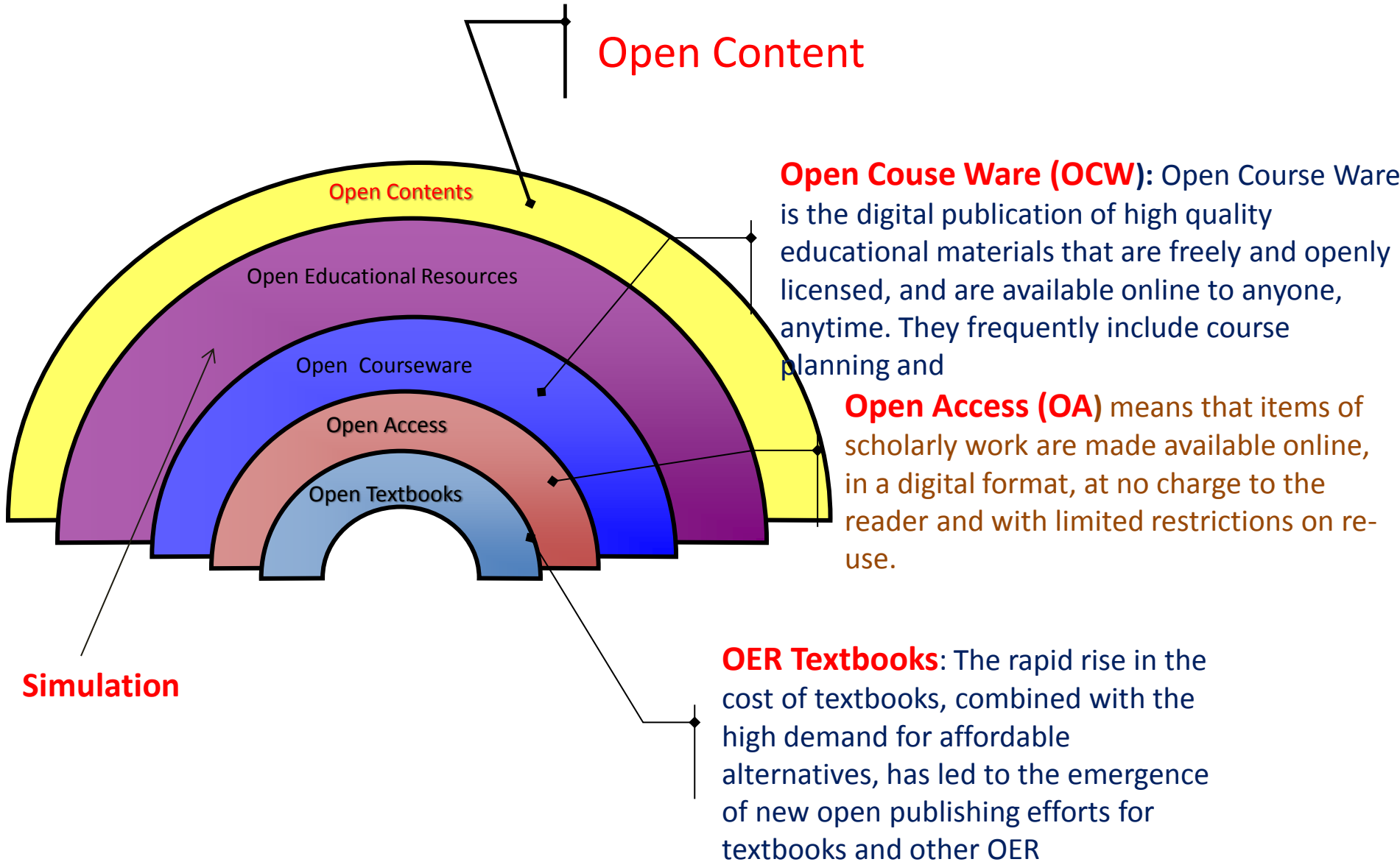
Figure 2.1. Open educational resources: a conceptual map



Source: Margulies, 2005.



OER Content



Selected Examples

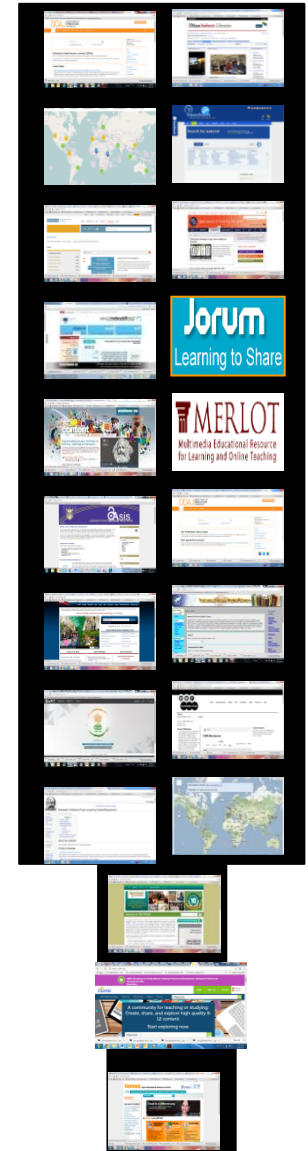
Open Courseware



Open Videos Lectures, simulation, animation



Open Text book



OER World Map





مركز الاعتماد
وإضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER



Creative Commons Licenses



Educational Resources Available on the Internet

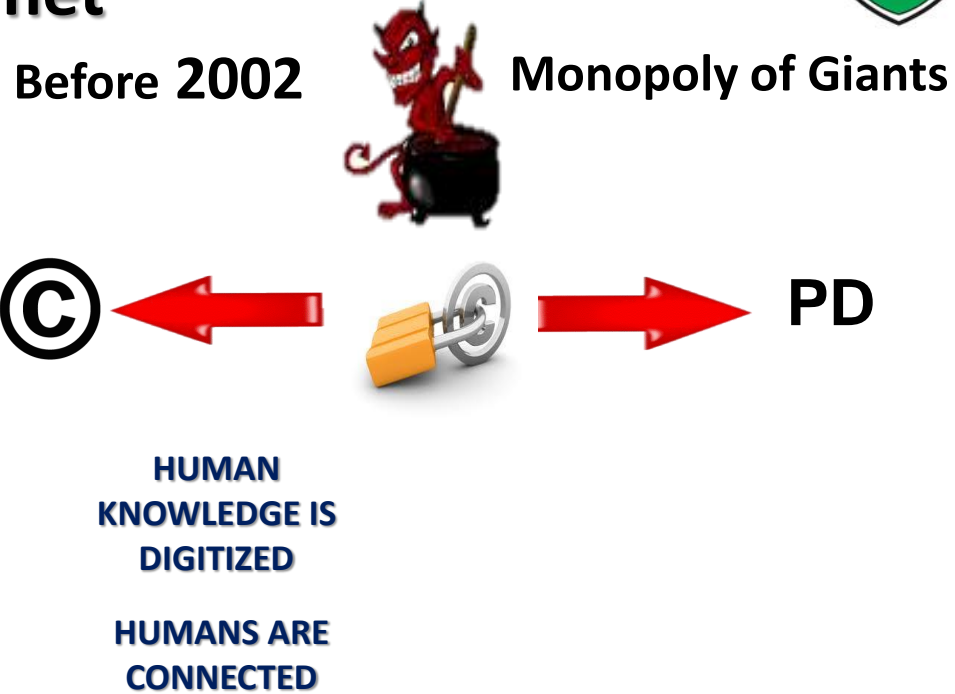


BY RESOURCE

- Whole courses
- Lecture notes
- Presentation slides
- Lecture hand-outs
- Lecture recordings
- Assignments
- Tests or Exams
- Reading lists
- Images
- Videos
- Simulations
- Text books
- Students' work
- etc.

BY SUBJECT

- Science
- Engineering
- Art
- Mathematic
- Computer Science
- Physics
- Humanities
- Economy
- Human Resource
- Etc.



Digitization of information in all media, combined with its increasingly widespread access, has introduced significant challenges regarding how to deal with issues of intellectual property such as copyright.



Creative Commons licenses

Learning to (Re)Use Open Educational Resources

Creative Commons was established in 2001, as nonprofit organization that works to increase the amount of creativity (cultural, educational, and scientific content) in the body of the work that is available to the public for free and legal sharing ,use repurposing, and remixing. Share , Remix Means that the user can change the work, modify it and build upon it ,Reuse — Legally .

- Enable legal sharing
- Provide the way to control intellectual property
- Maximize benefits of OER



مركز الاعتماد
و ضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

CREATIVE COMMONS



Video in Arabic



Lawrence Lessig 2002



Full Copyright:

all rights reserved

Creative Commons:

some rights
reserved

Public Domain:

no rights
reserved



Creative Commons Elements



- All Creative Commons licenses require that you credit the copyright holder when reusing their work in any way.
- You let others copy, distribute, display, perform and modify your work, as long as they distribute the work and any modified work on the same terms.
- You let others copy, distribute, display, perform and modify and use your work for any purpose other than commercially.
- No changes are allowed. You can't build upon this work.

Six Standards Licenses

The Licenses



Attribution
CC BY

This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.

[View License Deed](#) | [View Legal Code](#)



Attribution-ShareAlike
CC BY-SA

This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to "copyleft" free and open source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use. This is the license used by Wikipedia, and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.

[View License Deed](#) | [View Legal Code](#)



Attribution-NonCommercial
CC BY-NC

This license allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to you.

[View License Deed](#) | [View Legal Code](#)



Attribution-NonCommercial-ShareAlike
CC BY-NC-SA

This license lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.

[View License Deed](#) | [View Legal Code](#)



Attribution-NonCommercial-NoDerivs
CC BY-NC-ND

This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.

[View License Deed](#) | [View Legal Code](#)



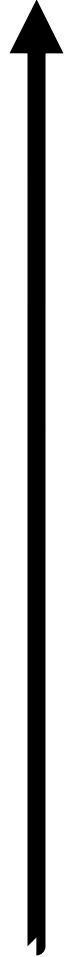
Attribution-ShareAlike
CC BY-SA

This license is the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially.

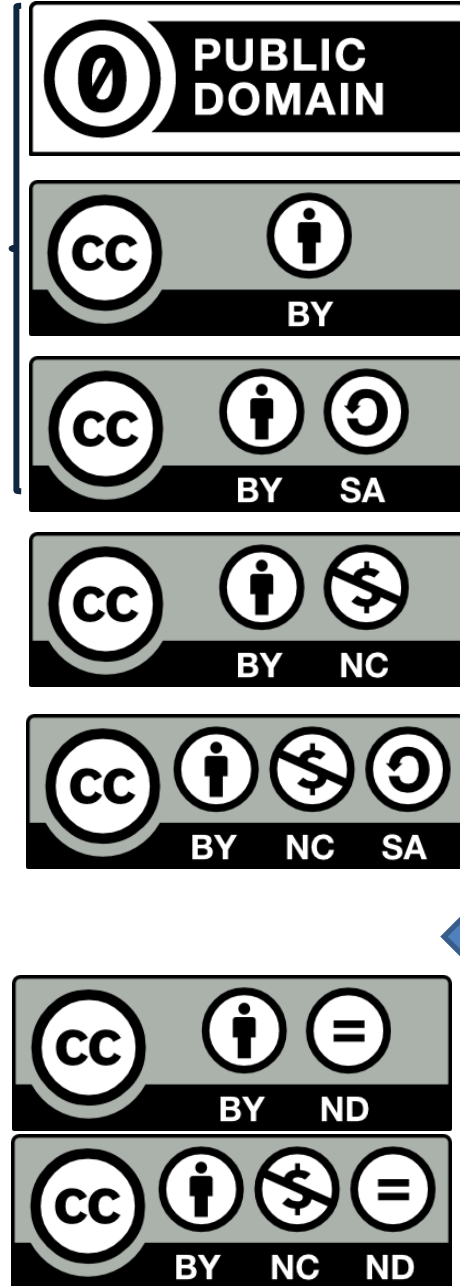
CREATIVE COMMONS LICENCES



most free

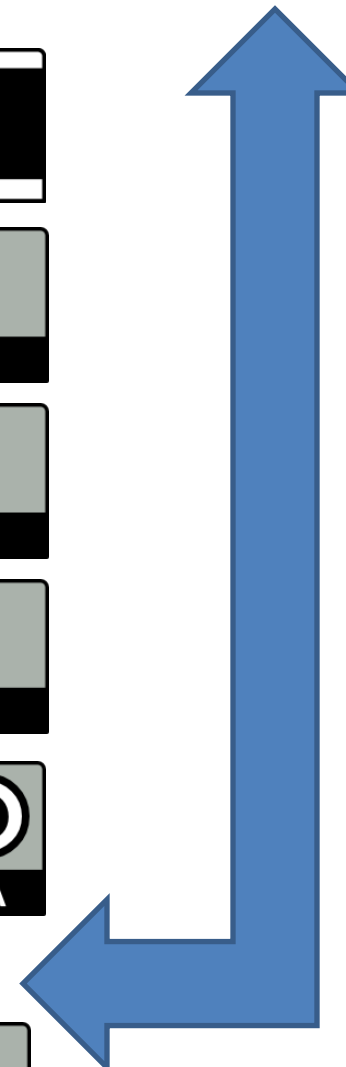


least free



OER 5Rs

- Retain
- Reuse
- Revise
- Remix
- Redistribute





CREATIVE COMMONS LICENCES

Three “Layers” Of Licenses



Machine Readable

```
<a rel="license"
href="http://creativecommons.org/licenses/by/4.0/"></a><br />This work is licensed under a <a rel="license"
href="http://creativecommons.org/licenses/by/4.0/">Creative
Commons Attribution 4.0 International License</a>.
```

Human Readable

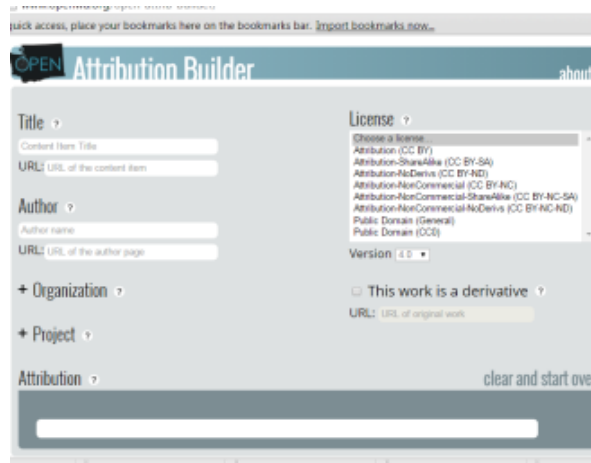


Legal Code



How TO License Your Work(Resource)

In Less than 2 Minutes



The screenshot shows the Creative Commons Attribution Builder web interface. It includes a header with the text "OPEN Attribution Builder" and "about". Below the header, there are several sections for inputting metadata:

- Title:** A dropdown menu for "Content Item Title" and a text input field for "URL: URL of the content item".
- Author:** A dropdown menu for "Author name" and a text input field for "URL: URL of the author page".
- Organization:** A dropdown menu.
- Project:** A dropdown menu.
- License:** A dropdown menu with options: "Choose a license", "Attribution (CC BY)", "Attribution-ShareAlike (CC BY-SA)", "Attribution-NoDerivs (CC BY-ND)", "Attribution-NonCommercial (CC BY-NC)", "Attribution-NonCommercial-ShareAlike (CC BY-NC-SA)", "Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)", "Public Domain (General)", and "Public Domain (CC0)". Below the license dropdown is a "Version" dropdown set to "1.0".
- Additional options:** A checkbox for "This work is a derivative" and a text input field for "URL: URL of original work".
- Attribution:** A large text input field with a "clear and start over" link to its right.





مركز الاعتماد
و ضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

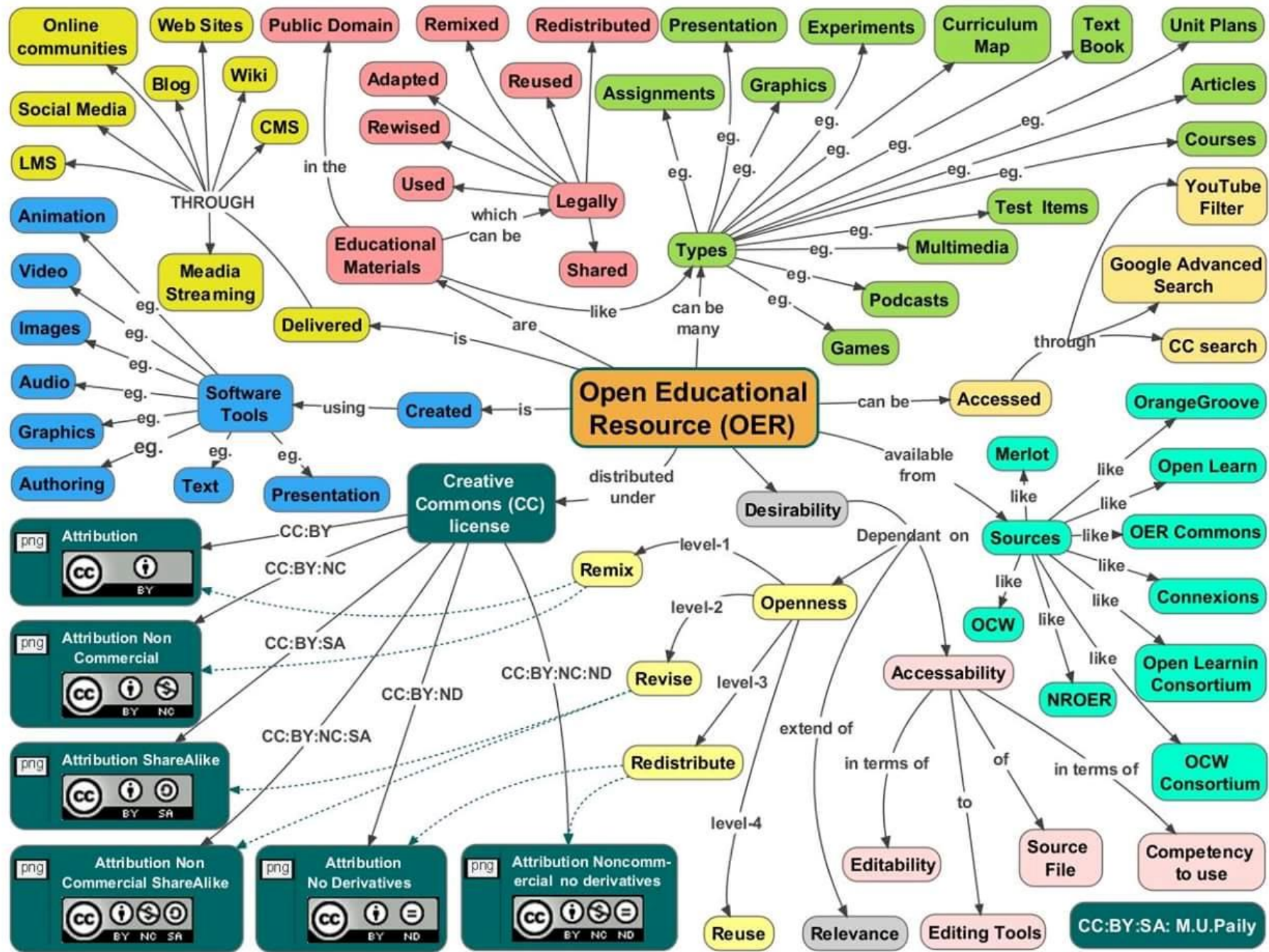
CREATIVE COMMONS LICENCES



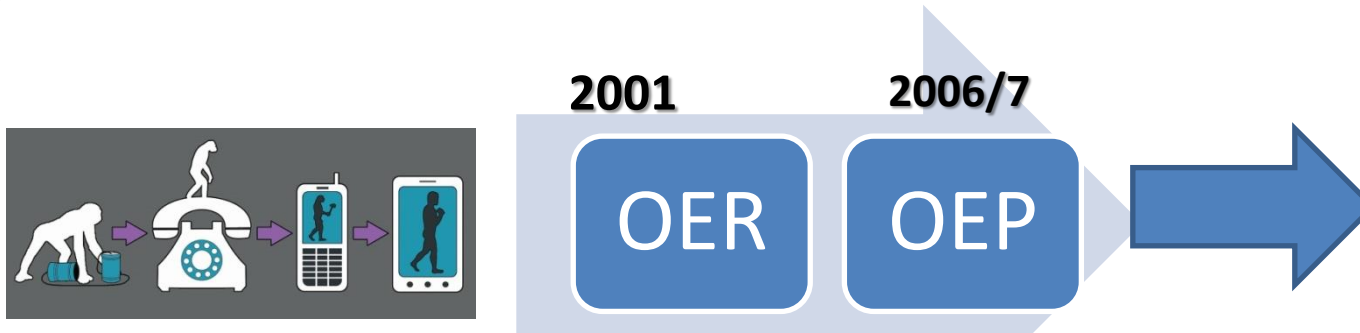
Remix: Which Creative Commons licensed resources can be combined with which?

	PUBLIC DOMAIN	PUBLIC DOMAIN	BY	BY SA	BY NC	BY ND	BY NC SA	BY NC ND
PUBLIC DOMAIN	✓	✓	✓	✓	✓	✗	✓	✗
PUBLIC DOMAIN	✓	✓	✓	✓	✓	✗	✓	✗
BY	✓	✓	✓	✓	✓	✗	✓	✗
BY SA	✓	✓	✓	✓	✗	✗	✗	✗
BY NC	✓	✓	✓	✗	✓	✗	✓	✗
BY ND	✗	✗	✗	✗	✗	✗	✗	✗
BY NC SA	✓	✓	✓	✗	✓	✗	✓	✗
BY NC ND	✗	✗	✗	✗	✗	✗	✗	✗

More In the Practice sessions



Evolution of OER



What is Open Educational Practices (OEP)

“OEP are defined as practices which support the (re)use and production of OER through institutional policies, promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path”

The availability of Open Educational Content is no more an educational issue

This work is licensed under a [Creative Commons Attribution 3.0 Unported License](https://creativecommons.org/licenses/by/3.0/). This License is registered for Dr. Khalaf Al-Tell

Evolution of OER

OER

building more access to digital content
doing old things in new ways



“Delivering OER to the still dominant model of teacher-centered. knowledge transfer will have little effect on equipping teachers, students and workers with the competences, knowledge and skills to participate successfully in the knowledge economy and society... [there is] the need to foster open practices of teaching and learning that are informed by a competency-based educational framework”

OEP

shifts the focus to doing new things (e.g., developing new capacities) in new ways (e.g., using OER).





9:30?



مركز الاعتماد
و ضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER



Session 2



مركز الاعتماد
و ضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER



Finding OER

- 1-Google Advance Search
- 2-Creative Commons Search
- 3-Universities Digital Libraries
- 4-Repositories

FREE



OPEN

The first task aims to identify those resources used within your classes which are suitable for being changed, reflecting on why this is. To complete this information for your course, use the template below.



Course objectives alignment: to what extent does this resource address the course objectives?

Format: which format do they have? text, video, audio, graphic, presentation, ...

Quality: high, medium, low.

Difficulty: level of comprehension of the resource, taking into account the student's profile/needs.

Update: date of creation or update.

License: which license does it have?

Detected need: identify what changes could be made to improve each resource.

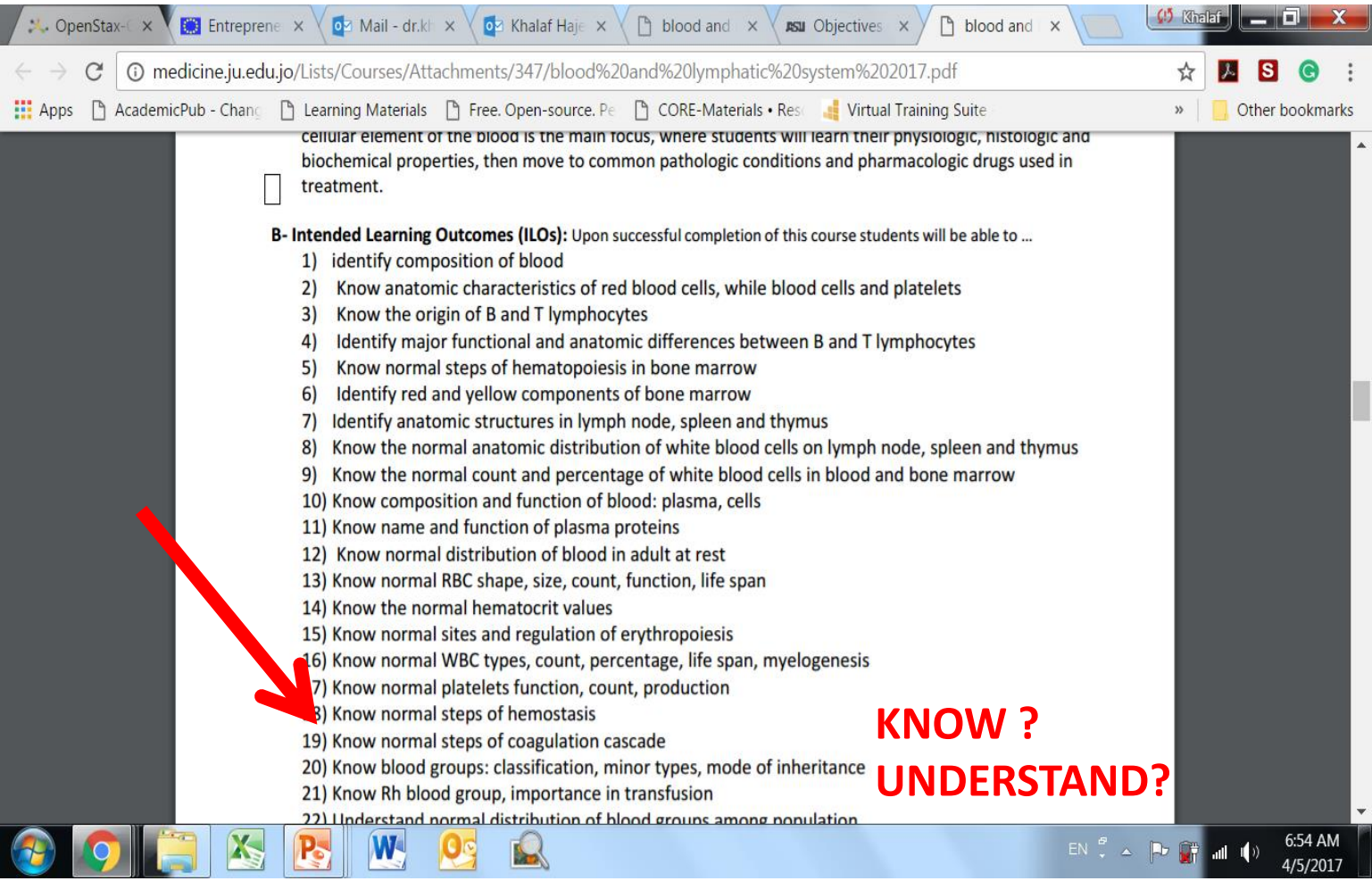
Learning Objectives

A Learning Objective is a statement that describe the Specific skills or knowledge a student will be able To demonstrate as a result of completing a course or a lesson

1-An action that we can see

2-An action that we can measure & assess

Common Mistakes



cellular element or the blood is the main focus, where students will learn their physiologic, histologic and biochemical properties, then move to common pathologic conditions and pharmacologic drugs used in treatment.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

- 1) identify composition of blood
- 2) Know anatomic characteristics of red blood cells, white blood cells and platelets
- 3) Know the origin of B and T lymphocytes
- 4) Identify major functional and anatomic differences between B and T lymphocytes
- 5) Know normal steps of hematopoiesis in bone marrow
- 6) Identify red and yellow components of bone marrow
- 7) Identify anatomic structures in lymph node, spleen and thymus
- 8) Know the normal anatomic distribution of white blood cells on lymph node, spleen and thymus
- 9) Know the normal count and percentage of white blood cells in blood and bone marrow
- 10) Know composition and function of blood: plasma, cells
- 11) Know name and function of plasma proteins
- 12) Know normal distribution of blood in adult at rest
- 13) Know normal RBC shape, size, count, function, life span
- 14) Know the normal hematocrit values
- 15) Know normal sites and regulation of erythropoiesis
- 16) Know normal WBC types, count, percentage, life span, myelogenesis
- 17) Know normal platelets function, count, production
- 18) Know normal steps of hemostasis
- 19) Know normal steps of coagulation cascade
- 20) Know blood groups: classification, minor types, mode of inheritance
- 21) Know Rh blood group, importance in transfusion
- 22) Understand normal distribution of blood groups among population

**KNOW ?
UNDERSTAND?**

You Should Use Bloom's Taxonomy As an aid to writing effective learning outcomes

Common Mistakes

Understand and Know

They can not be observed
They are thoughts and not action

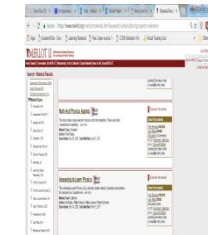
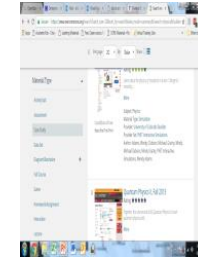
BLOOM'S TAXONOMY



What To Search For ?

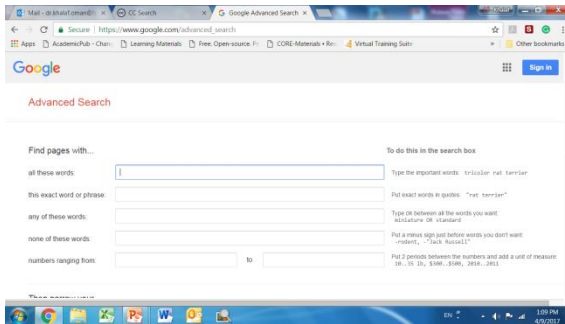
Animation (84)
Assessment Tool (471)
Assignment (54)
Case Study (5)
Collection (178)
Development Tool (4)
Drill and Practice (55)
portfolio (3)
Learning Object Repository (18)
Online Course (410)
Online Course Module (2)
Open Journal-Article (14)
Open Textbook (225)
Presentation (693)
Quiz/Test (214)
Reference Material (383)
Simulation (1,078)
Tutorial (85)
Workshop and Training Material (11)

Always Start with Learning Objectives of your Course

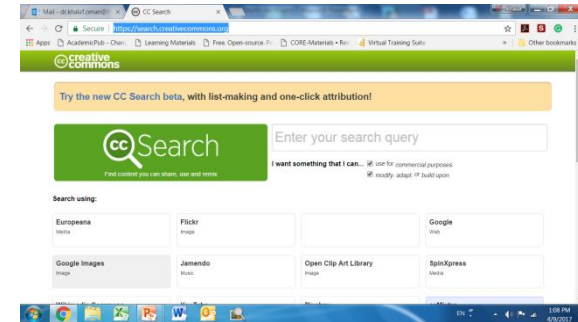


General Search

GOOGLE Advance Search



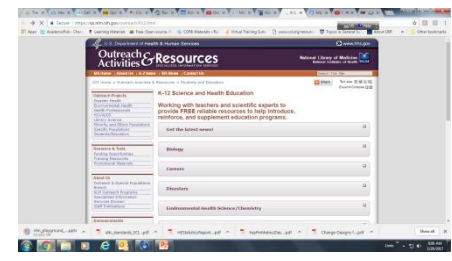
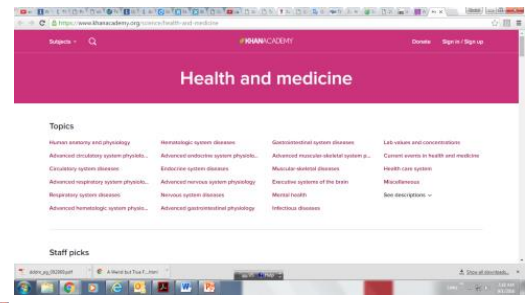
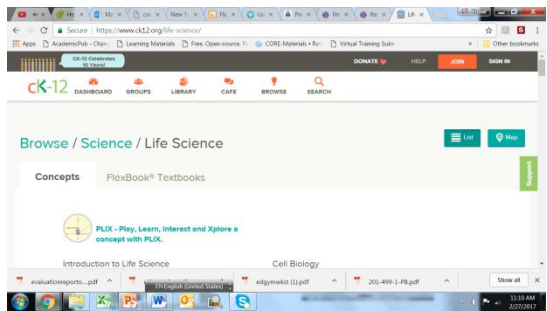
Creative Commons Search



Introductory Health and Engineering Resources

May be first year level

EXPLORE



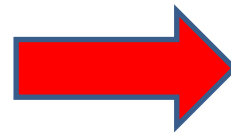
These sites can be used as mastery learning for skills for students



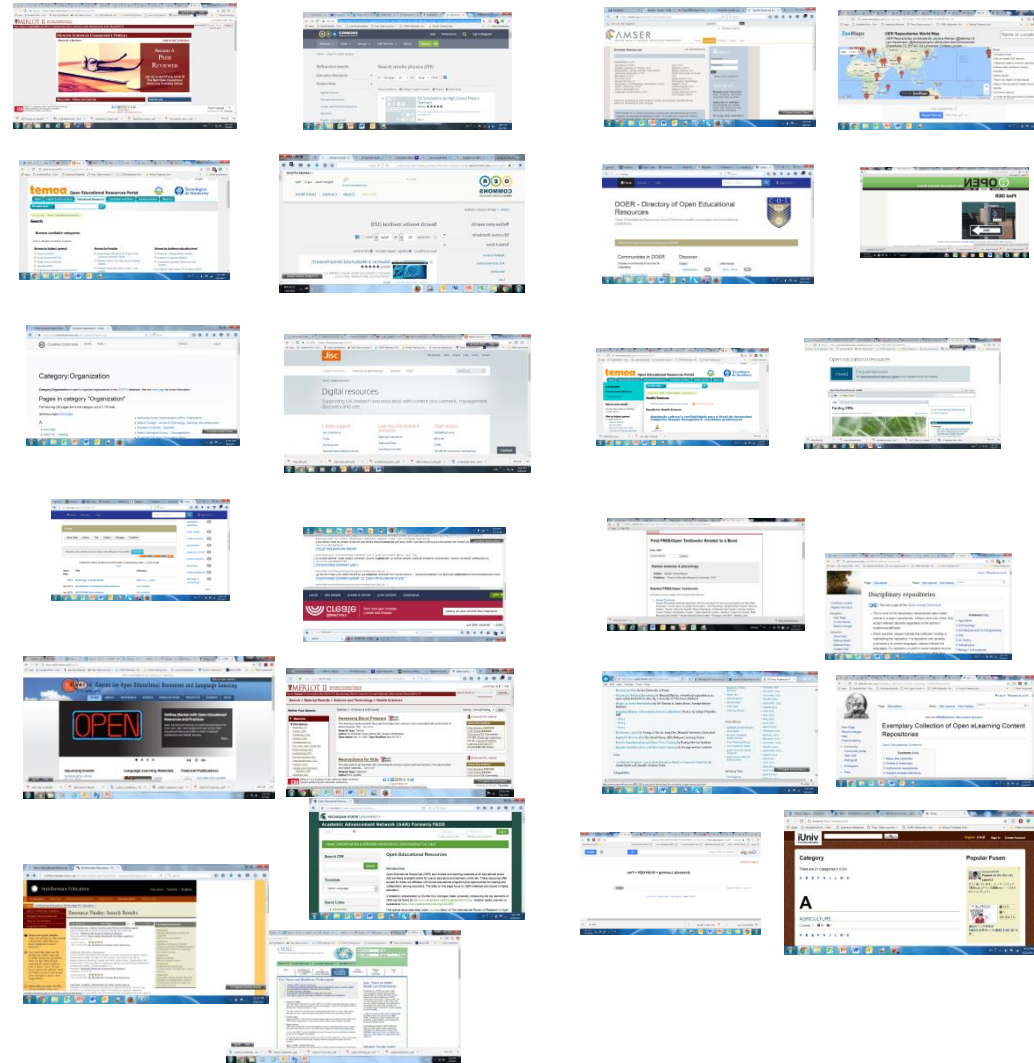
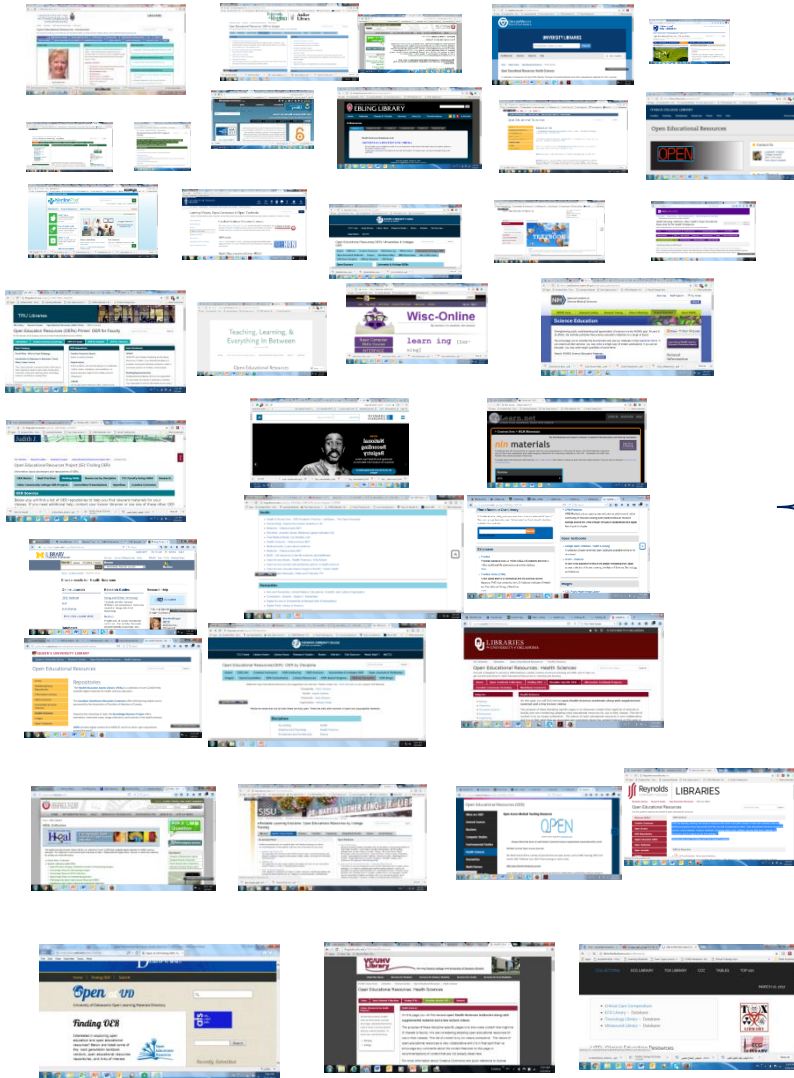
OEP

Open Educational Resources Universities Libraries

Search Health



Repositories



Open Educational Resources Universities Libraries

Search Engineering Repositories





10:30?

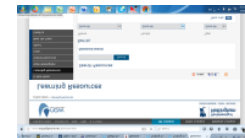
Session 3

1-Guides

2-Universities web sites

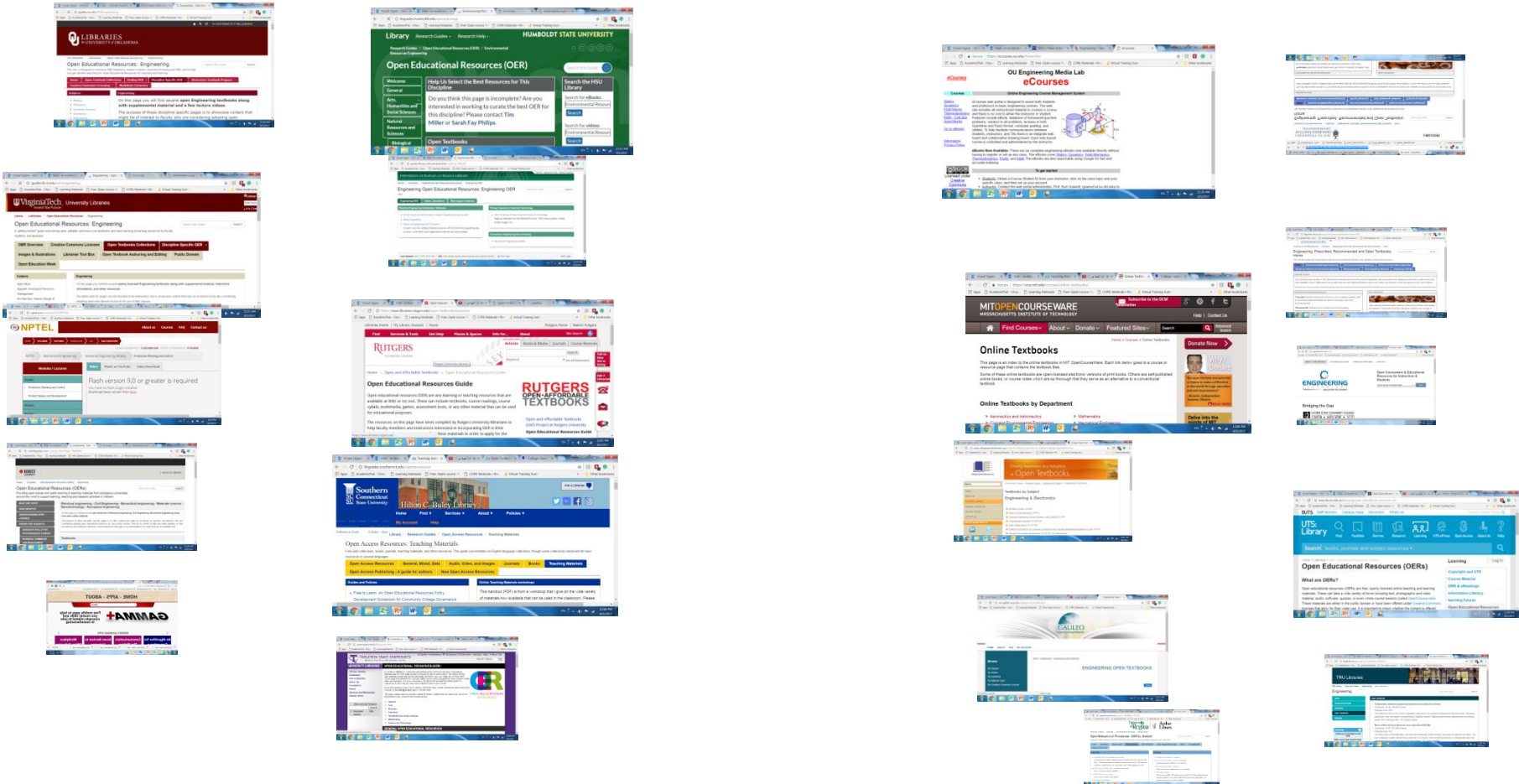
OER Guides

Universities OER



Engineering Universities OER

Engineering Guides



Courseware Examples



openmichigan
 home find share connect about contact

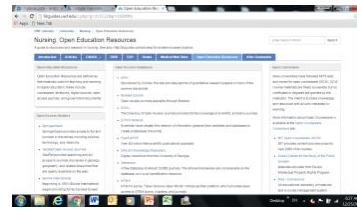
Find U-M Open Educational Resources
 Find staff and use it. Finally. Welcome to our collection of educational resources and learning experiences from the University of Michigan. Access a range of course materials, videos, software tools, student work and more. Download and open our openly licensed educational resources (OER).



MIT COURSES
 Open Courseware Initiative

The following courses have provided open courseware:

Course	ED	Resources
6.002	Thermodynamics	1
6.003	Transport Phenomena	1
6.004	Advanced Chemistry	1
6.005	Advanced Physics	1
6.006	The International Monetary System	1
6.007	Classical Applications of Newton's Laws	1
6.008	Office Mechanics and Human Design	1
6.009	Theory of Plates, Shells, and Structures	1
6.010	BUILDING GENETIC & GENOMIC NETWORKS	1



African Health OER Network

The African Health OER Network works to make participants to develop, adapt, and share health education resources to improve health care and other resources in the health sector and improve productivity in overall health provision in Africa and beyond. The mission of the Network is to advance health education in Africa by using open educational resources (OER) to share knowledge, address curriculum gaps, and support innovation around health education. Our aim is to strengthen the individual and policy infrastructure within and between African institutions in order to give it robust Network. Find out more.



eScholarship@UMMS

CANCER CONCEPTS: A GUIDEBOOK FOR THE NON-ONCOLOGIST
 Partial Cancer Syndromes



JHSPH OPEN
 Public health knowledge for the world

Find open public health courses and materials.

Choose a course:
 • Adviseurs Health and Development
 • Analytical Biostatistics: Case, Policy, and Practice Sciences
 • Approaches to Managing Health Services Organizations
 • Behavior Food Systems: A Case Study of Urban Food Environments
 • Biostatistics and Computational Biology: Solutions Using R and Bioconductor
 • Biological Agents of Water and Healthcare: Nosocomial
 • Biostatistics for Medical Product Regulation



TUFTS OPEN COURSEWARE

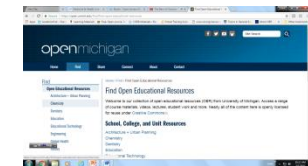
Courses by School

Tufts School of Medicine
 Tufts School of Medicine
 Tufts School of Medicine is pleased to announce that it has a robust team in place to support the development of open educational resources in the health sector. The team includes faculty, staff, and students who are committed to providing high-quality, open educational resources to support learning and teaching in the health sector.



African Health OER Network

The African Health OER Network works to make participants to develop, adapt, and share health education resources to improve health care and other resources in the health sector and improve productivity in overall health provision in Africa and beyond. The mission of the Network is to advance health education in Africa by using open educational resources (OER) to share knowledge, address curriculum gaps, and support innovation around health education. Our aim is to strengthen the individual and policy infrastructure within and between African institutions in order to give it robust Network. Find out more.



openmichigan

Find Open Educational Resources
 Access a range of course materials, videos, software tools, student work and more. Download and open our openly licensed educational resources (OER).



OpenUCT

UCT LOON

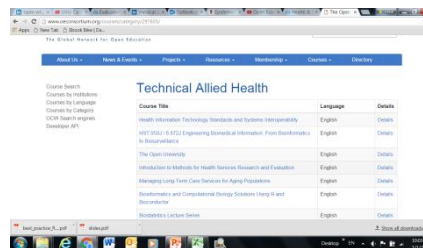
Courses in English
 Health Sciences
 Health Sciences



MIT OPEN COURSEWARE
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Harvard-MIT Program in Health Sciences and Technology

Harvard-MIT Program in Health Sciences and Technology



African Health OER Network

Technical Allied Health

Course Title	Language	Details
Health Information Technology: Standards and Systems Interoperability	English	Details
HEALTH (HSA) (6.037) Engineering Systems and Information: From Biomechanics to Biostatistics	English	Details
This Open Resource	English	Details
Introduction Methods for Health Services Research and Evaluation	English	Details
Managing Long Term Care Services for Aging Populations	English	Details
Biostatistics and Computational Design: Systems Using R and R Shiny	English	Details
Biostatistics Lecture Series	English	Details



MIT OPEN COURSEWARE
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Search Results

Health 1 - 10 of about 10 Health Care Services



openmichigan

Open Educational Resources

Search for Open Educational Resources



JHSPH OPEN

Peer Reviewed Publications

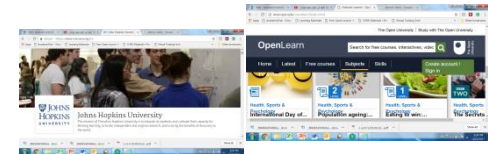
Call for Submissions
 Open Access
 Open Access



African Health OER Network

Health Information Technology: Standards and Systems Interoperability

Health Information Technology: Standards and Systems Interoperability



OpenLearn

Health Sciences & Digital Health Day of Learning

Health Sciences & Digital Health Day of Learning

Selected Examples



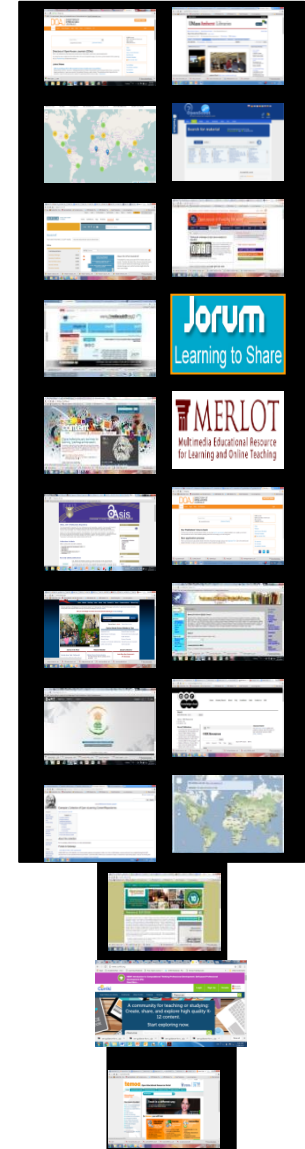
Open Courseware



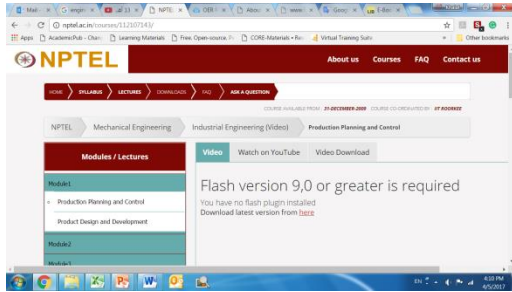
Open Videos Lectures, simulation, animation



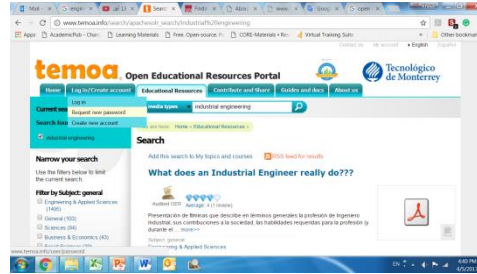
Open Text book



Industrial engineering



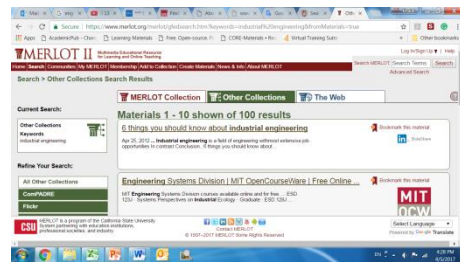
The screenshot shows the NPTEL website interface. The main navigation includes 'HOME', 'Syllabus', 'Lectures', 'Downloads', and 'FAQ'. The 'Courses' section is active, displaying 'Industrial Engineering (Video)' and 'Production Planning and Control'. A sidebar lists 'Modules / Lectures' with 'Module 1' (Production Planning and Control) and 'Module 2' (Product Design and Development). A message states: 'Flash version 9,0 or greater is required. You have no flash plugin installed. Download latest version from here.'



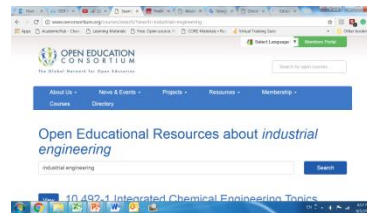
The screenshot shows the temoa Open Educational Resources Portal. The search bar contains 'Industrial engineering'. The search results display a document titled 'What does an Industrial Engineer really do???' with a PDF icon. The page includes navigation options like 'Home', 'Educational Resources', and 'Feedback'.



The screenshot shows the Engineering Education website. The main heading is 'Engineering Education' with a sub-heading 'Bridging the Gap'. Below this, there are sections for 'Open Courseware & Educational Resources for Instructors & Students' and 'Open Educational Resources for Learning'.



The screenshot shows the MERLOT II website search results for 'Industrial engineering'. The search results are displayed in a table with columns for 'Materials 1 - 10 shown of 100 results'. The first result is '6 Things you should know about industrial engineering' by 'Industrial Engineering'.



The screenshot shows the Open Education Consortium website. The main heading is 'Open Educational Resources about industrial engineering'. The search bar contains 'Industrial engineering'. The page includes navigation options like 'Home', 'About Us', 'Members & Comps', 'Projects', 'Resources', and 'Membership'.

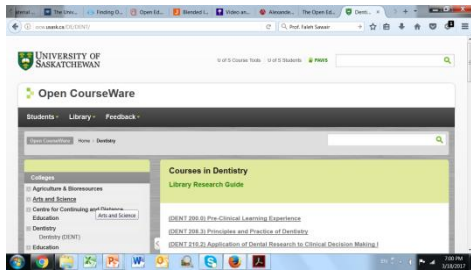


The screenshot shows the MERLOT II website search results for 'Industrial engineering'. The search results are displayed in a table with columns for 'Materials 1 - 10 shown of 246 results'. The first result is 'MAS 742 Industrial Design Intelligence: A Cognitive Approach to Engineering' by 'Industrial Engineering'.

Nursing



Dentistry Open Courses



UNIVERSITY OF SASKATCHEWAN
Open CourseWare
 Courses in Dentistry:
 • DENT 200.01 Pre-Clinical Learning Experience
 • DENT 200.02 Principles and Practice of Dentistry
 • DENT 210.01 Application of Dental Research to Clinical Decision Making



HEAL Collection
 Free, high-quality digital journals for health sciences education.
 The Health Education Assets Library (HEAL) is a collection of over 20,000 free available digital journals for health sciences education. The collection was created at the University of Utah.



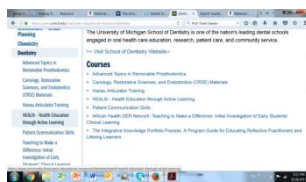
Dental Education in Video
 A collection of dental education videos for students and faculty.



Pathology & Laboratory Medicine
 ARCHIVE RESOURCES
 A collection of archived resources for pathology and laboratory medicine.



MIT OPEN COURSEWARE
Harvard-MIT Program in Health Sciences and Technology
 Courses in Health Sciences and Technology.



The University of Michigan School of Dentistry is one of the nation's leading dental schools engaged in oral health care education, research, patient care, and community service.



Anatomy & Physiology
 A comprehensive resource for anatomy and physiology.



The Orange Grove
 Health Sciences
 A digital library of health sciences resources.



TUFTS OPEN COURSEWARE
Tufts School of Dental Medicine
 Courses in Dental Medicine.



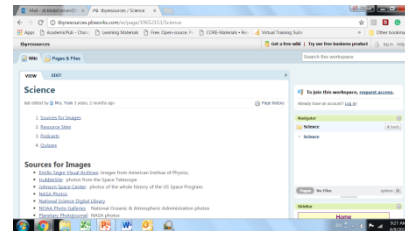
JHSIPHOPEN
Find open public health courses and materials.



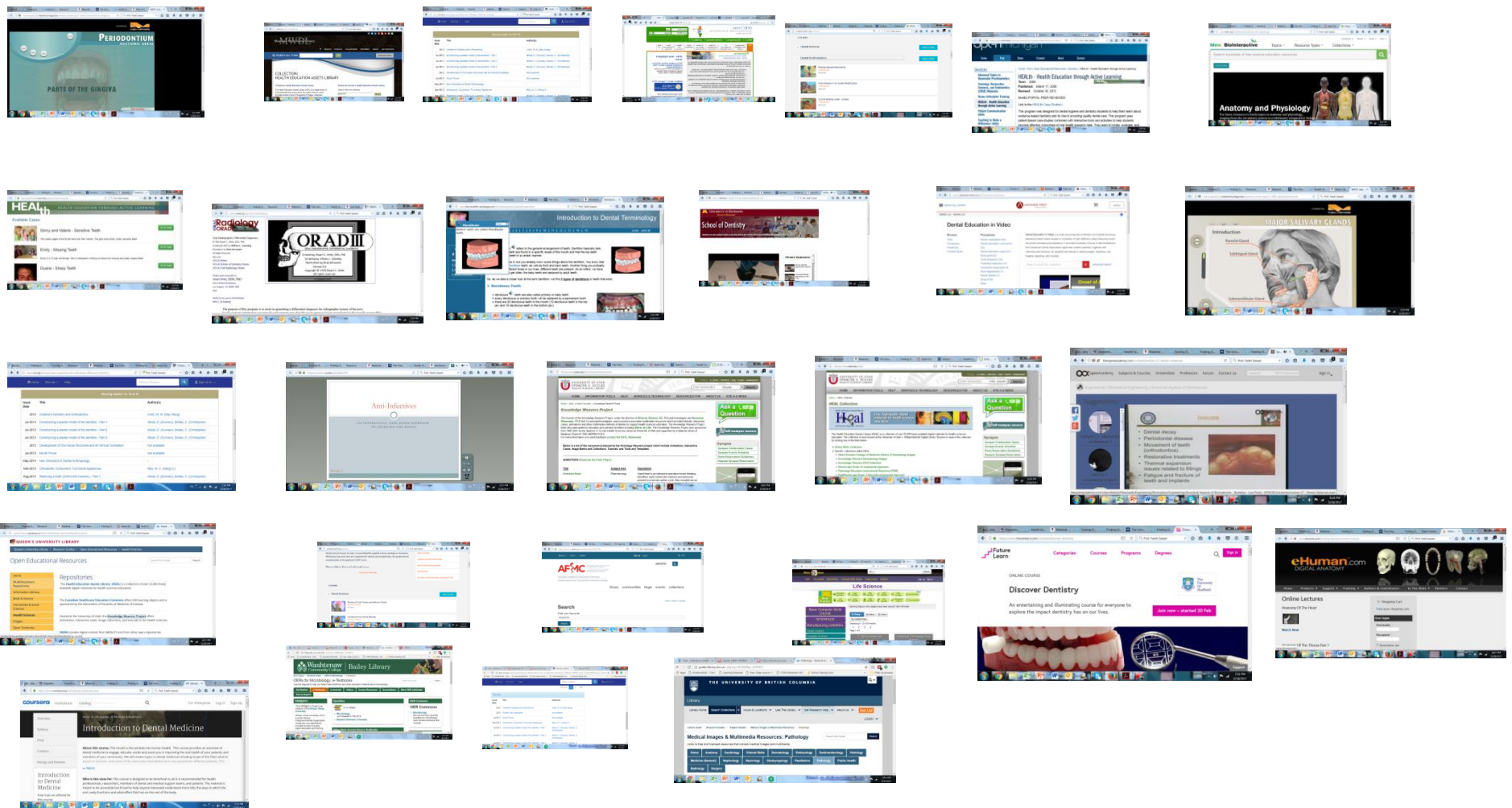
FreeBooks4Doctors!
 Learning languages on your smartphone.

Child and motherhood

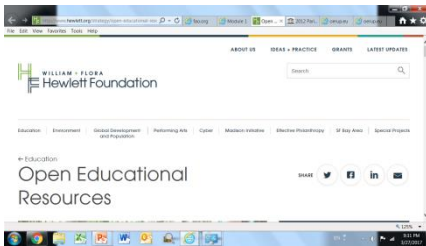
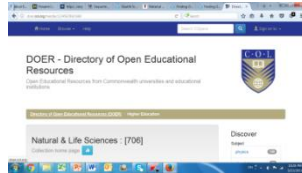
Science



Dentistry Resources



Health Science



Images

Hematology

Dermatology

ECG

Oral Cavity Subset

Lymphatic Tissues and Organs Subset

General





مركز الاعتماد
وضمان الجودة

Important Health Information

ASU Objectives Builder - Teac x

teachonline.asu.edu/objectives-builder/

Apps AcademicPub - Chang Learning Materials Free. Open-source. Pe CORE-Materials • Res Virtual Training Suite Other bookmarks

Objectives Builder

Use this application to develop instructional objectives for your courses and instructional programs.

Objectives Builder

Objectives Builder is an easy to use online tool for writing lesson objectives

EN 6:18 AM 4/5/2017



10:30?

Session 4

Topics

1-Open Textbooks

2-Open Simulation

3-Open Video

4-simulation/Video

5-Open journals

6-Images

Open Textbook Definition

An open textbook is a textbook licensed under an open copyright license, and made available online to be freely used by students, teachers and members of the public. Many open textbooks are distributed in either print, e-book, or audio formats that may be downloaded or purchased at little or no cost



1

Open Textbooks

5



Static

Dynamic
Interactive

40% TO 70%

of students have not purchased a textbook because of its cost.

3

WHERE TO FIND THEM

No. of Open Textbooks Web view PDF



- 100+
- Free
- \$34.95 (All Access Pass)
- (Included in pass)
- \$39.95

4

MOVERS & SHAKERS

Others are also playing a role in providing cost-free alternatives to textbooks:



SAYLOR

.org began its Open Textbook Challenge in October 2011. It offered \$20,000 for accepted textbooks

that aligned with eligible Saylor courses, so long as they could be re-licensed as CC-BY. By the end of June 2012, four books have been chosen and are available for free downloads in the iTunes Bookstore.



You are free: to Share — to copy, distribute and transmit the work.



= \$10

E-reader:
\$107.59



Students can save about 80% by choosing open textbooks

E-book Printed (B&W) Printed (color)



- 2
- Free
- Free
- Free
- \$30-\$50



- 84
- Free
- \$24.95
- \$24.95
- \$34.95
- \$89.95

In September 2012, Governor Jerry Brown signed two bills related to digital textbooks. He signed a proposal for the state to fund

50 OPEN SOURCES

digital textbooks; the bills dealt with creating the textbooks and establishing the California Digital Open Source Library to host them.

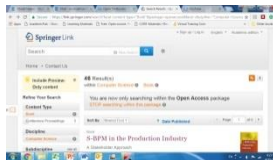
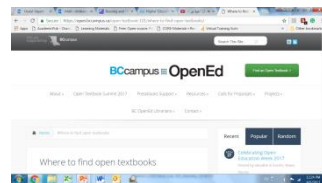
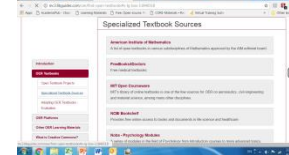
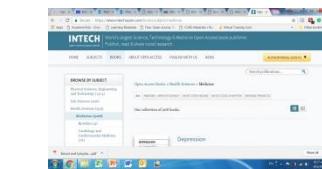
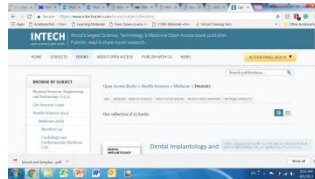
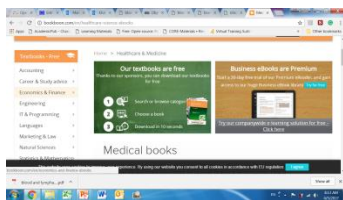
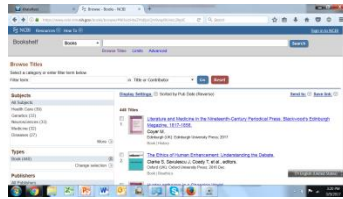


SOURCES

arstechnica.com | saylor.org | business.time.com | collegedata.com | calpirgstudents.org | theatlantic.com | catalog.flatworldknowledge.com | umn.edu | openstaxcollege.org | qao.gov |



Open Text Books



Health Open Textbooks



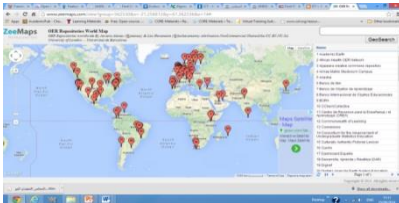


Searching

1- Open text initiatives Use Course Title



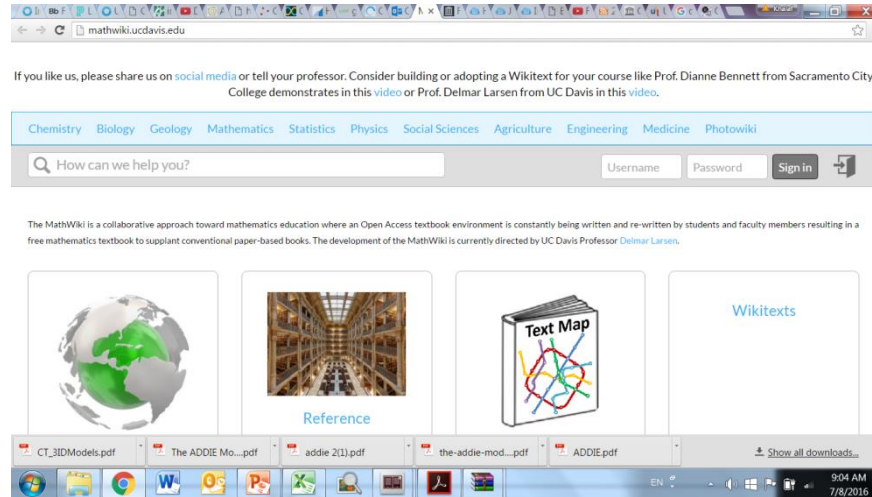
2-Repositories Use Key words



3- Use ISBN(International Standard Book Number)



Innovation



mathwiki.ucdavis.edu

If you like us, please share us on [social media](#) or tell your professor. Consider building or adopting a Wikitext for your course like Prof. Dianne Bennett from Sacramento City College demonstrates in this [video](#) or Prof. Delmar Larsen from UC Davis in this [video](#).

Chemistry Biology Geology Mathematics Statistics Physics Social Sciences Agriculture Engineering Medicine Photowiki

How can we help you? Username Password Sign in

The MathWiki is a collaborative approach toward mathematics education where an Open Access textbook environment is constantly being written and re-written by students and faculty members resulting in a free mathematics textbook to supplant conventional paper-based books. The development of the MathWiki is currently directed by UC Davis Professor [Delmar Larsen](#).

Reference

Wikitexts

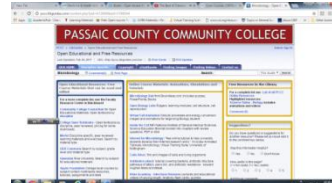
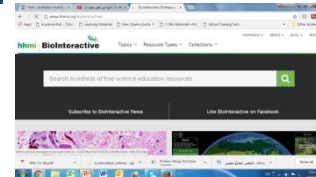
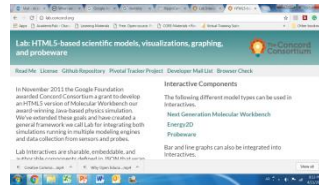
CT_3IDModels.pdf The ADDIE Mo...pdf addie 2(1).pdf the-addie-mod...pdf ADDIE.pdf

9:04 AM 7/8/2016

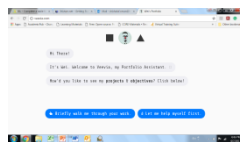
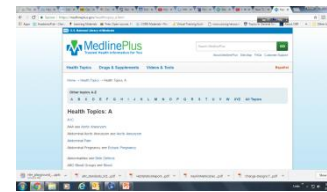
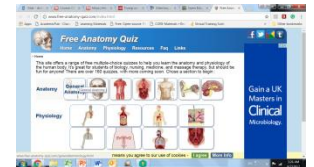
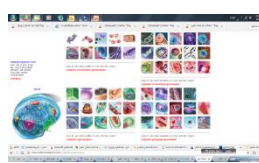
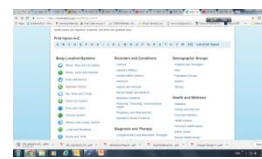


10:30?

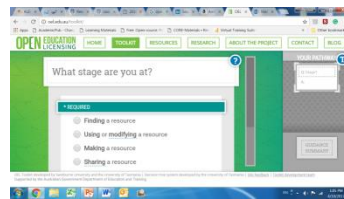
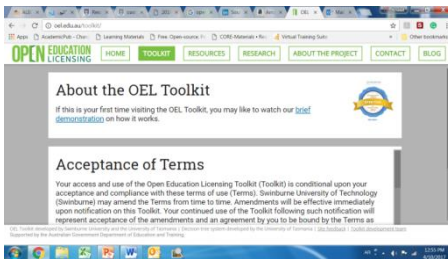
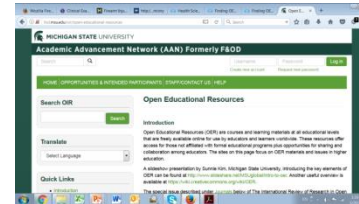
Simulation/Videos



Animation/Simulation



TOOLS





END